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Draft
Remedial Investigation Report
Former Precision Engineering Property, Seattle, Washington

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Executive Summary

This Remedial Investigation (RI) report was prepared for the Former Precision Engineering property located at 1231 South Director Street in Seattle, Washington (Site). The former manufacturing facility specialized in the production and repair of large hydraulic cylinders used in the manufacture of paper and metal sheets from 1968 through 2005. The property was sold in 2005 and is now operated as a retail warehouse (Pacific Industrial Supply) for construction and machinery supplies.

This RI report summarizes previous investigations and presents the results of recent investigations designed to provide sufficient information to evaluate the threat to human health and the environment resulting from Site conditions. The 2014/2015 RI was performed in accordance with the Washington State Department of Ecology's (Ecology's) Model Toxics Control Act (MTCA) regulations published in Washington Administrative Code (WAC) 173-340 (Ecology 2007).

ES.1 Remedial Investigation Objectives

The purpose of this RI report is to summarize and evaluate previous investigation data and to identify data gaps that need to be filled, to perform supplemental RI activities to address these data gaps, and to provide adequate information to assess potential risks posed to human health and the environment by the Site. Ecology performed this work with the primary objective of assessing the potential for impacts to the Lower Duwamish Waterway (LDW) as a result of past or ongoing releases from the Former Precision Engineering property.

ES.2 Remedial Investigation Activities

Several investigations have been conducted at the Site since a discharge violation was issued to Precision Engineering for discharging chrome-plating wastes to the sanitary sewer following cancellation of their Waste Discharge Permit in September 1985. From August 2014 through April 2015, Kennedy/Jenks Consultants (Kennedy/Jenks) conducted supplemental RI activities to fill data gaps and assess current Site conditions.

Activities conducted during this investigation included:

- Installation and development of three new groundwater monitoring wells (two shallow wells and one deeper well).
- Advancing 13 soil borings using direct-push technology, both on- and off-property.
- Advancing five soil borings using limited-access hollow-stem auger drilling techniques at off-property locations.
- Collection of soil and reconnaissance groundwater samples from the borings at multiple depth intervals.

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- Performance of quarterly groundwater monitoring for four events.
- Sampling of indoor air, ambient air and sub-slab vapor within the current building.
- Identification of potentially applicable cleanup and screening levels for comparison of analytical laboratory results.

ES.3 Remedial Investigation Results

The 2014/2015 RI confirmed the distribution and extent of metals and hydrocarbon-impacted soil and groundwater, and volatile organic compound (VOC) -impacted groundwater and air at the Site. The results are summarized as follows:

- Diesel- and oil-range hydrocarbons at concentrations greater than MTCA Method A/B cleanup levels (CULs) for unrestricted land use were detected in one sample collected during this investigation from the southern portion of the Site, and in one sample collected during a previous investigation from beneath the southeastern corner of the main Site structure. Diesel- and oil-range hydrocarbons at concentrations greater than MTCA CULs were detected in groundwater samples collected from monitoring wells screened in the shallow- to-intermediate depth alluvial saturated zone along the eastern/ southeastern property boundary, east and downgradient of the areas where diesel- and oil-range hydrocarbons were identified in soil samples.
- Soil samples collected in 2014 and 2015 did not contain arsenic, total chromium, hexavalent chromium, or lead at concentrations above MTCA Method A/B CULs. However, composite soil samples collected from beneath the former chrome-plating area during previous investigations contained total chromium concentrations up to 7,470 milligrams per kilogram (mg/kg). Groundwater sampled from beneath the main
- Site structure within the footprint of a former chrome-plating area contained total chromium and hexavalent chromium concentrations greater than the MTCA Method A/B groundwater CULs established during this investigation. Dissolved arsenic concentrations greater than the MTCA Method A CUL were identified in groundwater samples collected from each of 10 on-property monitoring wells, and in five reconnaissance groundwater samples collected off-property. With the exception of arsenic concentrations detected in monitoring well MW6, the majority of detected arsenic concentrations may be indicative of natural background conditions. In addition, arsenic concentrations detected in soil samples collected from the Site do not appear to be elevated above natural background concentrations for the Puget Sound region.
- Trichloroethene (TCE) was historically used as a solvent at the Site and was previously detected at concentrations greater than MTCA Method A CUL in groundwater. During the 2014/2015 RI, TCE was not detected at concentrations greater than MTCA Method A CUL for unrestricted land use in either soil or groundwater samples collected from the Site.
- Samples of indoor air, ambient outdoor air, and sub-slab vapor were collected in February 2015 from the current building within the footprint of the former chrome shop.

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The indoor air sample contained concentrations of TCE, benzene, carbon tetrachloride, and 1,2,4-trimethylbenzene above the MTCA Method B CULs for air. TCE was detected in the sub-slab vapor sample at a concentration greater than the corresponding screening level established in the *Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State* (Draft VI Guidance) (Ecology 2009a), which was updated in April 2015.

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Section 1: Introduction

This report presents the results of a remedial investigation (RI) conducted at the Former Precision Engineering property (Site) located at 1231 South Director Street in Seattle, Washington. The 2014/2015 RI was performed in accordance with the Washington State Department of Ecology's (Ecology's) Model Toxics Control Act (MTCA) regulations published in Washington Administrative Code (WAC) 173-340 (Ecology 2007).

1.1 Purpose

The purpose of the 2014/2015 RI was to identify the distribution of chemicals in Site soil, groundwater, surface water and air resulting from past releases at the property and to evaluate the risks posed to human health and the environment from Site conditions. Ecology initiated this work to evaluate the potential for impacts to Site media; focusing on potential impacts and/or contaminant migration pathways to the Lower Duwamish Waterway (LDW).

In accordance with the MTCA regulations, site boundaries are generally defined by the extent of contamination. For the Former Precision Engineering property, the Site boundary is defined by the extent to which contaminants of concern (COCs), resulting from past releases, have impacted soil, groundwater, surface water or air. The COCs at this Site include hexavalent and trivalent chromium, arsenic, cadmium, copper, lead, trichloroethene (TCE), polycyclic aromatic hydrocarbons (PAHs), and diesel- and oil-range petroleum hydrocarbons and their degradation products. In the case of the Former Precision Engineering property, the Site boundary potentially extends beyond the property boundary.

The remainder of Section 1 includes a summary of Site history; previous and current soil, drainage ditch soil, surface water, groundwater, and air sampling results; and previous interim remedial actions conducted to mitigate past releases at the Site.

1.2 Site Background

Located in the South Park and Greater Duwamish neighborhoods of Seattle, the Site was a manufacturing facility that specialized in the production and repair of large hydraulic cylinders used to manufacture paper and metal sheets. The facility operated from 1968 through 2005. The property was sold in March 2007 and is now operated by the current owner as a retail warehouse (Pacific Industrial Supply) for construction and machinery supplies.

1.2.1 Location and Setting

The 3.55-acre industrial property is located at 1231 South Director Street in Seattle, Washington on King County Parcel Number 000160-0055. The Site is located in unincorporated King County near the municipal boundary between the cities of Seattle and Tukwila, Washington, near the southwestern corner of South Director Street and 14th Avenue South, and is situated less than 2,000 feet west of the LDW (see Figure 1). Adjacent properties are developed with residences to the north and northwest, Seattle Refrigeration is located up a steep embankment to the west, Highway US-99/West Marginal Way South with cloverleaf interchange is located to

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the south and southeast, and a commercial property operated by Seattle Limousine is located to the east. East of Seattle Limousine and 14th Avenue South is the Sea King Industrial Park, which extends to the western bank of the LDW. A drainage ditch is situated along the southern edge of the Site, and extends north along 14th Avenue South and the eastern property line of the Seattle Limousine property (see Figure 2).

1.2.2 Historical Operations

During the time the property was operated as Precision Engineering, Site activities included grinding and polishing, honing, hard-chrome-plating, milling, welding, and application of other flame and arc-applied metal coatings. Precision Engineering's work involved the use of a number of chemicals, including chromic acid for plating and TCE as a solvent (Maul Foster & Alongi 2005a). A number of aboveground and partially belowground chromic acid plating tanks were located in the former chrome shop, as were tanks containing hydrochloric acid, sodium carbonate, and sodium hydroxide (summarized in Table 1 and shown on Figure 3). At least four trench drains were present in the grinding and chrome shops, located along the eastern and western walls of the shops. Former facility operational areas are depicted on Figure 3, based on drawings originally prepared by Maul Foster & Alongi, Inc. (MFA) in 2005.

1.2.2.1 Adjacent Property

The adjacent property to the east, Seattle Limousine (also referred to as KASPAC/Chiyoda or Carey Limousine in other reports), is a state cleanup site [Cleanup Site Identification (CSID) 2540] with documented hydrocarbon and solvent contamination in soil and groundwater. Seattle Limousine is located at 1237 South Director Street and received a No Further Action (NFA) determination from Ecology in 1998 following Independent Remedial Action Program (IRAP) review (Ecology 1998). Reportedly, the Seattle Limousine property was operated as a paint shop in the 1970s and a fiberglass boat manufacturing facility before that. Contaminants of concern (COCs) at Seattle Limousine are similar in nature to those identified at the Former Precision Engineering property. Previous environmental investigations conducted at the Seattle Limousine property are discussed in Section 1.2.4.

1.2.3 Regulatory History and Previous Investigations

Environmental concerns were initially raised at the Site in February 1986, when Seattle METRO (METRO) issued a discharge violation to Precision Engineering for discharging chrome-plating wastes into the sanitary sewer (METRO 1986). Precision Engineering cancelled its Waste Discharge Permit (METRO Permit number 7052) in September 1985. A facility inspection was conducted in March 1986 by Ecology and METRO (Ecology 1986a), which identified several environmental conditions of concern, including:

- Leaks in the concrete sump containing spent/waste chromic acid.
- Improper hazardous waste storage.
- Discharge of wastewater, detergent, and oil from the steam cleaning area into the adjacent drainage ditch located along the southern property margin.

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- Chromium contamination on the building roof due to ineffective scrubbers.
- Oil-contaminated surface and shallow subsurface soil adjacent to the facility dumpster.
- Groundwater accumulation in Tank 7.

In May 1986, SCS Engineers prepared a preliminary engineering report addressing compliance areas identified in METRO's Notice of Penalty and Compliance Schedule. Several environmental issues were identified in that report, including the following:

- Over 26,000 pounds of chromic acid flakes used in the plating tanks were purchased during a 2-year period from January 1984 through March 1986.
- Chrome tanks were operated on a closed-loop system, and the seven tanks at the facility had a capacity of up to 12,125 gallons.
- Chrome tanks were emptied on a 10 to 20-year frequency, and an estimated 550 gallons of sludge per year were collected from the bottom of the plating tanks.
- Chrome-plating periodically occurred in temporary onsite tanks.
- TCE was used for parts cleaning and degreasing, though use reportedly was discontinued prior to March 1986. Reportedly, TCE was used in a closed system vapor degreaser.
- Four parts cleaning and degreasing locations in the facility used Safety Kleen solvent (as of March 1984). Spent solvent was recycled through a contract with Safety Kleen. The locations of those parts cleaning/degreasing stations are not specified.
- Methyl ethyl ketone (MEK) was used for parts cleaning/paint thinning in a portable tank.
- Floor trenches were drained, cleaned, and inspected in May 1986. Reportedly, no leaks or cracks were observed in the trenches. Floor drains to the sewer system were sealed as of May 1986.

An Administrative (Enforcement) Order (DE 86-307) was issued to Precision Engineering in May 1986 by Ecology (1986b). The Order requested Precision Engineering produce an engineering report consisting of chemical purchases and use at the facility over an approximately 2-year period, findings of inspection of subsurface sumps, pits, and trench conditions and integrity; a site plan; and application materials to re-open the waste discharge permit that had lapsed in 1985. The Order was signed by a Precision Engineering representative on 29 May 1986. An amendment to the Order (Ecology 1986c), dated 19 December 1986, required Precision Engineering to address the identified environmental concerns and required characterization of the nature and extent of contaminant impacts to soil and groundwater at the Site and in the drainage ditch located to the south.

An agreement between Precision Engineering and Ecology was reached on 27 December 1988 (and filed in January 1989) regarding compliance with the Administrative Orders. The terms of

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the agreement included implementation of work plans to investigate soil and groundwater near Tank 7, sample soil in the ditch south of the facility, and plans for replacement and inspection of the chrome-plating tanks. Table 2 summarizes historical sampling activities conducted since 1988 and past investigations are also discussed in Sections 1.2.3.1 through 1.2.3.10 of this report.

A Site Hazard Assessment was conducted by Ecology in 1990, resulting in a rank of 1 (with 1 being highest risk and 5 being lowest risk). Ecology notified Precision Engineering in August 1990 of the ranking and its intent to list the Site in the September 1990 Site Register.

1.2.3.1 1988 Sweet-Edwards/EMCON – Hydrogeologic Investigation

In May 1988, an assessment of soil and groundwater conditions was conducted near Plating Tanks 1 and 2 (refer to Figure 4). Yellow-stained soil (indicative of chromium contamination) was reportedly observed adjacent to Tank 1, and six boreholes were advanced with hand augers around the perimeter of the tank to investigate subsurface soils (Sweet-Edwards/EMCON 1988). The boreholes were generally less than 7 feet deep, and soil samples were collected from the bottom of each boring. Soil samples from the borings were analyzed for soluble chromium using the Extraction Procedure Toxicity Test (EP Tox) Method; the resulting concentrations ranged from 12 to 184 milligrams per liter (mg/L). The tabulated results from this investigation are presented in Appendix A Table A1.

During June 1988, four monitoring wells (MW1 through MW4) were constructed at the property and groundwater samples were collected for chromium analysis (see Figure 5). Well MW1 is a deep monitoring well, and wells MW2 through MW4 are shallow wells. Chromium was reported in groundwater samples collected from wells MW1 through MW3 at concentrations ranging from 40 micrograms per liter (µg/L) at well MW1 to 923 µg/L at well MW3 (Sweet-Edwards/EMCON 1988). Historical groundwater sampling results are tabulated in Appendix A Table A2. A piezometer (P-1) was also installed in the 14th Avenue South right-of-way (ROW) in August 1988 to monitor groundwater elevation to the east.

A second piezometer (P-2) was constructed in April 1989 south of P-1. Monitoring well and piezometer locations outside the building footprint are depicted on Figure 5. The soil boring logs depicting piezometer and monitoring well construction details are included in Appendix B of this report.

1.2.3.2 1989 Sweet-Edwards/EMCON – Tank 7 Investigation

Tank 7, used as a sodium hydroxide strip tank, is located in the south-central portion of the Precision Engineering facility (refer to Figures 3 and 4). During inspection activities in 1986, groundwater infiltration into the tank was observed, presumably due to a crack located in the northwestern corner of the tank wall. In March 1989, Sweet-Edwards/EMCON conducted an investigation of the Tank 7 area by drilling one soil boring (location B-1, depicted on Figure 4) to the northwest of the Tank 7 pit area to a depth of approximately 20 feet below ground surface (bgs).

Groundwater was encountered at a depth of 9 feet bgs, and glacial till was identified at a depth of 18 feet bgs. Soils above till were interpreted as fill materials placed following construction of Tank 7. Soil samples were collected above and within the saturated zone, and submitted for

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analysis of soluble metals using the EP Tox Method (see Appendix A Table A1). While none of the reported metals concentrations exceeded regulatory limits at that time for designation as a dangerous waste (WAC 173-303-090), samples for total metals analysis were not collected. A temporary monitoring well was constructed in the B-1 borehole; however, no groundwater sampling is reported (Sweet-Edwards/EMCON 1989a). The well was abandoned on 6 April 1989. Tabulated results from this investigation are summarized in Appendix A Table A1.

1.2.3.3 1990 Sweet-Edwards/EMCON – Tank 1 Soil Sample Results

Five boreholes were advanced near Plating Tanks 1 and 2 in November 1989 to further characterize soil conditions (Sweet-Edwards/EMCON 1990a). The locations investigated are depicted on Figure 4, and the results are discussed in a later report documenting the removal of Plating Tanks 1 and 2. Tabulated results from soil sampling conducted during this investigation are summarized in Appendix A Table A1.

1.2.3.4 1990 Sweet-Edwards/EMCON – Ditch Soil Sampling

A summary report was prepared with surface soil sampling results collected in the drainage ditch located south of the facility (Sweet-Edwards/EMCON 1989d, 1990a, and 1990c). The sampling program was conducted in two phases: during March 1989 and November 1989, and included collection of four "background" soil samples. Soil samples were analyzed for soluble chromium using the EP Tox Method. Sampling results were reportedly below the 5.0 mg/L threshold for dangerous waste designation of chromium based on toxicity, in accordance with WAC 173-303-090. Tabulated results from this investigation are summarized in Appendix A Table A3, and sampling locations (B-1 through B-4 and S-1 through S-13) are depicted on Figure 5.

1.2.3.5 1990 M&M Environmental – Letter to Ecology Regarding Precision Engineering, Inc.

The letter report prepared by M&M Environmental (1990) summarizes the findings of the investigation activities conducted previously by Sweet-Edwards/EMCON and discusses the excavation and closure of Plating Tanks 1 and 2. Concrete and soils were excavated to approximately 13 feet bgs. Groundwater was encountered at the base of the excavation beneath the tanks at an approximate depth of 10 feet bgs. Tabulated results from this investigation are summarized in Appendix A Table A1.

1.2.3.6 1993 Precision Engineering – Independent Remedial Action Report

Between March 1988 and April 1993, several remedial activities were reportedly conducted at the Site.

Final sampling in the Former Plating Tanks 1 and 2 excavation (Figure 4) identified locations where hexavalent chromium concentrations in soil ranged from below the 0.05 mg/kg analytical reporting limit up to 73 mg/kg in the southern sidewall; however, a soluble (EP Tox Method) chromium concentration of 9.6 mg/L was detected along the southern sidewall, which is greater than the 5.0 mg/L threshold for designation as dangerous waste (Precision Engineering 1993). Final soil sampling results from the southern sidewall, northern sidewall, and excavation floor indicated hexavalent chromium concentrations greater than the current MTCA Method A CUL of

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19 mg/kg for unrestricted land use were left in place following the excavation. The analytical results from soil sampling are summarized in Appendix A Table A4.

In 1992, Plating Tanks 3, 4, 5, and 6 were removed and disposed. A 35-foot by 40-foot section of concrete flooring was cut and removed. The impacted soil was reportedly excavated and stockpiled based on visual observations, and soils beneath the removed concrete slab were collected and submitted for laboratory analysis. The report (Precision Engineering 1993) suggests that excavated soils and concrete with concentrations of soluble chromium less than 400 mg/L, as determined by Toxicity Characteristic Leaching Procedure (TCLP) analysis, were placed into the excavation as backfill, and a new concrete slab was poured. Analytical results for total chromium and soluble total chromium (as determined using the TCLP method) are summarized within the report and show that soils with soluble total chromium concentrations greater than the dangerous waste regulatory level of 5.0 mg/L were present beneath the replaced concrete slab. A new containment vault was constructed in the excavation and new plating tanks were installed in the same location as Plating Tanks 3, 4, 5, and 6. The approximate excavation area is depicted on Figure 4. Tabulated results from this investigation are summarized in Appendix A Table A5.

Also in 1992, the deep containment sump/vault for Tank 7 was repaired to reduce flow of groundwater into the vault. Reportedly, the containment vault was pressure washed and damaged concrete was removed and repaired. A polyester/vinyl liner was installed at the base of the vault and partially up the sidewalls, and a new concrete slab was poured at the base of the containment vault. Prior to containment vault repairs, a groundwater sample was collected from within the vault and analyzed for total chromium with a reported concentration below the laboratory analytical detection or reporting limit; however, analytical results were not available within the submitted report (Precision Engineering 1993) for further review.

The Independent Remedial Action Report (Precision Engineering 1993) indicates remedial activities were conducted between 1988 and 1990 near Plating Tanks 1 and 2, resulting in the removal of the two tanks and approximately 114 cubic yards of adjacent soils. A total of 13 hand-augered boreholes and five drilled boreholes were advanced adjacent to Plating Tanks 1 and 2, to characterize soils prior to removal of the plating tanks, shown on Figure 4. Tabulated results from this investigation are summarized in Appendix A Table A1.

1.2.3.7 2005 Maul Foster & Alongi, Inc. – Preliminary Soil and Groundwater Site Assessment Report

Precision Engineering ceased operations in approximately March 2005. MFA conducted Site investigation activities in 2005, which consisted of advancing 11 direct-push borings (locations GP-1 through GP-11; Figure 6) at the Site near former tanks, floor drains, and trenches. Soil samples were collected at each boring location and reconnaissance groundwater samples were collected at selected locations (see Figure 6). MFA's initial 2005 investigation identified concentrations of trivalent chromium, hexavalent chromium, and TCE in soil samples that exceeded MTCA Method A soil CULs for unrestricted land use (Maul Foster & Alongi 2005a). Concentrations of diesel-range hydrocarbons, oil-range hydrocarbons, hexavalent chromium, dissolved total chromium, TCE, and cis-1,2-Dichloroethene (cis-1,2-DCE) greater than the MTCA Method A or Method B CULs were detected in one or more groundwater samples. Historical soil and groundwater analytical results (summarized in Appendix A Tables A6 and A2,

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respectively) were reported to Ecology by MFA, Precision Engineering, Sweet-Edwards/EMCON, and others, beginning in approximately 1988.

In October 2005, the Site was entered into the Voluntary Cleanup Program (VCP) (Ecology VCP Project Number NW1511) to conduct an independent remedial action with technical consultation from Ecology. A *Work Plan for Soil and Groundwater Supplemental Remedial Investigation* was developed to further characterize Site conditions (Maul Foster & Alongi 2005b).

1.2.3.8 2006 Maul Foster & Alongi, Inc. – Supplemental Remedial Investigation

In late 2005, MFA (2006) conducted additional direct-push drilling and soil sampling at locations GP-12 through GP-31, including groundwater reconnaissance sampling at locations GP-13 and GP-15, and installed groundwater monitoring wells MW5 through MW8 (Figure 6). Results and findings of the supplemental remedial investigation are discussed below in Section 1.2.3.9. Analytical results for soil and groundwater samples collected during MFA's Supplemental Remedial Investigation (2006) are tabulated in Appendix A Tables A6 and A2, respectively.

1.2.3.9 2008 Maul Foster & Alongi, Inc. – Final Remedial Investigation and Risk Assessment Report

Results and findings of the investigations conducted by MFA through 2006 are summarized in the MFA (2008a) Remedial Investigation and Risk Assessment (RI/RA) Report. RI/RA findings included:

- Hexavalent and trivalent chromium, diesel- and oil-range petroleum hydrocarbons, and TCE were identified as indicator hazardous substances (IHSs) in soil at the Site.
- Arsenic, cadmium, copper, hexavalent chromium, trivalent chromium, lead, chrysene, and heavy oil-range petroleum hydrocarbons were identified as IHSs for soil in the drainage ditch located immediately south of the property. The drainage ditch receives surface water runoff from the Site and adjacent properties to the south and east.
- IHSs identified in groundwater include arsenic, copper, hexavalent chromium, trivalent chromium, and selenium, as well as heavy oil range-petroleum hydrocarbons, TCE, and vinyl chloride.

Between October 2007 and March 2008, interim remedial action was conducted and approximately 100 cubic yards of surface soil was excavated from the drainage ditch south of the property to address IHSs present offsite (Figure 7). Reportedly, less than 2 cubic yards of soil impacted at concentrations greater than site-specific CULs was left in place and covered with fill material. The report does not state why residual impacted soils were left in place or how this volume was calculated. The excavated areas in the drainage ditch were reportedly re-graded and re-seeded following remedial excavation. The approximate extent of excavation in the drainage ditch is shown on Figure 7. Analytical results collected prior to, during, and following excavation in the drainage ditch are summarized in Appendix A Table A7.

The RI/RA report suggests groundwater impacts are confined to the property. Using a fate and transport model, MFA derived site-specific groundwater CULs, reportedly protective of surface water, then used U.S. Environmental Protection Agency's (EPA's) BIOCHLOR model to show

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whether those contaminants would reach the LDW (MFA 2008a). According to MFA, their model predicts concentrations of contaminants greater than analytical detection/reporting limits would not reach the LDW. Groundwater modeling was conducted for IHSs, including arsenic, copper, hexavalent chromium, trivalent chromium, selenium, diesel-range hydrocarbons, oil-range hydrocarbons, TCE, and vinyl chloride. The BIOCHLOR model does not account for possible co-mingling of groundwater from the adjacent Seattle Limousine site to the east. As mentioned in Ecology's September 2009 opinion letter (Ecology 2009b) regarding the final RI/RA report, the model has not been validated with field data from groundwater monitoring downgradient from the Site.

Sub-slab soil vapor and indoor air samples were collected in April 2006 and June 2006, respectively, and analyzed for TCE and degradation products cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride to consider the vapor intrusion pathway from groundwater to indoor air. Those analytical results are summarized in Appendix A Table A8 and sampling locations depicted on Figure 6; however, MFA interpreted concentrations of TCE in indoor air to be below the MTCA Method C CULs, and stated that the detected concentrations do not pose unacceptable risk to future industrial workers. A sub-slab vapor intrusion mitigation system was the remedial action suggested by MFA to address concentrations of TCE and vinyl chloride present in groundwater at concentrations where vapor intrusion to indoor or outdoor air may occur. In October 2008, MFA submitted a work plan (Maul Foster & Alongi 2008b) to Ecology regarding vapor intrusion system installation and long-term monitoring; however, there is no documentation in Ecology's files indicating a vapor intrusion mitigation system was actually installed or operated at the Site.

1.2.3.10 2011 Maul Foster & Alongi, Inc. – Final Feasibility Study

The final feasibility study (Maul Foster & Alongi 2011) summarizes an interim remedial action that occurred within the drainage ditch south of the Site between October 2007 and March 2008. Several cleanup alternatives were considered, including:

- Alternative 1: No-action.
- Alternative 2: The building slab would be used as an engineered cap combined with groundwater monitoring and a restrictive covenant prohibiting groundwater use.
- Alternative 3: Approximately 1,000 cubic yards of impacted soil would be excavated, followed by groundwater monitoring and institutional controls.
- Alternative 4: Strategic excavation of approximately 67 cubic yards of soil, combined with injection of EHC-M (an *in situ* metals immobilization treatment) to treat hexavalent chromium contaminated groundwater, and groundwater monitoring.

MFA recommended Alternative 2, which included implementing institutional controls, a restrictive covenant, groundwater monitoring, and use of the current building slab and asphalt cover as a cap. In July 2011, Ecology issued an opinion letter (Ecology 2011) responding to the proposed remedial action, which indicated Site characterization was insufficient to establish cleanup standards and select a cleanup action. Ecology's opinion letter indicates the nature and extent of groundwater contamination, particularly downgradient of the Site boundary and

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the adjacent KASPAC/Chiyoda (currently Seattle Limousine) site, has not been adequately characterized.

1.2.4 Investigation and Remedial Activities at Adjacent Property

The property adjacent to the Former Precision Engineering facility is currently operated by Seattle Limousine, although this property has also been identified by site names including Carey Limousine, Chiyoda International Corporation, and Kaspac Corporation (Facility/Site ID 2489) in other documents. EMCON prepared an Independent Remedial Action Report for the property in November 1995 (EMCON 1995), summarizing prior investigations and independent remedial actions. Figure 8 depicts the Seattle Limousine property, prior operation areas and investigation locations discussed below.

Prior businesses and operations at the Seattle Limousine property included transmission and automotive repair, construction contracting, and road paint striping. In 1989, a Phase I Environmental Site Assessment was conducted at the property, which identified several possible sources of environmental releases (GeoEngineers 1989). These include:

- An 8,000-gallon underground storage tank (UST) for leaded gasoline was removed in September 1989 (GeoEngineers 1989). The former UST was located west of Building 1 (shown on Figure 8).
- Waste paint was suspected to have been disposed at ground surface adjacent to a former paint shed (west of Building 1).
- The Kaspac Corporation was cited in April 1989 (Ecology 1989) for discharge of oil, gas, diesel and hydraulic fluid to groundwater and/or surface water in the southwestern corner of the property.

The gasoline UST was decommissioned and removed in September 1989, at which time petroleum-impacted soils were excavated (GeoEngineers 1989). Soil samples collected from the margins of the excavation contained concentrations of gasoline-range hydrocarbons, diesel-range hydrocarbons, and benzene, toluene, ethylbenzene, and xylenes (BTEX) below MTCA Method A CULs. A soil sample from the western sidewall of the excavation contained diesel-range hydrocarbons at a concentration of 214 mg/kg (which was greater than the CUL at the time, but less than the current MTCA Method A CUL for diesel-range hydrocarbons). Analytical results from previous investigations at the Seattle Limousine property are summarized in Appendix A Tables A9 and A10.

A Phase II investigation was conducted in 1990 (Applied Consultants 1990a) to characterize hydrocarbon-impacted soils near the removed UST. Three groundwater monitoring wells were installed (MW-1 through MW-3). Groundwater sampling results from well MW-3 identified concentrations of benzene, xylenes and TCE reportedly at concentrations greater than cleanup standards. A second sample collected from well MW-3 in 1990 also identified ethylbenzene in groundwater at a concentration greater than cleanup standards. Two additional phases of groundwater investigation activities were conducted, resulting in the installation of six additional monitoring wells (MW-4 through MW-9) and identification of a possible release area near the loading dock (see Figure 8).

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Reportedly, paint-stained soils were excavated near the former paint shed and disposed offsite; however, the volume of excavated materials and the condition of excavation margins were not reported. In August 1990, hydrocarbon-impacted soils near the former UST were excavated, resulting in the decommissioning of well MW-3 (Applied Consultants 1990b). The excavated soil was stockpiled and landfarmed at the property, then reused as fill when analytical results for hydrocarbons and BTEX were reportedly below CULs (Applied Consultants 1991).

A recovery well (RW-1) was installed in the eastern portion of the excavated area, and a pump system installed and plumbed to remove groundwater from RW-1 and discharge to sanitary sewer. Reportedly, pumping continued from April 1991 through at least December 1991, and well RW-1 was abandoned in May 1992. Well MW-6 was plumbed to a water treatment system consisting of two carbon canisters, and used as recovery well RW-2 from January 1992 through April 1992 (EMCON 1995).

Following independent soil and groundwater remediation activities, additional investigation of groundwater and soil conditions in the southern portion of the property was conducted in 1993 and 1994. Groundwater samples contained BTEX constituents and/or lead, chromium, arsenic, and cadmium at concentrations greater than MTCA Method A CULs (EMCON 1995).

The Seattle Limousine property received an NFA determination through an Independent Remedial Action Program Review by Ecology in 1998 (Ecology 1998) on the basis of groundwater monitored since February 1997. Tables A9 and A10 in Appendix A summarize historical soil and groundwater analytical results from the Seattle Limousine property, as reported to Ecology by GeoEngineers, EMCON, and others.

1.3 Report Organization

The remainder of this RI Report is organized into the following sections:

Section 2: Study Area Investigation

Section 3: Physical Site Conditions

Section 4: Cleanup Standards

Section 5: Distribution and Extent of Impacted Media

Section 6: Conceptual Site Model

Section 7: Summary and Conclusions.

Supporting information is provided in the Appendices.

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Section 2: Study Area Investigation

The RI objectives for characterization of soil, groundwater, and air impacts by Site COCs were originally established in the *Draft Remedial Investigation Work Plan* (Draft RI Work Plan), prepared by Kennedy/Jenks Consultants and submitted to Ecology on 25 March 2014 (Kennedy/Jenks Consultants 2014). The following field investigation activities were conducted to characterize current Site conditions:

- Site reconnaissance and mapping of underground utilities and former sub-surface chemical use features.

- Visual inspection of existing monitoring wells to determine suitability for further use in Site investigation activities.

- An initial water level monitoring event was conducted in April 2014 to evaluate the direction and magnitude of the hydraulic gradient at the Site.

- Soil and reconnaissance groundwater sampling was conducted in August 2014 using direct-push soil sampling techniques. The 13 boring locations (SB1 through SB8, and SB10 through SB14) are shown on Figure 9. Reconnaissance groundwater samples were collected from the upper saturated unit, where conditions permitted.
  - Four of the sampling locations (SB11 through SB14) were located offsite between the Former Precision Engineering property and the LDW to characterize potential offsite groundwater migration downgradient of the Seattle Limousine property (Figure 9).

- Construction and development of two onsite shallow monitoring wells (MW10 and MW11), and one onsite deeper monitoring well (MW9). The locations and screened intervals of the new wells were determined based upon the results of the soil and reconnaissance groundwater sampling activities previously described in Section 1, in areas suitable for characterizing potential migration of metals and solvents. Drilling and well construction activities were conducted in August 2014.

- Groundwater samples were collected from new and existing monitoring wells on a quarterly basis. The existing groundwater well network (wells MW1 through MW8) was monitored over four quarterly events (April/May 2014, August 2014, December 2014, and March 2015) and the three new monitoring wells (MW9 through MW11) were sampled during the last three quarterly events.

- Sub-slab soil vapor and indoor air sampling was conducted in the current Pacific Industrial Supply warehouse building in February 2015 (sampling locations are shown on Figure 9).

- Soil and reconnaissance groundwater samples were collected at five locations (SB15 through SB19) east of the former Precision Engineering property and the current Seattle Limousine property in April 2015. Boreholes were advanced using a limited access

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hollow-stem auger drill rig. The drilling locations were selected based on observations and analytical findings from drilling conducted in August 2014. One borehole location (SB19) was located southeast of the Former Precision Engineering property, across 14th Avenue South, to characterize soil and groundwater conditions east and presumably downgradient of prior investigation areas and to help validate the preliminary conceptual site model.

- Soil, groundwater, and air samples were submitted for laboratory analytical analysis for COCs, including:

  - Diesel- and oil-range hydrocarbons in soil and groundwater.

  - Metals in soil and groundwater, including arsenic, chromium, hexavalent chromium, lead, and selenium in soil and groundwater.

  - Volatile organic compounds (VOCs) in soil, groundwater, sub-slab soil vapor, and indoor air.

  - Selected samples were also analyzed for gasoline-range hydrocarbons in soil and groundwater.

Interim reports of RI field activities and findings have been submitted to Ecology throughout the duration of this project, and are summarized in the following sections.

2.1 Soil Investigation

Site investigations conducted prior to the 2014/2015 RI yielded soil and groundwater analytical results that do not fully characterize current Site conditions. To augment the existing data set, additional soil sampling was conducted to characterize the vertical and lateral extent of groundwater-bearing soil across the Site, establish a better understanding of Site hydrogeology and the lithology of Site soils, and to confirm that the general distribution of metals and solvent concentrations in soil is consistent with historical results. Figure 9 depicts soil boring locations sampled during the 2014/2015 RI.

Soil samples collected during drilling of soil borings and MW9 and MW11 boreholes were submitted to Analytical Resources, Inc. (ARI) of Tukwila, Washington for analysis of metals using EPA Method 6010C, hexavalent chromium using EPA Method 7196A, VOCs using EPA Method 8260C, and diesel- and oil-range petroleum hydrocarbons using Method NWTPH-Dx. Selected samples collected during April 2015 were analyzed for gasoline-range hydrocarbons using Method NWTPH-Gx.

Analytical results for soil samples are summarized in Table 3, and are discussed below in Section 5. Soil boring and well construction logs with well construction details are provided in Appendix B. Laboratory analytical reports and chain-of-custody documentation for soil samples are provided in Appendix C. Tables within Appendix C summarize the analytical schedule for samples collected during the 2014/2015 RI.

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2.1.1 August 2014 – Soil Borings and Well Construction

In August 2014, a field investigation of Site soil and groundwater conditions was conducted using a Geoprobe direct-push drill rig operated by Cascade Drilling, Inc., of Woodinville, Washington. Prior to drilling, a one-call utility locate request was made for the proposed investigation area, and a private utility locator was subcontracted to identify potential underground utilities within a 20-foot radius of each drilling location. Traffic control measures were implemented during drilling of four boreholes (SB11 through SB14) located in the shoulder of the 14th Avenue South ROW; coordination and permitting was completed with the Washington State Department of Transportation (WSDOT) prior to conducting investigation activities within the ROW.

Soil and reconnaissance groundwater investigation activities were conducted on 7 and 8 August 2014. Soil boring locations are shown on Figure 10 and include nine locations on the Former Precision Engineering property (SB1 through SB8 and SB10) and four locations in WSDOT's 14th Avenue South ROW (SB11 through SB14). Proposed boring location SB9 was outside the area of known impacts and was not advanced in an effort to complete higher priority locations.

Each reconnaissance borehole (SB1 through SB8 and SB10 through SB14) was advanced to refusal or the inferred top of the glacial till surface, as shown in the interpretive cross-sections A-A' and B-B' on Figure 10. Continuous cores were collected and soil conditions were recorded at each soil boring location. Soil samples were collected from just above the inferred till unit and/or other depths where field screening (staining, odor, or sheen) suggested impacted soils may be present.

Three new groundwater monitoring wells (MW9 through MW11) were constructed at the Site on 16 August 2014. Well locations and depth intervals were selected based on preliminary analytical results from reconnaissance groundwater samples, expected groundwater flow direction, and field observations. The three new monitoring wells were installed using a hollow-stem auger drill rig operated by Holt Services, Inc. of Edgewood, Washington. Monitoring wells were constructed using 2-inch Schedule 40 polyvinyl chloride (PVC) casing with either 5 feet (MW9) or 10 feet (MW10, MW11) sections of 0.010-inch slotted PVC screens. Annular materials consisted of Colorado 10/20 silica sand as a filter pack across the screened interval to 2 feet above the screen, hydrated 3/8-inch bentonite chips as a seal from the top of the filter pack to approximately 1 foot bgs, and concrete grout from the top of the seal to the ground surface. A flush-mounted traffic-rated well box was installed at the surface for each well.

Well MW9 is located near borehole SB4. The MW9 borehole was advanced to a total depth of 45 feet bgs to characterize Site lithology in the upper portion of advance outwash deposits or a coarser interbed within a thicker till sequence (as interpreted based on available lithologic information from prior Site investigations). The well was screened from 31 to 36 feet bgs within a less dense sandy unit interpreted as a water-bearing unit within either the upper portion of advance outwash deposits or a coarser interbed within a thicker till sequence. Three soil samples were collected and submitted for chemical analysis to characterize soils at the inferred till/outwash interface, and at two depth intervals in the inferred advance outwash/coarse interbed unit. As data from the SB4 reconnaissance soil and groundwater samples did not identify impacts to groundwater, a permanent conductor casing was not installed at this location. Observed lithology and well construction details for each of the three locations are presented on the soil boring logs in Appendix B and are summarized in Table 4.

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Well MW10 was constructed approximately 6 feet north of well MW9. Wells MW9 and MW10 are intended to serve as a pair of wells with screens constructed at different depth intervals to assess a possible vertical hydraulic gradient. Well MW10 was constructed with a screened interval from 10 to 20 feet bgs; which is comparable to other shallow wells adjacent to the eastern property line of the Site. No soil samples were collected during construction of well MW10 due its proximity to well MW9.

Well MW11 was constructed approximately 250 feet north of the MW9/MW10 well pair, adjacent to borehole location SB8. The MW11 borehole was advanced to a total depth of 20 feet bgs, with the well screen interval from 10 to 20 feet bgs. One soil sample was collected from the saturated zone. The location of MW11 was selected to help understand shallow groundwater flow and contaminant concentrations north of the areas where known releases have occurred.

2.1.1.1 Development of Wells MW9, MW10, and MW11

As discussed above, three monitoring wells were constructed and added to the groundwater monitoring well network in August 2014. Following installation, the new monitoring wells were developed by Kennedy/Jenks on 18 and 19 August 2014 to remove fine grained materials from the screened interval prior to groundwater sampling. Well development forms documenting volumes of groundwater purged and groundwater conditions during development activities are provided in Appendix E.

Following well development activities, KPG of Tacoma, Washington was contracted to conduct a horizontal and vertical survey of new and existing monitoring well locations, including ground surface and the top of casing elevations. Surveying activities were conducted on 5 September 2014, and the reference elevations are incorporated into Tables 4 and 5.

2.1.2 April 2015 – Supplemental Soil Borings

Five additional off-property soil borings (SB15 through SB19) were advanced in the WSDOT 14th Avenue South ROW between 15 and 20 April 2015 to characterize soil and groundwater conditions east of the Former Precision Engineering property and east of the Seattle Limousine property (Figure 9). Soil boring locations were selected based on preliminary analytical results from soil and reconnaissance groundwater samples, expected groundwater flow direction, and field observations during previous investigation activities. The five new soil borings were advanced using a limited access hollow-stem auger drill rig operated by Cascade Drilling of Woodinville, Washington to penetrate dense glacially-deposited units encountered.

Soil samples were collected from several depth intervals in each borehole and analyzed to characterize soils present in sandy alluvium, just above the till interface, and at the top of the interpreted till unit. Temporary monitoring wells were constructed using 2-inch Schedule 40 PVC casing with 10 feet of 0.010-inch slotted PVC screens set at the bottom of the borehole, and grab/reconnaissance groundwater samples were collected. The collection and analysis of groundwater samples is discussed in Section 2.2. Following groundwater sample collection, the off-property soil borings were backfilled with bentonite chips to ground surface, and hydrated with potable water.

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Similar to other boring activities, utility locate activities were conducted prior to drilling, and at least the upper 5 feet of each borehole was cleared using an air-knife to identify any shallow subsurface utilities. All soil borings advanced in April 2015 required implementation of a traffic control plan.

2.2 Groundwater Investigation

The objectives of additional groundwater characterization are to define the lateral and vertical extent of impacted groundwater at the Site, and to assess whether impacted groundwater is migrating offsite towards the LDW. Limited groundwater reconnaissance sampling was performed prior to installation of MW9 through MW11 (as described in Section 2.2.1) during Geoprobe investigation activities. In lieu of installing permanent monitoring wells off-property (which could not be permitted in time to complete the investigation), further reconnaissance groundwater sampling was conducted in April 2015 to characterize groundwater conditions east of the Former Precision Engineering and Seattle Limousine properties.

The intent of groundwater investigation activities was to:

- Confirm the general distribution of metals, hydrocarbons, and solvents in groundwater.
- Establish a better understanding of Site hydrogeology and lithology of Site soils.
- Better define Site groundwater hydraulic conditions, including horizontal and vertical flow gradients, and estimate the saturated thickness of water-bearing zones.
- Develop a preliminary understanding of the continuity of hydro-stratigraphic zones beneath the Site to the LDW.

Findings and data generated during groundwater investigation activities are summarized in tables and appendixes to the 2014/2015 RI, and discussed in more detail in following sections. Measurements of depth to groundwater are summarized in Table 5. Analytical results for reconnaissance groundwater samples are summarized in Table 6 and results from groundwater monitoring well samples are summarized in Table 7. Laboratory analytical reports and chain-of-custody documentation for groundwater samples are provided in Appendix C. Groundwater purge and sampling forms completed during field investigation and sampling activities are provided in Appendix D.

Groundwater samples were analyzed by ARI for VOCs using EPA Method 8260C, metals (arsenic, lead, chromium, and selenium) using EPA Method 6010C (later EPA Method 200.8), hexavalent chromium using EPA Method 3500Cr-B, and for diesel-range petroleum hydrocarbons using Method NWTPH-Dx. A subset of groundwater samples were analyzed for gasoline-range hydrocarbons using Method NWTPH-Gx.

2.2.1 Reconnaissance Groundwater Sampling

Reconnaissance groundwater samples were collected from direct-push borings during Site investigation activities conducted on 7 and 8 August 2014 and from hollow-stem auger borings during 15 to 20 April 2015. Reconnaissance groundwater samples were collected and

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submitted to ARI for analysis. Reconnaissance groundwater samples collected in April 2015 were submitted for analysis of total and dissolved fractions of metals, while prior samples were submitted for analysis of total (unfiltered) metals.

Following collection of reconnaissance groundwater samples, boreholes were abandoned using hydrated bentonite chips. Reconnaissance groundwater samples were not collected from locations SB1 and SB2, as groundwater was not encountered prior to refusal.

2.2.2 Monitoring Well Sampling

2.2.2.1 Initial Groundwater Sampling

The initial, first quarterly groundwater monitoring and sampling event was conducted between 30 April and 2 May 2014. Existing monitoring wells MW1 through MW8 were inspected, and field measurements including depth to groundwater and total well depth were collected. At this time, well construction specifications were unavailable for wells MW1 through MW4; therefore, a down-hole, submersible video camera was used to identify and observe the screened interval. The screened interval length was estimated to be 10 feet long in wells MW1 through MW3 and 5 feet long in well MW4. Soil boring logs with well construction information for wells MW1 through MW4 were subsequently located following the initial groundwater sampling event. The actual well construction details, including top of casing elevation and screened interval, are summarized in Table 4, and depth to groundwater measurements are presented in Table 5.

During the first quarter groundwater monitoring and sampling event, groundwater samples were collected from monitoring wells MW2 through MW8. Well MW1 was not sampled in May 2014 due to access constraints at the time of sampling.

2.2.2.2 Second, Third, and Fourth Quarterly Groundwater Sampling Events

A second groundwater monitoring and sampling event was conducted on 20 and 21 August 2014, a third groundwater monitoring and sampling event was conducted on 1 and 2 December 2014, and a fourth groundwater monitoring and sampling event was conducted on 9 and 10 March 2015. Depth to groundwater measurements were made at wells MW1 through MW11 prior to sampling and are summarized in Table 5. Analytical results from groundwater monitoring well samples collected during the RI are summarized in Table 7. Laboratory analytical reports and chain-of-custody documentation are provided in Appendix C and groundwater purge and sampling forms are provided in Appendix D.

2.3 Vapor Intrusion Investigation

The objective of the indoor air, outdoor ambient air, and sub-slab soil vapor sampling at the Site was to evaluate the potential vapor intrusion (VI) exposure pathway into the current building at the Site. Sampling was conducted to evaluate whether VOCs present in soil and groundwater are present in vapor phase, and to evaluate whether potential VI of VOCs may pose adverse health effects to occupants of the onsite building.

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Air and sub-slab vapor analytical results are summarized in Table 8. Copies of the laboratory analytical reports and chain-of-custody documentation are provided in Appendix C. Sampling locations are shown on Figure 9. Field sampling records are provided in Appendix D.

2.3.1 Air and Sub-Slab Soil Vapor Sampling

Indoor air, outdoor ambient air, and sub-slab soil vapor samples were collected on 7 and 8 February 2015; one from the indoor breathing space of the building, one of outdoor ambient air (from an upgradient location), and one from a temporary sub-slab vapor implant installed by drilling through the existing concrete slab. Sampling was completed in general accordance with Ecology's Draft *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (Draft VI Guidance) (Ecology 2009a). Field activities were performed in a manner consistent with the standard operating guidelines (SOGs) presented in Appendix B of the *Remedial Investigation and Feasibility Study Work Plan, Precision Engineering Facility*, prepared by Kennedy/Jenks Consultants and submitted to Ecology on 25 March 2014.

Prior to the investigation, occupants of the facility were requested to turn off the building heating and ventilation system. Welding activities were observed in the same building, but in a separate room, immediately prior to the VI investigation. Air and vapor samples were collected over a 24-hour period, during which the Pacific Industrial Supply Company was closed for business.

The indoor air sample was collected in an area of previously detected VOCs in soil using a certified 6-liter Summa™ canister with an attached laboratory-supplied calibrated 24-hour flow controller. Before indoor air sample collection, the canister's valve was confirmed to be closed, the canister's brass cap was removed, and the flow controller and gauge were attached to the canister. The initial vacuum of the canister was recorded by attaching the brass cap to the gauge inlet, opening and closing the valve quickly, recording the gauge reading, then removing the brass cap. To collect a representative sample of the breathing air for workers, the indoor air sample canister was placed on a shelf approximately 5 feet above the floor level within 10 feet of the sub-slab vapor sample location.

Indoor air sample collection was initiated by opening the Summa™ canister's valve. At the end of the 24-hour sampling period, the final vacuum was recorded, the canister's valve was closed, the flow controller and gauge were removed, and the brass cap was replaced on the canister inlet valve.

The ambient, upgradient air sample was collected in a certified 6-liter Summa™ canister with an attached laboratory-supplied calibrated 24-hour flow controller. The canister was placed outside, in an upwind location approximately 6 feet above the ground along the northern wall of the main facility building (Figure 9). The ambient location was selected based on prevailing wind direction (from the west). Sample collection was initiated in the same manner as described for the indoor air sample.

One sub-slab soil vapor sample was collected from beneath the concrete slab within the former chrome shop area. The sub-slab sample was collected in an area of previously detected VOCs in soil. A 1-inch hole was advanced through the concrete floor using a rotohammer drill and a temporary sub-slab probe was installed. The sample train was tested for leaks by conducting a shut-in test, which consisted of applying a vacuum on the sampling train and observing any

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vacuum loss over a period of 60 seconds. The sub-slab implant was tested for leaks by placing a shroud over the sub-slab probe implant. Helium was introduced into the shroud and the concentration was maintained at approximately 50 to 60 percent while purging and sampling. The dead-volume of the connecting tubing and sampling train was purged by removing at least 200 milliliters of air from the probe. The purge air was immediately tested using a portable helium meter to evaluate the probe for potential leaks. Helium was detected in the purged air, confirming communication between indoor air and sub-slab sampling interval. Cracks were visually observed in the concrete slab around the former chrome shop area. The sub-slab vapor sample was then collected using a certified 1-liter Summa canister. The sampling hole was sealed upon completion of the sampling with neat cement, and sanded to match the existing floor grade.

Indoor air, outdoor air, and sub-slab vapor samples were analyzed for VOCs using EPA Method TO-15 and for helium by ASTM International (ASTM) Method 1945-46, by H&P Mobile Geochemistry, Inc. (H&P) of Carlsbad, California.

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Section 3: Physical Site Conditions

3.1 Developed Site Features

A reconnaissance of the Site was conducted in conjunction with other investigation activities to identify the location of underground and overhead utilities, and to review the current status of several Site features that were identified in the historical reports. Some of the information provided below was provided by Mr. Lee Frazier, the current property owner and site operator. The current status of these features is summarized in Table 1, and approximate feature locations are identified on Figures 3 and 9).

- Tank 7 and the deep sump/vault (see Figure 3)
  - According to Mr. Frazier, the Tank 7 sump/vault and pit were filled with concrete.
  - The specific details of the pit closure/decommissioning are not known.
  - It is uncertain whether the former tank and vault may act as a source to future groundwater contamination; however, chromic acid or other chrome-containing materials are not actively being used or stored in this area.
- Site perimeter
  - A single catch basin was identified in the southern portion of the property. Based on inspection at the surface, it appears the discharge piping drains to the drainage ditch south of the property, adjacent to the US-99 entrance ramp (see Figure 9).
- Drainage ditch
  - One drainage outfall/inlet to the ditch was identified near the southern portion of the Former Precision Engineering property. No additional inlets or outlets were observed other than the catch basin identified above.
- Underground utility lines
  - Historical METRO drain lines are present, running parallel to the eastern edge of the shop building and north to South Director Street, and north of the shop building, running diagonally to the northeast towards South Director Street. The main Seattle Public Utilities sewer drain line runs east-west along South Director Street. The current status of the lines is unknown.
  - Based on utility surveys performed prior to invasive drilling activities, an underground gas line is reportedly present near the south-central portion of the building and towards the driveway on the eastern portion of the Site. The gas line is believed to then head east across 14th Avenue South and traverse the Seattle Limousine property.

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- An underground power line reportedly enters the property from South Director Street at the main Site entrance, and trends south before making a connection at the building.

3.2 Geologic and Hydrogeologic Conditions

This section presents the current understanding of geologic and hydrogeologic conditions at the Site based on recent information obtained during the 2014/2015 RI, and on information available in historical reference materials and reports from past investigations.

The lithology and groundwater conditions encountered during current and historical soil boring and well installation activities are shown on the soil boring logs presented in Appendix B. Site lithology is also depicted on two interpretive cross-sections (Figure 10) and was used to establish a Conceptual Site Model (CSM) (Figure 11), which is discussed in Section 6 of this report.

3.2.1 Geology

The Site is generally located in the Puget Sound Lowlands, within an alluvial valley occupied by the LDW. Prior to engineering of the current navigable waterway, the Green River/Duwamish River meandered across a mile-wide valley. Geologic units in the vicinity of the Site are shown on a geologic map of Seattle prepared by the United States Geological Survey (USGS) (USGS 2005). A portion of that geologic map near the Site is shown on Figure 12.

The geologic units shown in the vicinity of the Site are primarily glacial in origin, but bedrock is exposed locally in small hills that occur within the LDW valley. One of these bedrock hills adjoins the Site to the north and west and is composed of Blakely Formation fossiliferous marine sandstone and conglomerate deposits which are overlain to the south by Vashon recessional outwash deposits and presumably other glacial deposits (i.e., glacial till and/or advance outwash deposits).

It appears a notch was cut into the southeastern portion of the hill when the Site was developed. As a result, the Precision Engineering property is graded into the hill in such a way that the western and northern edges of the property are flanked by steep embankments that are up to 20 feet high (and reinforced with shotcrete). The construction specifications of the embankments and retaining walls were not reviewed.

The geologic units identified in previous Site reports and shown on the 2005 Geologic Map of Seattle (USGS 2005; Figure 12) are described as follows:

- ***Shallow alluvium (Qal)***. Holocene alluvium described as: “sand, silt, gravel, and cobbles deposited by streams and running water” a few meters to 30 meters thick and “loose to dense or soft to stiff.”

- **Peat (Qp).** Described as: “organic matter consisting of plant material and woody debris, accumulated in bodies greater than about 1 meter in thickness and of mappable extent.” Peat may range in thickness from greater than 1 to 10 meters. The geologic map shows

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peat deposits to the south and east of the Site. Peat may be associated with both shallow alluvium (Qal) and recessional outwash (Qvr) sequences.

- **Recessional outwash deposits (Qvr).** Described as: "stratified sand and gravel, moderately sorted to well sorted, and less common silty sand and silt" typically 1 to 6 meters thick and "loose to dense." Recessional outwash deposits are depicted on the geologic map to the north and west of the Site on the southern portion of the hill that adjoins the Site to the north and west.

- ***Glacial till (Qvt)***. Pleistocene Vashon till is described as "compact diamict of silt, sand and subrounded to well-rounded gravel, glacially transported and deposited under ice. Commonly fractured and has intercalated sand lenses." The Vashon till is described as 1 to 10 meters thick and "very dense."

- ***Advance outwash (Qva)***. Advance outwash deposits are described as "well-sorted sand and gravel deposited by streams issuing from advancing ice sheet. May grade upward into till. Silt lenses locally present in upper part and are common in lower part." Advance outwash deposits are locally over 60 meters thick and are "dense to very dense." Some advanced outwash deposits may be texturally similar to glacial till.

Other geologic units shown on the 2005 Geologic Map of Seattle and located in proximity to the Site include:

- **Blakeley Formation Bedrock (Tb).** Described as "medium –grained sandstone, coarse-grained sandstone, conglomerate, and minor siltstone" that is over 1,000 meters thick and "weakly to moderately lithified." The Blakeley formation is shown on the geologic map to the north of the Site (forming the northern portion of the hill that adjoins the Site to the north and west) and to the northwest.

3.2.2 Lithology of Site Soils

Drilling activities conducted prior to 2012 indicate soils were previously investigated to a maximum depth of approximately 40 feet bgs at the Site. The current investigation includes borings to a maximum depth of approximately 50 feet bgs. Bedrock was not encountered during this or prior drilling investigations conducted at the Site.

Site lithology is described below and generally includes, from top to bottom, anthropogenic fill materials, native alluvial (Qal) deposits, native recessional outwash (Qvr) deposits, glacial till (Qvt) deposits, and sand/gravel deposits with some fines that may represent either advance outwash (Qva) deposits or coarser interbeds or lenses within the glacial till sequence (glacial till and some advance outwash deposits may be very similar texturally).

3.2.2.1 Shallow Zone Fill and Native Materials

Native shallow zone soils are predominantly silty sands and sandy silts containing up to 15 percent gravel, and interpreted as having alluvial or fluvial origins as either recessional outwash (Qvr) or recent alluvial (Qal) deposits. Fill materials, including up to 2 feet of fill and aggregate base materials beneath paved portions of the Former Precision Engineering property,

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was identified based on field observations during the 2014/2015 drilling activities, and generally corresponds with the area re-graded during Site development (the source of the fill is unknown, but may have included material removed from the hillside during development). Finer-grained deposits (i.e., silt and clay) and organic materials (woody debris and peat) also occur within the shallow zone throughout the Site. The fine-grained and organic materials may be associated with recessional outwash deposits or with recent alluvial deposits.

One or more thin (generally less than 1 foot thick), organic-rich layers of woody debris and/or peat were encountered at depths ranging from 6 to 12 feet bgs at locations MW6, MW7, MW9, MW11, SB5, SB7, SB8, and GP31. Thin layers of woody debris or peat were encountered at depths greater than 12 feet bgs at SB18 and SB19. The boring log prepared by MFA for well MW6 identifies a 2-foot thick layer of peat from 6 to 8 feet bgs, with a second occurrence of peat at approximately 17 feet bgs.

In the eastern portion of the Site, and on the east-adjoining Seattle Limousine Property, a sand and silt layer with locally abundant shell fragments occurs at the bottom of the shallow zone, and is typically saturated. This unit was not observed in borings in the central and western portions of the Site. Where present, the sand/silt layer was located immediately above the upper glacial till layer.

Shallow-zone geologic units are depicted on cross-sections (Figure 10) and on the CSM (Figure 11).

3.2.2.2 Glacial Till and Deeper Zone Deposits

Glacial till initially occurs at approximately 20 feet bgs in the eastern portion of the Site (see Figure 10) and the upper surface appears to slope downwards to the east away from the Site. The till may occur at shallower depths in the central and western portions of the Site (Sweet-Edwards/EMCON 1988, interpreted shallow soils within 1 foot of ground surface as glacial till at well locations MW1 and MW4); however, lithologic data is limited in the central and western portions of the Site.

The inferred base of the initial glacial till layer occurs at approximately 25 to 30 feet bgs beneath the Site, and appears to slope away from the Site to the east beneath the adjoining Seattle Limousine Property, although deeper lithologic data are limited. At boring SB-19, located southeast of the Site across 14th Avenue South, till was initially encountered at approximately 43 feet bgs and extended below the bottom of the boring which was terminated at 50.5 feet bgs.

Existing well locations MW1 and MW4 were reportedly drilled through till using hollow-stem auger drilling methods. Well MW1 in particular was interpreted by Sweet-Edwards/EMCON to have been constructed with a screened interval below approximately 30 feet of glacial till (glacial till was interpreted to occur within 1 foot bgs). Typically, Vashon till is difficult to penetrate using hollow-stem auger drilling methods, and is better characterized using other drilling methods (such as rotary drilling or rotosonic drilling). Based on the drilling records from 1988 and the field observations made during drilling activities in April 2015, the sandy, saturated unit where well MW1 is screened may better correlate to the coarser sands and gravels encountered at locations MW7, MW9, and possibly SB18 (see Figure 10).

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The sandy, gravelly material may represent advance outwash deposits or coarser interbeds or lenses within a thicker glacial till sequence, as previously discussed. The sand and gravel deposits occur beneath the upper till layer and were identified in borings MW1, MW7, and MW9. At MW1, the sand sequence is shown on the soil boring logs from 28 to 39 feet (approximately 11 feet thick) and at MW9 from approximately 32 to 38 feet (6 feet thick), and may pinch out to the east. The sand and gravel layer may correlate laterally between MW1 and MW7/MW9; however, lithologic data at the relevant depths are limited (wells MW1, MW7, and MW9 are screened in this unit). A sand deposit encountered in SB18 may correlate with that encountered in MW9, but may also represent a small lens within the upper till layer.

The materials encountered below the sand and gravel layer, particularly at MW9, included a dense to very dense silt, sand, and gravel mixture. Texturally, this material is similar to glacial till, but may also be associated with advance outwash deposits (USGS 2005). Therefore, the sand and gravel unit in which the onsite deeper zone wells are screened may represent the upper portion of advance outwash deposits or a coarser interbed within a thicker till sequence.

3.3 Hydrogeology

Observations made during the 2014/2015 RI, in combination with previous reports (e.g., Maul Foster & Alongi 2008a) suggest two distinct hydrogeologic units, a shallow saturated zone and deeper saturated zone, may be present beneath the Site within the upper 5 to 50 feet of soils encountered. The shallow saturated zone occurs within the recessional outwash and/or recent alluvium above the till layer. The deeper saturated zone occurs below the glacial till within material interpreted as advance outwash deposits, and/or interbeds within the glacial till unit. Saturated conditions may also occur in coarser lenses and/or interbeds within the glacial till.

3.3.1 Shallow Saturated Zone

A saturated zone observed to be predominantly sand with varying amounts of silt-sized particles exists above the glacial till within recessional outwash and/or recent alluvial deposits. Groundwater was encountered at all shallow zone borings (that were advanced to sufficient depth) and wells; however, localized dry zones were encountered below the initial water table occurrence in some borings, which indicates the vertical and/or lateral continuity of the shallow saturated zone may vary across the Site. Saturated intervals may include perched zones above the finer-grained (i.e., silt and/or clay) layers and above the till layer. Depth to groundwater in wells screened within the shallow zone ranged between 2.49 feet and 6.40 feet below top of casing (btoc) during the current investigation. Potentiometric surface maps were prepared for four quarters of groundwater monitoring and are presented as Figures 13A through 13D.

The shallow saturated zone may be partially confined locally by low permeability layers. Static groundwater elevations were measured at higher elevations than first encountered groundwater observed during drilling activities. A 1995 USGS water resources investigation report for southwestern King County indicates this alluvium layer may include both confined and unconfined saturated conditions (USGS 1995).

During groundwater sampling activities, groundwater in the shallow saturated zone was observed to exhibit reducing conditions, with negative oxidation-reduction potential (ORP) values measured while purging groundwater from the “shallow” wells prior to sampling.

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The horizontal hydraulic gradient in the shallow saturated zone is generally to the east towards the LDW, ranging from 0.016 foot per foot (ft/ft) to 0.033 ft/ft over the four monitored quarters. Based on the limited number of shallow wells onsite, an accurate assessment of the hydraulic gradient direction has been difficult to obtain, and may be complicated by the occurrence of locally discontinuous saturated intervals.

3.3.2 Deep Saturated Zone

The deeper saturated zone was encountered within sand and gravel deposits that may be present below the upper glacial till layer, or the sand and gravel deposits may represent the upper portion of advance outwash deposits, or possibly an interbed or lens within the glacial till sequence. The soil beneath the sand and gravel deposits (based on field observations at boring MW9 and previous borings MW1 and MW7) is a compact (i.e., dense to very dense) silt, sand, and gravel mixture that may be texturally similar to glacial till. The sand and gravel unit appears to be thickest under the western portion of the Site, becoming thinner and dipping to the east near the eastern Site margin.

The hydrology of the deeper saturated zone is characterized by three wells (MW1, MW7, and MW9) screened within the sand and gravel deposits. The hydraulic gradient and the estimated groundwater flow direction appears to generally trend from west to east based on the head elevations in these three wells. The deeper saturated zone is characterized as confined to semi-confined based on static water level elevations above the ground surface in well MW1.

Depth to groundwater in wells screened within the sand and gravel deposits was measured between 0.15 and 5.87 feet btoc during the current investigation with an approximate horizontal hydraulic gradient of 0.03 ft/ft. Figures 14A through 14C depict potentiometric surfaces interpreted during the second through fourth quarter groundwater monitoring events conducted during this investigation. The third deep monitoring well, MW9, was installed after the first quarterly event; therefore, a contour map for first quarter was not prepared.

Saturated conditions may also occur locally in other coarser interbeds or lenses within the glacial till sequence. The degree to which potential migration pathways (lateral and vertical) may be present within the till (i.e., along fractures and/or interconnected coarser-grained saturated intervals), and the degree of interconnectivity between the shallow and deep saturated zones, which are generally separated by the upper glacial till layer, have not been fully characterized. Water surface elevations recorded in Table 5 for the well pair of MW9 and MW10 suggest a downward vertical gradient, as the water surface elevation at well MW10 is consistently above that of well MW9. The head difference between wells MW9 and MW10 during three quarters of monitoring ranged from 1.50 to 1.76 feet, with a screen elevation difference of 18.5 feet (based on the center of the screened intervals). The downward vertical hydraulic gradient would be approximately 0.088 ft/ft.

3.3.3 Surface Water Hydrology

The LDW is the nearest ephemeral water body, located approximately ½ mile to the east from the Former Precision Engineering property. Surrounding the Site to the south, and east of the adjacent Seattle Limousine property is a drainage/retention ditch where surface water runoff and solids accumulate.

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While groundwater from beneath the Site may discharge to the LDW, the potential interconnectivity of groundwater between the Site and the LDW was not evaluated during the 2014/2015 RI.

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Section 4: Cleanup Standards

4.1 Soil Cleanup Standards and Points of Compliance

During the 2014 and 2015 investigation sampling activities, a number of compounds were detected in one or more soil samples. Soils were sampled on-property and off-property, east of the KASPAC/Chiyoda/Seattle Limousine property. The following compounds were detected at concentrations greater than laboratory reporting limits in Site soil samples analyzed during the current investigation:

- Diesel-range hydrocarbons
- Oil-range hydrocarbons
- Gasoline-range hydrocarbons
- Arsenic
- Chromium (total)
- Chromium (hexavalent)
- Lead
- Chloromethane
- Methylene chloride
- Acetone
- Carbon disulfide
- Benzene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Toluene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Ethylbenzene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Xylenes (m- & p-, specifically) (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)
- 1,3,5-Trimethylbenzene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)

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- 1,2,4-Trimethylbenzene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)

- Isopropylbenzene (substance identified in MTCA as Cumene) (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)

- N-Propylbenzene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)

- Sec-Butylbenzene (detected in two samples at locations downgradient of KASPAC/Chiyoda/Seattle Limousine)

- 4-Isopropyltoluene – not identified in Ecology's CULs and Risk Calculation (CLARC) database (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine)

- N-Butylbenzene(detected in two samples at locations downgradient of KASPAC/Chiyoda/Seattle Limousine)

- Naphthalene (detected in one sample at a location downgradient of KASPAC/Chiyoda/Seattle Limousine).

Several other compounds were detected and identified in soil as IHSs by MFA during a 2008 RI/RA; however, not all of these substances were detected in Site soil during 2014 and 2015 sampling activities. These additional compounds for consideration are:

- Cadmium (off-property in drainage ditch soil)

- Copper (off-property in drainage ditch soil)

- Hexavalent Chromium (on-property, and off-property in drainage ditch soil)

- TCE (on-property)

- Chrysene (off-property in drainage ditch soil).

4.1.1 Soil Cleanup Level Selection

The Method A/B CULs for unrestricted land use were selected as potentially applicable comparison standards for Site soils. However, specific calculations to assess whether or not Method A/B soil CULs would be protective of groundwater or surface water pathways has not been performed at this time.

Where Method A CULs are not available, MTCA Method B soil CULs may be applicable to Site conditions. These include:

- Acetone (non-cancer)

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- Carbon disulfide (non-cancer)
- 1,3,5-Trimethylbenzene (non-cancer)
- 4-Isopropylbenzene/Cumene (non-cancer)
- N-Propylbenzene (non-cancer)
- Sec-Butylbenzene (non-cancer)
- N-Butylbenzene (non-cancer)
- Chrysene (cancer)
- Copper (non-cancer).

Due to limited toxicological data, soil cleanup standards for chloromethane, 1,2,4-Trimethylbenzene, 4-Isopropyltoluene cannot be calculated using Standard Method B equations. Other soil screening levels considered for these substances include:

- EPA Regional Screening Levels (RSLs) established by Regions 3, 6, and 9, updated in June 2015 (EPA 2015).
    - Chloromethane: residential soil 11 mg/kg; industrial soil 46 mg/kg, based on a reference concentration for chronic inhalation exposure presented in EPA's Integrated Risk Information System (IRIS) and a hazard quotient of 0.1. The conservative concentration of 11 mg/kg has been selected for screening purposes only; however, chronic inhalation exposure of soil is an unlikely exposure route at this Site for human receptors.
    - 1,2,4-Trimethylbenzene: residential soil 5.8 mg/kg; industrial soil 24 mg/kg, based on a Provisional Peer Reviewed Toxicity Value for Superfund (PPRTV) reference value for chronic inhalation exposure and a hazard quotient of 0.1. The conservative concentration of 5.8 mg/kg has been selected for screening purpose; however, chronic inhalation exposure of soil is an unlikely exposure route at this Site for human receptors.
    - 4-Isopropyltoluene – not established or evaluated in the RSL tables.
- Oak Ridge National Laboratory's Risk Assessment Information System (RAIS) has an application to calculate preliminary remediation goals (PRG) (Oak Ridge National Laboratory 2014).
    - 4-Isopropyltoluene (also shown as p-Isopropyltoluene) is shown to have a soil saturation concentration of 162 mg/kg for a composite worker equation scenario.

Analytical soil results in Table 3 have been compared to the selected cleanup levels. Selected soil cleanup levels are summarized in Table 9.

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4.1.2 Point of Compliance

MTCA identifies the standard point of compliance for soils as throughout the site (WAC 173-340) (Ecology 2007). For the direct contact exposure route, the point of compliance is throughout the site to a depth of 15 feet bgs. For protection of groundwater, the point of compliance is throughout the Site to the depth of groundwater.

4.2 Groundwater Cleanup Standards and Points of Compliance

Compounds detected in one or more groundwater samples include the following:

- Oil-range hydrocarbons
- Diesel-range hydrocarbons
- Gasoline-range hydrocarbons
- Arsenic
- Chromium (total, and trivalent)
- Chromium (hexavalent)
- Lead
- Selenium
- Acetone
- Bromoform
- N-Butylbenzene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Chloroform
- 2-Chlorotoluene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- 1,3-Dichloropropane (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Ethylbenzene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Isopropylbenzene/Cumene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)

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- Methylene chloride
- Naphthalene
- N-Propylbenzene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Toluene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- TCE
- 1,3,5-Trimethylbenzene(in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- 1,2,4-Trimethylbenzene (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine)
- Xylenes (m, p & o – xylenes) (in a reconnaissance sample downgradient of KASPAC/Chiyoda/Seattle Limousine).

4.2.1 Groundwater Cleanup Level Selection

For simplicity, MTCA Method A/B groundwater CULs for human consumption were selected as potentially appropriate comparison standards for groundwater at the Site. Method A groundwater CUL concentrations for unrestricted land use are established for the following compounds detected in Site groundwater:

- Oil-range hydrocarbons
- Diesel-range hydrocarbons
- Gasoline-range hydrocarbon (benzene not present)
- Arsenic
- Lead
- Naphthalene
- Toluene
- Ethylbenzene
- TCE
- Xylenes (total).

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Method B values are available for the following compounds, where a Method A value is not available:

- Chromium (hexavalent) (non-cancer)
- Chromium (trivalent) (non-cancer), where hexavalent chromium data is also available
- Selenium (non-cancer)
- Acetone (non-cancer)
- Chloroform (cancer)
- 2-Chlorotoluene (non-cancer)
- 1,3,5-Trimethylbenzene (non-cancer)
- Isopropylbenzene/Cumene (non-cancer)
- N-butylbenzene (non-cancer)
- N-Propylbenzene (non-cancer)
- Bromoform (cancer).

Due to limited toxicological data, groundwater cleanup standards 1,3-Dichloropropane and 1,2,4-Trimethylbenzene cannot be calculated using Standard Method B equations. Other groundwater screening levels considered for these compounds include:

- EPA RSLs established by Regions 3, 6, and 9, updated in June 2015.
    - 1,3-Dichloropropane: no maximum contaminant level (MCL), but a tap water screening level of 37 μg/L, based on a PPRTV reference value and a hazard quotient of 0.1.
    - 1,2,4-Trimethylbenzene: no MCL, but a tap water screening level of 1.5 μg/L. Untreated Site groundwater is not expected to be used as tap water for human receptors.

Analytical results for groundwater samples collected during the 2014/2015 RI have been compared to the selected cleanup levels in Tables 6 and 7. Selected groundwater cleanup levels are summarized in Table 10.

4.2.2 Point of Compliance

Under MTCA, the typical groundwater point of compliance is throughout the Site (WAC 173-340). Groundwater at the Site is not expected to be a potable water source, and the primary objective

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is the protection of surface water and sediments in the LDW. Therefore, the point of compliance is throughout the Site in groundwater.

4.3 Air Cleanup Level Selection

For the VI pathway, CULs will be based on MTCA Method B air CULs and soil vapor screening levels as presented in Ecology's CLARC Database. Air and sub-slab soil vapor analytical results are presented in Table 8 and compared to the selected CULs. Potentially applicable CULs selected for air and sub-slab soil vapor are summarized in Table 11.

CUL concentrations are established for the following compounds detected in indoor and ambient air samples:

- Acetone (non-cancer)
- Benzene (cancer)
- Bromomethane (non-cancer)
- 2-Butanone (non-cancer) [methyl ethyl ketone (MEK)]
- Carbon disulfide (non-cancer)
- Carbon tetrachloride (cancer)
- Chloromethane (-cancer)
- Dichlorodifluoromethane (non-cancer)
- Ethylbenzene (non-cancer)
- Methylene chloride (cancer)
- Styrene (cancer)
- Tetrachloroethene (PCE) (cancer)
- Toluene (non-cancer)
- TCE (cancer)
- Trichlorofluoromethane (non-cancer)
- 1,1,1-Trichloroethane (non-cancer)
- 1,2,4-Trimethylbenzene (non-cancer)

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- Total xylenes (non-cancer)
- Vinyl chloride (cancer).

Sub-slab soil vapor screening levels were calculated by applying a sub-slab attenuation factor of 0.03 to the MTCA Method B Indoor Air CULs (Ecology 2009a and April 2015 update to Draft Vapor Intrusion Guidance). Screening levels were calculated for the following substances detected in the sub-slab soil vapor sample:

- Acetone - toxicity value is calculated based on toxicity information from Cal EPA and/or ATSDR
- Benzene
- 2-Butanone (MEK)
- Carbon disulfide
- Ethylbenzene
- Styrene
- PCE
- Toluene
- 1,1,1-Trichloroethene
- TCE
- 1,2,4-Trimethylbenzene
- Xylenes.

The following substances were detected in either air or sub-slab vapor samples; however, corresponding MTCA air CULs have not been promulgated at this time:

- 4-Ethyltoluene
- 4-Methyl-2-pentanone
- 1,3,5-Trimethylbenzene.

4.3.1 Point of Compliance

Under MTCA, the typical point of compliance for ambient air (including indoor air) is throughout the Site (WAC 173-340-750) (Ecology 2007).

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Section 5: Distribution and Extent of Impacted Media

This section discusses the distribution of chemically impacted Site media and compares the analyte concentrations to the potentially applicable cleanup standards discussed above.

5.1 Soils on Facility Property

Between 1990 and 2015, 82 soil samples were collected at the Former Precision Engineering property, of which 15 soil samples were collected during the 2014/2015 RI. Analytical soil sample results from the current investigation are summarized in Table 3, and results from previous investigations are presented in tables contained within Appendix A. The soil results discussed below do not include surface soil/ditch soil samples collected from the drainage ditch south of the Former Precision Engineering property.

The range of concentrations for each substance discussed below includes both current and historical data, unless otherwise noted.

5.1.1 Metals

Arsenic was detected at concentrations greater than laboratory reporting limits in 19 soil samples, with concentrations ranging from 1.89 mg/kg (GP28 at 1.0 foot bgs) to 10 mg/kg (MW9-18-19 at 19 feet bgs). All reported concentrations of arsenic were below the MTCA Method A CUL of 20 mg/kg. The 90th percentile natural background concentration for arsenic in the Puget Sound region (Ecology 1994) is 7.30 mg/kg. Arsenic concentrations in soil sampled at the Site are generally below the natural background concentration, with the exception of soil samples MW9-18-19 (10 mg/kg) and SB19-35 (8.5 mg/kg).

Cadmium was detected at concentrations greater than laboratory reporting limits in two soil samples, with concentrations of 0.714 mg/kg and 1.29 mg/kg from samples GP12-1.0 and GP15-3.0, respectively. All reported concentrations of cadmium are below the MTCA Method A CUL of 2 mg/kg. The Puget Sound regional natural background concentration of cadmium is 0.77 mg/kg (Ecology 1994). Cadmium was not analyzed in samples collected during 2014/2015 RI activities.

Hexavalent chromium was detected at concentrations greater than laboratory reporting limits in 37 soil samples collected between 1990 and 2015, with concentrations ranging from 0.119 mg/kg (GP7 at 2.0 feet bgs) to 7,470 mg/kg (composite sample WP-8). Eleven soil samples collected during MFA's 2005 investigation contained concentrations of hexavalent chromium above the MTCA Method A CUL of 19 mg/kg. Those samples were collected from boring locations GP1, GP2, GP3, GP4, GP6, GP17, GP18, and GP32. The highest concentrations of hexavalent chromium reported during that investigation were samples GP18 at 1.0 foot bgs (2,300 mg/kg) and GP32 at 1.0 foot bgs (3,500 mg/kg), from the former plating tank area (depicted on Figure 7). Other samples with reported concentrations of hexavalent chromium above the MTCA Method A CUL were collected during removal of former Plating Tanks 3 through 6 (summarized on Appendix A Tables A4 and A5). Hexavalent chromium was detected in one soil sample (SB17-43.5) analyzed during the 2014/2015 RI at a concentration of 1.78 mg/kg, less than the MTCA Method A CUL (see Figure 15).

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Total chromium (including both hexavalent and trivalent chromium valences) was detected at concentrations greater than laboratory reporting limits in 76 soil samples, with concentrations ranging from 7.3 mg/kg (PE-430W) to 7,470 mg/kg (WP-8, a composite sample). Nine samples had concentrations of total chromium above the MTCA Method A CUL of 2,000 mg/kg for trivalent chromium; the same nine samples also contained hexavalent chromium at concentrations above the MTCA Method A CUL of 19 mg/kg. The highest concentrations of chromium were detected in the vicinity of the former chrome plating tanks during investigations conducted prior to 2010. The natural background concentration for chromium in the Puget Sound region is 48.15 mg/kg (Ecology 1994). Figure 16 shows concentrations of total chromium detected in soils sampled during the 2014/2015 RI. Two soil samples analyzed during the 2014/2015 RI contained chromium at concentrations above natural background; both samples (SB1-5 48.7 mg/kg; and SB3-8 67.3 mg/kg) are located south of the building at the Site.

Lead was detected at concentrations greater than laboratory reporting limits in 26 soil samples, with concentrations ranging from 2 mg/kg (SB10-7 at 7.0 feet bgs) to 3,500 mg/kg (GP32 at 1.0 foot bgs). No soil samples collected during the 2014/2015 RI contained concentrations of lead above the MTCA Method A CUL of 250 mg/kg; however, one soil sample (SB14-6) contained lead at a concentration of 56 mg/kg, greater than the natural background concentration of 16.83 mg/kg (Ecology 1994).

5.1.2 VOCs

TCE was detected at concentrations greater than laboratory reporting limits in four soil samples collected by MFA in 2005, with concentrations ranging from 0.0405 mg/kg (GP6 at 1.0 foot bgs) to 1.160 mg/kg (GP6 at 14.5 feet bgs). All detected concentrations were greater than the MTCA Method A CUL of 0.03 mg/kg, and were in soils sampled from below the former chrome shop. Soil concentrations of TCE at GP6 and GP11 increased with depth, to a maximum sample depth of 14.5 feet and 6.5 feet from GP6 and GP11, respectively. The vertical extent of TCE concentrations in soil above the MTCA Method A CUL at locations GP6 and GP11 has not been characterized. TCE was not detected at concentrations above laboratory reporting limits in soil samples analyzed during the 2014/2015 RI activities.

Cis-1,2-DCE, a degradation product of TCE, was detected at concentrations greater than laboratory reporting limits in four soil samples collected by MFA in 2005, with concentrations ranging from 0.0494 mg/kg (GP29 at 1.0 foot bgs) to 0.149 mg/kg (GP6 at 14.5 feet bgs). All detected concentrations were below the MTCA Method B CUL (non-cancer) of 160 mg/kg. A MTCA Method A CUL has not been promulgated for cis-1,2-DCE in soil. Cis-1,2-DCE was not detected in soil samples analyzed during the current investigation.

Toluene was detected at concentrations greater than laboratory reporting limits in one sample collected by MFA in 2005, at a concentration of 0.00162 mg/kg in sample GP1 at 6.0 feet bgs. This concentration is below the MTCA Method A CUL of 7 mg/kg for toluene. Toluene was detected during the current investigation in a soil sample collected from boring SB14 (at 6 feet bgs) at a concentration of 7.1 micrograms per kilogram (µg/kg) (i.e., 0.0071 mg/kg), three orders of magnitude below the MTCA Method A CUL.

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MEK (also known as 2-Butanone) was detected at concentrations greater than laboratory reporting limits in 13 soil samples collected by MFA in 2005, with a maximum concentration of 0.215 mg/kg (GP13 at 1.0 foot bgs). All detected concentrations were less than the MTCA Method B (non-cancer) CUL of 48,000 mg/kg. MEK is a solvent used for parts cleaning and degreasing, and was stored in a 200-gallon drum/portable tank within the chrome shop and chrome plating area at the Former Precision Engineering property (SCS Engineers 1986). All detected concentrations of MEK were in soil samples collected from within the former tank and chrome shop areas. MEK was not detected above laboratory reporting limits in soil samples collected during the 2014/2015 RI activities.

Additional VOCs detected in soil above laboratory reporting limits include 1,1-Dichloroethene (one sample, GP10 at a depth of 1.5 feet bgs, sampled by MFA in 2005 and not identified as an IHS) and methylene chloride (16 samples, all concentrations below the MTCA Method A CUL of 0.02 mg/kg). Methylene chloride was also detected in method blanks associated with some instances of soil sample detections, and is possibly a cross-over contaminant from cleaning agents used in the analytical laboratory.

5.1.3 Petroleum Hydrocarbons

Fifty-one soil samples were analyzed for diesel- and oil-range hydrocarbons. Diesel-range hydrocarbons were detected in 22 soil samples at concentrations ranging from 7.5 mg/kg (SB1-5 at 5.0 feet bgs) to 10,000 mg/kg (SB3-2 at 2.0 feet bgs). Two soil samples, SB3-2 and GP21-6.5, contained concentrations of diesel-range hydrocarbons above the MTCA Method A CUL of 2,000 mg/kg.

Oil-range hydrocarbons were detected in 25 soil samples at concentrations ranging from 14 mg/kg (SB3-8, MW9-18-19, and MW9-38-39) to 12,000 mg/kg (SB3-2). Two soil samples, SB3-2 and GP21-6.5, contained concentrations of oil-range hydrocarbons above the MTCA Method A CUL of 2,000 mg/kg. Diesel- and oil-range hydrocarbon concentrations were below the analytical reporting limits in sample SB3-8 at 8.0 feet bgs, indicating impacts to soil are shallow at location SB3. Sample GP21-1.0, collected at 1.0 foot bgs, did not contain concentrations of diesel- or oil-range hydrocarbons at concentrations greater than the analytical reporting limits, indicating hydrocarbon impacts increase with depth at this location. The chromatogram for sample GP21-6.5 showed elution patterns characteristic of lube oil.

Diesel- and/or oil-range hydrocarbon concentrations above MTCA Method A CULs were also identified in shallow soils in the drainage ditch south of the Precision Engineering facility property (locations HA2-0.5, HA3-0.5 HA4-0.5, HA4-1.5, and HA5-0.5, advanced in 2005 by Maul Foster & Alongi). A portion of the ditch was excavated by MFA in 2007; however, confirmation sampling for petroleum hydrocarbons substances was not conducted. The source of hydrocarbons identified in the drainage ditch soils was believed to be stormwater runoff (Maul Foster & Alongi 2008).

Figure 17 depicts analytical results above laboratory reporting limits for diesel- and oil-range hydrocarbons in soil samples collected during the 2014/2015 RI. Field indications of hydrocarbon impacts were noted at the time of sampling at boring SB3-2, including odor, sheen, and an organic vapor measurement of 91 parts per million (ppm) with a photoionization detector

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(PID). This sampling location is approximately 20 feet south-southeast of a former used oil tank (depicted on Figure 3).

Soil samples collected on the Former Precision Engineering property were not analyzed for gasoline-range hydrocarbons, as gasoline was not identified as a potential contaminant of concern at the Site.

5.2 Soil in the South Drainage Ditch

Between 2005 and 2007, 64 soil samples were collected by MFA from the off-property drainage ditch to the south of the building. As described above in Sections 1.2.3.9 and 1.2.3.10, this drainage ditch receives surface water runoff from the Site and adjacent properties to the south and east. The purpose of sampling the ditch soil was to delineate the nature and extent of soil impacts from hexavalent chromium, arsenic, lead, cadmium, copper, VOCs, PAHs, and petroleum hydrocarbons. Between 2007 and 2008, approximately 100 cubic yards of accumulated solids and surface soil was excavated from the drainage ditch, as described in Section 1.2.3.9. No drainage ditch samples were collected during the current investigation. Further details about the drainage ditch investigation can be found in MFA's 2008 report. Historical analytical results for ditch soil samples are summarized in Appendix A Tables A3 and A7. Corresponding sample locations are depicted on Figures 5 and 7.

5.3 Soil East of the Former Precision Engineering Property

As discussed in Section 1.2.4 above, previous soil investigations were conducted at the adjacent Seattle Limousine property to characterize site conditions related to known and suspected releases which had occurred on that parcel. During the 2014/2015 RI, additional site characterization was conducted east of both the Former Precision Engineering property and of the Seattle Limousine property to characterize downgradient, off-property conditions.

Soil samples were collected from four direct-push borings (SB11 through SB14) during August 2014. Those borings were located along the shoulder of southbound 14th Avenue South, east of the drainage ditch. In April 2015, four additional borings (SB15 through SB18) were advanced in the area between the eastern property line for Seattle Limousine and the drainage ditch adjacent to 14th Avenue South, and a fifth boring (SB19) was advanced across 14th Avenue South in the shoulder adjacent to the northbound lane. These five borings were advanced using a limited access hollow-stem auger drilling rig to penetrate deeper depths than previous soil investigations conducted at the Site.

Analytical soil sample results from the 2014/2015 RI are summarized in Table 4. Reported concentrations of diesel-range hydrocarbons, oil-range hydrocarbons, arsenic, chromium, hexavalent chromium, lead, selenium, and VOCs in soil were below the selected soil cleanup levels.

Sample SB14-6, collected at 6.0 feet bgs in August 2014, contained concentrations of benzene, n-butylbenzene, ethylbenzene, isopropylbenzene, naphthalene, n-propylbenzene, toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and xylenes above the laboratory reporting limits and below corresponding CULs. These VOCs (all possible constituents of fuel products) were not detected in other soil samples collected from the Former Precision Engineering

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property or along the 14th Avenue South ROW. Oil-range hydrocarbons were detected in soil sample SB14-6 at a concentration of 730 mg/kg.

Shallow soil samples collected during April 2015 investigation activities were also analyzed for gasoline-range hydrocarbons. Gasoline-range hydrocarbons were detected at concentrations above the laboratory reporting limits in all five analyzed samples. Concentrations ranged from 7.7 mg/kg in SB19-35 to 9.5 mg/kg in SB15-26, below the corresponding MTCA Method A CUL for gasoline-range hydrocarbons.

Hexavalent chromium was detected in sample SB17-43.5, from a depth of 43.5 feet bgs, at a concentration of 1.78 mg/kg, below the corresponding CUL of 19 mg/kg. Other samples located east of the Former Precision Engineering property did not contain hexavalent chromium concentrations above laboratory reporting limits.

5.4 Groundwater

Between 1988 and 2015, a total of 77 groundwater samples were collected from Site monitoring wells MW1 through MW11, of which 40 samples were collected during the current investigation. An additional 23 reconnaissance groundwater samples were collected from borings advanced between 2005 and 2015. Analytical groundwater sample results from the 2014/2015 RI are shown in Table 6 (reconnaissance sampling) and Table 7 (monitoring wells), and results from previous investigations are summarized in Appendix A Table A2.

Groundwater samples collected during the 2014/2015 RI prior to March 2015 were analyzed for total metals (unfiltered) using EPA Method 6010C. The resulting analytical reporting limits were greater than the corresponding MTCA Method A CUL for arsenic. During the final quarterly groundwater monitoring event in March 2015, and reconnaissance groundwater sampling activities in April 2015, groundwater samples were analyzed for metals using EPA Method 200.8 to achieve lower analytical reporting limits for arsenic, lead, chromium and selenium. Field-filtered reconnaissance groundwater samples collected in April 2015 were field submitted for dissolved metals analysis and unfiltered samples were submitted for total metals analysis (both by EPA Method 200.8). Reconnaissance groundwater samples collected in August 2014 were not field filtered, analyzed for total metals, and likely represent unnaturally (biased) high metals concentrations.

5.4.1 Metals

5.4.1.1 Arsenic

Arsenic was detected at concentrations greater than laboratory reporting limits in 37 of the 64 monitoring well groundwater samples analyzed for total arsenic, with concentrations of up to 80 µg/L (MW6 in April 2014 and in August 2014). Monitoring well MW6 was the only well which contained concentrations of arsenic above laboratory reporting limits during the four 2014/2015 monitoring events. Arsenic was detected above laboratory reporting limits in 11 of the 15 reconnaissance groundwater samples analyzed for total arsenic, with concentrations ranging from 6.7 µg/L (SB17) to 300 µg/L (SB5).

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Concentrations of dissolved (field-filtered) arsenic in the five reconnaissance samples collected in April 2015 were at least one-half the concentration of total (unfiltered) arsenic, suggesting at least a portion of the total arsenic concentration in reconnaissance samples may reflect arsenic adsorbed to soil particles in groundwater. During the 2014/2015 RI, concentrations of arsenic in 13 groundwater samples from monitoring wells and all 11 reconnaissance groundwater samples were above the MTCA Method A CUL of 5 µg/L. Dissolved (field-filtered) arsenic concentrations in the five reconnaissance samples collected in April 2015 are above the MTCA Method A CUL. Figure 18 depicts concentrations of total (unfiltered) arsenic in groundwater above laboratory reporting limits during the 2014/2015 RI. Arsenic concentrations in soil at the Site are generally below the natural background concentration, so it is unlikely that a source of arsenic is present at the Site.

5.4.1.2 Chromium

Hexavalent chromium was detected at concentrations greater than laboratory reporting limits in 17 of the 68 monitoring well groundwater samples analyzed for hexavalent chromium, with a maximum concentration of 450,000 µg/L (MW5 in December 2005). The laboratory method for analyzing hexavalent chromium in aqueous solutions (such as groundwater), requires filtration of the sample; thus, hexavalent chromium results for groundwater are dissolved concentrations. During seven sampling events between 2005 and 2015, hexavalent chromium was reported in groundwater from well MW5. Other sampling locations where hexavalent chromium has been detected in groundwater above laboratory reporting limits include MW1 in June 2005 (269 µg/L), MW3 during each of the four sampling events of the current investigation (concentrations range from 12 µg/L to 28 µg/L), MW4 in April 2006 (23 µg/L), and MW8 in May 2014 (23 µg/L). Hexavalent chromium was detected above laboratory reporting limits in eight of the 23 reconnaissance groundwater samples analyzed for hexavalent chromium, with a maximum concentration of 300,000 µg/L (GP6). Concentrations of hexavalent chromium above the MTCA Method B (non-cancer) CUL of 48 µg/L have been reported in reconnaissance sampling locations within the chrome plating shop and regularly reported at monitoring well MW5. Concentrations of hexavalent chromium in groundwater above laboratory reporting limits during the 2014/2015 RI are depicted on Figure 19.

Total chromium (unfiltered, hexavalent and trivalent chromium) was detected at concentrations greater than laboratory reporting limits in 54 of the 74 monitoring well groundwater samples analyzed for total chromium, with a maximum reported concentration of 497,000 µg/L (MW5) in December 2005. Monitoring well MW5 is a shallow well located in the former chrome plating area. Groundwater purged and sampled from well MW5 was yellow in color during each sampling event in the RI. Total chromium was detected above laboratory reporting limits in 14 of the 16 reconnaissance groundwater samples analyzed for total chromium, with a maximum concentration of 355,000 µg/L (GP8). Reconnaissance groundwater samples GP2, GP4, and GP5 were collected from borings within the former chrome shop. Reconnaissance groundwater sample GP8 was collected from a boring downgradient of the former chrome shop.

As hexavalent chromium data were available for all groundwater sampled during the 2014/2015 RI, total chromium results were compared to a cleanup level based on trivalent chromium. As depicted on Figure 20, no reconnaissance groundwater samples contained concentrations of chromium above 24,000 µg/L; however, groundwater samples collected from well MW5 during each of the four quarterly events did contain chromium above 24,000 µg/L. Concentrations of

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hexavalent and total chromium in groundwater at MW5 were similar, suggesting nearly all chromium present in groundwater at MW5 is in the hexavalent state.

5.4.1.3 Lead

Lead was detected at concentrations greater than laboratory reporting limits in four of the 60 monitoring well groundwater samples analyzed for lead, with a maximum concentration of 57 µg/L (MW1). Figure 21 depicts detected concentrations of total lead in groundwater observed during the 2014/2015 RI. Lead was detected in groundwater samples collected from wells MW6 and MW10 at a concentration of 0.2 µg/L in March 201, less than the MTCA Method A CUL of 15 µg/L. Lead was not reported at concentrations above laboratory reporting limits in other groundwater samples collected from monitoring wells. Concentrations of total lead (unfiltered) above the MTCA Method A CUL were detected in 14 of the 16 reconnaissance groundwater samples collected during the 2014/2015 RI, with a maximum concentration of 247 µg/L (SB16).

The five reconnaissance groundwater samples sampled in April 2015 and analyzed for dissolved (field-filtered) lead each contained concentrations at least one order of magnitude below the MTCA Method A CUL, suggesting total lead concentrations in reconnaissance groundwater samples may be due to lead adsorbed to solid particles. Lead concentrations in Site soils are generally less than the natural background concentration, so it is unlikely that a natural source of lead to groundwater is present at the Site.

5.4.1.4 Selenium

Selenium was detected at concentrations greater than laboratory reporting limits in 15 of the 64 monitoring well groundwater samples analyzed for selenium, with a maximum reported concentration of 19 µg/L at well MW6 in April 2006. Figure 22 depicts concentrations of total selenium detected above laboratory reporting limits during 2014/2015 groundwater sampling activities. All detected concentrations of total selenium were below the selected cleanup level of 80 µg/L.

5.4.1.5 Summary

Overall, groundwater monitoring results from the last four sampling events suggest that concentrations of metals are generally stable; however, there is some seasonal variation in chromium concentrations at MW5. With the exception of arsenic, concentrations of metals in groundwater at the monitoring wells along the eastern property line of the Former Precision Engineering property are below the selected groundwater cleanup levels.

Reconnaissance groundwater sampling results from locations east of the Former Precision Engineering property investigated during the 2014/2015 RI indicate concentrations of dissolved (field-filtered) chromium, lead, selenium, and hexavalent chromium are below cleanup levels, though concentrations of total (unfiltered) and dissolved (field-filtered) arsenic in groundwater are consistently above selected cleanup levels at each location. Since sources of arsenic, lead and selenium have not been identified, concentrations of total (unfiltered) metals are likely due to turbid samples and not actual impacts to Site groundwater.

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5.4.2 VOCs

TCE was detected at concentrations greater than laboratory reporting limits in six of the seven monitoring well groundwater samples collected from MW5 since 2005, with concentrations ranging from 1.0 µg/L (December 2014) to 22.1 µg/L (December 2005). During two occasions (December 2005 and April 2006), the reported concentrations were above the MTCA Method A CUL of 5 µg/L. Concentrations detected during the 2014/2015 investigation were all below the selected cleanup level, as shown on Figure 23. TCE was detected above laboratory reporting limits in three reconnaissance groundwater samples collected by MFA in 2005, in borings GP6 (1,130 µg/L), GP8 (16.8 µg/L), and GP13 (0.220 µg/L). The maximum concentration of TCE in groundwater (1,130 µg/L from GP6) was approximately 0.1 percent of the TCE solubility limit of 1,100,000 µg/L, suggesting free-phase TCE is likely not present in materials investigated at the Site (Maul Foster & Alongi 2005).

Vinyl chloride, a degradation product of TCE, was detected at concentrations greater than laboratory reporting limits in MFA's reconnaissance groundwater sample GP13 at a concentration of 16.5 µg/L. This detected concentration is above the MTCA Method A CUL of 0.2 µg/L. The GP13 boring location is within the former cylinder shop (refer to Figures 3 and 6) and downgradient of boring GP11, where TCE was detected in soil. Vinyl chloride was detected in two groundwater samples collected from well MW8, at concentrations of 0.560 µg/L (December 2005) and 0.80 µg/L (April 2006); however, vinyl chloride has not been detected in groundwater at well MW8 since 2006. The presence of vinyl chloride may indicate biodegradation of TCE is occurring.

Several VOCs were detected in reconnaissance groundwater sample SB14 at concentrations above the laboratory reporting limit. Those VOCs present in SB14 were ethylbenzene (16 µg/L), isopropyl benzene (2.3 µg/L), naphthalene (6.2 µg/L), toluene (2.2 µg/L), 1,2,4-Trimethylbenzene (13 µg/L), 1,3,5-Trimethylbenzene (6.6 µg/L), and total xylenes (31 µg/L). These results are consistent with reported concentrations in soil sampled at SB14 at a depth of 6.0 feet bgs and discussed above. The concentrations reported in SB14 are less than the respective MTCA Method A/B CULs for unrestricted land use, as shown in Table 6.

5.4.3 Petroleum Hydrocarbons

Sixty-five monitoring well and nine reconnaissance groundwater samples were analyzed for diesel- and oil-range hydrocarbons. Diesel-range hydrocarbons were detected above laboratory reporting limits in samples collected from monitoring wells MW2, MW3, and MW5 through MW11 at concentrations up to 2,640 µg/L (MW6 in December 2005). One or more groundwater samples from MW2, MW5, MW6, MW8, and MW10 contained diesel-range hydrocarbons at concentrations greater than the MTCA Method A CUL of 500 µg/L. Concentrations of diesel-range hydrocarbons in groundwater samples collected from wells MW2, MW5 and MW8 have been less than the MTCA Method A CUL since 2005. Diesel-range hydrocarbons were detected above the laboratory reporting limit in eight reconnaissance groundwater samples, and concentrations at SB3 (duplicate, 540 µg/L) and SB5 (500 µg/L) were above the selected cleanup level.

Oil-range hydrocarbons were present in groundwater samples collected from monitoring wells MW2, MW6, MW8, MW10, and MW11, at a maximum concentration of 1,320 µg/L (MW6 in

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December 2005). One or more groundwater samples collected from wells MW2, MW6, and MW8 contained oil-range hydrocarbon concentrations greater than the MTCA Method A CUL of 500 µg/L. Samples from MW2 and MW8 have not contained concentrations of oil-range hydrocarbons above the MTCA Method A CUL since 2005.

As depicted on Figure 24, oil-range hydrocarbons were present above laboratory reporting limits in reconnaissance groundwater samples from seven locations; however, the concentration in sample SB5 (530 µg/L) was above the selected cleanup level. Diesel- and oil-range hydrocarbon concentrations above the selected cleanup level were reported at well MW6 during the first and third quarterly groundwater monitoring events, although concentrations reported during the second and fourth quarterly monitoring events were below the selected cleanup level.

5.5 Air and Sub-slab Soil Vapor Sampling

5.5.1 Solvents

Analytical results from the indoor air sample identified concentrations of PCE [1.6 micrograms per cubic meter (µg/m^3)], TCE (240 µg/m^3), and vinyl chloride (0.25 µg/m^3) above the laboratory reporting limits. The reported concentration of TCE is greater than the MTCA Method B (cancer) CUL of 0.37 µg/m^3, while PCE and vinyl chloride concentrations in indoor air are below their respective CULs.

Analytical results from the outdoor ambient air sample identified detectable concentrations of TCE (0.96 µg/m^3) greater than the MTCA Method B CUL, but less than the indoor air TCE concentrations.

Analytical results from the sub-slab soil vapor sample identified detectable concentrations of PCE (11 µg/m^3) and TCE (95 µg/m^3). The concentration of PCE is less than the MTCA Method B soil vapor screening level of 321 µg/m^3. The concentration of TCE is greater than the MTCA Method B soil vapor screening level of 12.3 µg/m^3. Helium (used as a tracer gas during sampling) was also detected in the sub-slab sample at 21 percent by volume, indicating possible ambient air leakage into the sub-slab sample.

Other VOCs detected in the indoor, outdoor ambient air, and sub-slab soil vapor samples are summarized in Table 8 and compared to their respective selected cleanup levels for air and screening levels for sub-slab vapor.

Concentrations of TCE in indoor air and sub-slab vapor exceeding the MTCA Method B levels suggest VI may be occurring at the building structure. However, the TCE concentration in indoor air is greater than the reported sub-slab concentration, which suggests the possible presence of an indoor source of TCE.

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Section 6: Conceptual Site Model

6.1 Conceptual Site Model

The purpose of developing a CSM (Figure 11) and exposure pathway analysis (Figure 25) is to identify potential exposure pathways for human and environmental receptors that may come in contact with COCs. The CSM presented and discussed in this report is a revision of the previous version presented in the 25 March 2014 *Remedial Investigation Work Plan* prepared by Kennedy/Jenks Consultants *(*Kennedy/Jenks Consultants 2014), and incorporates observations and interpretations made during the 2014/2015 RI.

6.1.1 Sources

Potential sources of contaminated media at the Site may include (but are not necessarily limited to) leaks and spills from the following:

- Former plating tanks and storage tanks operated by Precision Engineering
- Former sumps, vaults, trenches and drainage features operated by Precision Engineering
- Former scrubber room and similar process areas operated by Precision Engineering
- Former dumpster and disposal/waste accumulation areas operated by Precision Engineering
- Possible release(s) of TCE from a vapor degreaser (out of service by 1986) or other solvents (such as MEK) used in parts cleaning and degreasing activities conducted at by Precision Engineering.

Additional source areas or contaminant releases have occurred on the adjacent Seattle Limousine property. These may be comingled with releases which occurred at the Former Precision Engineering property and extend east of the property line separating the two properties. Potential contributing sources of contaminated media at the Seattle Limousine property may include (but are not necessarily limited to) the following:

- A former UST release
- Former paint storage and use areas
- Leaks or spills from equipment or storage vessels in the southwestern corner of the property.

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6.1.2 Transport Processes

Potential transport processes between sources and exposure media may include (but are not necessarily limited to) the following:

- Direct release to media
- Infiltration of affected surface water/stormwater to groundwater
- Leaching from soil to groundwater in water-bearing zones
- Recharge of surface water in the drainage ditch or possibly the LDW by Site groundwater
- Stormwater conveyance system discharge of surface water and/or accumulated solids
- Biotic uptake by plants, fish, or invertebrates through exposure to affected media
- Vaporization of groundwater to soil vapor
- Vapor infiltration into buildings/indoor air from impacted soils and groundwater or former subsurface features/sources.

6.1.3 Routes of Exposure

Potential exposure pathways for the Site may include (but are not necessarily limited to) the following:

- Dermal contact with and/or incidental ingestion of subsurface soil, drainage ditch soil and drainage ditch surface water
- Dermal contact with and/or incidental ingestion of groundwater in wells through seepage into tanks/vaults in the building or through seepages/discharge into the drainage ditch
- Dermal contact with and/or incidental ingestion of subsurface soil throughout the Site (most likely to expose on-property construction workers or ecological receptors)
- Inhalation of vapors or particulates
- Consumption of plants, fish, or invertebrates exposed through biotic uptake (not fully investigated).

As the known and suspected release areas at the Former Precision Engineering property are currently paved, Figure 25 depicts the exposure pathway for surface soils at the Site as incomplete. Subsistence and recreational use of on-property soil, ditch soil, groundwater, surface water, or biologic resources would not be expected; however, they have not been studied extensively; therefore, exposure pathways for these receptors are not fully investigated.

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6.1.4 Known or Potential Natural Resource Damages

The Site is not located within a greenbelt, park, wetlands, or special aquatic habitat of Washington State. The area is zoned for industrial and commercial land use, with adjacent residential properties to the north. The Site was developed prior to the 1960s.

No indication of special status wildlife species at the Site was identified during a review of the Washington Department of Fish and Wildlife Priority (WDFW) Habitats and Species (PHS) on the Web data set (WDFW 2015). The LDW is located approximately ½ mile east of the Site, and is identified as an aquatic habitat.

Resident Coastal Cutthroat trout have been mapped as occurring in upland drainage features south of the Site, connecting to the LDW. Coho salmon, western pond turtles, and other salmonids are identified as present or migrating within the LDW (WDFW 2015).

Kennedy/Jenks considered whether a Terrestrial Ecological Evaluation (TEE) for the Site to assess potential terrestrial ecological receptors was appropriate. The Site may meet the exclusion criteria for conducting a TEE in WAC 173-340-7491 on the basis that soil contaminated with hazardous substances is covered by buildings or pavement that will prevent plants and wildlife from being exposed to the soil contamination.

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Section 7: Summary and Conclusions

7.1 Site Geologic and Hydrogeologic Conditions

Since 1986, multiple site investigation and remedial activities have been at the Site. Work to date is summarized in a series of reports prepared by various consulting firms. This information, combined with the results of investigation activities performed by Kennedy/Jenks, form the basis of the RI report.

Four primary lithologic units were identified at the Site within the upper 50 feet from the ground surface including, from top to bottom, anthropogenic fill materials, native alluvial (Qal) deposits, native recessional outwash (Qvr) deposits, glacial till (Qvt) deposits, and sand/gravel deposits with some fines that may represent either advance outwash (Qva) deposits or coarser interbeds or lenses with the glacial till sequence.

Two saturated zones were encountered at the Site; the first unit (identified as the shallow zone) is in the upper recessional outwash and/or recent alluvial deposits, and the second unit (referred to as the deep zone) is in an advance outwash deposit below the till (or possibly within saturated interbeds or lenses within the till). Based on field observations, saturated conditions may be discontinuous laterally in both units. The direction of the horizontal hydraulic gradient (and presumed direction of groundwater flow) is generally towards the east in both saturated units (towards the LDW). A net downward vertical gradient was observed in a well pair MW9/MW10 located onsite.

While no off-property monitoring wells have been installed as part of the 2014/2015 RI, off-property borings indicate relatively consistent lithologic conditions were encountered east of the Seattle Limousine site adjacent to 14th Avenue South. While not confirmed as part of the 2014/2015 RI, it is anticipated groundwater beneath the Site may discharge to the LDW.

7.2 Distribution of Contaminants

Several indicator hazardous substances have been identified at concentrations above the cleanup standards selected and identified in Section 4. These substances were identified during investigation activities conducted during this 2014/2015 RI, as well as previous investigations conducted by others and discussed within Section 2.

7.2.1 Soil

During the 2014/2015 RI, diesel- and oil-range hydrocarbons were the only COCs identified in soil at concentrations greater than MTCA Method A CULs. Both diesel- and oil-range hydrocarbons compounds were identified in a soil sample collected at a depth of 2 feet bgs at boring location SB3. Visible indicators of petroleum hydrocarbon impacts were not observed in the underlying soil material at location SB3 and appear to be associated with base course material for the asphalt paving.

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Sampling activities conducted by MFA in 2005 identified diesel- and oil-range hydrocarbons (at concentrations of 5,270 and 19,900 mg/kg, respectively) in a soil sample collected at 6.5 feet bgs in boring GP21 (above the MTCA Method A CUL). Boring GP21 was advanced in the building interior, north of a former steam cleaning area (near monitoring wells MW2 and MW7). Oil-range hydrocarbons were also detected at a concentration slightly below the MTCA Method A CUL in a soil sample from boring SB5 collected during the 2014/2015 RI activities at 11 feet bgs and may be associated with petroleum hydrocarbons detected inside the building at GP21.

The lateral extent of petroleum hydrocarbon-impacted soil at the Site is believed to be isolated to several locations and does not appear to extend beyond the property line.

Other COCs, including arsenic, chromium, lead, selenium, hexavalent chromium, and TCE were not detected in soil at concentrations above applicable MTCA Method A/B CULs during the 2014/2015 RI. As with the petroleum hydrocarbon-impacted soils discussed above, concentrations of these compounds do not appear to extend beyond the property boundary based on the available analytical data.

7.2.2 Groundwater

Concentrations of diesel- and oil-range hydrocarbons greater than MTCA Method A cleanup levels were reported in groundwater samples collected from well MW6 during two quarters of sampling performed during the 2014/2015 RI. Diesel-range hydrocarbons were also detected at concentrations above the MTCA Method A CUL in one groundwater sample collected from well MW10, and from reconnaissance groundwater samples collected at borings SB3 and SB5. The groundwater grab sample from boring SB5 also contained oil-range hydrocarbons at a concentration greater than the MTCA Method A CUL. Based on the available analytical data, dissolved concentrations of diesel- and oil-range hydrocarbons likely extend beyond the property boundary at monitoring well MW6 and MW10.

Total arsenic concentrations (unfiltered) above the MTCA Method A CUL of 5 µg/L were reported in one or more groundwater samples collected at monitoring wells MW1 through MW8 and MW10. The detected concentrations total arsenic in unfiltered samples were greater than 10 µg/L (twice the MTCA Method A CUL) at wells MW1, MW6, MW8, and MW10. Reconnaissance groundwater samples from boring locations SB3, SB4, SB5, SB7, SB11, SB12, SB15, SB16, SB17, SB18, and SB19 each contained total arsenic in unfiltered samples at concentrations greater than the MTCA Method A CUL. Since an onsite source of arsenic was not identified in soil, detected arsenic concentrations in groundwater samples may represent background conditions.

Hexavalent chromium was consistently detected in groundwater samples from well MW5 at concentrations ranging from 22,000 µg/L to 95,500 µg/L, significantly above the MTCA Method A CUL of 48 µg/L. Since hexavalent chromium was not detected at elevated concentrations in groundwater samples collected from other onsite wells or reconnaissance groundwater samples collected downgradient of well MW5, the lateral migration of hexavalent chromium from well MW5 appears to be limited.

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Total lead (unfiltered) was detected in several onsite reconnaissance groundwater samples at concentrations above the MTCA Method A CUL. Since lead was not detected at elevated concentrations in groundwater samples from monitoring wells or in soil samples, an onsite source of lead does not appear to be present. The reported concentrations of lead in the reconnaissance groundwater samples appears to be biased high by lead adsorbed to soil particles in unfiltered samples.

Concentrations of VOCs in groundwater samples were generally below the CULs summarized in Table 10. 1,2,4-Trimethylbenzene was reported to be present in reconnaissance groundwater samples from borings SB16 (18 µg/L) and SB14 (13 µg/L). Both borings are located east of the Former Precision Engineering property and the adjacent Seattle Limousine property. The reported concentrations of 1,2,4-Trimethylbenzene in borings SB16 and SB18 are both greater than the EPA screening level of 1.5 µg/L (EPA 2015). This screening level is based on acceptable concentrations in potable tap water. No CUL has been promulgated under MTCA at this time, and EPA MCLs have not been published.

7.2.3 Air and Soil Vapor

Benzene, carbon tetrachloride, TCE and 1,2,4-trimethylbenzene were reported in indoor air sampled within the Former Precision Engineering property building at concentrations greater than the corresponding MTCA Method B CULs for air. TCE was also detected in sub-slab vapor and ambient air samples at concentrations above either the sub-slab screening level or the MTCA Method B CUL, as applicable. The reported concentration of TCE in indoor air was at least two times the concentration reported in the sub-slab vapor sample, suggesting an indoor source of TCE rather than potential vapor intrusion from subsurface soil or groundwater. Benzene was also detected in the ambient air sample at a concentration above the MTCA Method B CUL for air (based on carcinogenic effects).

Additional characterization of indoor air and sub-slab vapor conditions would be necessary to investigate potential sources of TCE.

7.3 Conclusions

The 1993 report prepared by Precision Engineering documenting removal and remediation in the chrome plating shop (specifically former Plating Tanks 3 through 6) suggests excavated soils and concrete with concentrations of soluble chromium less than 400 mg/L, as determined by TCLP analysis, were placed into the excavation as backfill, and a new concrete slab was poured. Upon closure of the Precision Engineering business in 2005, metal plating activities ceased, and tanks and chemicals were either removed or decommissioned.

- This source removal activity, as well as similar activities conducted at former Plating Tanks 1 and 2 reduced the volume of hexavalent chromium in soil available for leaching to groundwater and potential migration. However, residual concentrations of hexavalent chromium are likely significantly above the MTCA Method A soil CUL of 19 mg/kg.

- Hexavalent chromium concentrations in soil beneath the current building are expected to remain above the MTCA Method A CUL and will continue to pose a source of chromium to groundwater as long as the impacted soils remain in place. Soils sampled outside the

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building footprint during the 2014/2015 RI activities did not contain concentrations of chromium (total or hexavalent) above the MTCA Method A CUL, suggesting that remaining source materials are confined beneath the building. Because limited lateral migration was observed in on-property soil samples, the potential for significant off-property chromium impacts to soil or groundwater resulting from on-property sources, appears to be limited.

- Hexavalent chromium concentrations in groundwater beneath the current building, as observed in samples collected at well MW5, are above the MTCA Method A CUL; however, hexavalent and total chromium concentrations in groundwater samples collected from wells located downgradient of the former plating tanks and well MW5 are below the MTCA Method A CUL. Consequently, significant on-property or off-property migration of chromium in groundwater has not been identified.

- TCE, historically used for degreasing, has been detected in groundwater, soil, sub-slab vapor, and indoor air in the former chrome shop area. Concentrations of TCE in soil and groundwater appear to be confined to former use areas beneath the existing building and were not detected above the MTCA Method A soil or groundwater CULs in samples collected during the 2014/2015 RI.

- Concentrations of cis-1,2-DCE, a TCE degradation product, in soil were reported by MFA during sampling activities within the former chrome shop in 2005. Another degradation product, vinyl chloride, was detected in groundwater beneath the former chrome shop in 2005, suggesting biodegradation of TCE is occurring.

- While not identified in the soil and groundwater samples collected during the 2014/2015 RI, it is possible that groundwater impacted by chromium and/or TCE has migrated beyond the property boundary towards the LDW. Since natural attenuation and/or biodegradation of those compounds would be expected, significant groundwater transport impacts to the LDW appear unlikely based on the available analytical data.

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References

Applied Consultants. 1990a. Phase II Environmental Assessment 1237 South Director Street, Seattle, Washington. Dated 21 February 1990.

Applied Consultants. 1990b. Report of Contamination Study 1237 South Director Street, Seattle, Washington. Dated 22 November 1990.

Applied Consultants. 1991. Report of Contamination Study 1237 South Director Street, Seattle, Washington. Dated 10 June 1991.

EMCON. 1995. Independent Remedial Action Report. Chiyoda International Corporation Property, Seattle, Washington. Dated 14 November 1995.

GeoEngineers. 1989. Report Phase 1 Site Assessment and Underground Storage Tank Removal Property Located at 1237 South Director Street Seattle, Washington. Prepared for Chiyoda International Corporation. Dated 18 October 1989.

Kennedy/Jenks Consultants. 2014. Draft Remedial Investigation Work Plan. Former Precision Engineering Site 1231 South Director Street, Seattle, Washington. Prepared for Washington State Department of Ecology. Dated 25 March 2014.

Maul Foster & Alongi, Inc. 2005a. Preliminary Soil and Groundwater Site Assessment Report. 5 August 2005.

Maul Foster & Alongi, Inc. 2005b. Work Plan for Soil and Groundwater Supplemental Remedial Investigation. 23 November 2005.

Maul Foster & Alongi, Inc. 2006. Supplemental Remedial Investigation. 22 February 2006.

Maul Foster & Alongi, Inc. 2008a. Final Remedial Investigation and Risk Assessment Report. 21 July 2008.

Maul Foster & Alongi, Inc. 2008b. Final Pioneer Vapor Intrusion Mitigation System Installation and Long-Term Monitoring Work Plan for Precision Engineering Site, 1231 South Director Street, Seattle, Washignton, VCP ID Number NW 1511. Dated 16 October 2008.

Maul Foster & Alongi, Inc. 2011. Final Feasibility Study. 3 March 2011.

METRO Municipality of Metropolitan Seattle. 1986. Notice of Penalty and Compliance Schedule. In the matter of Enforcement Action against Precision Engineering, Inc. Dated 26 February 1986.

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M&M Environmental. 1990. Letter to Judith M. Aitken regarding Precision Engineering, Inc. Status on the Department of Ecology's Site Register Toxics Cleanup Program Listing. 4 December 1990.

Oak Ridge National Laboratory. 2014. RAIS (Risk Assessment Information System) Preliminary Remediation Goals (PRGs) Calculator. Accessed November 2014: http://rais.ornl.gov/cgi-bin/prg/PRG_search?select=chem

Pollution Control Hearings Board. 1989. Stipulated Agreement and Order of Dismissal regarding PCHB No. 87-13 between Precision Engineering, Inc and State of Washington Department of Ecology. Filed 20 January 1989.

Precision Engineering, Inc. 1993. Independent Remedial Action Report. 21 July 1993.

SAIC. 2013. Lower Duwamish Waterway RM 3.8 to 4.2 West Sea King Industrial Park Summary of Existing Information and Identification of Data Gaps. May 2013.

SCS Engineers. 1986. Preliminary Metro Compliance Report for Precision Engineering, Inc. Seattle, Washington. Dated 29 May 1986.

Sweet-Edwards/EMCON, Inc. 1988. Status Report Soils/Ground Water Investigation, Seattle Facility. Dated 15 December 1988.

Sweet-Edwards/EMCON, Inc. 1989a. Tank #7 Precision Engineering, Inc Seattle, Washington. June 1989.

Sweet-Edwards/EMCON, Inc. 1989b. Precision Engineering, Drainage Ditch Soil EP Tox Results. Dated 28 April 1989.

Sweet-Edwards/EMCON, Inc. 1989c. Precision Engineering. Letter regarding results from soil and groundwater investigation. Dated 24 August 1989.

Sweet-Edwards/EMCON, Inc. 1989d. Surface Soil Sampling, Precision Engineering Seattle Facility. Dated 30 August 1989.

Sweet-Edwards/EMCON, Inc. 1989e. Hydrogeology and Geochemistry, Precision Engineering Seattle Facility. Dated 28 November 1989.

Sweet-Edwards/EMCON, Inc. 1990a. Soil Sample Results; Tank No. 1 and Drainage Ditch, Precision Engineering, Inc., Seattle Facility. Dated 4 January 1990.

Sweet-Edwards/EMCON, Inc. 1990b. Ground Water Sampling at Precision Engineering, Inc., Seattle, Washington. Dated 23 January 1990.

Sweet-Edwards/EMCON, Inc. 1990c. Sediment Sampling, Precision Engineering, Inc., Seattle, Washington. Dated 26 February 1990.

© 2015 Kennedy/Jenks Consultants

United States Environmental Protection Agency (USEPA). 2015. Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites. Accessed June 2015: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/master_sl_table_01run_JUNE2015.pdf. Updated June 2015.

United States Geological Survey. 1995. Occurrence and Quality of Ground Water in Southwestern King County, Washington. Woodward, D.G., Packard, F.A., Dion, N.P., and Sumioka, S.S. USGS Water Resources Investigations Report 92-4098.

United States Geological Survey. 2005. The Geologic Map of Seattle – a Progress Report. Troost, K.G., Booth, D.B., Wisher, A.P., and Shimel, S.A. Prepared by USGS, City of Seattle, and Universtiy of Washington Department of Earth and Space Sciences. Prepared for the 5th Washington Hydrogeology Symposium. April 2005.

Washington State Department of Ecology. 1986a. Narrative Report for the Inspection at the Precision Engineering, Inc. Facility in Seattle Washington on March 6, 1986. Prepared by Julie Sellick.

Washington State Department of Ecology. 1986b. Administrative Order DE 86-307 In the Matter of the Compliance by Precision Engineering, Inc. with chapter 70.105 and 90.48 RCW and the Rules and Regulations of the Department of Ecology. Dated 23 May 1986.

Washington State Department of Ecology. 1986c. First Amendment to Administrative Order DE 86-307 In the Matter of the Compliance by Precision Engineering, Inc. with chapter 70.105 and 90.48 RCW and the Rules and Regulations of the Department of Ecology. Dated 19 December 1986.

Washington State Department of Ecology. 1989. Letter to David Stetson, The Kaspac Corporation. Re: Observations during a March 22, 1989 site inspection. Prepared by Barbara J. Trejo. Dated 3 April 1989.

Washington State Department of Ecology. 1994. Natural Background Soil Metals Concentrations in Washington State. Prepared by Charles San Juan. Publication 94-114. Dated October 1994.

Washington State Department of Ecology. 1998. Letter to Rory Stevens, Chiyoda International Corporation. Re: Completion of Monitoring, No Further Action Determination Chiyoda International Corporation Property/KASPAC, 1237 S. Director Street Seattle, Washington. Dated 16 May 1998.

Washington State Department of Ecology. 2007. Model Toxics Control Act Regulation and Statute. Publication No. 94-06. Revised November 2007.

Washington State Department of Ecology. 2008. Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC. Publication No. 08-11-051. 19 December 2008.

© 2015 Kennedy/Jenks Consultants

Washington State Department of Ecology. 2009a. Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Review Draft. Publication No. 09-09-047. October 2009, revised 6 April 2015.

Washington State Department of Ecology. 2009b. Letter to James Okel, Precision Engineering, Inc. Re: Opinion pursuant to WAC 173-340-515(5) on July 21, 2008 Final Remedial Investigation and Risk Assessment Report, for the following Hazardous Waste Site: Precision Engineering. Dated 21 September 2009.

Washington State Department of Ecology. 2011. Letter to James Okel, Precision Engineering, Inc. Re: Opinion pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the following Hazardous Waste Site: Precision Engineering. Dated 8 July 2011.

Washington State Department of Fish and Wildlife (WDFW). 2015. Priority Habitats and Species (PHS) on the Web dataset. Accessed 12 May 2015. http://wdfw.wa.gov/mapping/phs/

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Tables

Table 1: Summary of Areas of Concern

Area of Concern[a]	Description	Investigation History	Remediation History	Current Conditions	Potential Ongoing Source?	Associated COCs	Potentially Affected Media
Drainage Ditch	The drainage ditch located south of the property boundary. The ditch wraps around the eastern side of the adjacent Seattle Limousine (Chiyoda) property, and receives overland flow from the Chiyoda property as well as the Precision Engineering facility property, 14th Street South, and the US-99 northbound entrance ramp. There is no apparent connectivity to a storm sewer or other drainage features to convey water in the ditch. One catch basin located near the southern property line at Former Precision Engineering discharges directly to the drainage ditch.	In April 1986, four ditch soil samples were collected. Chromium was detected at a high concentration; however, Maul Foster & Alongi (MFA) questioned the units they were presented in. In 1989, a subsequent investigation was conducted and 15 shallow soil/sediment samples were analyzed for metals, again identifying chromium concentrations of concern. MFA collected additional samples in the drainage ditch in 2006. Hexavalent chromium was identified near the stormwater outfall, and lead and arsenic were detected above Model Toxics Control Act (MTCA) cleanup levels at several other locations within the ditch.	In October 2007, approximately 100 cubic yards (CY) of soil were excavated from the ditch and disposed offsite. Following confirmation sampling, additional excavation was conducted at two ditch locations in March 2008. Excavated areas were backfilled and reseeded. Not all impacted soil was removed.	One confirmation soil sample had concentrations of lead and arsenic above the cleanup level.	The ditch received impacted surface runoff and possible process wastes. It could be either and ongoing source or a sink.	Chromium, arsenic, lead.	Surface soil, surface water.
Former Plating Tank 1	Installed in an in-ground containment vault in 1968. Removed and reconstructed in early 1990s during remedial action, removed from the Site in 2005.	Sweet Edwards/EMCON in 1988 and 1989. Yellow-stained soil was observed in an opening in the concrete floor. Thirteen hand-augered borings and borings B-1 through B-5 were completed adjacent to former Plating Tanks 1 and 2. Additional investigation was conducted in 2005 & 2006 by MFA to characterize soils near Plating Tanks 1 and 2.	Tanks removed following 1989 investigation. Contaminated soil excavated in 1990. Approximately 114 CY of soil and concrete removed - soils excavated up to 13 feet below ground surface (bgs) (1993). Groundwater was encountered in base of excavation.	Hexavalent chromium detected in four of five confirmation samples up to 73 milligrams per kilogram (mg/kg).	Possible source area.	Trichloroethene (TCE), chromium and hexavalent chromium in soil.	Soil and groundwater.
Former Plating Tank 2	Installed in an in-ground containment vault in 1968. Removed and reconstructed in early 1990s during remedial action, removed from the Site in 2005.	Sweet Edwards/EMCON in 1988 and 1989. Yellow-stained soil was observed in an opening in the concrete floor. Thirteen hand-augered borings and borings B-1 through B-5 were completed adjacent to former Plating Tanks 1 and 2. Additional investigation was conducted in 2005 and 2006 by MFA to characterize soils near Plating Tanks 1 and 2.	Tanks removed following 1989 investigation. Contaminated soil excavated in 1990. Approximately 114 CY of soil and concrete removed - soils excavated up to 13 feet bgs (1993). Groundwater was encountered in base of excavation.	Hexavalent chromium detected in four of five confirmation samples up to 73 mg/kg.	Possible source area.	TCE, chromium and hexavalent chromium in soil.	Soil and groundwater.
Former Plating Tank 3	Aboveground tank with a concrete curb surround. Concrete-lined floor trenches located to the east and west. Located in the plating shop. Removed in the early 1990s during remedial action and replaced by Tanks 3 and 4.	In 1992, Plating Tanks 3, 4, 5 and 6 were removed, as was a 35-foot by 40-foot section of concrete below the tanks. Visibly contaminated soils were removed with the excavation extending up to 28 inches bgs. Chromium [Toxicity Characteristic Leaching Procedure (TCLP)] was detected in soils and concrete, and soil and concrete with low detections was used as excavation backfill. Additional geoprobe drilling was conducted in 2005 by MFA for soil and groundwater analysis. TCE and hexavalent chromium concentrations exceeded MTCA Method A cleanup levels.	Tanks removed in 1992, some soil excavated, concrete below the tanks was also removed. Excavation backfilled with excavated material.	2005 soil sampling suggests hexavalent chromium present in soils.	Yes.	TCE, chromium and hexavalent chromium in soil.	Soil and groundwater.
Former Plating Tank 4	Aboveground tank with a concrete curb surround. Concrete-lined floor trenches located to the east and west. Located in the plating shop. Removed in the early 1990s during remedial action and replaced by Tanks 3 & 4.	In 1992, Plating Tanks 3, 4, 5, and 6 were removed, as was a 35-foot by 40-foot section of concrete below the tanks. Visibly contaminated soils were removed with the excavation extending up to 28 inches bgs. Chromium (TCLP) was detected in soils and concrete, and soil and concrete with low detections was used as excavation backfill. Additional geoprobe drilling was conducted in 2005 by MFA for soil and groundwater analysis. TCE and hexavalent chromium concentrations exceeded MTCA Method A cleanup levels.	Tanks removed in 1992, some soil excavated, concrete below the tanks was also removed. Excavation backfilled with excavated material.	2005 soil sampling suggests hexavalent chromium present in soils.	Yes.	TCE, chromium, and hexavalent chromium in soil.	Soil and groundwater.
Former Plating Tank 5	Aboveground tank with a concrete curb surround. Concrete-lined floor trenches located to the east and west. Located in the plating shop. Removed in the early 1990s during remedial action and replaced by Tanks 3 and 4.	In 1992, Plating Tanks 3, 4, 5, and 6 were removed, as was a 35-foot by 40-foot section of concrete below the tanks. Visibly contaminated soils were removed with the excavation extending up to 28 inches bgs. Chromium (TCLP) was detected in soils and concrete, and soil and concrete with low detections was used as excavation backfill. Additional geoprobe drilling was conducted in 2005 by MFA for soil and groundwater analysis. TCE and hexavalent chromium concentrations exceeded MTCA Method A cleanup levels.	Tanks removed in 1992, some soil excavated, concrete below the tanks was also removed. Excavation backfilled with excavated material	2005 soil sampling suggests hexavalent chromium present in soils.	Yes.	TCE, chromium, and hexavalent chromium in soil.	Soil and groundwater.

Table 1: Summary of Areas of Concern

Area of Concern[(a)]	Description	Investigation History	Remediation History	Current Conditions	Potential Ongoing Source?	Associated COCs	Potentially Affected Media
Former Plating Tank 6	Aboveground tank with a concrete curb surround. Concrete-lined floor trenches located to the east and west. Located in the plating shop. Removed in the early 1990s during remedial action and replaced by Tanks 3 and 4.	In 1992, Plating Tanks 3, 4, 5, and 6 were removed, as was a 35-foot by 40-foot section of concrete below the tanks. Visibly contaminated soils were removed with the excavation extending up to 28 inches bgs. Chromium (TCLP) was detected in soils and concrete, and soil and concrete with low detections was used as excavation backfill. Additional geoprobe drilling in 2005 by MFA for soil and groundwater analysis. TCE and hexavalent chromium concentrations exceeded MTCA Method A cleanup levels.	Tanks removed in 1992, some soil excavated, concrete below the tanks was also removed. Excavation backfilled with excavated material	2005 soil sampling suggests hexavalent chromium present in soils.	Yes.	TCE, chromium, and hexavalent chromium in soil.	Soil and groundwater.
Tank 7 vault	A large single containment vault 24 feet long, 8 feet wide, and 16 feet deep held three tanks. These tanks included Tank 7, a sodium hydroxide strip tank and a sodium bicarbonate strip tank. Tank 7 was 9 feet long, 7.5 feet wide, and 16 feet deep. All tanks in the large vault were removed in 2005.	One 20-foot soil boring was drilled northeast of Tank 7 in 1989. Groundwater was encountered at 9 feet bgs. Soil was sampled for pH and metals. Chromium was not detected in leachate above the Extraction Procedure Toxicity Test (EP Tox) Method reporting limit of 0.005 milligrams per liter (mg/L). Three additional soil borings, GP-7, GP-9, and GP-10 were drilled north of the Tank 7 vault during MFA's 2005 investigation. Soil samples were not collected from depths below that of the adjacent vault.	In 1989 groundwater was sampled from within the vault, concrete repaired, a liner installed at the base, and a new concrete slab was poured at the base of the vault. Current status/condition of the Tank 7 sump/vault not specified.	Unknown; vault no longer in use.	Possible source area. Apparently groundwater has previously infiltratated the vault surrounding Tank 7. Current conditions not specified.	Hexavalent chromium, 1,1-dichloroethene (1,1-DCE), methylene chloride (MC), and total petroleum hydrocarbons (TPHs) below MTCA Method A cleanup levels for soil. Hexavalent chromium in groundwater at GP-7 above MTCA Method B cleanup level.	Groundwater, possibly soil.
Trenches and drains	Prior to 1986, floor drains and trenches discharged to METRO's sanitary sewer system. Chrome-plating rinse water was permitted to discharge from a small rinse tank to the sanitary system. After July 1986, trenches and drains were re-routed to drain to containment vaults.	Several soil borings were advanced in 2005 and 2006 near trench and drain features. TCE, chromium, and hexavalent chromium were observed in one or more locations at concentrations exceeding MTCA Method A cleanup levels.	Upon facility closure, trenches were apparently filled with concrete. Other specifics of closure are not specified.	2005 soil samples suggest hexavalent chromium and TCE present in soils. Trenches and drains no longer in use.	Former drain lines may be a preferential pathway for vapor migration.	TCE, chromium and hexavalent chromium in soil.	Soil and groundwater.
Hydraulic cylinder test vault	Reportedly, a hydraulic cylinder test vault was located outside the building, approximately 10 feet from the western wall of the building. This vault measured 4 feet in diameter and was reportedly 25 feet deep.	Two soil samples were collected in 2005 at location GP-5, near the hydraulic cylinder test vault. Hexavalent chromium was detected in groundwater in excess of the MTCA Method B cleanup level.	None. Current status/condition of test vault not specified.	Unknown; vault no longer in use.	Unknown.	Hexavalent chromium in groundwater above MTCA Method B cleanup level.	Groundwater.
Temporary plating tanks	Temporary aboveground plating tanks were used in the area north of Tank 7.	Several soil borings were advanced in 2005 near the temporary plating area. Soil samples were analyzed for chromium and hexavalent chromium; however, concentrations were below the MTCA Method A cleanup level. The reconnaissance groundwater sample collected from location GP-7 contained hexavalent chromium at a concentration of 101 micrograms per liter (µg/L), which is above the MTCA Method B (non-carcinogen) cleanup level.	None.	No longer in use.	Unknown.	Hexavalent chromium.	Possibly soil and/or groundwater.
Scrubber room	A cooling-water tank, chromic-acid evaporator, chromic-acid purification unit, and large aboveground chromic-acid holding tank were located in the scrubber room. The evaporator was located in an in-ground containment vault and used to concentrate chromic-acid wastes.	Two soil borings were advanced in 2005 south of the scrubber room. Soil samples from both locations were analyzed for chromium and hexavalent chromium; however, reported concentrations were below MTCA Method A cleanup levels.	None.	No longer in use.	Unknown.	Hexavalent chromium.	Possibly soil and/or groundwater.
Parts washing	Parts washing and degreasing was conducted throughout the building. Solvents used included methyl ethyl ketone (MEK), stoddard solvent, and TCE. Prior to 1986, a closed-loop vapor degreaser system in the cylinder shop used TCE. A TCE tank was located in the chrome plating area.	Exact locations not specified. Parts washing areas may have been investigated in conjunction with sampling at other areas of concern.	None.	No longer in use.	Unknown.	TCE and degradation products.	Surface soil, surface water runoff.
Steam Cleaning Area	An outdoor steam-cleaning area was located southeast of the building prior to 1986. Liquids were discharged to an oil/water separator. In 1986, the oil/water separator was dismantled and steam cleaning operations were moved inside. A sodium hydroxide stripping tank was also located in this area.	Surface water and surface soil samples were collected in the southern ditch, which would have received surface water runoff. Lead was detected in shallow soil at location HA-17 at a concentration of 278 mg/kg, above the MTCA Method A cleanup level.	None.	Unknown; not believed to be in use.	Not expected to be an ongoing source.	Oil & grease, copper, nickel, zinc, chromium, caustics.	Surface soil, surface water runoff.
Solid Waste Dumpster	A solid waste dumpster was located near the southeastern corner of the Former Precision Engineering facility. Surface runoff from the dumpster area drains into the drainage ditch.	Surface water and surface soil samples were collected in the southern ditch, which would have received surface water runoff. Oil, arsenic, and lead were detected in shallow soil at one or more locations at concentrations exceeding MTCA Method A cleanup levels.	None.	Waste storage area still present at this location.	Unknown.	Oil & grease. Copper, nickel, zinc, and benzo(a)pyrene.	Surface soil, surface water runoff.

Notes:
(a) Refer to Figures 2 and 3 for locations of Areas of Concern.

Table 2: Summary of Previous Site Investigations

Date of Work	Associated Reference	Locations	Media Sampled	Laboratory Analysis Conducted	Data Location	Summary of Activities
May 1988	Sweet-Edwards/EMCON, Inc. 1988. Status Report Soils/Ground Water Investigation, Seattle Facility. Dated 15 December 1988.	HA-1 through HA-6	Soil	Extraction Procedure Toxicity Test (EP Tox) Chromium	Appendix A Table A1	Hand-augered locations adjacent to Plating Tank 1.
June 1988	Sweet-Edwards/EMCON, Inc. 1988. Status Report Soils/Ground Water Investigation, Seattle Facility. Dated 15 December 1988.	MW1 through MW4	Groundwater	Total Chromium	Appendix A Table A2	Four groundwater monitoring wells constructed No soil samples were submitted for chemical analysis.
August 1988	Sweet-Edwards/EMCON, Inc. 1988. Status Report Soils/Ground Water Investigation, Seattle Facility. Dated 15 December 1988.	P-1	None	NA	NA	Piezometer installed in August 1988 for evaluation of groundwater elevations. A boring log for P-2, installed in April 1989, was appended to this report.
March 1989	Sweet-Edwards/EMCON, Inc. 1989a. Tank #7 Precision Engineering, Inc Seattle, Washington. June 1989.	B-1	Soil	EP Tox metals, pH	Appendix A Table A1	Characterization of deep soils near Chromic Acid Tank 7 pit. Temporary well installed (no aqueous samples); however, was abandoned in April 1989.
March 1989	Sweet-Edwards/EMCON, Inc. 1989b. Precision Engineering, Drainage Ditch Soil EP Tox Results. Dated 28 April 1989.	S1 through S6	Surface soil	EP Tox metals	Appendix A Table A1, A3	Surface soil samples from the drainage ditch south of the Former Precision Engineering property.
March 1989	Sweet-Edwards/EMCON, Inc. 1989c. Precision Engineering. Letter regarding results from soil and groundwater investigation. Dated 24 August 1989.	S1 through S6, PEI-B1 through PEI-B4	Surface and drainage ditch soil	EP Tox metals	Appendix A Table A1	Results only; interpretation in the February 1990 Sediment Sampling report.
September 1989	Sweet-Edwards/EMCON, Inc. 1989d. Surface Soil Sampling, Precision Engineering Seattle Facility. Dated 30 August 1989.	HA-7 through HA-13	Soil	EP Tox Chromium	Appendix A Table A1	Second phase of hand auger investigation locations near Plating Tanks 1 and 2.
November 1989	Sweet-Edwards/EMCON, Inc. 1990. Soil Sample Results; Tank No. 1 and Drainage Ditch, Precision Engineering, Inc., Seattle Facility. Dated 4 January 1990.	B-1 through B-5	Soil	EP Tox Chromium	Appendix A Table A1	Additional soil samples near Plating Tank 1.
November 1989	Sweet-Edwards/EMCON, Inc. 1990. Soil Sample Results; Tank No. 1 and Drainage Ditch, Precision Engineering, Inc., Seattle Facility. Dated 4 January 1990.	S-7 through S-13	Surface soil	EP Tox Chromium	Appendix A Table A3	Soil samples in the drainage ditch near the S-6 sampling location.
March 1989 and November 1989	Sweet-Edwards/EMCON, Inc. 1990. Sediment Sampling, Precision Engineering, Inc., Seattle, Washington. Dated 26 February 1990.	S1 through S13 and B1 through B4	Surface soil	EP Tox Chromium	Appendix A Table A1	Summarizes Phase I (locations S1 through S6),"background" samples B1 through B4, Phase II (S7 through S13)

Table 2: Summary of Previous Site Investigations

Date of Work	Associated Reference	Locations	Media Sampled	Laboratory Analysis Conducted	Data Location	Summary of Activities
March and April 1993	Precision Engineering, Inc. 1993. Independent Remedial Action Report. 21 July 1993.	WP-1 through WP-14, NW-1, EW-1, WW-1, BW-1, PE-430B, PE-430E, PE-430S, PE-430W, PE-430N, BW-2	Soil and concrete	TCLP chromium and total chromium	Appendix A Tables A4, A5	Summarizes removal of Plating Tanks 3 through 6, and repairs to Tank 7. Also summarizes characterization activities conducted previously in 1988 through 1990, and remediation during excavation of Tanks 1 and 2.
June 2005	Maul Foster Alongi. 2005. Preliminary Soil and Groundwater Site Assessment Report. 5 August 2005	GP1 through GP11	Soil and groundwater	Metals, VOCs, petroleum hydrocarbons, hexavalent chromium, PCBs and PAHs	Appendix A Table A6	Summarizes soil and groundwater sampling conducted following closure of Precision Engineering operations.
December 2005	Maul Foster Alongi. 2006. Supplemental Remedial Investigation. 22 February 2006.	GP12 through GP31, MW5 through MW8, HA1 through HA5	Soil, surface soil, and groundwater	Metals, VOCs, petroleum hydrocarbons, hexavalent chromium, PCBs and PAHs	Appendix A Tables A2, A6, A7	Summarizes second phase of soil sampling by Geoprobe, groundwater reconnaissance sampling, and construction of three additional monitoring wells. Includes investigation in the drainage ditch.
April 2006 through January 2007	Maul Foster Alongi. 2008. Final Remedial Investigation and Risk Assessment Report. 21 July 2008.	HA6 through HA12, A1 through A7, and IA1 through IA9	Surface soil, groundwater, indoor air and sub-slab soil vapor	VOCs, hexavalent chromium, PAHs	Appendix A Tables A7, A8	Compilation of prior sampling activities, with additional indoor air and sub-slab vapor sampling, and further characterization in the drainage ditch.
October 2007 through July 2010	Maul Foster Alongi. 2011. Final Feasibility Study. 3 March 2011	B1 through B13, P1 through P9, SS1 through SS6, C1 through C3	Surface and near-surface soil, groundwater	Metals, VOCs, petroleum hydrocarbons, hexavalent chromium, and PAHs	Appendix A Tables A7, A8	Additional groundwater samples from existing monitoring well network. An interim action was conducted in the drainage ditch.

Notes:

NA = not applicable

VOCs = volatile organic compounds

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

Table 3: Soil Analytical Results August 2014 through April 2015

Sample ID	Depth (ft bgs)	Date	Hydrocarbons (Methods NWTPH-Dx and NWTPH-Gx)			Metals (EPA Methods 6010C and 7196A) (mg/kg)				VOCs (EPA Method 8260C) (mg/kg)														
			Diesel-Range	Oil-Range	Gasoline-Range	Arsenic	Chromium	Hexavalent chromium	Lead	Acetone	Benzene	n-Butyl-benzene	Carbon Disulfide	Chloro-methane	Ethyl-benzene	Isopropyl-benzene	4-Isopropyl-toluene	Methylene Chloride	Naph-thalene	n-Propyl-benzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	m, p-Xylene
SB1-5	5	8/8/2014	7.5	62		<5	48.7	<0.440	<2	0.015 Q	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0049	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
SB3-2	2	8/8/2014	**10,000**	**12,000**																				
SB3-8	8	8/8/2014	<5.8	14		<6	67.3	<0.452	<2	0.025 Q	<0.0007	<0.0007	0.012 Q	<0.0007	<0.0007	<0.0007	<0.0007	0.0024	<0.0037	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
SB4-5	5	8/7/2014	65	220		7	22.7	<0.572	11	0.032 Q	<0.0018	<0.0018	0.0045 Q	<0.0018	<0.0018	<0.0018	<0.0018	0.0039	<0.0088	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018
SB4-20	20	8/7/2014	<6.2	<12		6	14.9	<0.482	<2	0.036 Q	<0.0011	<0.0011	0.0063 Q	<0.0011	<0.0011	<0.0011	<0.0011	0.0028	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
SB5-11	11	8/8/2014	420	1,900		<7	15.7	<0.552	<3	0.058 Q	<0.0014	<0.0014	0.0056 Q	<0.0014	<0.0014	<0.0014	<0.0014	0.0048	<0.0068	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
SB6-16	16	8/8/2014	15	49		<7	10.0	<0.571	<3	0.027 Q	<0.0014	<0.0014	0.0028 Q	<0.0014	<0.0014	<0.0014	<0.0014	0.0048	<0.0070	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
SB7-11	11	8/8/2014	38	440		<7	17.7	<0.554	4	0.061 Q	<0.0015	<0.0015	0.0091 Q	<0.0015	<0.0015	<0.0015	<0.0015	0.0094	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
SB7-19	19	8/8/2014	<5.9	<12		<6	24.8	<0.462	<2	0.016 Q	<0.0006	<0.0006	0.0043 Q	<0.0006	<0.0006	<0.0006	<0.0006	0.0024	<0.0032	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
SB8-16	16	8/8/2014	74	560		<7	23.7	<0.544	7	0.070 Q	<0.0015	<0.0015	0.011 Q	<0.0015	<0.0015	<0.0015	<0.0015	<0.0030	<0.0076	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
SB10-7	7	8/8/2014	<5.6	<11		<5	30.3	<0.445	2	0.017 Q	<0.0011	<0.0011	0.0017 Q	<0.0011	<0.0011	<0.0011	<0.0011	0.0026	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
SB11-10	10	8/7/2014	9.7	30		<6	11.7	<0.472	6	0.035 Q	<0.0013	<0.0013	0.0048 Q	<0.0013	<0.0013	<0.0013	<0.0013	0.0083	<0.0064	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013
SB11-30	30	8/7/2014				6	20.9	<0.484	<2															
SB12-12	12	8/7/2014	<6.5	19		<7	17.0	<0.516	<3	0.055 Q	<0.0012	<0.0012	0.021 Q	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
SB13-9	9	8/7/2014	<6.7	18		<8	16.8	<0.534	<3	0.037 Q	<0.0014	<0.0045 Q	0.0030 Q	<0.0014	<0.0014	<0.0014	<0.0014	0.0035	<0.0072	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
SB14-6	6	8/7/2014	74	730		<5	27.6	<0.425	56	<0.010	0.0021	0.011 Q	0.0067 Q	<0.0021	0.056	0.015	0.0040	<0.0041	0.028	0.046	0.0071	0.008	0.016	0.029
SB15-26	26	4/15/2015	<6.7	<13	9.5	5.9	17.9	<0.519	2.9	<0.0067	<0.0013	<0.0013	0.0028	<0.0013	<0.0013	<0.0013	<0.0013	<0.0027	<0.0067	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013
SB15-41	41	4/15/2015	<5.8	<12		4.9	43.4	<0.502	4.0	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
SB16-26	26	4/16/2015	<7.3	<15	8.8	5.6	18.6	<0.525	2.6	0.029	<0.0015	<0.0015	0.0069 Q	<0.0015	<0.0015	<0.0015	<0.0020	0.0049	<0.0073	<0.0015	<0.0015	<0.0020	<0.0020	<0.0015
SB16-40	40	4/16/2015				3.1	26.1	<0.476	2.3															
SB16-46	46	4/16/2015				2.9	24.5	<0.441	2.4															
SB17-26	26	4/16/2015	<6.5	<13	8.7	4.8	18.4	<0.499	2.1	0.034	<0.0015	<0.0045	0.0032 Q	<0.0015	<0.0015	<0.0015	<0.0015	0.003	<0.0075	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
SB17-40	40	4/17/2015	<6.2	<12		2.5	21.2	<0.426	1.7	<0.0051	<0.0010	<0.0010	0.0016	0.0016 M	<0.0010	<0.0010	<0.0010	0.0028	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
SB17-43.5	43.5	4/17/2015				2.8	25.3	1.78	1.9	0.0088	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0010	0.0024	<0.0047	<0.0009	<0.0009	<0.0010	<0.0010	<0.0009
SB18-26	26	4/17/2015	<6.7	<13	7.8	6.4	19.5	<0.51	2.9	0.025	<0.0014	<0.0014	0.0034	<0.0014	<0.0014	<0.0014	<0.0014	0.0031	<0.0069	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014
SB18-36.5	36.5	4/17/2015	<5.5	<11		2.3	18.1	<0.459	1.8	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	0.0019	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
SB18-39.5	39.5	4/17/2015				2.1	21.9	<0.426	1.7															
SB19-35	35	4/20/2015	<6.4	<13	7.7	8.5	20.4	<0.500	2.5	0.034	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
SB19-45	45	4/20/2015	<6.0	<12		6.2	46	<0.469	4.6	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
SB19-50	50	4/20/2015	<6.3	<13		3.7	43.8	<0.508	3.9	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	0.0026	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
MW9-18-19	18-19	8/16/2014	<6.2	14		10	19	<0.492	<6	0.028	<0.0010	<0.0010	0.0018 Q	<0.0010	<0.0010	<0.0010	<0.0010	0.0051 B	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW9-32.5-33.5	32.5-33.5	8/16/2014	<5.7	<11		<5	17.8	<0.448	<2	0.0086	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	0.0055 B	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009
MW9-38-39	38-39	8/16/2014	9.3	14		<5	32.3	<0.471	<2	0.016	<0.0010	<0.0010	0.0016 Q	0.0015	<0.0010	<0.0010	<0.0010	0.0055 B	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW11-18-19/ duplicate	18-19	8/16/2014	6.2/ NA	<11/ NA		<6/ <5	38.0/ 37.8	<0.455/ <0.448	2/ <2	0.013/ 0.016	<0.0009/ <0.0011	<0.0009/ <0.0011	0.001 Q/ <0.0011	<0.0009/ 0.0018	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	0.005 B/ 0.0041 B	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011
Selected Soil Cleanup Levels			*2,000*	*2,000*	*100/30**	*20*	*2,000*	*19*	*250*	*72,000*	*0.03*	*4,000*	*8,000*	*11*	*6*	*8,000*	*162*	*0.02*	*5*	*8,000*	*7*	*6*	*800*	*9*

Notes:

This table shows samples and analytical results for compounds detected. Data regarding all reported results are presented in Appendix C.

"<" indicates analyte was not detected above the specified laboratory reporting limit.

"-" indicates a cleanup level is not established.

Q qualifier indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.

B qualifier indicates analyte detected in an associated method blank at a concentration greater than 1/2 the laboratory reporting limit or 5 percent of either the regulatory limit or analyte concentration in the sample.

Cleanup levels listed for chromium are for trivalent chromium.

Analysis not performed/reported.

A summary of selected soil cleanup levels and the origin of those concentrations is summarized in Table 9 and discussed in Section 4.1.1 of this report. Selected soil cleanup levels are based on MTCA Method A/B except where noted.

BOLD concentrations were reported above the selected soil cleanup level.

* The MTCA Method A cleanup level (CUL) for gasoline is 100 mg/kg if benzene is not present, and 30 mg/kg if benzene is present.

VOCs = volatile organic compounds

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

NA = duplicate sample was not analyzed for this constituent

Table 4: Well Construction Details

Monitoring Well ID	Date Installed	Screened Interval (ft bgs)	Bottom Depth (ft bgs)	Borehole Diameter (in)	Casing Diameter (in)	Screen Slot Size (in)	Casing Material	Filter Pack Type	Top of Casing Elevation [a,b] (ft msl)
Precision Engineering Property									
MW1	6/16/1988	29-39	40	NA	2	0.010	SCH 40 PVC	washed pea gravel	26.66
MW2	6/15/1988	9-19	20	NA	2	0.010	SCH 40 PVC	8x12 Colorado Silica Sand	22.39
MW3	6/15/1988	8-18	20	NA	2	0.010	SCH 40 PVC	8/12 Colorado Silica Sand	23.05
MW4	6/15/1988	15-25	25	NA	2	0.010	SCH 40 PVC	8x12 Colorado Silica Sand	24.09
MW5	12/15/2005	10-20	20.5	10.25	2	0.01	SCH 40 PVC	2/12 Colorado Silica Sand	23.40
MW6	12/15/2005	10-20	20.8	10.25	2	0.01	SCH 40 PVC	2/12 Colorado Silica Sand	21.49
MW7	12/16/2005	26.5-31.5	35.5	10.25	2	0.01	SCH 40 PVC	2/12 Colorado Silica Sand	21.35
MW8	12/15/2005	9.5-19.5	20.2	10.25	2	0.01	SCH 40 PVC	2/12 Colorado Silica Sand	20.88
MW9	8/16/2014	31-36	46	9	2	0.010	SCH 40 PVC	10/20 Colorado Silica Sand	20.47
MW10	8/16/2014	10-20	20	9	2	0.010	SCH 40 PVC	10/20 Colorado Silica Sand	20.32
MW11	8/16/2014	10-20	20	9	2	0.010	SCH 40 PVC	10/20 Colorado Silica Sand	22.30

Notes:

(a) Top of casing elevations were surveyed 5 September 2014.

(b) Top of casing elevations are taken from the northern side, except for well MW4, which was taken on the southern side.

NA = well construction detail not available in reviewed reports or logs

ft = feet

bgs = below ground surface

btoc = below top of well casing

msl = mean sea level

SCH 40 PVC = Schedule 40 polyvinyl chloride

in = inches

Table 5: Groundwater Elevations April 2014 through March 2015

Monitoring Well ID	Screened Interval (ft bgs)	Top of Casing Elevation [a,b] (ft msl)	30 April 2014		12 August 2014		20 August 2014		2 December 2014		9 March 2015	
			Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)	Depth to Water (ft btoc)	Water Elevation (ft msl)
MW1	29-39	26.66	0.15	26.51	not measured		3.19	23.47	0.85	25.81	0.30	26.36
MW2	9-19	22.39	4.15	18.24	5.55	16.84	5.21	17.18	4.71	17.68	4.91	17.48
MW3	8-18	23.05	5.42	17.63	6.40	16.65	6.69	16.36	5.61	17.44	4.53	18.52
MW4	15-25	24.09	2.49	21.60	3.51	20.58	3.05	21.04	4.43	19.66	2.50	21.59
MW5	10-20	23.40	4.72	18.68	5.96	17.44	5.77	17.63	5.10	18.30	4.81	18.59
MW6	10-20	21.49	4.92	16.57	4.21	17.28	4.43	17.06	4.53	16.96	4.36	17.13
MW7	26.5-31.5	21.35	5.52	15.83	5.03	16.32	5.87	15.48	5.68	15.67	4.96	16.39
MW8	9.5-19.5	20.88	5.14	15.74	6.10	14.78	5.53	15.35	5.42	15.46	3.67	17.21
MW9	31-36	20.47	not applicable		not applicable		5.84	14.63	4.99	15.48	4.87	15.60
MW10	10-20	20.32	not applicable		not applicable		3.93	16.39	3.34	16.98	3.09	17.23
MW11	10-20	22.30	not applicable		not applicable		5.42	16.88	4.85	17.45	4.32	17.98

Notes:

(a) Top of casing elevations were surveyed 5 September 2014.

(b) Top of casing elevations are taken from the northern side, except for well MW4, which was taken on the southern side.

ft = feet

bgs = below ground surface

btoc = below top of well casing

msl = mean sea level

Table 6: Reconnaissance Groundwater Analytical Results August 2014 through April 2015

Sample ID	Sample Depth (feet)	Date	Hydrocarbons (Methods NWTPH-Dx and NWTPH-Gx) (µg/L)			Dissolved Metals (EPA Method 200.8) (µg/L)				Total Metals[a] (µg/L)					VOCs (Detected Above Laboratory Reporting Limits) (EPA Method 8260C) (µg/L)				
			Diesel	Oil	Gasoline	Arsenic	Chromium	Lead	Selenium	Arsenic	Chromium	Hexavalent chromium[b]	Lead	Selenium	Acetone	Bromoform	n-Butyl-benzene	Chloroform	2-Chloro-toluene
SB3 / duplicate	12-17	8/8/2014	450/ **540**	300/ 320						**60/ 60**	418/ 265	<10/ <10	**80/ 120**	<50/ <50	<25/ <25	<1/ <1	<1/ <1	<1/ <1	<1/ <1
SB4	7-12	8/7/2014								**80**	63	<10	**40**	<50	<25	<1	<1	<1	<1
SB5	11-16	8/8/2014	**500**	**530**						**300**	570	<10	**100**	<200	<25	<1	<1	<1	<1
SB6	12-17	8/8/2014	380	290						<50	91	<10	<20	<50	<25	<1	<1	<1	<1
SB7	14-19	8/8/2014	200	220						**100**	340	<10	**70**	<100	<25	<1	<1	<1	<1
SB10	4.5-14.5	8/8/2014	<100	<200						<50	331	<10	<20	<50	<25	<1	<1	<1	<1
SB11	6-11	8/7/2014	440	490						**60**	10	<10	**40**	<50	<25	<1	<1	<1	<1
SB12	8-13	8/7/2014								**60**	76	14	**60**	<50					
SB13	5-10	8/7/2014								<50	31	12	**20**	<50					
SB14	4-14	8/7/2014	380	460						<50	47	<10	**70**	<50	<25	<1	<1	<1	<1
SB15	36-46	4/15/2015	<100	<200	<250	**25.6**	1.0	0.3	<0.5	**71**	189	<10	**29.4**	7	<5.0	<0.20	<0.20	<0.20	<0.20
SB16	37-47	4/16/2015	260	250	300	**8.7**	1.3	1.2	<0.5	**150**	2,424	<10	**247**	<20	18	<0.40	0.52	<0.40	0.56
SB17	34-44	4/17/2015	110	<200	<250	**6.7**	0.7	<0.1	<0.5	**210**	0.7	<10	**223**	<20	<10	<0.40	<0.40	0.96	<0.40
SB18	29.5-39.5	4/17/2015	100	<200	<250	**46**	1.4	0.2	<5.0	**113**	380	<10	**39.6**	3	6.2	<0.20	<0.20	0.38	<0.20
SB19	40.5-50.5	4/20/2015	220	<200	<250	**28.7**	3	2.5	2	**60**	240	<10	**57**	<10	7.3	<0.20	<0.20	<0.20	<0.20
Selected Groundwater Cleanup Levels			500	500	1,000	5	24,000	15	80	5	24,000	48	15	80	7,200	5.54	400	1.41	160

Table 6: Reconnaissance Groundwater Analytical Results August 2014 through April 2015

Sample ID	Sample Depth (feet)	Date	VOCs (Detected Above Laboratory Reporting Limits) (EPA Method 8260C) (µg/L)								
			1,3-Dichloro-propane	Ethyl-benzene	Isopropyl-benzene	Naphthalene	n-Propy-lbenzene	Toluene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	m,p-Xylene
SB3 / duplicate	12-17	8/8/2014	<1/ <1	<1/ <1	<1/ <1	<2.5/ <2.5	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<2/ <2
SB4	7-12	8/7/2014	<1	<1	<1	3.1	<1	<1	<1	<1	<2
SB5	11-16	8/8/2014	<1	<1	<1	<2.5	<1	<1	<1	<1	<2
SB6	12-17	8/8/2014	<1	<1	<1	<2.5	<1	<1	<1	<1	<2
SB7	14-19	8/8/2014	<1	<1	<1	<2.5	<1	<1	<1	<1	<2
SB10	4.5-14.5	8/8/2014	<1	<1	<1	<2.5	<1	<1	<1	<1	<2
SB11	6-11	8/7/2014	<1	<1	<1	<2.5	<1	<1	<1	<1	<2
SB12	8-13	8/7/2014									
SB13	5-10	8/7/2014									
SB14	4-14	8/7/2014	<1	16	2.3	6.2	5	2.2	**13**	6.6	26
SB15	36-46	4/15/2015	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.40
SB16	37-47	4/16/2015	<0.40	1.4	0.46	<1.0	1.7	<0.40	**18**	5.2	10
SB17	34-44	4/17/2015	<0.40	<0.40	<0.40	<1.0	<0.40	<0.40	<0.40	<0.40	<0.80
SB18	29.5-39.5	4/17/2015	1	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.40
SB19	40.5-50.5	4/20/2015	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.40
Selected Groundwater Cleanup Levels			37	700	800	160	800	1,000	1.5	80	1,000

Notes:

(a) Samples collected prior to March 2015 were analyzed for metals using EPA Method 6010C. Samples collected in March 2015 were analyzed for metals using EPA Method 200.8.

(b) Hexavalent chromium was analyzed using EPA Method 3500Cr-B.

< indicates analyte was not detected above the specified laboratory reporting limit.

Shaded cells indicate not analyzed.

Bold results are above the selected cleanup level shown for detected analytes.

A summary of selected groundwater cleanup levels and the origin of those concentrations is summarized in Table 10 and discussed in Section 4.2.1 of this report. Selected groundwater cleanup levels are based on MTCA Method A/B except where noted.

NWTPH-Dx = Northwest Total Petroleum Hydrocarbons as Diesel and Oil Extended

VOCs = volatile organic compounds

µg/L = micrograms per liter

Table 7: Groundwater Analytical Results April 2014 through April 2015

Sample ID	Date	Hydrocarbons (Method NWTPH-Dx)		Metals[a]					VOCs (Detected Above Laboratory Reporting Limits)	
		Diesel-Range (µg/L)	Oil-Range (µg/L)	Arsenic (µg/L)	Total Chromium (µg/L)	Hexavalent Chromium [b] (µg/L)	Lead (µg/L)	Selenium (µg/L)	Trichloroethene (µg/L)	Bromoform (µg/L)
MW1	8/20/2014	<100	<200	<50	<5	<10	<20	<50	<1.0	1.5
	12/2/2014	<100	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	3/9/2015	<100	<200	**28.3**	<0.5	<10	<0.1	<0.5	<1.0	<1.0
MW2	5/1/2014	240	260	<50	7	<10	<20	<50	<5.0	<5.0
	8/20/2014	490	490	<50	6	<10	<20	<50	<1.0	<1.0
	12/2/2014	330	220	<50	11	<10	<20	<50	<1.0	<1.0
	3/9/20115	420	360	**5.8**	5.5	12	<0.1	4	<1.0	<1.0
MW3	4/30/2014	<100	<200	<50	<5	28	<20	<50	<1.0	<1.0
	8/21/2014	<100	<200	<50	<5	12	<20	<50	<1.0	<1.0
	12/4/2014	120	<200	<50	5	17	<20	<50	<1.0	<1.0
	3/9/2015	120	<200	**10**	1.1	22	<0.1	<0.5	<1.0	<1.0
MW4	5/1/2014	<100	<200	<50	5	13	<20	<50	<1.0	<1.0
	8/20/2014	<100/ <100	<200/ <200	<50/ <50	<5/ <5	<10/ <10	<20/ <20	<50/ <50	<1.0/ <1.0	<1.0/ <1.0
	12/2/2014	<100	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	3/10/2015	<100	<200	**9.3**	<0.5	<10	<0.1	<0.5	<1.0	<1.0
MW5	5/1/2014	<100/ <100	<200/ <200	<50/ <50	**75,100/ 80,500**	**80,000/ 84,500**	<20/ <20	<50/ <50	3.1/ 3.6	<1.0
	8/21/2014	<100	<200	<50	**82,400**	**95,500**	<20	<50	3.1	<1.0
	12/4/2014	<100/ <100	<200/ <200	<50/ <50	**32,000/ 29,000**	**27,200/ 22,200**	<20/ <20	<50/ <50	1.0/ <1.0	<1.0/ <1.0
	3/10/2015	100/ <100	<200/ <200	**6.3/ 6.2**	**38,700/ 45,700**	**55,400/ 53,800**	<0.1/ <0.1	<0.5/ <0.5	2.4 J/ 2.2 J	<5.0/ <5.0
MW6	4/30/2014	**720**	**850**	**80**	31	<10	<20	<50	<5.0	<5.0
	8/21/2014	300	<200	**80**	23	<10	<20	<50	<1.0	<1.0
	12/3/2014	**770**	**790**	**70**	25	<10	<20	<50	<5.0	<5.0
	3/10/2015	390	330	**40.5**	19	<10	0.2	7.4	<5.0	<5.0

Table 7: Groundwater Analytical Results April 2014 through April 2015

Sample ID	Date	Hydrocarbons (Method NWTPH-Dx)		Metals[a]					VOCs (Detected Above Laboratory Reporting Limits)	
		Diesel-Range (µg/L)	Oil-Range (µg/L)	Arsenic (µg/L)	Total Chromium (µg/L)	Hexavalent Chromium [b] (µg/L)	Lead (µg/L)	Selenium (µg/L)	Trichloroethene (µg/L)	Bromoform (µg/L)
MW7	4/30/2014	<100	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	8/20/2014	140	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	12/3/2014	170	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	3/10/2015	140	<200	**6.8**	0.7	<10	<0.1	3.1	<1.0	<1.0
MW8	5/1/2014	340	290	<50	11	23	<20	<50	<5.0	<5.0
	8/20/2014	440	380	**50**	8	17	<20	<50	<1.0	<1.0
	12/3/2014	420	240	<50	12	<10	<20	<50	<5.0	<5.0
	3/10/2015	320	220	**9.2**	6.8	<10	<0.1	1.3	<5.0	<5.0
MW9	8/21/2014	<100	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	12/3/2014	150	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	3/9/2015	120	<200	3	0.7	<10	<0.1	<1	<1.0	<1.0
MW10	8/21/2014	130	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	12/3/2014	390	310	<50	9	<10	<20	<50	<1.0	<1.0
	3/9/2015	**540**	430	**21.2**	9	<10	0.2	4	<1.0	<1.0
MW11	8/21/2014	120	<200	<50	<5	<10	<20	<50	<1.0	<1.0
	12/4/2014	260	<200	<50	5	12	<20	<50	<10	<10
	3/10/2015	230	210	4.2	2.7	<10	<0.1	1.1	<5.0	<5.0
Selected Groundwater Cleanup Levels		500	500	5	24,000	48	15	80	5	5.54

Notes:

(a) Samples collected prior to March 2015 were analyzed for using EPA Method 6010C. Samples collected in March 2015 were analyzed for metals using EPA Method 200.8.

(b) Hexavalent chromium was analyzed using EPA Method 3500Cr-B.

"<" indicates analyte was not detected above the specified laboratory reporting limit.

"-" indicates a cleanup level is not established.

Bold results are above the cleanup level shown for detected analytes.

A summary of selected groundwater cleanup levels and the origin of those concentrations is summarized in Table 10 and discussed in Section 4.2.1 of this report.

Selected groundwater cleanup levels are based on MTCA Method A/B except where noted.

VOCs = volatile organic compounds, analyzed by EPA Method 8260C

µg/L = micrograms per liter

Table 8: Indoor Air and Sub-Slab Vapor Results February 2015

Sample ID	Date	VOCs (µg/m^3)																					
		Acetone	Benzene	Bromo-methane	2-Butanone	Carbon Disulfide	Carbon tetrachloride	Chloro-methane	Dichloro-difluoro-methane	Ethyl-benzene	4-Ethyl-toluene	4-Methyl-2-pentanone	Methylene chloride	Styrene	Tetrachloro-ethene	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	Trichloro-fluoro-methane	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	m,p-Xylene	o-Xylene	Vinyl chloride
Sub-Slab Soil Vapor Sample																							
SS-1-020715	2/7/2015	21.0	7.0	<1.6	18	2.2	<1.3	<0.8	<4.0	3.8	<2.0	12	<1.4	2.8	11	32	4.4	**95**	<2.3	3.7	<2.0	11	4.1	<0.5
Indoor Air Sample																							
IA-SHOP-020715	2/7/2015	33	**2.6**	0.75	3.3	0.64	**0.45**	1.4	2.9	5.9	2.2	2.3	0.66	0.66	1.6	45	<0.55	**240**	1.2	**12**	12	12	5.1	0.25
Ambient Outdoor Air Sample																							
AMB-OUTDOOR-020715	2/7/2015	4.6	**0.67**	<1.6	0.79	<0.32	0.40	1.1	2.3	<0.44	<0.50	<0.83	<0.35	<0.43	<0.69	2.2	<0.55	**0.96**	1.2	<0.50	<0.50	1.1	<0.44	<0.5
Screening and Cleanup Levels [(a)]																							
Sub-Slab Soil Vapor[(b)]		472,319	10.7	76	76,190	10,667	13.9	1,371	1,524	15,238	-	-	8,333	15,238	321	76,190	76,190	12.3	10,667	107	-	1,524	1,524	9.33
MTCA Method B Cancer		-	0.32	-	-	-	0.42	-	-	-	-	-	250	457	9.62	-	-	0.37	-	-	-	-	-	0.28
MTCA Method B Non-Cancer		14,171	13.7	2.3	2,286	320	45.7	41.1	45.7	457	-	-	274	-	18.3	2,286	2,286	0.91	320	3.2	-	45.7	45.7	-

Notes:

(a) Screening levels used to evaluate sub-slab soil vapor sample results. Selected indoor air cleanup levels used to evaluate air sample results.

(b) Selected cleanup levels for indoor air calculated by applying an attenuation factor of 0.03 to MTCA Method B indoor air cleanup levels, as noted in the April 2015 update to Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action; Review Draft,* October 2009 (Revised 6 April 2015).

"<" indicates analyte was not detected above the specified laboratory reporting limit.

"-" indicates a cleanup level is not established, or that a screening level can not be calculated as no cleanup level has been promulgated.

Bold results indicate concentrations greater than the screening level (soil vapor sample) or selected cleanup levels (air samples).

A summary of selected indoor air cleanup levels and sub-slab soil vapor screening levels is provided in Table 11 and discussed in Section 2.3 of this report.

VOCs = volatile organic compounds

MTCA = Washington Department of Ecology Model Toxics Control Act

µg/m^3 = micrograms per cubic meter

Table 9: Soil Cleanup Level Selection

Chemical Name	MTCA Method A	MTCA Method B		EPA	ORNL
	Unrestricted (mg/kg)	Non-Cancer (mg/kg)	Cancer (mg/kg)	Regional Screening Levels (mg/kg)	Risk Assessment Information System (mg/kg)
Acetone	--	72,000	--	--	--
Arsenic	20	--	--	--	--
Benzene	0.03	--	--	--	--
n-Butylbenzene	--	4,000	--	--	--
Cadmium	2.0	--	--	--	--
Carbon Disulfide	--	8,000	--	--	--
Chloromethane	--	--	--	11	--
Chromium(III)	2,000	--	--	--	--
Chromium(VI)	19	--	--	--	--
Chrysene	--	--	137	--	--
Copper	--	3,200	--	--	--
Diesel	2,000	--	--	--	--
Ethylbenzene	6	--	--	--	--
Gasoline	100/30*	--	--	--	--
Isopropylbenzene/Cumene	--	8,000	--	--	--
4-Isopropyltoluene	--	--	--	--	162
Lead	250	--	--	--	--
Methylene Chloride	0.02	--	--	--	--
Naphthalene	5	--	--	--	--
Oil	2,000	--	--	--	--
n-Propylbenzene	--	8,000	--	--	--
Toluene	7	--	--	--	--
Trichloroethene	0.03	--	--	--	--
1,2,4-Trimethylbenzene	--	--	--	5.8	--
1,3,5-Trimethylbenzene	--	800	--	--	--
Xylenes (total)	9	--	--	--	--

Notes:

"--" denotes cleanup level (CUL) not used in this investigation.

MTCA = Washington State Department of Ecology Model Toxics Control Act

EPA = United State Environmental Protection Agency

ORNL = Oak Ridge National Laboratory

mg/kg = milligrams per kilogram

* The MTCA Method A CUL cleanup level for gasoline is 100 mg/kg if benzene is not present, and 30 mg/kg if benzene is present.

Table 10: Groundwater Cleanup Level Selection

Chemical Name	MTCA Method A Unrestricted (µg/L)	MTCA Method B Non-Cancer (µg/L)	MTCA Method B Cancer (µg/L)	EPA Regional Screening Levels (µg/L)
Diesel-range hydrocarbons	500	--	--	--
Oil-range hydrocarbons	500	--	--	--
Gasoline-range hydrocarbons	1,000*	--	--	--
Arsenic	5	--	--	--
Chromium (trivalent)	--	24,000	--	--
Chromium (hexavalent)	--	48	--	--
Lead	15	--	--	--
Selenium	--	80	--	--
Acetone	--	7200	--	--
Bromoform	--	--	5.54	--
n-Butylbenzene	--	400	--	--
Chloroform	--	--	1.41	--
2-Chlorotoluene	--	160	--	--
1,3-Dichloropropane	--	--	--	37
Ethylbenzene	700	--	--	--
Isopropylbenzene/Cumene	--	800	--	--
Methylene Chloride	5	--	--	--
Naphthalene	160	--	--	--
n-Propylbenzene	--	800	--	--
Toluene	1,000	--	--	--
Trichloroethene	5	--	--	--
1,2,4-Trimethylbenzene	--	--	--	1.5[(a)]
1,3,5-Trimethylbenzene	--	80	--	--
Xylenes (total)	1,000	--	--	--

Notes:

(a) The EPA Regional Screening Level for 1,2,4-trimethylbenzene in tapwater was used, as there is no published EPA Maximum Contaminant Level Goal or Maximum Contaminant Level (MCL), or Washington state MCL.

"--" denotes cleanup level not used in this investigation.

MTCA = Washington State Department of Ecology Model Toxics Control Act

EPA = United States Environmental Protection Agency

µg/L = micrograms per liter

* The cleanup level is based on no benzene present in groundwater.

Table 11: Air Cleanup Level and Sub-Slab Vapor Screening Level Selection

Chemical Name	MTCA Method B Indoor Air Cleanup Level		MTCA Method B Sub-Slab Vapor
	Non-Cancer ($\mu g/m^3$)	Cancer ($\mu g/m^3$)	Screening Level [(a)] ($\mu g/m^3$)
Acetone	14,171	--	472,319
Benzene	--	0.32	10.68
Bromomethane	2.3	--	76.19
2-Butanone (Methyl ethyl ketone)	2,286	--	76,190
Carbon Disulfide	320	--	10,667
Carbon Tetrachloride	--	0.42	13.9
Chloromethane	41.1	--	1,371
Dichlorodifluoromethane	45.7	--	1,524
Ethylbenzene	457	--	15,238
Methylene Chloride	--	250	8,333
Styrene	--	457	15,238
Tetrachloroethene	--	9.62	320.5
Toluene	2,286	--	76,190
1,1,1-Trichloroethane	2,286	--	76,190
Trichloroethene	--	0.4	12.3
Trichlorofluoromethane	320	--	10,667
1,2,4-Trimethylbenzene	3.2	--	106.7
Xylenes (total)	45.7	--	1,524
Vinyl Chloride	--	0.28	9.33

Notes:

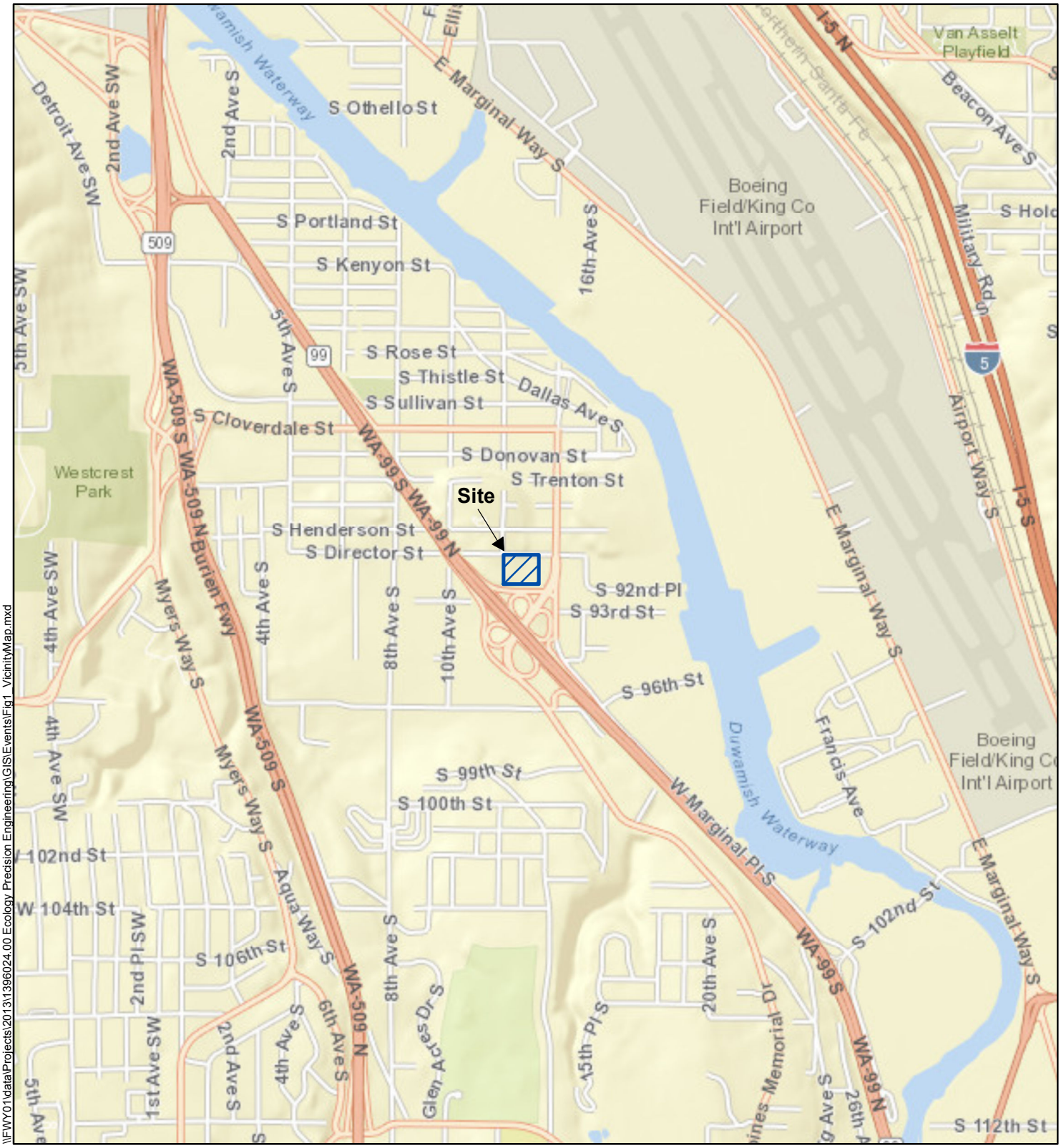
(a) Sub-slab vapor screening levels are calculated based on an attenuation factor of 0.03, as noted in the April 2015 update to Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action; Review Draft,* October 2009 (revised 6 April 2015).

"--" denotes cleanup level not used in this investigation.

MTCA = Washington State Department of Ecology Model Toxics Control Act

$\mu g/m^3$ = micrograms per cubic meter

Figures



\\FWY01\data\Projects\20131396024.00 Ecology Precision Engineering\GIS\Events\Fig1_VicinityMap.mxd

Imagery Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

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0.5 0.25 0 0.5 Miles

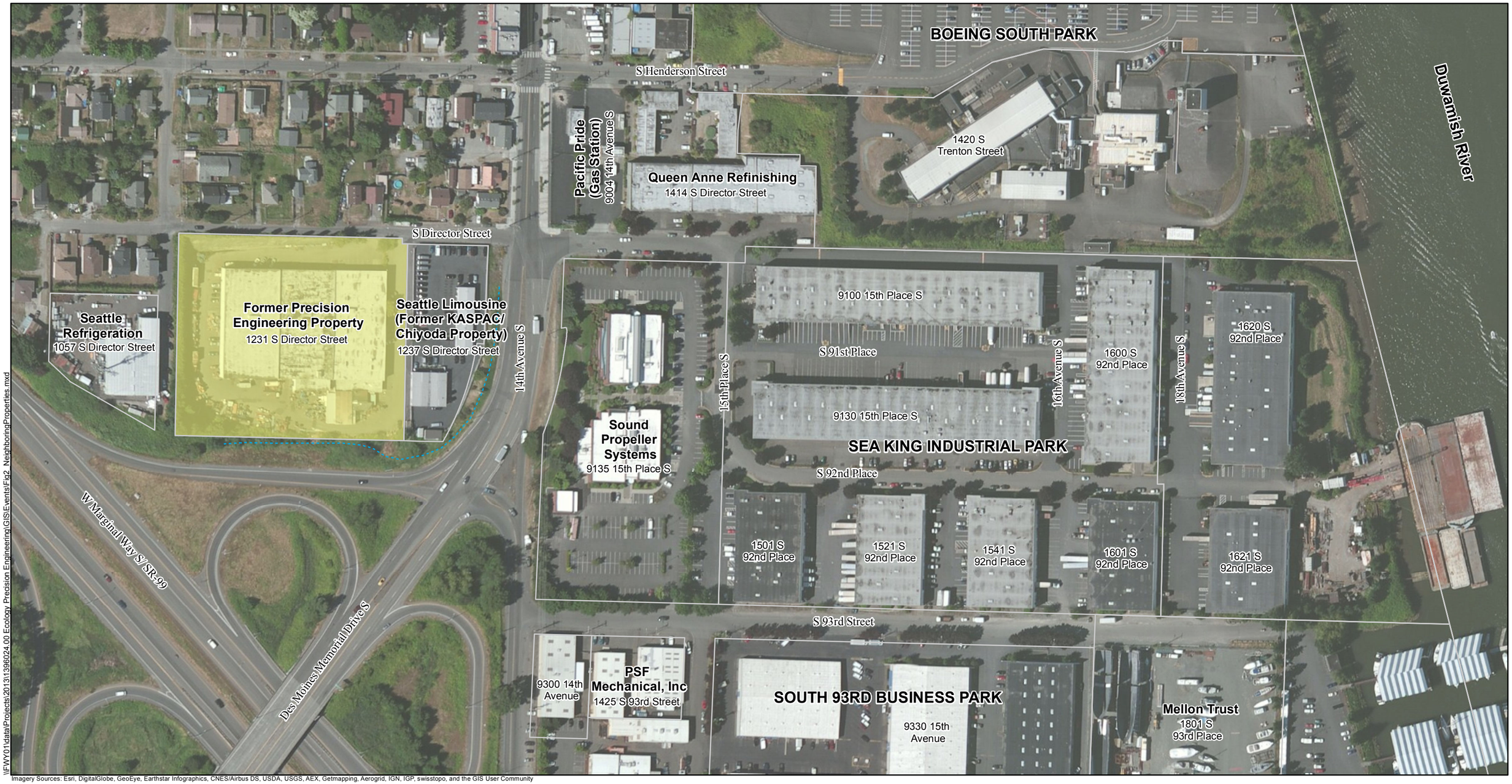
Kennedy/ Jenks Consultants

Former Precision Engineering Property
Seattle, Washington

Vicinity Map

Figure 1

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\Fig2_NeighboringProperties.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, Earthstar Infographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Former Precision Engineering Property
- Adjacent and Neighboring Properties
- Approximate Location of Drainage Ditch

Note:

1. All locations are approximate.

N

170 85 0 170 Feet

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Former Precision Engineering Property
Seattle, Washington

Site Location and Adjacent Properties

Figure 2

K/J Project Number 1396024.00
June 2015

S Director Street

12th Avenue S

14th Avenue S

SR-99 Ramp

Seattle Limousine
(Former KASPAC/
Chiyoda Property)

Office

Storage Bay

Machine
Shop

Grinding
Shop

Cylinder
Shop

Trench
Drains

Chrome Shop

Tank 4

Paint
Booth

Historical
Trench Drains

Pump Repair
Room

Former Plating
Tanks (3 - 6)

Weld Shop

Temporary
Plating Area

Deep Sump/
Vault

Former Plating
Tank 2

Former Plating Tank 1

Auxiliary
Room

Former Sanitary
Sewer Drain

Covered Dumpster Area
(Former Steam-cleaning Area)

Tank 7

Scrubber Room

Holding Tank

Chromic Acid Purification Unit

Evaporator

Former Plating Tank 3

Steam Clean Pit

Compressor
Room

Hazardous
Waste
Containment
Area

Containment Curb

Used Oil Tank

Compressor
Condensate Tank

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\FormerProcessAreas.mxd

Map Source: Maul Foster & Alongi. Final Feasibility Study, Former Precision Engineering, Inc., Site. 3 March 2011.

Legend

- Sewer Line
- Other
- Tank
- Drain
- Steep Bank
- Paved Area
- Parcel Boundary

Note:

1. All locations are approximate.

N

60 30 0 60

Feet

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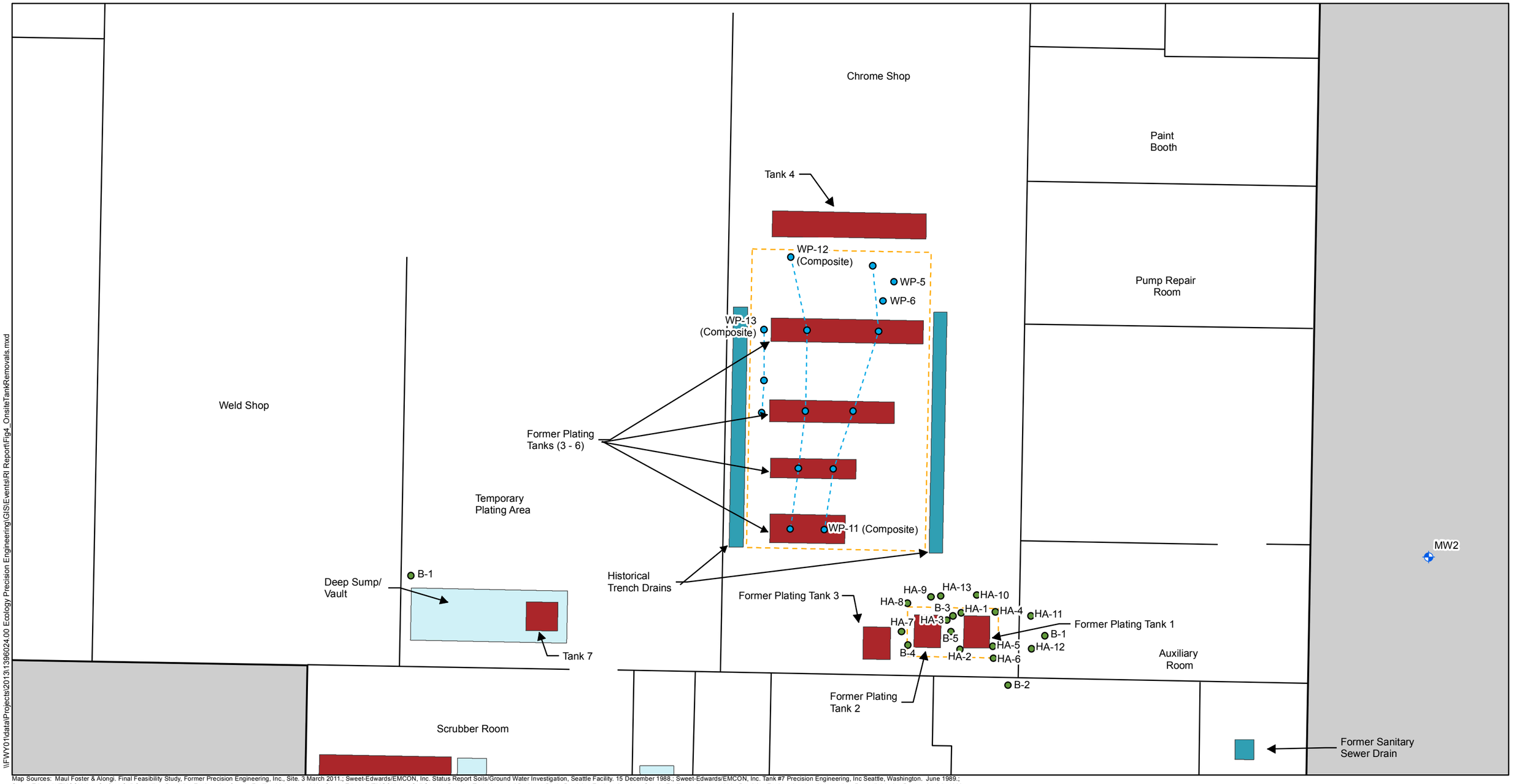
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Former Precision Engineering Property
Seattle, Washington

Site Historical Operation Areas

Figure 3

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig4_OnsiteTankRemovals.mxd

Map Sources: Maul Foster & Alongi. Final Feasibility Study, Former Precision Engineering, Inc., Site. 3 March 2011.; Sweet-Edwards/EMCON, Inc. Status Report Soils/Ground Water Investigation, Seattle Facility. 15 December 1988.; Sweet-Edwards/EMCON, Inc. Tank #7 Precision Engineering, Inc Seattle, Washington. June 1989.; Sweet-Edwards/EMCON, Inc. Surface Soil Sampling, Precision Engineering Seattle Facility. 30 August 1989.; Sweet-Edwards/EMCON, Inc. Soil Sample Results; Tank No. 1 and Drainage Ditch, Precision Engineering, Inc., Seattle Facility. 4 January 1990.; Precision Engineering, Inc. Independent Remedial Action Report. 21 July 1993.

Legend

- Shallow Monitoring Well
- 1988-1989 Soil Sample
- 1992 Soil Sample
- Composite Soil Sample
- Approximate Tank Excavation Area
- Other
- Tank
- Drain
- Paved Area

Note:
1. All locations are approximate.

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N

0 7.5 15
Feet

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Former Precision Engineering Property
Seattle, Washington

Historical Sampling Locations Within the Building

Figure 4

K/J Project Number 1396024.00
June 2015



Map Sources: Maul Foster & Alongi. Final Feasibility Study, Former Precision Engineering, Inc., Site. 3 March 2011.; Sweet-Edwards/EMCON, Inc. Status Report Soils/Ground Water Investigation, Seattle Facility. 15 December 1988.; Sweet-Edwards/EMCON, Inc. Precision Engineering, Drainage Ditch Soil EP Tox Results. 28 April1989.; Sweet-Edwards/EMCON, Inc. Precision Engineering. Letter regarding results from soil and groundwater investigation. 24 August 1989.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Reconnaissance Groundwater Sample
- Historical Soil Boring
- Sewer Line
- Other
- Tank
- Drain
- Steep Bank
- Paved Area
- Parcel Boundary

Note:

1. All locations are approximate.

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N

60 30 0 60

Feet

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Former Precision Engineering Property
Seattle, Washington

Historical Boring and Groundwater Sampling Locations

Figure 5

K/J Project Number 1396024.00
June 2015

S Director Street

12th Avenue S

14th Avenue S

SR-99 Ramp

MW3 MW6 MW2 MW7 MW5 MW4 MW1 MW8

GP12 GP13 GP11 GP24 GP14 GP15 GP05 GP16 GP17 GP32 GP18 GP06 GP19 GP10 GP23 GP02 GP20 GP03 GP09 GP07 GP01 GP04 GP22 GP08 GP21 GP26 GP28 GP30 GP31 GP25 GP27 GP29

IA1 IA2 IA3 IA4 IA5 IA6

A1 A2 A3 A4 A5 A6 A7

HA1 HA6 HA11 HA7 HA10 HA2 IA7 HA13 HA9 HA8 HA14 HA17 HA15 HA18 HA16 HA19 HA20 HA21 HA22 HA3 HA4 HA23 HA24 HA5 HA25 HA26 HA12 HA27

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig6_PriorDrillingLocations.mxd

Map Source: Maul Foster & Alongi. Final Feasibility Study, Former Precision Engineering, Inc., Site. 3 March 2011.

Legend

- Air Sample Point
- Deep Monitoring Well
- Geoprobe boring
- Hand Auger Boring
- Reconnaissance Groundwater Sample
- Shallow Monitoring Well
- Staff Gauge
- Vapor Monitoring Sample
- Paved Area
- Sewer Line
- Other
- Tank
- Drain
- Ditch Soil Excavation Area
- Steep Bank
- Parcel Boundary

Notes:

1. All locations are approximate.
2. Geoprobe borings and reconnaissance groundwater samples collected in 2005.
3. Hand auger borings collected between 2005 and 2007.
4. Vapor monitoring samples collected below the concrete slab on 18 April 2006.
5. Air samples collected 13 June 2006 from indoor/ambient locations.
6. Monitoring wells sampled between 1988 and 2010.

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N

60 30 0 60 Feet

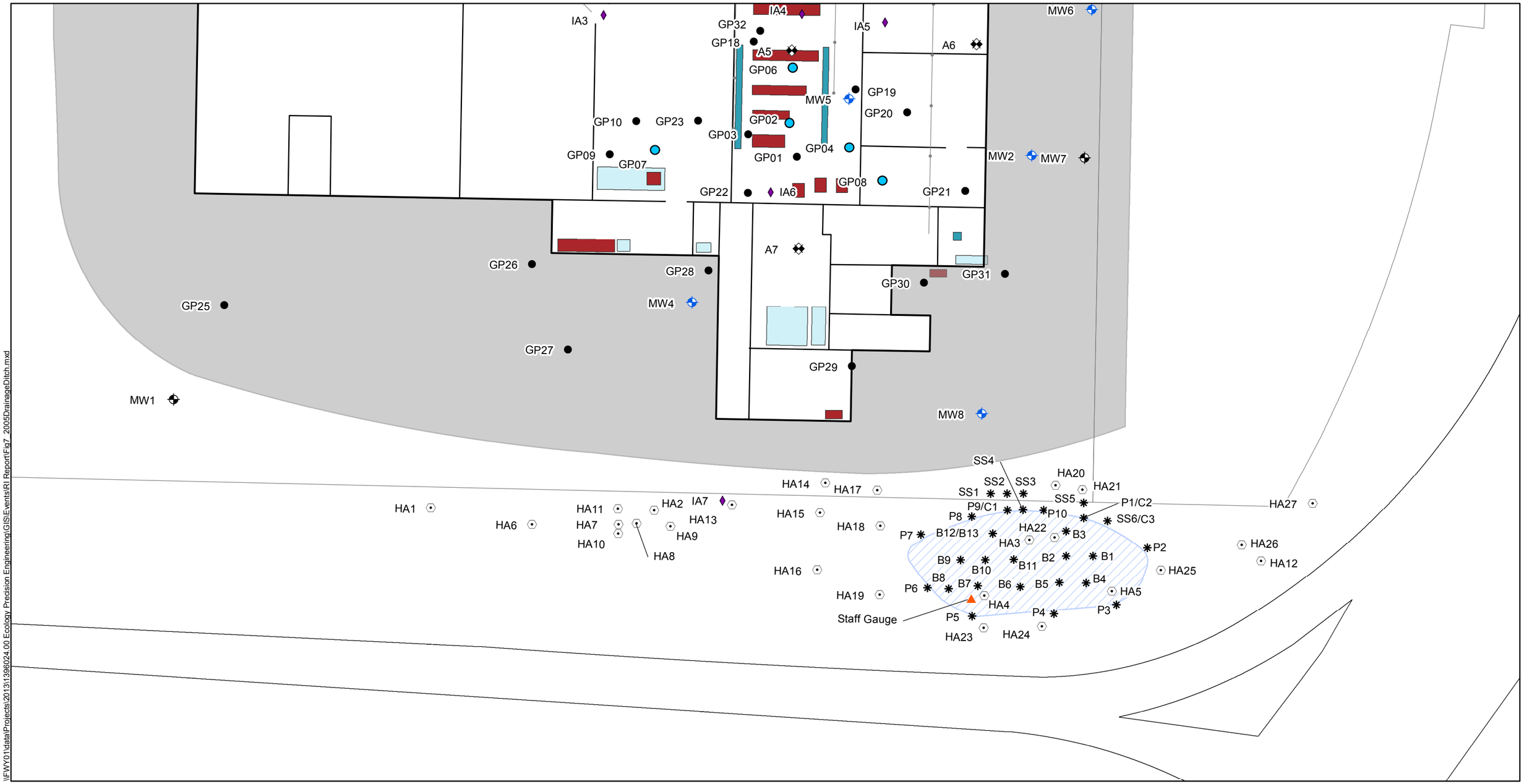
Kennedy/ Jenks Consultants

Former Precision Engineering Property
Seattle, Washington

Historical Boring and Sampling Locations (2005 through 2010)

Figure 6

K/J Project Number 1396024.00
June 2015



Map Source: Maul Foster & Alongi. Final Feasibility Study, Former Precision Engineering, Inc., Site. 3 March 2011.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig7_2005DrainageDitch.mxd

Legend

- Air Sample Point
- Confirmation Soil Sample
- Deep Monitoring Well
- Geoprobe Boring
- Hand Auger Boring
- Reconnaissance Groundwater Sample
- Shallow Monitoring Well
- Staff Gauge
- Vapor Monitoring Sample
- Paved Area
- Sewer Line
- Other
- Tank
- Drain
- Ditch Soil Excavation Area
- Parcel Boundary

Notes:

1. All locations are approximate.
2. Geoprobe borings and reconnaissance groundwater samples collected in 2005.
3. Hand auger borings collected between 2005 and 2007.
4. Vapor monitoring samples collected below the concrete slab on 18 April 2006.
5. Air samples collected 13 June 2006 from indoor/ambient locations.
6. Staff gauge sampled in 2005 and 2006, but no sampling data was reported.
7. Monitoring wells sampled between 1988 and 2010.

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N

35 17.5 0 35 Feet

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Former Precision Engineering Property
Seattle, Washington

Sampling and Excavation in Drainage Ditch

Figure 7

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RIReport\Fig8_SeattleLimo.mxd

Legend

- Seattle Limousine Monitoring Well
- Seattle Limousine Soil Boring
- Seattle Limousine Excavation Soil Sample
- Precision Engineering Deep Monitoring Well
- Precision Engineering Shallow Monitoring Well
- Seattle Limousine Excavations
- Parcel Boundary

Notes:

1. All locations are approximate.

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.
Seattle Limousine Map Sources: EMCON, Independent Remedial Action Report, Chiyoda International Property. 14 November 1995. and EMCON, Addendum to Independent Remedial Action Report, Chiyoda International Corporation Property. 9 September 1996.

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N

0 17.5 35 Feet

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Former Precision Engineering Property
Seattle, Washington

Seattle Limousine Property Sampling Locations

Figure 8

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\20131396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig9_2014SamplingLocations.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Air Sampling Location
- Subslab Sampling Location
- Catch Basin
- Outfall to Drainage Ditch
- Approximate Parcel Boundary

Utility Lines

- Puget Sound Energy gas
- Electrical
- Sewer and drainage line
- Water

A A' Location of Geologic Cross-Section (See Figure 10)

Notes:

1. All locations are approximate.
2. Approximate utility line locations from Seattle Public Utilities and markings made in the field by utility locators.

DRAFT

70 35 0 70 Feet

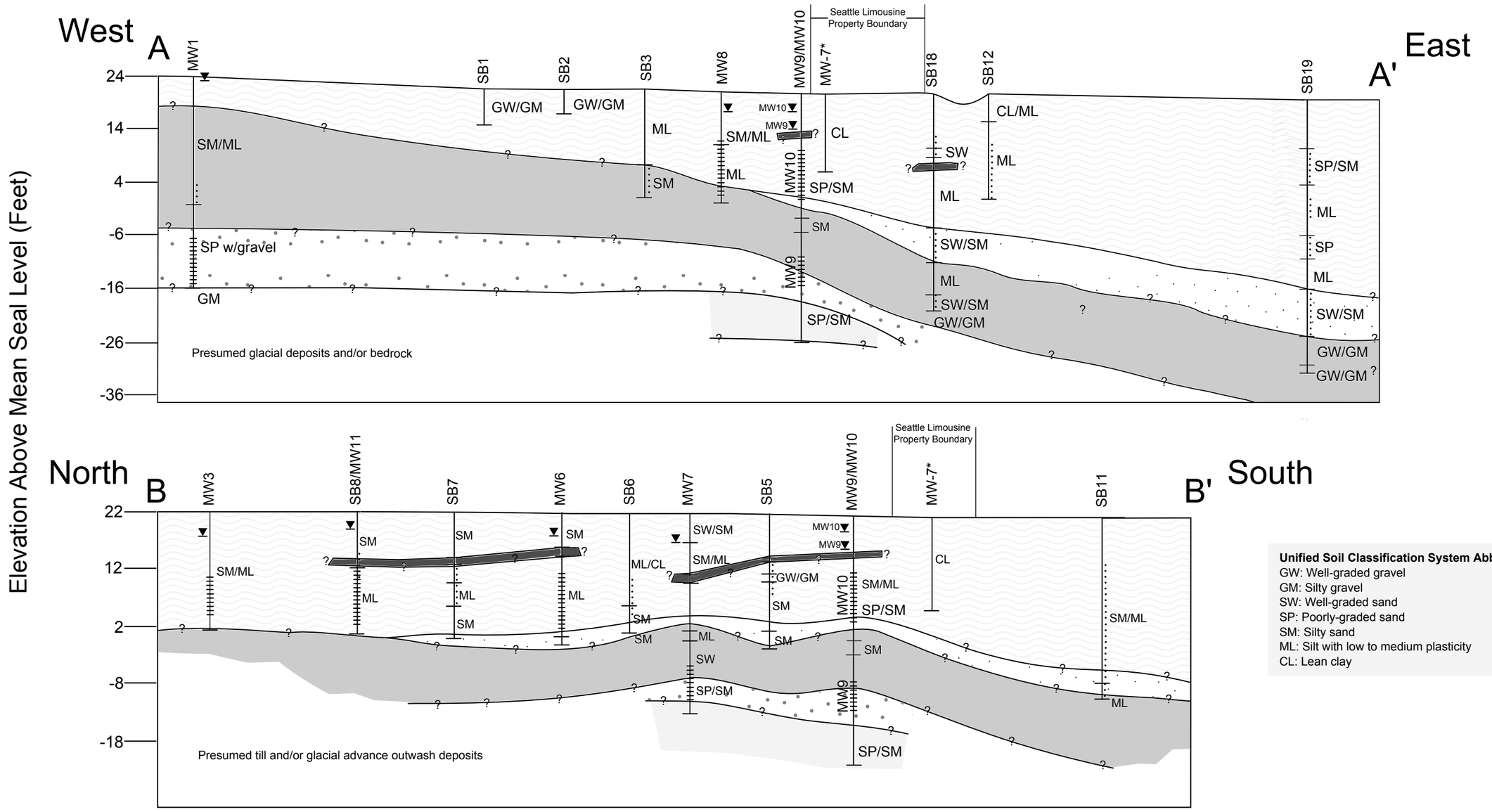
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Former Precision Engineering Property
Seattle, Washington

2014/2015 Remedial Investigation Sampling Locations

Figure 9

K/J Project Number 1396024.00
June 2015



Unified Soil Classification System Abbreviations
GW: Well-graded gravel
GM: Silty gravel
SW: Well-graded sand
SP: Poorly-graded sand
SM: Silty sand
ML: Silt with low to medium plasticity
CL: Lean clay

Legend

- Silts, clays, silt with sand (inferred recessional outwash and recent alluvium and fill)
- Wood, peat, woody organic material
- Sand and silt with shell fragments
- Dense to very dense silt, sand, and gravel (inferred glacial till)
- Sand and gravel with some fines (inferred advance outwash deposits or lens/interbed within the glacial sequence)
- Dense silt, sand, and gravel (inferred advance outwash deposits or possibly glacial till)

▼ Depth to water measured March 2015

* Seattle Limousine Property

Notes:
1. All location are approximate.
2. Ground surface estimated from multiple sources, including: survey, GPS, and Google Earth elevation data.

Wet/Moisture in borings

Screened intervals

Bottom of logged boring

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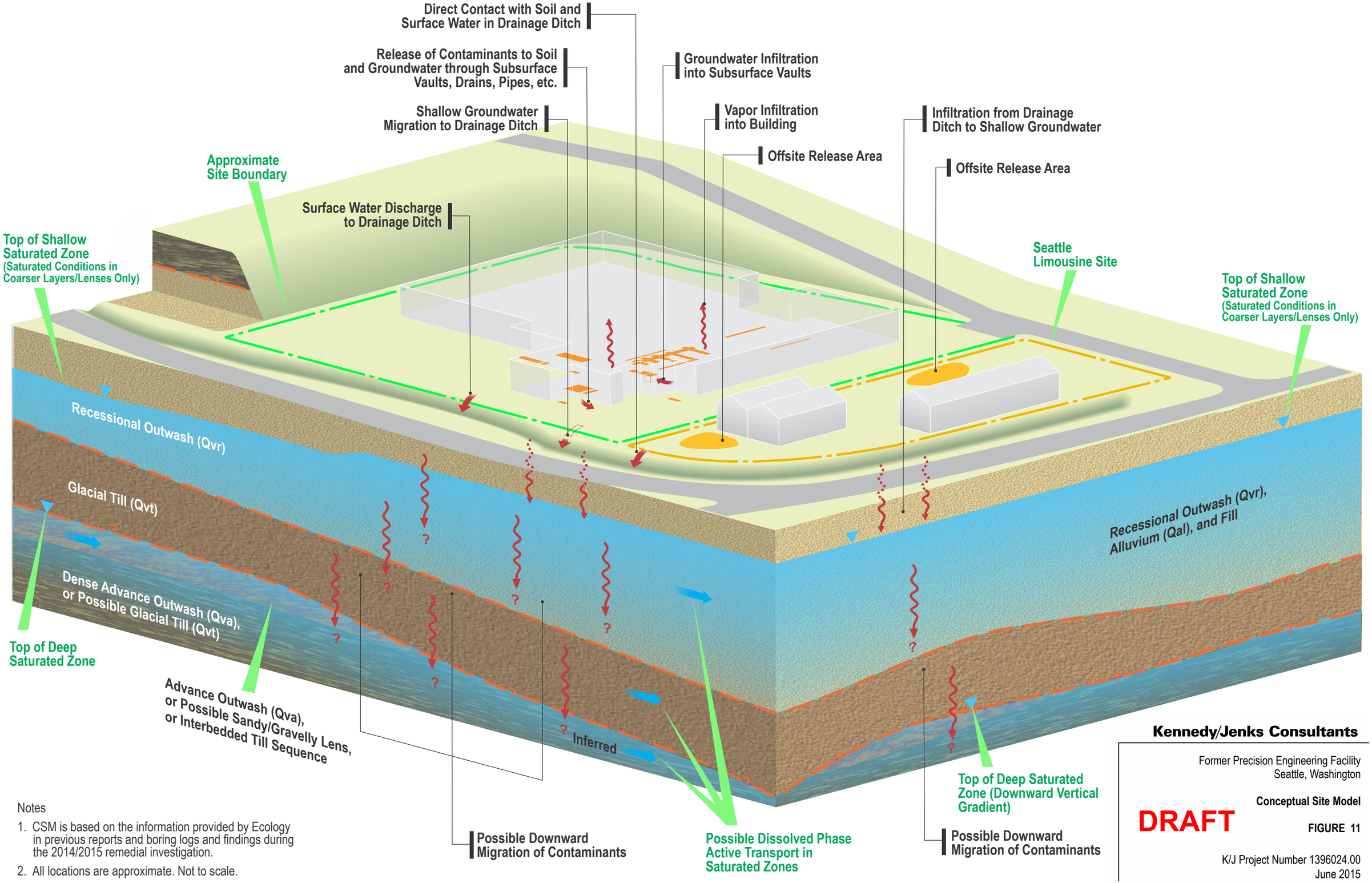
Vertical Scale: Feet: 0, 10, 20
Vertical Exaggeration = 3X
Horizontal Scale: Feet: 0, 30, 60

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Seattle, WA

Interpretive Geologic Cross Section A-A' and B-B'

Figure 10

1396024*00
June 2015



Notes

1. CSM is based on the information provided by Ecology in previous reports and boring logs and findings during the 2014/2015 remedial investigation.
2. All locations are approximate. Not to scale.

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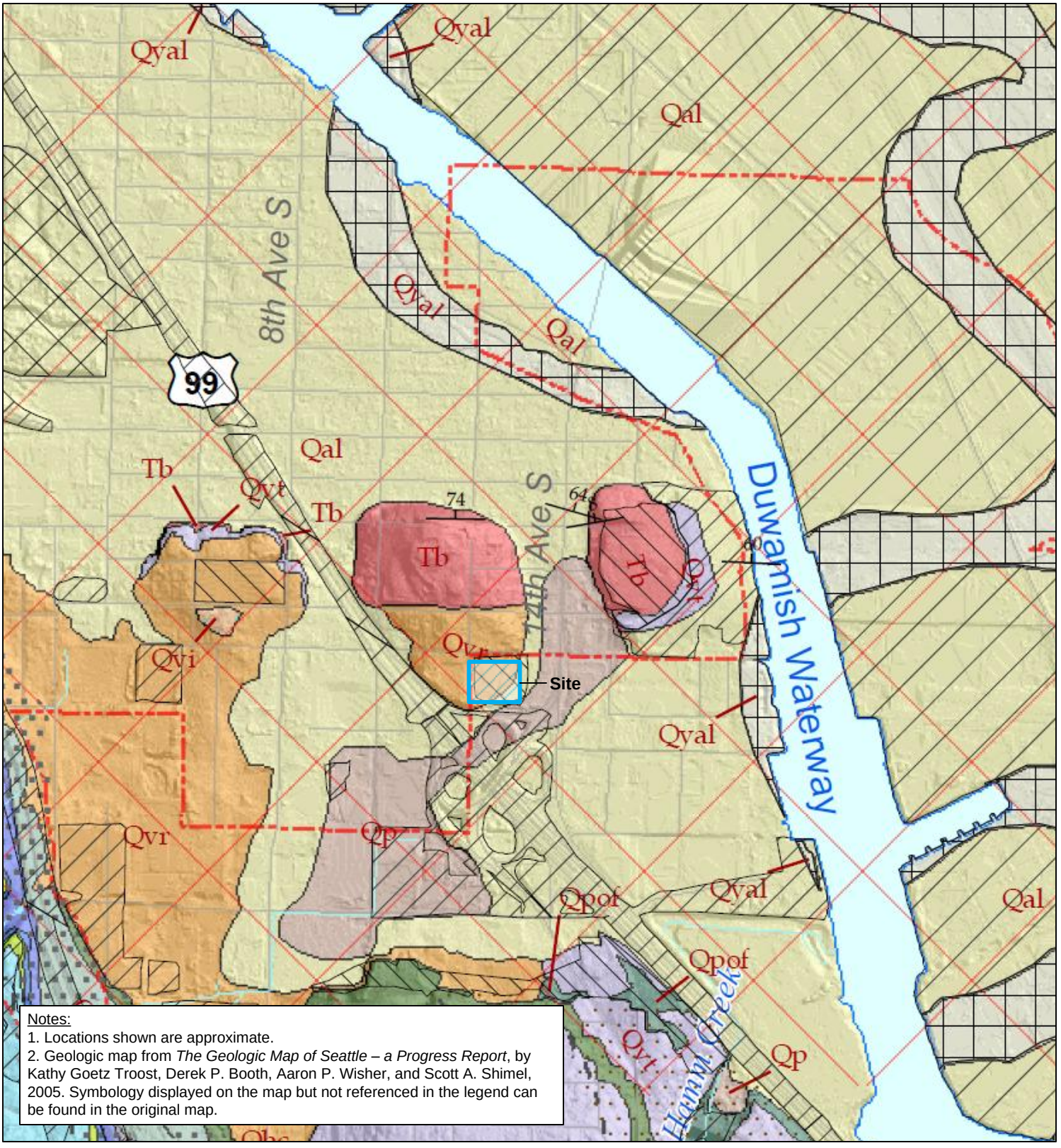
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Conceptual Site Model

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FIGURE 11

K/J Project Number 1396024.00
June 2015



Legend

- Site Location
- Qal (Alluvium)
- Qyal (Younger alluvium)
- Qvr (Vashon recessional outwash deposits)
- Tb (Blakely Formation: sandstone, conglomerate, siltstone, scattered marine shells)
- Qp (Peat)
- Qvt (Vashon subglacial till)
- Qhc (Hamm Creek formation)
- Artificial fill or modified land
- Filled river channels

N

0 450 900
Feet

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Regional Geology

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Figure 12

K/J Project Number 1396024.00
June 2015



Q:\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig13A_Q1_Potentiometric_Shallow2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (shallow zone) in feet above mean sea level
- 25.81 Groundwater elevation of shallow groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

70 35 0 70
Feet

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Potentiometric Surface of Shallow Groundwater - April 2014

Figure 13A

K/J Project Number 1396024.00
June 2015



Q:\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig13B_Q2_Potentiometric_Shallow2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (shallow zone) in feet above mean sea level
- 25.81 Groundwater elevation of shallow groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

N

70 35 0 70
Feet

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Potentiometric Surface of Shallow Groundwater - August 2014

Figure 13B

K/J Project Number 1396024.00
June 2015



Q:\Projects\20131296024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig13C_Q3_Potentiometric_Shallow2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (shallow zone) in feet above mean sea level
- 25.81 Groundwater elevation of shallow groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

70 35 0 70
Feet

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Potentiometric Surface of Shallow Groundwater - December 2014

Figure 13C

K/J Project Number 1396024.00
June 2015



Q:\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig13D_Q4_Potentiometric_Shallow_2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (shallow zone) in feet above mean sea level
- 25.81 Groundwater elevation of shallow groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

N

70 35 0 70
Feet

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Potentiometric Surface of Shallow Groundwater - March 2015

Figure 13D

K/J Project Number 1396024.00
June 2015



Q:\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig14A_Q2_Potentiometric_Deep2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (deep zone) in feet above mean sea level
- 25.81 Groundwater elevation of deep groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

DRAFT

70 35 0 70
Feet

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Potentiometric Surface of Deep Groundwater - August 2014

Figure 14A

K/J Project Number 1396024.00
June 2015



Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Q:\Projects\20131396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig14B_Q3_Potentiometric_Deep2.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (deep zone) in feet above mean sea level
- 25.81 Groundwater elevation of deep groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

N

70 35 0 70
Feet

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Potentiometric Surface of Deep Groundwater - December 2014

Figure 14B

K/J Project Number 1396024.00
June 2015



Q:\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Updated Potentiometric Maps\Fig14C_Q4_Potentiometric_Deep2.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Approximate groundwater elevation contour (deep zone) in feet above mean sea level
- 25.81 Groundwater elevation of deep groundwater wells in feet above mean sea level
- Approximate Parcel Boundary

Note:
1. All locations are approximate.

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N

70 35 0 70
Feet

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Potentiometric Surface of Deep Groundwater - March 2015

Figure 14C

K/J Project Number 1396024.00
June 2015

Analytical Abbreviation:
CrVI Hexavalent chromium

S Director Street

12th Avenue S

14th Avenue S

SR-99 Ramp

SB10
MW3
SB8
MW11
SB7
SB15
MW6
SB14
SB6
SB16
MW5
MW2
MW7
SB5
MW4
MW9
MW10
SB4
MW8
MW1
SB1
SB2
SB3
SB17
SB13
SB18
SB12
SB11
SB19

SB17	
Depth	CrVI
26	<0.499
40	<0.426
43.5	1.78

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RIReport\Fig15_CrSoil.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

SB17	
Depth	CrVI
26	<0.499
40	<0.426
43.5	1.78

Sample depth in feet below ground surface

Analyte

Concentration in milligrams per kilogram (mg/kg)

Notes:
1. All locations are approximate.
2. Soil samples collected on 7, 8, and 16 August 2014 and 15, 16, 17, and 20 April 2015.
3. Results are only shown for borings with detected concentrations of hexavalent chromium in soil.

N

70 35 0 70
Feet

DRAFT

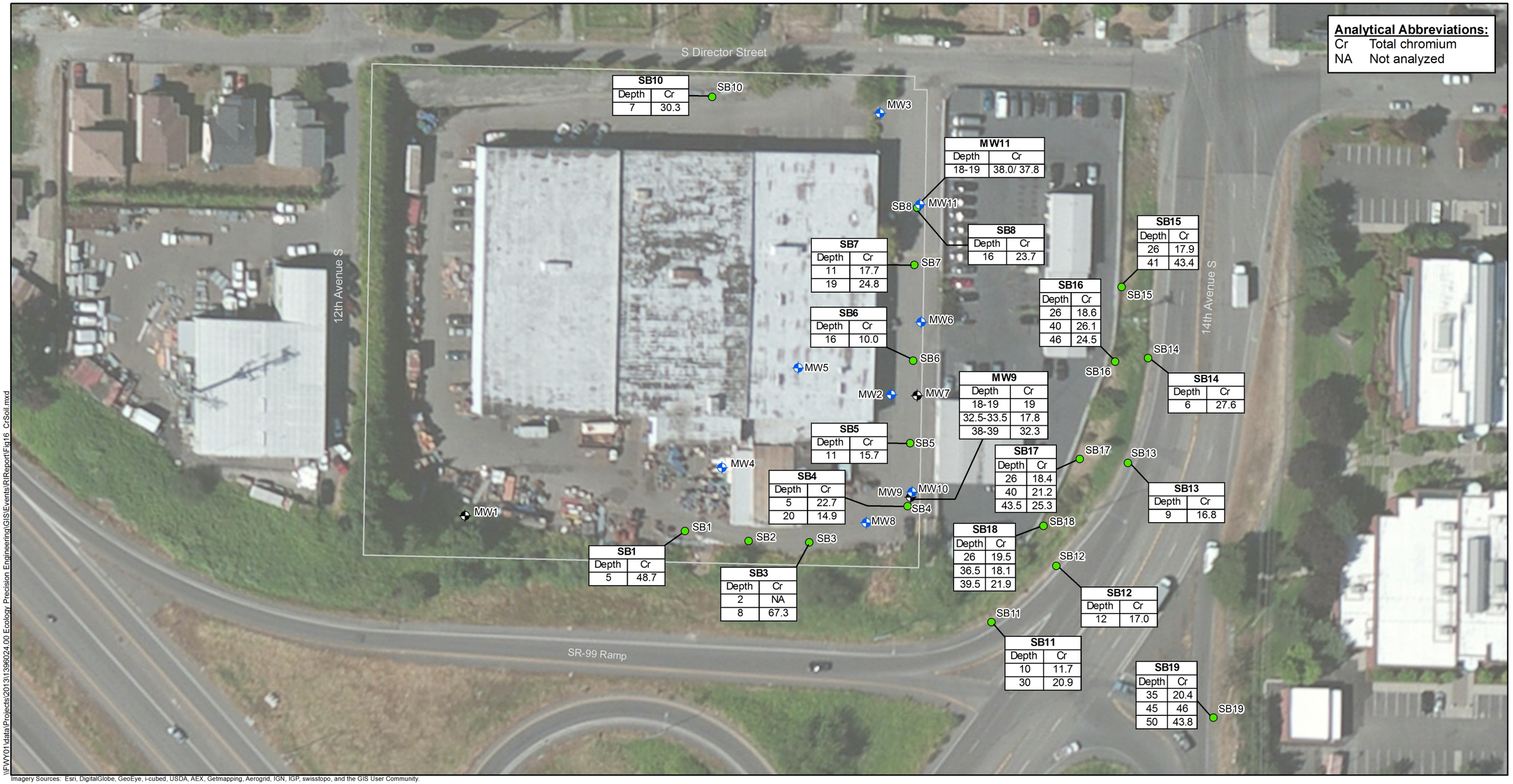
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Seattle, Washington

Detected Concentrations of Hexavalent Chromium in Soil 2014 to 2015

Figure 15

K/J Project Number 1396024.00
June 2015



Analytical Abbreviations:

Cr	Total chromium
NA	Not analyzed

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RIReport\Fig16_CrSoil.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

SB12

Depth	Cr
12	17.0

Sample depth in feet below ground surface

Analyte

Concentration in milligrams per kilogram (mg/kg)

Notes:

1. All locations are approximate.
2. Soil samples collected on 7, 8, and 16 August 2014 and 15, 16, 17, and 20 April 2015.
3. Results are only shown for borings with detected concentrations of total chromium in soil.

N

70 35 0 70

Feet

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Detected Concentrations of Total Chromium in Soil 2014 to 2015

Figure 16

K/J Project Number 1396024.00
June 2015

Analytical Abbreviations:
D Diesel-Range Hydrocarbons
O Oil-Range Hydrocarbons

S Director Street

12th Avenue S

14th Avenue S

SR-99 Ramp

SB10

MW3

MW11

Date	Depth	D	O
8/16/14	18-19	6.2	<11

MW11

SB8

SB8

Date	Depth	D	O
8/8/14	16	74	560

SB7

Date	Depth	D	O
8/8/14	11	38	440
8/8/14	19	<5.9	<12

SB7

SB15

SB6

Date	Depth	D	O
8/8/14	16	15	49

MW6

SB6

SB16

SB14

MW5

MW9

Date	Depth	D	O
8/16/14	18-19	<6.2	14
8/16/14	32.5-33.5	<5.7	<11
8/16/14	38-39	9.3	14

MW2

MW7

SB14

Date	Depth	D	O
8/7/14	6	74	730

SB5

Date	Depth	D	O
8/8/14	11	420	1,900

SB5

SB17

SB13

MW4

MW10

MW9

SB4

Date	Depth	D	O
8/7/14	20	65	220
8/7/14	5	<6.2	<12

SB4

SB13

Date	Depth	D	O
8/7/14	9	<6.7	18

MW8

SB18

MW1

SB1

SB2

SB3

SB1

Date	Depth	D	O
8/8/14	5	7.5	62

SB3

Date	Depth	D	O
8/8/14	2	**10,000**	**12,000**
8/8/14	8	<5.8	14

SB12

SB12

Date	Depth	D	O
8/7/14	12	<6.5	19

SB11

SB11

Date	Depth	D	O
8/7/14	10	9.7	30
8/7/14	30	NA	NA

SB19

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig17_TPHSoil.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location
Sample depth in feet below ground surface

SB3

Date	Depth	D	O
8/8/14	2	**10,000**	**12,000**
8/8/14	8	<5.8	14

Analyte
Concentration in milligrams per kilogram (mg/kg)
Grey shading indicates concentrations above the MTCA Method A cleanup level

Notes:

1. All locations are approximate.
2. Soil samples collected on 7, 8, and 16 August 2014 and 15, 16, 17, and 20 April 2015.
3. The Model Toxics Control Act (MTCA) Method A cleanup level for diesel- and oil-range hydrocarbons in soil is 2,000 mg/kg.
4. Results are only shown for borings with detected concentrations of diesel- and/or oil-range hydrocarbons in soil.

N

70 35 0 70 Feet

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Seattle, Washington

Detected Concentrations of Diesel- and Oil-Range Hydrocarbons in Soil 2014 to 2015

Figure 17

K/J Project Number 1396024.00
June 2015

Analytical Abbreviation:
As Arsenic

S Director Street

12th Avenue S

14th Aven

SR-99 Ramp

MW3	
Date	As
3/9/15	**10**

MW11	
Date	As
3/10/15	4.2

SB7	
Date	As
8/8/14	**100**

MW6	
Date	As
4/30/14	**80**
8/21/14	**80**
12/3/14	**70**
3/10/15	**40.5**

SB15	
Date	As
4/15/15	**71**

MW5	
Date	As
3/10/15	**6.3/ 6.2**

MW2	
Date	As
3/9/15	**5.8**

MW7	
Date	As
3/10/15	**6.8**

SB16	
Date	As
4/16/15	**150**

SB5	
Date	As
8/8/14	**300**

MW4	
Date	As
3/10/15	**9.3**

MW10	
Date	As
3/9/15	**21.2**

SB17	
Date	As
4/17/15	**210**

MW9	
Date	As
3/9/15	**3**

SB18	
Date	As
4/17/15	**113**

MW1	
Date	As
3/9/15	**28.3**

SB3	
Date	As
8/8/14	**60/60**

SB4	
Date	As
8/7/14	**80**

SB12	
Date	As
8/7/14	**60**

MW8	
Date	As
3/10/15	**9.2**

SB11	
Date	As
8/7/14	**60**

SB19	
Date	As
4/20/15	**60**

MW1 MW2 MW3 MW4 MW5 MW6 MW7 MW8 MW9 MW10 MW11
SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB10 SB11 SB12 SB13 SB14 SB15 SB16 SB17 SB18 SB19

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig18_AsGroundwater.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

SB12	
Date	As
12/29/05	**60**

Sample Collection Date

Analyte

Concentration in micrograms per liter (µg/L)

Grey shading indicates concentrations above the MTCA Method A cleanup level

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method A cleanup level for arsenic in groundwater is 5 µg/L.
3. Reconnaissance groundwater samples from borings were submitted for total metals (unfiltered) and are likely biased high due to turbidity produced during sampling.
4. Only detected concentrations are shown.

N

70 35 0 70

Feet

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Former Precision Engineering Property
Seattle, Washington

Detected Concentrations of Total Arsenic in Groundwater 2014 to 2015

Figure 18

K/J Project Number 1396024.00
June 2015

Analytical Abbreviation:
CrVI Hexavalent Chromium

S Director Street

12th Avenue S

14th Avenue S

SR-99 Ramp

MW3	
Date	CrVI
4/30/14	28
8/21/14	12
12/4/14	17
3/9/15	22

MW11	
Date	CrVI
12/4/14	12

MW5	
Date	CrVI
5/1/14	**80,000/ 84,500**
8/21/14	**95,500**
12/4/14	**27,200/ 22,200**
3/10/15	**55,400/ 53,800**

MW2	
Date	CrVI
3/9/15	12

MW4	
Date	CrVI
5/1/14	13

MW8	
Date	CrVI
5/1/14	23
8/20/14	17

SB13	
Date	CrVI
8/7/14	12

SB10, MW3, MW11, SB8, SB7, SB15, MW6, SB6, SB14, SB16, MW5, MW2, MW7, SB5, MW4, SB17, SB13, MW10, MW9, SB4, MW1, MW8, SB1, SB2, SB3, SB18, SB12, SB11, SB19

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig19_CrVIGroundwater.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

MW5	
Date	CrVI
5/1/14	**80,000/ 84,500**
8/21/14	**95,500**
12/4/14	**27,200/ 22,200**
3/10/15	**55,400/ 53,800**

Sample Collection Date

Analyte

Concentration in micrograms per liter (µg/L)

Grey shading indicates concentrations above the MTCA Method A cleanup level

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method B (non-cancer) cleanup level for hexavalent chromium in groundwater is 48 µg/L.
3. Only detected concentrations are shown.

N

70 35 0 70 Feet

DRAFT

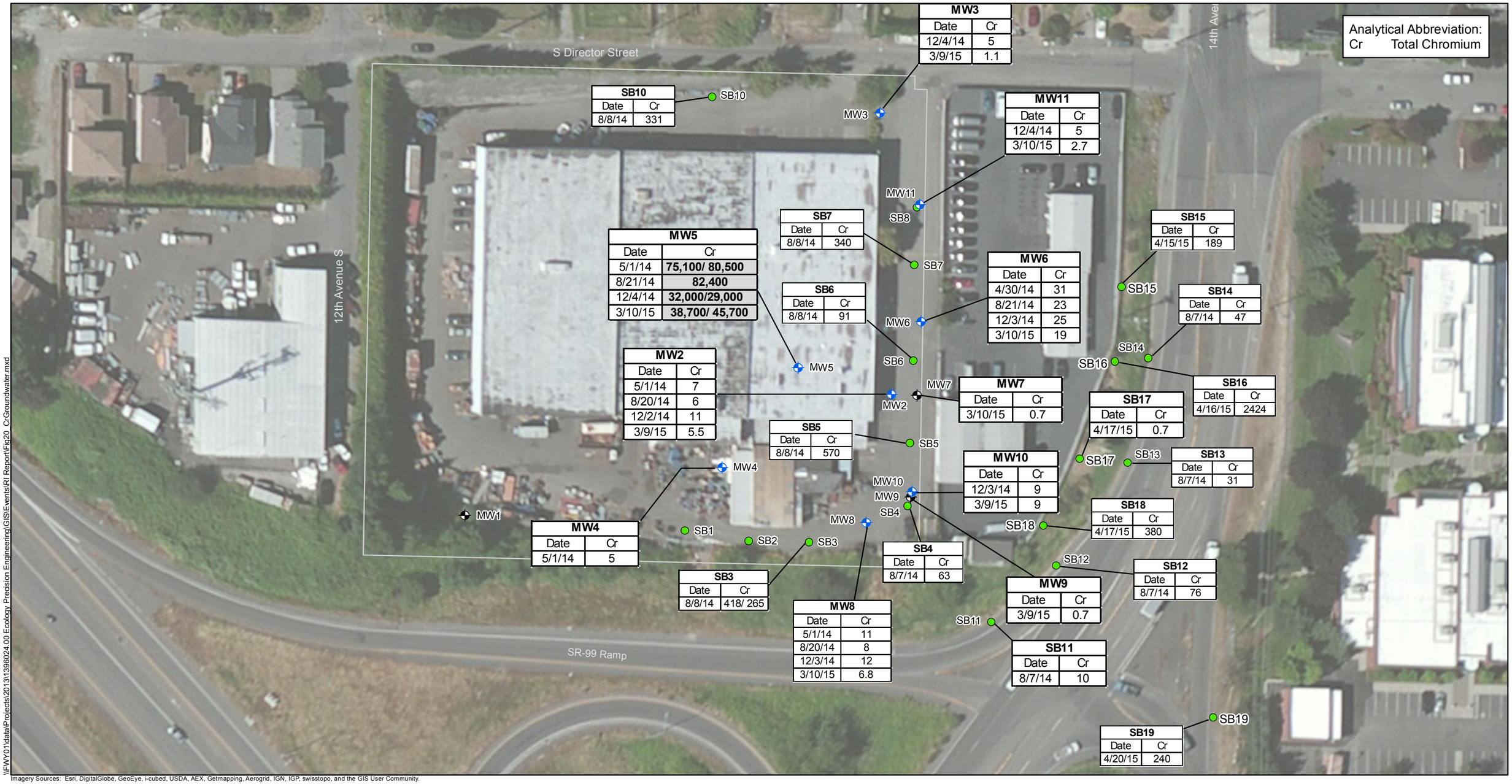
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Seattle, Washington

Detected Concentrations of Hexavalent Chromium in Groundwater 2014 to 2015

Figure 19

K/J Project Number 1396024.00
June 2015



Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig20_CrGroundwater.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location → MW5

Sample Collection Date	Cr (Analyte)
5/1/14	75,100/ 80,500
8/21/14	82,400
12/4/14	32,000/29,000
3/10/15	38,700/ 45,700

Cr: Concentration in micrograms per liter (µg/L)

Grey shading indicates concentrations above the MTCA Method B (non-cancer) cleanup level

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method B (non-cancer) cleanup level for trivalent chromium in groundwater is 24,000 µg/L.
3. Reconnaissance groundwater samples from borings were submitted for total metals (unfiltered) and are likely biased high due to turbidity produced during sampling.
4. Only detected concentrations are shown.

DRAFT

N

70 35 0 70 Feet

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Seattle, Washington

Detected Concentrations of Total Chromium in Groundwater 2014 to 2015

Figure 20

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig21_PbGroundwater.mxd

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

Sample Collection Date

SB12	
Date	Pb
8/7/14	60

Analyte

Concentration in micrograms per liter (µg/L)

Grey shading indicates concentrations above the MTCA Method A cleanup level

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method A cleanup level for lead in groundwater is 15 µg/L.
3. Reconnaissance groundwater samples from borings were submitted for total metals (unfiltered) and are likely biased high due to turbidity produced during sampling.
4. Only detected concentrations are shown.

DRAFT

N

70 35 0 70 Feet

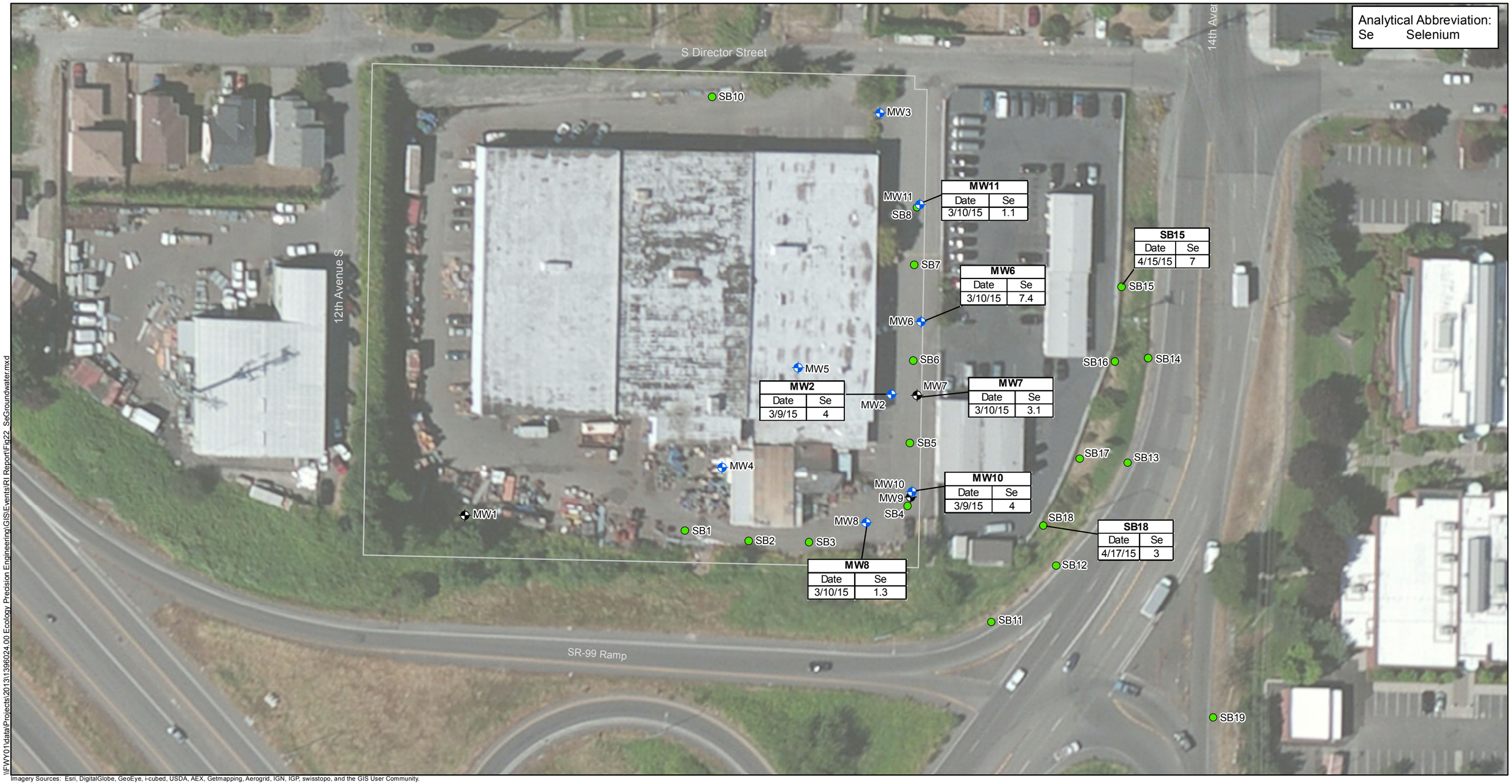
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Seattle, Washington

Detected Concentrations of Total Lead in Groundwater 2014 to 2015

Figure 21

K/J Project Number 1396024.00
June 2015



Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig22_SeGroundwater.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

SB15	
Date	Se
4/15/15	7

Sample Collection Date

Analyte

Concentration in micrograms per liter (µg/L)

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method B (non-cancer) cleanup level for selenium in groundwater is 80 µg/L.
3. Reconnaissance groundwater samples from borings were submitted for total metals (unfiltered) and are likely biased high due to turbidity produced during sampling.
4. Only detected concentrations are shown.

70 35 0 70 Feet

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Seattle, Washington

Detected Concentrations of Total Selenium in Groundwater 2014 to 2015

Figure 22

K/J Project Number 1396024.00
June 2015



\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig23_TCEGroundwater.mxd

Imagery Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

Sample Collection Date

MW5	
Date	TCE
5/1/14	3.1/ 3.6
8/21/14	3.1
12/4/14	1/ <1
3/10/15	2.4 J/ 2.2 J

Analyte

Concentration in micrograms per liter (µg/L)

Notes:

1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method A cleanup level for trichloroethene in groundwater is 5 µg/L.
3. Only samples with detected concentrations are shown.

N

70 35 0 70

Feet

DRAFT

Kennedy/ Jenks Consultants

Former Precision Engineering Property
Seattle, Washington

Detected Concentrations of Trichloroethene in Groundwater 2014 to 2015

Figure 23

K/J Project Number 1396024.00
June 2015

Analytical Abbreviations:
D Diesel-Range Hydrocarbons
O Oil-Range Hydrocarbons

S Director Street

12th Avenue S

S Annue

SR-99 Ramp

MW3		
Date	D	O
12/4/14	120	<200
3/9/15	120	<200

MW11		
Date	D	O
8/21/14	120	<200
12/4/14	260	<200
3/10/15	230	210

MW6		
Date	D	O
4/30/14	**720**	**850**
8/21/14	300	<200
12/3/14	**770**	**790**
3/10/15	390	330

SB7		
Date	D	O
8/8/14	200	220

SB16		
Date	D	O
4/16/15	260	250

SB6		
Date	D	O
8/8/14	380	290

SB14		
Date	D	O
8/7/14	380	460

MW2		
Date	D	O
5/1/14	240	260
8/20/14	490	490
12/2/14	330	220
3/9/15	420	360

MW7		
Date	D	O
8/20/14	140	<200
12/3/14	170	<200
3/10/15	140	<200

SB17		
Date	D	O
4/17/15	110	<200

SB5		
Date	D	O
8/8/14	**500**	**530**

MW10		
Date	D	O
8/21/14	130	<200
12/3/14	390	310
3/9/15	**540**	430

MW9		
Date	D	O
12/3/14	150	<200
3/9/15	120	<200

SB18		
Date	D	O
4/17/15	100	<200

SB3		
Date	D	O
8/8/14	450/ **540**	300/320

MW8		
Date	D	O
5/1/14	340	290
8/20/14	440	380
12/3/14	420	240
3/10/15	320	220

SB11		
Date	D	O
8/7/14	440	490

SB19		
Date	D	O
4/17/15	220	<200

SB10 MW3 MW11 SB8 SB7 SB15 SB16 SB14 MW6 SB6 MW5 MW7 MW2 SB5 MW4 SB17 SB13 MW10 MW9 SB4 MW1 SB1 SB2 SB3 MW8 SB18 SB12 SB11 SB19

Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

\\FWY01\data\Projects\2013\1396024.00 Ecology Precision Engineering\GIS\Events\RI Report\Fig24_TPHGroundwater.mxd

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- 2014-2015 Soil Boring
- Approximate Parcel Boundary

Sample Location

SB3		
Date	D	O
8/8/14	450/ **540**	300/320

Analyte
Concentration in micrograms per liter (µg/L)
Grey shading indicates concentrations above the MTCA Method A cleanup level
Sample Collection Date

Notes:
1. All locations are approximate.
2. The Model Toxics Control Act (MTCA) Method A cleanup levels for diesel- and oil-range hydrocarbons in groundwater is 500 µg/L.
3. Only samples with detected concentrations are shown.

N

70 35 0 70
Feet

DRAFT

Kennedy/ Jenks Consultants

Former Precision Engineering Property
Seattle, Washington

Detected Concentrations of Diesel- and Oil-Range Hydrocarbons in Groundwater 2014 to 2015

Figure 24

K/J Project Number 1396024.00
June 2015

Source Areas	Primary Release Mechanism	Medium	Secondary Release	Exposure Medium	Exposure Route	Potential Receptors: On-Property Construction Worker	Potential Receptors: Subsistence User	Potential Receptors: Recreational User	Potential Receptors: Ecological Receptors
Plating tanks, sumps, vaults, process areas, waste accumulation areas and degreasing activity areas at the former Precision Engineering facility	Leaks and spills	Soil	Percolation / Infiltration	Surface Soil	Incidental Ingestion	X	X	X	X
					Dermal Contact	X	X	X	X
				Subsurface Soil	Incidental Ingestion	✔	X	X	?
					Dermal Contact	✔	X	X	?
			Leaching	Fish	Ingestion	?	?	?	?
		Groundwater	Recharge to Surface Water	Surface Water	Incidental Ingestion	✔	?	?	?
					Dermal Contact	✔	?	?	?
			Stormwater Conveyance System	Stormwater Discharge	Incidental Ingestion	?	?	?	?
					Dermal Contact	?	?	?	?
				Drainage Ditch Soil	Incidental Ingestion	✔	?	?	?
					Dermal Contact	✔	?	?	?
			Biotic Uptake	Edible Biota	Plant Ingestion	?	?	?	?
					Aquatic Invertebrate Ingestion	?	?	?	?
		Air		Vapors/ Particulates	Inhalation	✔	?	?	?

✔ Complete exposure pathway

X Exposure pathway not complete

? Potential exposure pathway (not fully investigated)

NOTE: Figure depicts a preliminary assessment of potential exposure pathways.

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Seattle, Washington

Potential Exposure Pathway Diagram

Figure 25

KJ Project Number 1396024.00
June 2015

Appendix A

Previous Investigations Analytical Sampling Results

Table A1: Historical Soil Investigation Analyses

Sample Location	Sample Depth (ft bgs)	Date	EP TOX Metals (mg/L)										DATA SOURCE
			Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Silver	Zinc	
HA-1	2.8-3.0	5/23/1988				29.7							Sweet-Edwards/EMCON 1988
HA-2	4.3-4.6	5/23/1988				12.0							Sweet-Edwards/EMCON 1988
HA-3	2.3-3.0	5/23/1988				99.5							Sweet-Edwards/EMCON 1988
HA-4	3.5-3.9	5/23/1988				43.6							Sweet-Edwards/EMCON 1988
HA-5	6.5-6.8	5/23/1988				84.4							Sweet-Edwards/EMCON 1988
HA-6	2.8-3.3	5/23/1988				184.0							Sweet-Edwards/EMCON 1988
B-1 (S-1)	2.5	3/7/1989	<0.03	0.018	<0.005	<0.005	<0.005	<0.03	<0.02	<0.03	<0.01	0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-2)	5.0	3/7/1989	<0.03	0.024	<0.005	<0.005	<0.005	<0.03	0.02	<0.03	<0.01	0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-3)	7.5	3/7/1989	<0.03	0.025	<0.005	<0.005	0.006	<0.03	0.02	<0.03	<0.01	0.02	Sweet-Edwards/EMCON 1989a
B-1 (S-4)	10.0	3/7/1989	<0.03	0.011	<0.005	<0.005	<0.005	<0.03	<0.02	<0.03	<0.01	0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-5)	12.5	3/7/1989	<0.03	0.016	<0.005	<0.005	<0.005	<0.03	<0.02	<0.03	<0.01	<0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-6)	15.0	3/7/1989	<0.03	<0.01	<0.005	<0.005	<0.005	<0.03	<0.02	<0.03	<0.01	0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-7)	17.5	3/7/1989	<0.03	0.016	<0.005	<0.005	<0.005	<0.03	<0.02	<0.03	<0.01	<0.01	Sweet-Edwards/EMCON 1989a
B-1 (S-8)	20.0	3/7/1989	<0.03	0.016	<0.005	<0.005	<0.005	<0.03	0.04	<0.03	<0.01	0.015	Sweet-Edwards/EMCON 1989a
HA-7		9/30/1989				1.01							Sweet-Edwards/EMCON 1989d
HA-8		9/30/1989				1.01							Sweet-Edwards/EMCON 1989d
HA-9		9/30/1989				1.40							Sweet-Edwards/EMCON 1989d
HA-10		9/30/1989				<0.01							Sweet-Edwards/EMCON 1989d
HA-11		9/30/1989				0.02							Sweet-Edwards/EMCON 1989d
HA-12		9/30/1989				<0.01							Sweet-Edwards/EMCON 1989d
HA-13		9/30/1989				0.16							Sweet-Edwards/EMCON 1989d
B-1 (S-2)	9.5-10.5	11/29/1989				<0.01							Sweet-Edwards/EMCON 1990a
B-2 (S-2)	9.8-11.0	11/29/1989				0.03							Sweet-Edwards/EMCON 1990a
B-3 (S-1)	4.5-6.0	11/29/1989				0.44							Sweet-Edwards/EMCON 1990a
B-5 (S-4)	5.5-7.0	11/30/1989				68.9							Sweet-Edwards/EMCON 1990a
B-5 (S-5)	7.0-8.5	11/30/1989				61.9							Sweet-Edwards/EMCON 1990a
B-5 (S-6)	8.5-9.2	11/30/1989				4.12							Sweet-Edwards/EMCON 1990a

Notes:

"<" indicates analyte was not detected above the specified laboratory reporting limit.

Indicates analysis not performed/reported.

mg/L = milligrams per liter

ft bgs = feet below ground surface

Table A2: Historical Groundwater Investigation Analyses - Monitoring Wells and Reconnaissance Samples

Sample ID	Date	Hydrocarbons (µg/L)		Metals (µg/L)																			VOCs (µg/L)	
		Diesel-range	Oil-range	Antimony	Arsenic	Beryllium	Cadmium	Total Chromium	Dissolved Chromium	Hexavalent chromium	Copper	Dissolved Copper	Lead	Dissolved Lead	Mercury	Dissolved Mercury	Nickel	Dissolved Nickel	Selenium	Silver	Thallium	Zinc	Dissolved Zinc	Acetone	Benzene
Monitoring Wells																								
MW1	6/22/1988							40																
	3/8/1990							332	<5		240	<10	57	<2	0.5	<0.5	360	<20				620	<10	21	<1
	6/16/2005							<20		269														<5	<1
	12/27/2005	<248	<495	<3	32.3	<1	<1	<1		<6.25	1.01		<1		<0.2		<1.00		<1	<1	<1	<10			
	4/18/2006	<260	<520		33			<0.14		<20	<2		<0.016						<1.1						
	7/15/2010	<76	<380		28.1					<1.3	<0.2								<0.1						
MW2	6/22/1988							278																	
	5/5/1989							6																	
	3/8/1990	<50	<50					<5	<5		<10	<10	4	<2	<0.5	<0.5	<20	<20				30	<10	<10/ <10	<1/ <1
	6/17/2005	438	512					<20		<10														17.1	<1
	12/28/2005	1,190	1,040	<3	5.63	<1	<1	8.79		<6.25	1.17		<1		<0.2		2.51		6.28	<1	<1	<10			
	4/19/2006	410	<580		3.8			21		<20	2.5		<0.016												
	7/15/2010	280	<390		2.3			6.7		<6.5	<0.2								0.71						
MW3	6/22/1988							923																	
	5/5/1989							28																	
	3/8/1990							57	<5		40	<10	9	<2	<0.5	<0.5	50	<20				90	<10	<10	<1
	6/7/2005							<20		<10														<5	<1
	12/29/2005	312	<505	<3	15.3	<1	<1	2.15		<6.25	<1.00		<1		<0.2		1.7		<1	<1	<1	<10			
	4/17/2006	<280	<570		13			7.8		<20	<2		<0.016						<1.1						
	7/13/2010	<82	<410		14.5			2.1		<100	<0.2								<0.1						
MW4	3/8/1990							239	<5		150	<10	35	<2	<0.5	<0.5	260	<20				370	<10	<10	<1
	6/9/2005							<20/ <20		<10/ <10														<5/ <5	<1/ <1
	12/27/2005	<248	<495	<3	15.1	<1	<1	<1		<6.25	<1.00		<1		<0.2		1.33		<1	<1	<1	<10			
	4/18/2006	<270	<540		15			2		23	<2		<0.016						<1.1						
	7/15/2010	<78	<390		11.2					<1.3	<0.2								<0.1						
MW5	12/28/2005	831	<495	<3	4.59	<1	<1	497,000		450,000	3.67		<1		<0.2		32.2		<1000	<1	<1	14.0			
	4/19/2006	<260	<510		4.9			382,000		350,000	<2		<0.016						<1.1						
	7/16/2010	130	<390		<0.31			207,600		81,600	<1								<0.52						
MW6	12/29/2005	2,640	1,320	<3	11.9	<1	<1	18.7		<6.25	4.02		<1		<0.2		16.3		12.3	<1	<1	<10			
	4/19/2006	760	1200		24			47		<20	5.1		<0.016						19						
	7/16/2010	730	930		35.7			27.5		<1.3	0.54								2.9						
MW7	12/28/2005	<248	<495	<3	6.62	<1	<1	10.6		7.38	2.12		<1		<0.2		11.8		2.77	<1	<1	10.8			
	4/18/2006	<260/ <260	<510/ <510		7.1/ 7.3			13/ 13		<20 / <20	2.4/ 3.3		<0.016/ <0.016						5.0/ 4.6						
	7/13/2010	<80/ <77	<400/ <380		5.6/ 5.4			1.3/ 1.3		<1.3/ <1.3	2.9/ 2.9								<0.1/ <0.1						
MW8	12/28/2005	1,710/ 1,790	1,000/ 1,210	<3/ <3	6.41/ 7.85	<1 / <1	<1 / <1	7.55/ 8.49		<6.25/ <6.25	<1/ 1.03		<1/ <1		<0.2		2.91/ 3.14		4.11/ 4.27	<1 / <1	<1/ <1	<10 / <10			
	4/18/2006	450	<580		4.8			21		<20	<2		<0.016						3.6						
	7/15/2010	280	<390		6.3			8.4		<6.5	<0.2								<0.1						
Reconnaissance Groundwater Samples																									
GP2	6/9/2005							37,100		4,720			<15000											295	<5
GP4	6/16/2005	0.325	<0.478					267,000		236,000														40.5	<1
GP5	6/16/2005							<20		89.7														7.2	<1
GP6	6/16/2005							343,000		300,000														<100	<20
GP7	6/16/2005							<20		101														<5	<1
GP8	6/16/2005	0.814	<0.479					355,000		294,000														75.8	<1
GP-13	12/14/2005																								
GP-15	12/14/2005																								

Table A2: Historical Groundwater Investigation Analyses - Monitoring Wells and Reconnaissance Samples

Sample ID	Date	VOCs (µg/L)																										
		Bromobenzene	Bromodichloro-methane	Bromoform	Bromomethane	2-Butanone	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	1,1,2-Trichloro-1,2,2,-trifluoroethane	Chlorobenzene	Chlorobromo-methane	Chloroethane	2-Chloroethylvinyl-ether	Chloroform	Chloromethane	1,2-Dibromo-3-chloropropane	2-Chlorotoluene	4-Chlorotoluene	Dibromochloro-methane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Dichlorodifluoro-methane
Monitoring Wells																												
MW1	6/22/1988																											
	3/8/1990		<1	<1	<1	<10				<1	<1	<10	<1		<1	<10	<1	<1				<1			<1	<1	<1	
	6/16/2005	<1	<1	<1	<1	<5	<1	<1	<1		<1		<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/27/2005					<2																						
	4/18/2006																											
	7/15/2010																											
MW2	6/22/1988																											
	5/5/1989																											
	3/8/1990		<1/ <1	<1/ <1	<1/ <1	<10/ <10				<1/ <1	<1/ <1	<10/ <10	<1/ <1		<1/ <1	<10/ <10	<1/ <1	<1/ <1				<1/ <1			<1/ <1	<1/ <1	<1/ <1	
	6/17/2005	<1	<1	<1	<1	5.43	<1	<1	<1		<1		<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	
	12/28/2005					<2																						
	4/19/2006																											
	7/15/2010																											
MW3	6/22/1988																											
	5/5/1989																											
	3/8/1990		<1	<1	<1	<10				<1	<1	<10	<1		<1	<10	<1	<1				<1			<1	<1	<1	
	6/7/2005	<1	<1	<1	<1	<5	<1	<1	<1		<1		<1	<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/29/2005					<2																						
	4/17/2006																											
	7/13/2010																											
MW4	3/8/1990		<1	<1	<1	<10				<1	<1	<10	<1		<1	<10	<1	<1				<1			<1	<1	<1	
	6/9/2005	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<5/ <5	<1/ <1	<1/ <1	<1/ <1		<1/ <1		<1/ <1	<1/ <1	<1/ <1		<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1
	12/27/2005					<2																						
	4/18/2006																											
	7/15/2010																											
MW5	12/28/2005					34																						
	4/19/2006																											
	7/16/2010																											
MW6	12/29/2005					10.7																						
	4/19/2006																											
	7/16/2010																											
MW7	12/28/2005					<2																						
	4/18/2006																											
	7/13/2010																											
MW8	12/28/2005					17/ 15.5																						
	4/18/2006																											
	7/15/2010																											
Reconnaissance Groundwater																												
GP2	6/9/2005	<5	<5	<5	<5	729	<5	<5	<5		<5	<5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GP4	6/16/2005	<1	<1	<1	<1	<5	<1	<1	<1		<1	<1					<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP5	6/16/2005	<1	<1	<1	<1	<5	<1	<1	<1		<1	<1					<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP6	6/16/2005	<20	<20	<20	<20	<100	<20	<20	<20		<20	<20					<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
GP7	6/16/2005	<1	<1	<1	<1	<5	<1	<1	<1		<1	<1					<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP8	6/16/2005	<1	<1	<1	<1	10.3	<1	<1	<1		<1	<1					<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP-13	12/14/2005					<2																						
GP-15	12/14/2005					2.07																						

Table A2: Historical Groundwater Investigation Analyses - Monitoring Wells and Reconnaissance Samples

Sample ID	Date	VOCs (µg/L)																											
		1,1-Dichloroethene	1,2-Dichloroethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Hexachloro-butadiene	2-Hexanone	Isopropylbenzene	4-Isopropyl-toluene	4-Methyl-2-pentanone	Methyl tert-butyl ether	Methylene Chloride	Naphthalene	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloro-ethane	1,1,2,2-Tetrachloro-ethane	Tetrachloroethene	Toluene	1,2,3-Trichloro-benzene
Monitoring Wells																													
MW1	6/22/1988																												
	3/8/1990	<1	<1	<1	<1	<1	<1				<1	<1	<1		<10			<10		12			<1	<1		<1	<1	
	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/27/2005				<0.200	<0.200																							
	4/18/2006				<0.062	<0.091																							
	7/15/2010																												
MW2	6/22/1988																												
	5/5/1989																												
	3/8/1990	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1				<1/ <1	<1/ <1	<1/ <1		<10/ <10			<10/ <10		<10/ <10			<1/ <1	<1/ <1		<1/ <1	<1/ <1	
	6/17/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/28/2005				<0.200	<0.200																							
	4/19/2006				<0.062	<0.091																							
	7/15/2010																												
MW3	6/22/1988																												
	5/5/1989																												
	3/8/1990	<1	<1	<1	<1	<1	<1				<1	<1	<1		<10			<10		<10			<1	<1		<1	<1	
	6/7/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/29/2005				<0.200	<0.200																							
	4/17/2006				<0.062	<0.091																							
	7/13/2010																												
MW4	3/8/1990	<1	<1	<1	<1	<1	<1				<1	<1	<1		<10			<10		<10			<1	<1		<1	<1	
	6/9/2005	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1		<1/ <1	<1/ <1	<5/ <5	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1
	12/27/2005				<0.200	<0.200																							
	4/18/2006				<0.062	>0.091																							
	7/15/2010																												
MW5	12/28/2005				2.42	0.260																							
	4/19/2006				1.1	<0.091																							
	7/16/2010																												
MW6	12/29/2005				<1.00	<1.00																							
	4/19/2006				<0.062	<0.091																							
	7/16/2010																												
MW7	12/28/2005				<0.200	<0.200																							
	4/18/2006				<0.062/ <0.062	<0.091/ <0.091																							
	7/13/2010																												
MW8	12/28/2005				1.03/ 0.920	<0.200/ <0.200																							
	4/18/2006				1.5	<0.091																							
	7/15/2010																												
Reconnaissance Groundwater																													
GP2	6/9/2005	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	<5	<25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
GP4	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP5	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP6	6/16/2005	<20	<20	<20	144	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20	<20	<100	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
GP7	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GP8	6/16/2005	<1	<1	<1	2.26	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<5	<1	<1	87	<1	<1	<1	<1	<1	<1	<1	<1
GP-13	12/14/2005				6.03	1.01																							
GP-15	12/14/2005				0.2	<0.2																							

Table A2: Historical Groundwater Investigation Analyses - Monitoring Wells and Reconnaissance Samples

Sample ID	Date	VOCs (µg/L)													PAHs (µg/L)											
		1,2,4-Trichloro-benzene	1,1,1-Trichloro-ethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloro-propane	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Vinyl Acetate	Vinyl chloride	m,p-Xylene	o-Xylene	Total Xylenes	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Benzo(b+k)-fluoranthene	Benzo(ghi)-perylene	2-Chloro-naphthalene	Chrysene	Dibenzo(a,h)-anthracene
Monitoring Wells																										
MW1	6/22/1988																									
	3/8/1990		<1	<1	<1	<1				<10	<1			<1	<1	<1	<1	<1	<1			<2	<1		<1	<2
	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1													
	12/27/2005				<0.200						<0.200				<0.114	<0.114	<0.114	0.107	<0.0114	0.104	0.108		<0.114		0.132	<0.0114
	4/18/2006				<0.055						<0.14				0.0038 J	0.020 J	0.030 J	0.029 J	<0.057			<0.030	<0.017		0.014 J	<0.011
	7/15/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW2	6/22/1988																									
	5/5/1989																									
	3/8/1990		<1/ <1	<1/ <1	<1/ <1	<1/ <1				<10/ <10	<1/ <1			<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1			<2/ <2	<1/ <1		<1/ <1	<2/ <2
	6/17/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1		<0.192	<0.192	<0.192	<0.192	<0.192			<0.962	<0.192	<0.192	<0.192	<0.192
	12/28/2005				<0.200						<0.200				<0.0990	<0.0990	<0.0990	<0.0990	<0.00990	<0.00990	<0.00990		<0.0990		<0.0990	<0.0990
	4/19/2006				<0.055						<0.14				0.015 J	<0.0044	0.035 J	0.031 J	<0.066			<0.034	<0.020		<0.0098	<0.013
	7/15/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW3	6/22/1988																									
	5/5/1989																									
	3/8/1990		<1	<1	<1	<1				<10	<1			<1	<1	<1	<1	<1	<1			<2	<1		<1	<2
	6/7/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1													
	12/29/2005				<0.200						<0.200				<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100		<0.0100		<0.0100	<0.0100
	4/17/2006				<0.055						<0.14				<0.0032	<0.0042	<0.0084	<0.0095	<0.063			<0.033	<0.019		<0.0095	<0.013
	7/13/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW4	3/8/1990		<1	<1	<1	<1				<10	<1			<1	<1	<1	<1	<1	<1			<2	<1		<1	<2
	6/9/2005	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1	<1/ <1		<1/ <1	<2/ <2	<1/ <1													
	12/27/2005				<0.200						<0.200				<0.100	<0.100	<0.100	<0.100	<0.0100	<0.0100	<0.0100		<0.0100		<0.0100	<0.0100
	4/18/2006				<0.055						<0.14				0.019 J	0.019 J	<0.0082	<0.0092	<0.061			<0.032	<0.018		<0.0092	<0.012
	7/15/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW5	12/28/2005				22.1						<0.200				<0.0990	<0.0990	<0.0990	<0.0990	<0.00990	<0.00990	<0.00990		<0.00990		<0.00990	<0.00990
	4/19/2006				7.9						<0.14				0.0061 J	0.020 J	0.033 J	<0.0086	<0.057			<0.030	<0.017		<0.0086	<0.011
	7/16/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW6	12/29/2005				<1.00						<1.00				<0.0990	<0.0990	<0.0990	<0.0990	<0.00990	<0.00990	<0.00990		<0.00990		<0.00990	<0.00990
	4/19/2006				<0.055						<0.14				<0.0031	<0.0041	0.039 J	<0.0093	<0.062			<0.032	<0.019		<0.0093	<0.012
	7/16/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
MW7	12/28/2005				<0.200						<0.200				<0.0990	<0.0990	<0.0990	<0.0990	<0.00990	<0.00990	<0.00990		<0.00990		<0.00990	<0.00990
	4/18/2006				<0.055/ <0.055						<0.14/ <0.14				0.011 J/ 0.004 J	0.028 J/ <0.0041	0.037 J/ 0.029 J	0.035 J/ <0.0091	<0.061/ <0.061			<0.031/ <0.031	<0.018/ <0.0181		0.013 J/ <0.009	0.038 J/ <0.012
	7/13/2010				<0.50/ <0.50						<0.20/ <0.20							<0.015/ <0.015	<0.015/ <0.015	<0.015/ <0.015	<0.015/ <0.015				<0.015/ <0.015	<0.015/ <0.015
MW8	12/28/2005				<0.200/ <0.200						0.560/ 0.400				<0.100/ <0.0990	<0.100/ <0.0990	<0.100/ <0.0990	<0.100/ <0.0990	<0.0100/ <0.00990	<0.0100/ <0.00990	<0.0100/ <0.00990		<0.0100/ <0.00990		<0.0100/ <0.00990	<0.0100/ <0.00990
	4/18/2006				<0.055						0.80 J				<0.0038	<0.0050	<0.010	<0.011	<0.00990			<0.039	<0.023		<0.011	<0.015
	7/15/2010				<0.50						<0.20							<0.015	<0.015	<0.015	<0.015				<0.015	<0.015
Reconnaissance Groundwater																										
GP2	6/9/2005	<5	<5	<5	<5	<5	<5	<5	<5		<5	<1	<5													
GP4	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1			<0.191	<0.191	<0.191	<0.191			<0.954	<0.191	<0.191	<0.191	<0.191
GP5	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1													
GP6	6/16/2005	<20	<20	<20	1130	<20	<20	<20	<20		<20	<40	<20													
GP7	6/16/2005	<1	<1	<1	<1	<1	<1	<1	<1		<1	<2	<1													
GP8	6/16/2005	<1	<1	<1	16.8	<1	<1	<1	<1		<1	<2	<1			0.328	<0.194	<0.194	<0.194			<0.97	<0.194	<0.194	<0.194	<0.194
GP-13	12/14/2005				0.22						16.5															
GP-15	12/14/2005				<0.2																					

Table A2: Historical Groundwater Investigation Analyses - Monitoring Wells and Reconnaissance Samples

Sample ID	Date	PAHs (µg/L)							
		Fluoranthene	Fluorene	Indeno(1, 2, 3-cd)-pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene
Monitoring Wells									
MW1	6/22/1988								
	3/8/1990	<1	<1	<2			<1	<1	<1
	6/16/2005								
	12/27/2005	0.384	<0.114	<0.0114	<0.114	<0.114	<0.114	0.159	0.310
	4/18/2006	0.053 J	<0.0076	0.034 J	<0.030	<0.0086	0.011 J	0.024 J	<0.043
	7/15/2010			<0.015					
MW2	6/22/1988								
	5/5/1989								
	3/8/1990	<1/ <1	<1/ <1	<2/ <2			<1/ <1	<1/ <1	<1/ <1
	6/17/2005	<0.192	<0.192	<0.192		<0.481	0.854	<0.192	<0.192
	12/28/2005	<0.0990	<0.0990	<0.00990	<0.0990	<0.0990	0.271	<0.0990	<0.0990
	4/19/2006	0.032 J	<0.0087	<0.016	<0.035	<0.0096	0.93	<0.0052	<0.014
	7/15/2010			<0.015					
MW3	6/22/1988								
	5/5/1989								
	3/8/1990	<1	<1	<2			<1	<1	<1
	6/7/2005								
	12/29/2005	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100	<0.100	<0.100
	4/17/2006	<0.0095	<0.0084	<0.016	<0.034	<0.0095	<0.0063	<0.0032	<0.014
	7/13/2010			<0.015					
MW4	3/8/1990	<1	<1	<2			<1	<1	<1
	6/9/2005								
	12/27/2005	<0.100	<0.100	<0.0100	<0.100	<0.100	<0.100	<0.100	<0.100
	4/18/2006	0.029 J	<0.0082	<0.015	<0.033	<0.0092	0.011 J	<0.0064	<0.030
	7/15/2010			<0.015					
MW5	12/28/2005	<0.0990	<0.0990	<0.00990	<0.0990	<0.0990	0.457	<0.0990	<0.0990
	4/19/2006	0.032 J	<0.0076	<0.014	<0.033	0.017 J	0.13 J	<0.014	<0.032
	7/16/2010			<0.015					
MW6	12/29/2005	<0.0990	<0.0990	<0.00990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990
	4/19/2006	0.033 J	<0.0083	<0.016	<0.033	0.012 J	0.013 J	<0.011	<0.034
	7/16/2010			<0.015					
MW7	12/28/2005	<0.0990	<0.0990	<0.00990	<0.0990	<0.0990	<0.0990	<0.0990	<0.0990
	4/18/2006	0.036 J/ <0.0091	0.039 J/ <0.0081	0.039 J/ <0.015	<0.032/ <0.032	0.014 J/ <0.0091	0.023 J/ 0.019 J	0.022/ <0.0081	<0.037/ <0.013
	7/13/2010			<0.015/ <0.015					
MW8	12/28/2005	<0.100/ <0.0990	<0.100/ <0.0990	<0.0100/ <0.00990	<0.100	<0.100	<0.100/ <0.0990	<0.100/ <0.0990	<0.100/ <0.0990
	4/18/2006	<0.011	<0.010	<0.019	<0.040	<0.011	<0.0075	<0.0038	<0.016
	7/15/2010			<0.015					
Reconnaissance Groundwater									
GP2	6/9/2005								
GP4	6/16/2005	<0.191	<0.191	<0.191		<0.477	<0.477	<0.191	<0.191
GP5	6/16/2005								
GP6	6/16/2005								
GP7	6/16/2005								
GP8	6/16/2005	<0.194	0.298	<0.194		8.56	26.5	5.54	<0.194
GP-13	12/14/2005								
GP-15	12/14/2005								

Notes:
"<" indicates analyte was not detected above the specified laboratory reporting limit.
Indicates analysis not performed/reported.
J qualifier indicates an estimated concentration.
PAHs = polycyclic aromatic hydrocarbons
VOCs = volatile organic compounds
µg/L = micrograms per liter

Table A3: Historical Drainage Ditch Soil Analyses

Sample Location	Sample Depth (ft bgs)	Date	EP TOX Metals (mg/L)											DATA SOURCE
			Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	
PEI-S1	0-0.5	3/22/1989	<0.01	0.750	0.031	0.046	0.054	1.35	<0.0005	0.250	<0.03	<0.01	5.93	Sweet-Edwards/EMCON 1989b
PEI-S2	0-0.5	3/22/1989	0.067	0.087	0.006	0.010	0.041	<0.03	<0.0005	0.058	<0.03	<0.01	0.206	Sweet-Edwards/EMCON 1989b
PEI-S3	0-0.5	3/22/1989	0.078	0.081	0.008	0.055	0.217	0.466	<0.0005	0.272	<0.03	<0.01	4.81	Sweet-Edwards/EMCON 1989b
PEI-S4	0-0.5	3/22/1989	<0.1	0.350	0.020	0.025	0.247	1.22	<0.0005	0.091	<0.03	<0.01	1.65	Sweet-Edwards/EMCON 1989b
PEI-S5	0-0.5	3/22/1989	<0.1/<0.1	0.311/0.172	0.014/0.004	<0.005/<0.005	0.063/0.064	1.09/1.51	<0.0005/<0.0005	0.062/0.034	<0.03/<0.03	<0.01/<0.01	0.876/0.420	Sweet-Edwards/EMCON 1989b
PEI-S6	0-0.5	3/22/1989	<0.1	0.077	0.004	0.508	0.441	0.321	<0.0005	0.044	<0.03	<0.01	0.917	Sweet-Edwards/EMCON 1989b
PEI-B1	0-0.5	3/22/1989	<0.1	0.025	0.002	<0.005	0.064	0.061	<0.0005	0.031	<0.03	<0.01	0.564	Sweet-Edwards/EMCON 1989b
PEI-B2	0-0.5	3/22/1989	<0.1	0.02	<0.002	0.007	0.049	0.102	<0.0005	0.026	<0.03	<0.01	0.282	Sweet-Edwards/EMCON 1989b
PEI-B3	0-0.5	3/22/1989	0.031	0.372	0.013	0.017	0.123	0.218	<0.0005	0.068	<0.03	<0.01	1.10	Sweet-Edwards/EMCON 1989b
PEI-B4	0-0.5	3/22/1989	<0.1	0.142	0.008	0.010	0.056	0.298	<0.0005	0.039	<0.03	<0.01	16.0	Sweet-Edwards/EMCON 1989b
S-7	0-0.5	11/30/1989				0.02								Sweet-Edwards/EMCON 1990a
S-8	0-0.5	11/30/1989				0.26								Sweet-Edwards/EMCON 1990a
S-9	0.5-1.0	11/30/1989				0.05								Sweet-Edwards/EMCON 1990a
S-10	0.5-1.0	11/30/1989				0.09								Sweet-Edwards/EMCON 1990a
S-11	0-0.5	11/30/1989				0.33								Sweet-Edwards/EMCON 1990a

Notes:

"<" indicates substance was not detected above the specified laboratory reporting limit.

Indicates analysis not performed/reported.

mg/L = milligram per liter

ft bgs = feet below ground surface

Table A4: Historical Soil Analytical Results from Tank 1 and 2 Removal

Sample Location	Sample Depth (ft bgs)	Date	Sample Type	EP Toxicity Chromium (mg/L)	Hexavalent Chromium (mg/kg)	
Tanks 1 and 2						
NW-1	Composite	4/25/1990	Characterization		52	Precision Engineering 1993
WW-1	Composite	4/25/1990	Characterization	1.8	96	Precision Engineering 1993
EW-1	Composite	4/25/1990	Characterization		960	Precision Engineering 1993
BW-1	7-8	4/25/1990	Characterization		68	Precision Engineering 1993
PE-430B	11	4/30/1990	Characterization	30	190	Precision Engineering 1993
PE-430E	Composite	4/30/1990	Confirmation		<0.05	Precision Engineering 1993
PE-430S	Composite	4/30/1990	Confirmation	9.6	73	Precision Engineering 1993
PE-430W	Composite	4/30/1990	Confirmation		7.3	Precision Engineering 1993
PE-430N	Composite	4/30/1990	Confirmation		34	Precision Engineering 1993
BW-2	12	5/3/1990	Confirmation		41	Precision Engineering 1993

Notes:

"<" indicates analyte was not detected above the specified laboratory reporting limit.

Indicates analysis not performed/reported.

mg/kg = milligrams per kilogram

ft bgs = feet below ground surface

mg/L = milligrams per liter

Table A5: Historical Soil Analytical Results from Tanks 3, 4, 5, and 6 Removal

Sample Location	Sample Depth (ft bgs)	Date	Sample Type	EP Toxicity Chromium (mg/L)	Hexavalent Chromium (mg/kg)	
WP-1	Concrete floor	3/9/1993	**	34.7		Precision Engineering 1993
WP-2	Concrete floor	3/9/1993	**	4.20		Precision Engineering 1993
WP-3	Concrete floor	3/9/1993	**	3.51		Precision Engineering 1993
WP-4	Concrete floor	3/9/1993	**	17.5		Precision Engineering 1993
WP-5	0-0.5	3/9/1993	Characterization	37.3		Precision Engineering 1993
WP-6	0.5	3/9/1993	Characterization	89.0		Precision Engineering 1993
WP-7	Composite	3/11/1993	**	128	5,300	Precision Engineering 1993
WP-8	Composite	3/11/1993	**	159	7,470	Precision Engineering 1993
WP-9	Composite	3/12/1993	**	174	6,080	Precision Engineering 1993
WP-10	Composite	3/12/1993	Characterization	201	5,810	Precision Engineering 1993
WP-11	Composite	3/12/1993	Confirmation	91	5,760	Precision Engineering 1993
WP-12	Composite	3/12/1993	Confirmation	118	4,180	Precision Engineering 1993
WP-13	Composite	3/12/1993	Confirmation	259	6,650	Precision Engineering 1993
WP-14	Concrete floor	3/12/1993	Characterization	590	37,600	Precision Engineering 1993

Notes:

Indicates analysis not performed/reported.

** indicates a sample that may have been used as backfill within the excavation.

ft bgs = feet below ground surface
mg/L = milligrams per liter
mg/kg = milligrams per kilogram

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	Hydrocarbons (mg/kg)		Metals (mg/kg)															VOCs (mg/kg)		
			Diesel-range	Oil-range	Antimony	Arsenic	Beryllium	Cadmium	Total Chromium	Hexavalent Chromium	Trivalent Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Acetone	Benzene	Bromo-benzene
Former Precision Engineering Property																						
GP1	1.5	6/7/2005							205	152	53									0.0176	<0.000839	<0.000839
	6.0	6/7/2005							147	31.8	115.2									0.0291	0.00255	<0.00112
	10.0	6/9/2005							73.5	14.4	59.1									<0.191	<0.00765	<0.0382
GP2	1.0	6/7/2005							2,680	523	2,157									0.0134	<0.00096	<0.00096
	10.0	6/9/2005							24.9	<0.109	24.9									<0.220	<0.00881	<0.044
GP3	2.0	6/9/2005							915	27.7	887.3									<0.397	<0.0159	<0.0795
	6.0	6/9/2005							1,100	49.8	1,050.2									<0.224	<0.00896	<0.0448
	14.0	6/9/2005							941	34.4	906.6									<0.193	<0.00771	<0.0385
GP4	1.5	6/16/2005							1,230	53.4	1,176.6									<0.259	<0.0103	<0.0517
GP5	1.5	6/16/2005							18.9	<0.111	18.9									<0.178	<0.00712	<0.0356
	8.0	6/16/2005																		<0.176	<0.00703	<0.0351
	14.0	6/16/2005							20.1	<0.115	20.1									<0.202	<0.0081	<0.0405
GP6	1.0	6/16/2005							584	627										<0.213	<0.0085	<0.0425
	14.5	6/16/2005							259	0.181	258.819									<0.207	<0.00828	<0.0414
GP7	2.0	6/16/2005							23.6	0.119	23.481									<0.195	<0.00781	<0.039
	8.0	6/16/2005							21	<0.113	21									<0.221	<0.00884	<0.0442
GP8	1.5	6/16/2005							22.2	0.661	21.539									<0.246	<0.00986	<0.0493
GP9	2.0	6/17/2005							43.3	2.97	40.33									<0.185	<0.00742	<0.0371
GP10	1.5	6/17/2005							21.8	0.142	21.658									<0.279	<0.0112	<0.0558
	13.5	6/17/2005							24.1	<0.106	24.1									<0.199	<0.00796	<0.0398
GP11	2.0	6/17/2005							21.7	0.573	21.127									<0.209	<0.00837	<0.0419
	6.5	6/17/2005							17.3	0.37	16.93									<0.215	<0.00861	<0.043
GP12	3.0	12/13/2005	<10.7	<26.6	<1.77	2.79	<0.591	<0.591	24.3	<1.1 J	24.3	17.6	2.45	<0.131	25.6	<0.591	<0.591	<0.591	32.9			
	5.0	12/13/2005							25.2	<1.0 J	25.2											
GP13	1.0	12/14/2005			<1.78	9.45	<0.593	1.29	26.6	<1.4 J	26.6	29.0	21.1	<0.168	21.8	<0.593	<0.593	<0.593	84.9			
	6.0	12/14/2005	<12.8	56.1					46.6	<1.3 J	46.6											
GP14	3.0	12/13/2005			<1.83	3.00	<0.609	<0.609	24.8	<2.0 J	24.8	14.4	2.2	<0.120	32.9	<0.609	<0.609	<0.609	38.4			
	6.0	12/13/2005	<10.8	<26.9					31.4	1.2 J	30.2											
GP15	3.0	12/13/2005	17.7	59.1	<1.59	7.76	<0.529	0.714	24.7	<1.2 J	24.7	30.4	18.7	<0.154	16.4	<0.529	<0.529	<0.529	71.6			
	6.0	12/13/2005							20.2	<1.2 J	20.2											
GP16	1.0	12/13/2005							30.0	<2.1 J	30.0											
	5.0	12/13/2005	<11.2	<28.0					26.2	<2.1 J	26.2											
GP17	1.0	12/13/2005	11.6	63.1					254	<1.7 J	254											
	6.0	12/13/2005							1,660	60 J	1,600											
GP18	1.0	12/13/2005	156	742	<1.84	3.55	<0.615	<0.615	4,430	2,300 J	2,130	113	26.3	1.10	23.1	<0.615	<0.615	<0.615	40.9			
GP19	1.0	12/13/2005	52.8/ 18.2	172/ 43.8					22.0/ 24.8	<2.5 J/ <2.0 J	22.0/ 24.8											
	7.0	12/13/2005	<14.5	56.7					27.1	<2.7 J	27.1											
GP20	1.0	12/14/2005	198	301	<1.78	5.47	<0.592	<0.592	17.6	<1.1 J	17.6	29.4	10.1	<0.152	13	<0.592	<0.592	<0.592	49.3			
	6.0	12/14/2005	75.9	294					24.5	<1.5 J	24.5											
GP21	1.0	12/14/2005	<11.2	<28.0					25.6	<1.0 J	25.6											
	6.5	12/14/2005	5,270	19,900					23.0	<1.3 J	23.0											
GP22	1.0	12/13/2005							46.8	2.9 J	43.9											
	10.0	12/13/2005	<11.3	<28.2					32.1	<1.3 J	32.1											
GP23	7.0	12/14/2005	<10.8	<26.9					23.3	<1.1 J	23.3											
	10.5	12/14/2005							979	<1.2 J	979											
GP24	3.0	12/14/2005	<11.1	<27.8	<1.63/ <1.60	3.06/ 3.64	<0.542/ <0.532	<0.542/ <0.532	30.2/ 26.2	<1.0 J/ <1.1 J	30.2/ 26.2	16.5/ 14.3	3.09/ 3.33	<0.115/ <0.107	28.5/ 25.3	<0.542/ <0.532	<0.542/ <0.532	<0.542/ <0.532	44.3/ 50.4			
	6.5	12/14/2005							29.3	<2.4 J	29.3											
GP25	1.0	12/12/2005							19.3	<1.8 J	19.3											
	7.0	12/12/2005	<10.6	<26.6					19.8	<1.7 J	19.8											
GP26	1.0	12/12/2005	36.4	121					23.7	<2.2 J	23.7											
	9.5	12/12/2005	<10.8	<27.1					24.0	<2.1 J	24.0											
GP27	1.0	12/12/2005							22.0	<2.2 J	22.0											
	13.0	12/12/2005	<10.9	<27.2					18.6	<2.1 J	18.6											
GP28	1.0	12/12/2005	<10.8	<27.0	<1.63	1.89	<0.542	<0.542	20.5	<2.2 J	20.5	12.6	1.54	<0.144	22.5	<0.542	<0.542	<0.542	24.9			
	7.0	12/12/2005	<10.4	<26.0					22.4	<1.8 J	22.4											
GP29	1.0	12/12/2005	80.4	249	<1.73	5.91	<0.577	<0.577	29.6	<2.4 J	29.6	15.6	18.0	0.876	27.0	<0.577	<0.577	<0.577	36.9			
	6.0	12/12/2005	<12.8	<32.0					31.9	<2.6 J	31.9											
GP30	1.0	12/12/2005	14.9	90.5					27.2	<2.1 J	27.2											
	6.0	12/12/2005	39.6	165					32.7	<2.4 J	32.7											
GP31	1.0	12/12/2005	145	1,300	<1.65	5.72	<0.549	<0.549	19.2	<2.1 J	19.2	40.2	14.2	<0.131	14.4	<0.549	<0.549	<0.549	46.1			
	6.0	12/12/2005	58.9	157					23.6	<3.0 J	23.6											
GP32	1.0	12/14/2005	<11.3	<28.3					6,750	3,500 J	3,250											

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)																
			Bromodichloro-methane	Bromoform	Bromo-methane	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene	Carbon Tetrachloride	Chloro-benzene	Chloro-bromo-methane	Chloro-ethane	Chloro-methane	Chloroform	1,2-Dibromo-3-chloropropane	2-Chlorotoluene	4-Chlorotoluene	Dibromochloro-methane
Former Precision Engineering Property																			
GP1	1.5	6/7/2005	<0.000839	<0.000839	<0.000839	<0.0042	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839
	6.0	6/7/2005	<0.00112	<0.00112	<0.00112	<0.0056	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112
	10.0	6/9/2005	<0.0382	<0.0382	<0.0382	<0.191	<0.0382	<0.0382	<0.0382	<0.00765	<0.0382	<0.0382	<0.0765	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382
GP2	1.0	6/7/2005	<0.00096	<0.00096	<0.00096	<0.0048	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096
	10.0	6/9/2005	<0.044	<0.044	<0.044	<0.220	<0.044	<0.044	<0.044	<0.00881	<0.044	<0.044	<0.0881	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044
GP3	2.0	6/9/2005	<0.0795	<0.0795	<0.0795	<0.397	<0.0795	<0.0795	<0.0795	<0.0159	<0.0795	<0.0795	<0.159	<0.0795	<0.0795	<0.0795	<0.0795	<0.0795	<0.0795
	6.0	6/9/2005	<0.0448	<0.0448	<0.0448	<0.224	<0.0448	<0.0448	<0.0448	<0.00896	<0.0448	<0.0448	<0.0896	<0.0448	<0.0448	<0.0448	<0.0448	<0.0448	<0.0448
	14.0	6/9/2005	<0.0385	<0.0385	<0.0385	<0.193	<0.0385	<0.0385	<0.0385	<0.00771	<0.0385	<0.0385	<0.0771	<0.0385	<0.0385	<0.0385	<0.0385	<0.0385	<0.0385
GP4	1.5	6/16/2005	<0.0517	<0.0517	<0.0517	<0.259	<0.0517	<0.0517	<0.0517	<0.0103	<0.0517	<0.0517	<0.103	<0.0517	<0.0517	<0.0517	<0.0517	<0.0517	<0.0517
GP5	1.5	6/16/2005	<0.0356	<0.0356	<0.0356	<0.178	<0.0356	<0.0356	<0.0356	<0.00712	<0.0356	<0.0356	<0.0712	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356
	8.0	6/16/2005	<0.0351	<0.0351	<0.0351	<0.176	<0.0351	<0.0351	<0.0351	<0.00703	<0.0351	<0.0351	<0.0703	<0.0351	<0.0351	<0.0351	<0.0351	<0.0351	<0.0351
	14.0	6/16/2005	<0.0405	<0.0405	<0.0405	<0.202	<0.0405	<0.0405	<0.0405	<0.0081	<0.0405	<0.0405	<0.081	<0.0405	<0.0405	<0.0405	<0.0405	<0.0405	<0.0405
GP6	1.0	6/16/2005	<0.0425	<0.0425	<0.0425	<0.213	<0.0425	<0.0425	<0.0425	<0.0085	<0.0425	<0.0425	<0.085	<0.0425	<0.0425	<0.0425	<0.0425	<0.0425	<0.0425
	14.5	6/16/2005	<0.0414	<0.0414	<0.0414	<0.207	<0.0414	<0.0414	<0.0414	<0.00828	<0.0414	<0.0414	<0.0828	<0.0414	<0.0414	<0.0414	<0.0414	<0.0414	<0.0414
GP7	2.0	6/16/2005	<0.039	<0.039	<0.039	<0.195	<0.039	<0.039	<0.039	<0.00781	<0.039	<0.039	<0.0781	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039
	8.0	6/16/2005	<0.0442	<0.0442	<0.0442	<0.221	<0.0442	<0.0442	<0.0442	<0.00884	<0.0442	<0.0442	<0.0884	<0.0442	<0.0442	<0.0442	<0.0442	<0.0442	<0.0442
GP8	1.5	6/16/2005	<0.0493	<0.0493	<0.0493	<0.246	<0.0493	<0.0493	<0.0493	<0.00986	<0.0493	<0.0493	<0.0986	<0.0493	<0.0493	<0.0493	<0.0493	<0.0493	<0.0493
GP9	2.0	6/17/2005	<0.0371	<0.0371	<0.0371	<0.185	<0.0371	<0.0371	<0.0371	<0.00742	<0.0371	<0.0371	<0.0742	<0.0371	<0.0371	<0.0371	<0.0371	<0.0371	<0.0371
GP10	1.5	6/17/2005	<0.0558	<0.0558	<0.0558	<0.279	<0.0558	<0.0558	<0.0558	<0.0112	<0.0558	<0.0558	<0.112	<0.0558	<0.0558	<0.0558	<0.0558	<0.0558	<0.0558
	13.5	6/17/2005	<0.0398	<0.0398	<0.0398	<0.199	<0.0398	<0.0398	<0.0398	<0.00796	<0.0398	<0.0398	<0.0796	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398
GP11	2.0	6/17/2005	<0.0419	<0.0419	<0.0419	<0.209	<0.0419	<0.0419	<0.0419	<0.00837	<0.0419	<0.0419	<0.0837	<0.0419	<0.0419	<0.0419	<0.0419	<0.0419	<0.0419
	6.5	6/17/2005	<0.043	<0.043	<0.043	<0.215	<0.043	<0.043	<0.043	<0.00861	<0.043	<0.043	<0.0861	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043
GP12	3.0	12/13/2005				<0.0143													
	5.0	12/13/2005				<0.0136													
GP13	1.0	12/14/2005				0.215													
	6.0	12/14/2005				0.0476													
GP14	3.0	12/13/2005				<0.0147													
	6.0	12/13/2005				<0.0157													
GP15	3.0	12/13/2005				0.123													
	6.0	12/13/2005				<0.0630													
GP16	1.0	12/13/2005				<0.0111													
	5.0	12/13/2005				<0.0127													
GP17	1.0	12/13/2005				0.0295													
	6.0	12/13/2005				0.0223													
GP18	1.0	12/13/2005				<0.0142													
GP19	1.0	12/13/2005				0.0601/ 0.0375													
	7.0	12/13/2005				<0.0163													
GP20	1.0	12/14/2005				0.0217													
	6.0	12/14/2005				0.0663													
GP21	1.0	12/14/2005				<0.0131													
	6.5	12/14/2005				0.0667													
GP22	1.0	12/13/2005				<0.0136													
	10.0	12/13/2005				0.0128													
GP23	7.0	12/14/2005				<0.0108													
	10.5	12/14/2005				<0.0136													
GP24	3.0	12/14/2005				<0.0155/ <0.0150													
	6.5	12/14/2005				<0.017													
GP25	1.0	12/12/2005				<0.0128													
	7.0	12/12/2005				<0.0148													
GP26	1.0	12/12/2005				<0.0121													
	9.5	12/12/2005				<0.0159													
GP27	1.0	12/12/2005				<0.0132													
	13.0	12/12/2005				<0.0123													
GP28	1.0	12/12/2005				<0.0112													
	7.0	12/12/2005				<0.0130													
GP29	1.0	12/12/2005				<0.0148													
	6.0	12/12/2005				<0.0146													
GP30	1.0	12/12/2005				0.0169													
	6.0	12/12/2005				0.0526													
GP31	1.0	12/12/2005				<0.0121													
	6.0	12/12/2005				0.0568													
GP32	1.0	12/14/2005				<0.0142													

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)															
			1,2-Dibromo-ethane	Dibromo-methane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Dichlorodi-fluoromethane	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloro-propane	1,3-Dichloro-propane	2,2-Dichloro-propane	1,1-Dichloro-propene	cis-1,3-Dichloro-propene
Former Precision Engineering Property																		
GP1	1.5	6/7/2005	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839
	6.0	6/7/2005	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112
	10.0	6/9/2005	<0.0014	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382	<0.00765	<0.00765	<0.0382	<0.0382	<0.00765	<0.00765	<0.0382	<0.0382	<0.0382
GP2	1.0	6/7/2005	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096
	10.0	6/9/2005	<0.00161	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.00881	<0.00881	<0.044	<0.044	<0.00881	<0.00881	<0.044	<0.044	<0.044
GP3	2.0	6/9/2005	<0.00291	<0.0795	<0.0795	<0.0795	<0.0795	<0.0795	<0.0795	<0.0159	<0.0159	<0.0795	<0.0795	<0.0159	<0.0159	<0.0795	<0.0795	<0.0795
	6.0	6/9/2005	<0.00164	<0.0448	<0.0448	<0.0448	<0.0448	<0.0448	<0.0448	<0.00896	<0.00896	<0.0448	<0.0448	<0.00896	<0.00896	<0.0448	<0.0448	<0.0448
	14.0	6/9/2005	<0.00141	<0.0385	<0.0385	<0.0385	<0.0385	<0.0385	<0.0385	<0.00771	<0.00771	<0.0385	<0.0385	<0.00771	<0.00771	<0.0385	<0.0385	<0.0385
GP4	1.5	6/16/2005	<0.00189	<0.0517	<0.0517	<0.0517	<0.0517	<0.0517	<0.0517	<0.0103	<0.0103	<0.0517	<0.0517	<0.0103	<0.0103	<0.0517	<0.0517	<0.0517
GP5	1.5	6/16/2005	<0.0013	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.00712	<0.00712	<0.0356	<0.0356	<0.00712	<0.00712	<0.0356	<0.0356	<0.0356
	8.0	6/16/2005	<0.00129	<0.0351	<0.0351	<0.0351	<0.0351	<0.0351	<0.0351	<0.00703	<0.00703	<0.0351	<0.0351	<0.00703	<0.00703	<0.0351	<0.0351	<0.0351
	14.0	6/16/2005	<0.00148	<0.0405	<0.0405	<0.0405	<0.0405	<0.0405	<0.0405	<0.0081	<0.0081	<0.0405	<0.0405	<0.0081	<0.0081	<0.0405	<0.0405	<0.0405
GP6	1.0	6/16/2005	<0.00156	<0.0425	<0.0425	<0.0425	<0.0425	<0.0425	<0.0425	<0.0085	<0.0085	<0.0425	<0.0425	<0.0085	<0.0085	<0.0425	<0.0425	<0.0425
	14.5	6/16/2005	<0.00151	<0.0414	<0.0414	<0.0414	<0.0414	<0.0414	<0.0414	<0.00828	<0.00828	0.149	<0.0414	<0.00828	<0.00828	<0.0414	<0.0414	<0.0414
GP7	2.0	6/16/2005	<0.00143	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.00781	<0.00781	<0.039	<0.039	<0.00781	<0.00781	<0.039	<0.039	<0.039
	8.0	6/16/2005	<0.00162	<0.0442	<0.0442	<0.0442	<0.0442	<0.0442	<0.0442	<0.00884	<0.00884	<0.0442	<0.0442	<0.00884	<0.00884	<0.0442	<0.0442	<0.0442
GP8	1.5	6/16/2005	<0.0018	<0.0493	<0.0493	<0.0493	<0.0493	<0.0493	<0.0493	<0.00986	<0.00986	<0.0493	<0.0493	<0.00986	<0.00986	<0.0493	<0.0493	<0.0493
GP9	2.0	6/17/2005	<0.00136	<0.0371	<0.0371	<0.0371	<0.0371	<0.0371	<0.0371	<0.00742	<0.00742	<0.0371	<0.0371	<0.00742	<0.00742	<0.0371	<0.0371	<0.0371
GP10	1.5	6/17/2005	<0.00204	<0.0558	<0.0558	<0.0558	<0.0558	<0.0558	<0.0558	<0.0112	0.0237	<0.0558	<0.0558	<0.0112	<0.0112	<0.0558	<0.0558	<0.0558
	13.5	6/17/2005	<0.00146	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398	<0.00796	<0.00796	<0.0398	<0.0398	<0.00796	<0.00796	<0.0398	<0.0398	<0.0398
GP11	2.0	6/17/2005	<0.00153	<0.0419	<0.0419	<0.0419	<0.0419	<0.0419	<0.0419	<0.00837	<0.00837	<0.0419	<0.0419	<0.00837	<0.00837	<0.0419	<0.0419	<0.0419
	6.5	6/17/2005	<0.00158	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.00861	<0.00861	0.0788	<0.043	<0.00861	<0.00861	<0.043	<0.043	<0.043
GP12	3.0	12/13/2005										<0.00286	<0.00239					
	5.0	12/13/2005										<0.00273	<0.00227					
GP13	1.0	12/14/2005										<0.0119	<0.00989					
	6.0	12/14/2005										<0.00349	<0.00289					
GP14	3.0	12/13/2005										<0.00293	<0.00244					
	6.0	12/13/2005										<0.00315	<0.00262					
GP15	3.0	12/13/2005										<0.00326	<0.00272					
	6.0	12/13/2005										<0.0126	<0.0105					
GP16	1.0	12/13/2005										<0.00222	<0.00185					
	5.0	12/13/2005										<0.00255	<0.00212					
GP17	1.0	12/13/2005										<0.00251	<0.00209					
	6.0	12/13/2005										<0.00272	<0.00227					
GP18	1.0	12/13/2005										<0.00283	<0.00236					
GP19	1.0	12/13/2005										<0.00320/ <0.00288	<0.00267/ <0.00240					
	7.0	12/13/2005										<0.00326	<0.00272					
GP20	1.0	12/14/2005										<0.00315	<0.00262					
	6.0	12/14/2005										<0.00542	<0.00452					
GP21	1.0	12/14/2005										<0.00261	<0.00218					
	6.5	12/14/2005										<0.00335	<0.00279					
GP22	1.0	12/13/2005										<0.00272	<0.00226					
	10.0	12/13/2005										<0.00227	<0.00189					
GP23	7.0	12/14/2005										<0.00216	<0.00180					
	10.5	12/14/2005										<0.00272	<0.00227					
GP24	3.0	12/14/2005										<0.00309/ <0.00300	<0.00258/ <0.00250					
	6.5	12/14/2005										<0.00340	<0.00283					
GP25	1.0	12/12/2005										<0.00256	<0.00213					
	7.0	12/12/2005										<0.00297	<0.00247					
GP26	1.0	12/12/2005										<0.00241	<0.00201					
	9.5	12/12/2005										<0.00318	<0.00265					
GP27	1.0	12/12/2005										<0.00263	<0.00219					
	13.0	12/12/2005										<0.00245	<0.00205					
GP28	1.0	12/12/2005										<0.00224	<0.00187					
	7.0	12/12/2005										<0.00261	<0.00217					
GP29	1.0	12/12/2005										0.00494	<0.00247					
	6.0	12/12/2005										0.00996	<0.00243					
GP30	1.0	12/12/2005										<0.00287	<0.00239					
	6.0	12/12/2005										<0.00399	<0.00332					
GP31	1.0	12/12/2005										<0.00242	<0.00202					
	6.0	12/12/2005										<0.00409	<0.00341					
GP32	1.0	12/14/2005										<0.00284	<0.00237					

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)																	
			trans-1,3-Dichloro-propene	Ethyl-benzene	Hexachloro-butadiene	Isopropyl-benzene	4-Isopropyl-toluene	Methylene Chloride	Naph-thalene	4-Methyl-2-pentanone	n-Propyl-benzene	Styrene	1,1,1,2-Tetrachloro-ethane	1,1,2,2-Tetrachloro-ethane	Tetrachloro-ethene	Toluene	1,2,3-Trichloro-benzene	1,2,4-Trichloro-benzene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane
Former Precision Engineering Property																				
GP1	1.5	6/7/2005	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.0042	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839
	6.0	6/7/2005	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.0056	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	0.00162	<0.00112	<0.00112	<0.00112	<0.00112
	10.0	6/9/2005	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382	<0.00765	<0.0382	<0.191	<0.0382	<0.0382	<0.0382	<0.00765	<0.00765	<0.0382	<0.0382	<0.0382	<0.00765	<0.0382
GP2	1.0	6/7/2005	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.0048	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096
	10.0	6/9/2005	<0.044	<0.044	<0.044	<0.044	<0.044	<0.00881	<0.044	<0.220	<0.044	<0.044	<0.044	<0.00881	<0.00881	<0.044	<0.044	<0.044	<0.00881	<0.044
GP3	2.0	6/9/2005	<0.0795	<0.0795	<0.0795	<0.0795	<0.0795	<0.0159	<0.0795	<0.397	<0.0795	<0.0795	<0.0795	<0.0159	<0.0159	<0.0795	<0.0795	<0.0795	<0.0159	<0.0795
	6.0	6/9/2005	<0.0448	<0.0448	<0.0448	<0.0448	<0.0448	<0.00896	<0.0448	<0.224	<0.0448	<0.0448	<0.0448	<0.00896	<0.00896	<0.0448	<0.0448	<0.0448	<0.00896	<0.0448
	14.0	6/9/2005	<0.0385	<0.0385	<0.0385	<0.0385	<0.0385	<0.00771	<0.0385	<0.193	<0.0385	<0.0385	<0.0385	<0.00771	<0.00771	<0.0385	<0.0385	<0.0385	<0.00771	<0.0385
GP4	1.5	6/16/2005	<0.0517	<0.0517	<0.0517	<0.0517	<0.0517	<0.0103	<0.0517	<0.259	<0.0517	<0.0517	<0.0517	<0.0103	<0.0103	<0.0517	<0.0517	<0.0517	<0.0103	<0.0517
GP5	1.5	6/16/2005	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.00712	<0.0356	<0.178	<0.0356	<0.0356	<0.0356	<0.00712	<0.00712	<0.0356	<0.0356	<0.0356	<0.00712	<0.0356
	8.0	6/16/2005	<0.0351	<0.0351	<0.0351	<0.0351	<0.0351	<0.00703	<0.0351	<0.176	<0.0351	<0.0351	<0.0351	<0.00703	<0.00703	<0.0351	<0.0351	<0.0351	<0.00703	<0.0351
	14.0	6/16/2005	<0.0405	<0.0405	<0.0405	<0.0405	<0.0405	<0.0081	<0.0405	<0.202	<0.0405	<0.0405	<0.0405	<0.0081	<0.0081	<0.0405	<0.0405	<0.0405	<0.0081	<0.0405
GP6	1.0	6/16/2005	<0.0425	<0.0425	<0.0425	<0.0425	<0.0425	<0.0085	<0.0425	<0.213	<0.0425	<0.0425	<0.0425	<0.0085	<0.0085	<0.0425	<0.0425	<0.0425	<0.0085	<0.0425
	14.5	6/16/2005	<0.0414	<0.0414	<0.0414	<0.0414	<0.0414	<0.00828	<0.0414	<0.207	<0.0414	<0.0414	<0.0414	<0.00828	<0.00828	<0.0414	<0.0414	<0.0414	<0.00828	<0.0414
GP7	2.0	6/16/2005	<0.039	<0.039	<0.039	<0.039	<0.039	<0.00781	<0.039	<0.195	<0.039	<0.039	<0.039	<0.00781	<0.00781	<0.039	<0.039	<0.039	<0.00781	<0.039
	8.0	6/16/2005	<0.0442	<0.0442	<0.0442	<0.0442	<0.0442	<0.00884	<0.0442	<0.221	<0.0442	<0.0442	<0.0442	<0.00884	<0.00884	<0.0442	<0.0442	<0.0442	<0.00884	<0.0442
GP8	1.5	6/16/2005	<0.0493	<0.0493	<0.0493	<0.0493	<0.0493	<0.00986	<0.0493	<0.246	<0.0493	<0.0493	<0.0493	<0.00986	<0.00986	<0.0493	<0.0493	<0.0493	<0.00986	<0.0493
GP9	2.0	6/17/2005	<0.0371	<0.0371	<0.0371	<0.0371	<0.0371	<0.00742	<0.0371	<0.185	<0.0371	<0.0371	<0.0371	<0.00742	<0.00742	<0.0371	<0.0371	<0.0371	<0.00742	<0.0371
GP10	1.5	6/17/2005	<0.0558	<0.0558	<0.0558	<0.0558	<0.0558	0.0179	<0.0558	<0.279	<0.0558	<0.0558	<0.0558	<0.0112	<0.0112	<0.0558	<0.0558	<0.0558	<0.0112	<0.0558
	13.5	6/17/2005	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398	<0.00796	<0.0398	<0.199	<0.0398	<0.0398	<0.0398	<0.00796	<0.00796	<0.0398	<0.0398	<0.0398	<0.00796	<0.0398
GP11	2.0	6/17/2005	<0.0419	<0.0419	<0.0419	<0.0419	<0.0419	<0.00837	<0.0419	<0.209	<0.0419	<0.0419	<0.0419	<0.00837	<0.00837	<0.0419	<0.0419	<0.0419	<0.00837	<0.0419
	6.5	6/17/2005	<0.043	<0.043	<0.043	<0.043	<0.043	<0.00861	<0.043	<0.215	<0.043	<0.043	<0.043	<0.00861	<0.00861	<0.043	<0.043	<0.043	<0.00861	<0.043
GP12	3.0	12/13/2005																		
	5.0	12/13/2005																		
GP13	1.0	12/14/2005																		
	6.0	12/14/2005																		
GP14	3.0	12/13/2005																		
	6.0	12/13/2005																		
GP15	3.0	12/13/2005																		
	6.0	12/13/2005																		
GP16	1.0	12/13/2005																		
	5.0	12/13/2005																		
GP17	1.0	12/13/2005																		
	6.0	12/13/2005																		
GP18	1.0	12/13/2005																		
GP19	1.0	12/13/2005																		
	7.0	12/13/2005																		
GP20	1.0	12/14/2005																		
	6.0	12/14/2005																		
GP21	1.0	12/14/2005																		
	6.5	12/14/2005																		
GP22	1.0	12/13/2005																		
	10.0	12/13/2005																		
GP23	7.0	12/14/2005																		
	10.5	12/14/2005																		
GP24	3.0	12/14/2005																		
	6.5	12/14/2005																		
GP25	1.0	12/12/2005																		
	7.0	12/12/2005																		
GP26	1.0	12/12/2005																		
	9.5	12/12/2005																		
GP27	1.0	12/12/2005																		
	13.0	12/12/2005																		
GP28	1.0	12/12/2005																		
	7.0	12/12/2005																		
GP29	1.0	12/12/2005																		
	6.0	12/12/2005																		
GP30	1.0	12/12/2005																		
	6.0	12/12/2005																		
GP31	1.0	12/12/2005																		
	6.0	12/12/2005																		
GP32	1.0	12/14/2005																		

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)								PAHs (mg/kg)							
			Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloro-propane	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Vinyl chloride	m,p-Xylene	o-Xylene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene
Former Precision Engineering Property																		
GP1	1.5	6/7/2005	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.000839	<0.00168	<0.000839								
	6.0	6/7/2005	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00112	<0.00224	<0.00112								
	10.0	6/9/2005	<0.00765	<0.0382	<0.00765	<0.0382	<0.00765	<0.00765	<0.0765	<0.0382								
GP2	1.0	6/7/2005	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<00192	<0.00096								
	10.0	6/9/2005	<0.00881	<0.044	<0.00881	<0.044	<0.00881	<0.00881	<0.0881	<0.044								
GP3	2.0	6/9/2005	<0.0159	<0.0795	<0.0159	<0.0795	<0.0159	<0.0159	<0.159	<0.0795								
	6.0	6/9/2005	<0.00896	<0.0448	<0.00896	<0.0448	<0.00896	<0.00896	<0.0896	<0.0448								
	14.0	6/9/2005	<0.00771	<0.0385	<0.00771	<0.0385	<0.00771	<0.00771	<0.0771	<0.0385								
GP4	1.5	6/16/2005	<0.0103	<0.0517	<0.0103	<0.0517	<0.0103	<0.0103	<0.103	<0.0517								
GP5	1.5	6/16/2005	<0.00712	<0.0356	<0.00712	<0.0356	<0.00712	<0.00712	<0.0712	<0.0356								
	8.0	6/16/2005	<0.00703	<0.0351	<0.00703	<0.0351	<0.00703	<0.00703	<0.0703	<0.0351								
	14.0	6/16/2005	<0.0081	<0.0405	<0.0081	<0.0405	<0.0081	<0.0081	<0.081	<0.0405								
GP6	1.0	6/16/2005	0.0405	<0.0425	<0.0085	<0.0425	<0.0085	<0.0085	<0.085	<0.0425								
	14.5	6/16/2005	1.160	<0.0414	<0.00828	<0.0414	<0.00828	<0.00828	<0.0828	<0.0414								
GP7	2.0	6/16/2005	<0.00781	<0.039	<0.00781	<0.039	<0.00781	<0.00781	<0.0781	<0.039								
	8.0	6/16/2005	<0.00884	<0.0442	<0.00884	<0.0442	<0.00884	<0.00884	<0.0884	<0.0442								
GP8	1.5	6/16/2005	<0.00986	<0.0493	<0.00986	<0.0493	<0.00986	<0.00986	<0.0986	<0.0493								
GP9	2.0	6/17/2005	<0.00742	<0.0371	<0.00742	<0.0371	<0.00742	<0.00742	<0.0742	<0.0371								
GP10	1.5	6/17/2005	<0.0112	<0.0558	<0.0112	<0.0558	<0.0112	<0.0112	<0.112	<0.0558								
	13.5	6/17/2005	<0.00796	<0.0398	<0.00796	<0.0398	<0.00796	<0.00796	<0.0796	<0.0398								
GP11	2.0	6/17/2005	0.0872	<0.0419	<0.00837	<0.0419	<0.00837	<0.00837	<0.0837	<0.0419								
	6.5	6/17/2005	0.281	<0.043	<0.00861	<0.043	<0.00861	<0.00861	<0.0861	<0.043								
GP12	3.0	12/13/2005	<0.00239					<0.00239										
	5.0	12/13/2005	<0.00227					<0.00227										
GP13	1.0	12/14/2005	<0.00989					<0.00989										
	6.0	12/14/2005	<0.00289					<0.00289										
GP14	3.0	12/13/2005	0.00449					<0.00244										
	6.0	12/13/2005	<0.00262					<0.00262										
GP15	3.0	12/13/2005	<0.00272					<0.00272										
	6.0	12/13/2005	<0.0105					<0.0105										
GP16	1.0	12/13/2005	0.00363					<0.00185										
	5.0	12/13/2005	<0.00212					<0.00212										
GP17	1.0	12/13/2005	<0.00209					<0.00209										
	6.0	12/13/2005	<0.00227					<0.00227										
GP18	1.0	12/13/2005	0.00343					<0.00236			<0.0111	<0.0111	<0.0111	0.0235	<0.0111	0.0746	<0.0111	0.0560
GP19	1.0	12/13/2005	<0.00267/ <0.00240					<0.00267/ <0.00240			<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124
	7.0	12/13/2005	<0.00272					<0.00272										
GP20	1.0	12/14/2005	<0.00262					<0.00262			<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120
	6.0	12/14/2005	<0.00452					<0.00452			<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139
GP21	1.0	12/14/2005	<0.00218					<0.00218										
	6.5	12/14/2005	<0.00279					<0.00279			<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129
GP22	1.0	12/13/2005	<0.00226					<0.00226										
	10.0	12/13/2005	<0.00189					<0.00189										
GP23	7.0	12/14/2005	<0.00180					<0.00180										
	10.5	12/14/2005	<0.00227					<0.00227										
GP24	3.0	12/14/2005	<0.00258/ <0.00250					<0.00258/ <0.00250										
	6.5	12/14/2005	<0.00283					<0.00283										
GP25	1.0	12/12/2005	<0.00213					<0.00213										
	7.0	12/12/2005	<0.00247					<0.00247										
GP26	1.0	12/12/2005	<0.00201					<0.00201										
	9.5	12/12/2005	<0.00265					<0.00265										
GP27	1.0	12/12/2005	<0.00219					<0.00219										
	13.0	12/12/2005	<0.00205					<0.00205										
GP28	1.0	12/12/2005	<0.00187					<0.00187										
	7.0	12/12/2005	<0.00217					<0.00217										
GP29	1.0	12/12/2005	<0.00247					<0.00247			<0.0119	<0.0119	0.0137	0.0750	0.0571	0.0611	0.0249	0.0703
	6.0	12/12/2005	<0.00243					<0.00243										
GP30	1.0	12/12/2005	<0.00239					<0.00239										
	6.0	12/12/2005	<0.00332					<0.00332			<0.0146	<0.0146	<0.0146	0.0154	<0.0146	<0.0146	<0.0146	<0.0146
GP31	1.0	12/12/2005	<0.00202					<0.00202			<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117
	6.0	12/12/2005	<0.00341					<0.00341			<0.0134	<0.0134	<0.0134	0.0211	0.0176	0.0261	<0.0134	0.0178
GP32	1.0	12/14/2005	<0.00237					<0.00237										

Table A6: Historical Soil Analytical Results - 2005 MFA Investigation

Sample Location	Sample Depth (ft bgs)	Date	PAHs (mg/kg)										DATA SOURCE
			Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phen-anthrene	Pyrene	
Former Precision Engineering Property													
GP1	1.5	6/7/2005											MFA 2008
	6.0	6/7/2005											MFA 2008
	10.0	6/9/2005											MFA 2008
GP2	1.0	6/7/2005											MFA 2008
	10.0	6/9/2005											MFA 2008
GP3	2.0	6/9/2005											MFA 2008
	6.0	6/9/2005											MFA 2008
	14.0	6/9/2005											MFA 2008
GP4	1.5	6/16/2005											MFA 2008
GP5	1.5	6/16/2005											MFA 2008
	8.0	6/16/2005											MFA 2008
	14.0	6/16/2005											MFA 2008
GP6	1.0	6/16/2005											MFA 2008
	14.5	6/16/2005											MFA 2008
GP7	2.0	6/16/2005											MFA 2008
	8.0	6/16/2005											MFA 2008
GP8	1.5	6/16/2005											MFA 2008
GP9	2.0	6/17/2005											MFA 2008
GP10	1.5	6/17/2005											MFA 2008
	13.5	6/17/2005											MFA 2008
GP11	2.0	6/17/2005											MFA 2008
	6.5	6/17/2005											MFA 2008
GP12	3.0	12/13/2005											MFA 2008
	5.0	12/13/2005											MFA 2008
GP13	1.0	12/14/2005											MFA 2008
	6.0	12/14/2005											MFA 2008
GP14	3.0	12/13/2005											MFA 2008
	6.0	12/13/2005											MFA 2008
GP15	3.0	12/13/2005											MFA 2008
	6.0	12/13/2005											MFA 2008
GP16	1.0	12/13/2005											MFA 2008
	5.0	12/13/2005											MFA 2008
GP17	1.0	12/13/2005											MFA 2008
	6.0	12/13/2005											MFA 2008
GP18	1.0	12/13/2005	0.0717	<0.0111	0.195	<0.0111	<0.0111	0.0167	0.0202	0.0179	0.109	0.0884	MFA 2008
GP19	1.0	12/13/2005	0.0127	<0.0124	0.0245	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	0.0161	0.0203	MFA 2008
	7.0	12/13/2005											MFA 2008
GP20	1.0	12/14/2005	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	<0.0120	MFA 2008
	6.0	12/14/2005	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	<0.0139	MFA 2008
GP21	1.0	12/14/2005											MFA 2008
	6.5	12/14/2005	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	MFA 2008
GP22	1.0	12/13/2005											MFA 2008
	10.0	12/13/2005											MFA 2008
GP23	7.0	12/14/2005											MFA 2008
	10.5	12/14/2005											MFA 2008
GP24	3.0	12/14/2005											MFA 2008
	6.5	12/14/2005											MFA 2008
GP25	1.0	12/12/2005											MFA 2008
	7.0	12/12/2005											MFA 2008
GP26	1.0	12/12/2005											MFA 2008
	9.5	12/12/2005											MFA 2008
GP27	1.0	12/12/2005											MFA 2008
	13.0	12/12/2005											MFA 2008
GP28	1.0	12/12/2005											MFA 2008
	7.0	12/12/2005											MFA 2008
GP29	1.0	12/12/2005	0.122	0.0162	0.149	<0.0119	0.0260	<0.0119	<0.0119	<0.0119	0.0382	0.156	MFA 2008
	6.0	12/12/2005											MFA 2008
GP30	1.0	12/12/2005											MFA 2008
	6.0	12/12/2005	0.0334	<0.0146	0.0467	<0.0146	<0.0146	<0.0146	<0.0146	<0.0146	0.0258	0.0531	MFA 2008
GP31	1.0	12/12/2005	0.0340	<0.0117	0.0253	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	0.0153	0.0254	MFA 2008
	6.0	12/12/2005	0.0449	<0.0134	0.0517	<0.0134	<0.0134	<0.0134	<0.0134	<0.0134	0.0287	0.0500	MFA 2008
GP32	1.0	12/14/2005											MFA 2008

Notes:
J qualifier indicates an estimated concentration.
"<" indicates analyte was not detected above the specified laboratory reporting limit.
Indicates analysis not performed/reported
VOCs = volatile organic compounds
PAHs = polycyclic aromatic hydrocarbons
mg/kg = micrograms per kilogram
ft bgs = feet below ground surface

Table A7: Historical Drainage Ditch Soil Analytical Results - 2005 to 2008

Sample Location	Sample Depth (ft bgs)	Date	Hydrocarbons (mg/kg)			Metals (mg/kg)														VOCs (mg/kg)									
			Diesel	Oil	Gasoline	Antimony	Arsenic	Beryllium	Cadmium	Total Chromium	Hexavalent Chromium	Trivalent Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	Acetone	Benzene	Bromobenzene	Bromodichloro-methane	Bromoform	Bromomethane	2-Butanone	sec-Butylbenzene	n-Butylbenzene	tert-Butylbenzene
B-1	1.5	10/24/2007					16.2							11.2																
B-2	1.5	10/24/2007					13.9							36.7																
B-3	1.5	10/24/2007					10.7							29.7																
B-4	1.5	10/24/2007					3.79							3.6																
B-5	1.5	10/24/2007	<13.0	<32.5	<5.30		3.07							5.19								<0.0318								
B-6	1.5	10/24/2007					2.76							3.5																
B-7	1.5	10/24/2007					7.21							22.2																
B-8	1.5	10/24/2007					10							40.4																
B-9	1.5	10/24/2007					8							19.5																
B-10	1.5	10/24/2007					16.1							37.2																
B-11	1.5	10/24/2007					8.26							16																
B-12	1.5	10/24/2007					11.3							108																
B-13	1.5	10/24/2007					26.3							55.5																
C-1	2.0	3/27/2008					9.91							470																
C-2	1.5	3/27/2008					21.6							1,020																
C-3	1.5	3/27/2008					13.2							213																
HA1	0.5	12/15/2005	210	1,170	11.4	<1.73	3.81	<0.576	<0.576	34.3	<2.9 J	34.3	32.8	34.6	<0.132	21.3	<0.576	<0.576	<0.576	140	<0.0344	<0.00172	<0.00573	<0.00573	<0.00573	<0.0115	<0.0172	<0.00573	<0.00573	<0.00573
	1.5	12/15/2005	37.6/ 67.0	182/ 328	<6.57/ <7.00	<1.65/ <2.12	2.88 J/ 8.35 J	<0.550/ <0.707	<0.550/ <0.707	110/ 84.5	6.5 J/ <2.8 J	103.5/ 84.5	16.2 J/ 68.4 J	15.3 J/ 95.3 J	0.328/ <0.364	24.7 J/ 108 J	<0.550/ <0.707	<0.550/ <0.707	<0.550/ <0.707	70.8 J/ 293 J	<0.0415/ <0.158	<0.00792	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.0138/ <0.0528	<0.0207/ <0.0792	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264
HA2	0.5	12/15/2005	636	3,170	<8.20	<2.17	3.94	<0.723	0.984	206	89 J	117	70.9	81.4	<0.142	36.0	<0.723	<0.723	<0.723	341	<0.0438	<0.00219	<0.00730	<0.00730	<0.00730	<0.0146	<0.0219	<0.00730	<0.00730	<0.00730
	1.5	12/15/2005	73.8	409	<4.79	<1.84	2.71	<0.613	<0.613	215	3.2 J	211.8	28.2	36.5	0.232	31.0	<0.613	<0.613	<0.613	134	<0.0277	<0.00138	<0.00461	<0.00461	<0.00461	<0.00922	<0.0138	<0.00461	<0.00461	<0.00461
HA3	0.5	12/15/2005	278	2,470	<7.58	<1.94	53.9	<0.648	2.53	1,590	<2.6 J	1,590	528	545	2.65	98.4	<0.648	<0.648	<0.648	433	<0.938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.938	<0.0938	<0.0938	<0.0938
	1.5	12/15/2005	<11.7	30.1	<5.65	<1.76	6.96	<0.585	<0.585	55.2	<2.4 J	55.2	16.4	8.41	<0.109	30.8	<0.585	<0.585	<0.585	46.2	<0.0301	<0.00151	<0.00502	<0.00502	<0.00502	<0.0100	<0.0151	<0.00502	<0.00502	<0.00502
HA4	0.5	12/15/2005	35,900	106,000	<22.1	6.68	44.3	<1.63	28.7	8,480	<7.2 J	8,480	978	1,710	2.28	99.7	<1.63	<1.63	<1.63	2,620	<0.444	<0.0222	<0.0739	<0.0739	<0.0739	<0.148	<0.222	<0.0739	<0.0739	<0.0739
	1.5	12/15/2005	1,350	3,550	<10.2	<2.46	5.25	<0.819	<0.819	280	<3.0 J	280	48.8	50.8	<0.580	21.9	<0.819	<0.819	<0.819	86.3	<0.0367	<0.00184	<0.00612	<0.00612	<0.00612	<0.0122	<0.0184	<0.00612	<0.00612	<0.00612
HA5	0.5	12/15/2005	1,130	7,330	<21.3	<3.56	35.9	<1.19	3.13	155	<5.8 J	155	129	1,440	0.918	41.6	<1.19	<1.19	<1.19	358	<1.690	<0.169	<0.169	<0.169	<0.169	<0.169	<1.690	<0.169	<0.169	<0.169
	1.5	12/15/2005	61.8	347	<8.11	<2.11	12.5	<0.703	1.09	32.7	<2.9 J	32.7	39.6	209	<0.488	22.2	<0.703	<0.703	<0.703	110	0.0803	<0.00225	<0.00749	<0.00749	<0.00749	<0.0150	0.0272	<0.00749	<0.00749	<0.00749
HA6	0.5	4/18/2006									3.33 J																			
HA7	0.5	4/18/2006									0.22 J																			
HA8	0.5	4/18/2006									0.26 J																			
HA9	0.5	4/19/2006									3.4 J																			
HA10	0.5	4/19/2006									0.074 J																			
HA11	0.5	4/19/2006									0.45 J																			
HA12	0.5	4/19/2006					9.00		0.48 J				39	220																
HA17	0.5	1/9/2007					6.61							278																
	1.5	1/9/2007					5.3							23.5																
HA18	0.5	1/9/2007					5.03							61.5																
	1.5	1/9/2007					<2.12							<2.12																
HA19	0.5	1/9/2007					12.7							134																
	1.5	1/9/2007					4.02							11.3																
HA20	0.5	1/9/2007					<2.02							27.9																
	1.5	1/9/2007					<1.81							8.91																
HA21	0.5	1/10/2007					5.72							398																
	1.5	1/10/2007					5.83							121																
HA22	0.5	1/10/2007					53.5							986																
	1.5	1/10/2007					10.3							32.4																
HA23	0.5	1/10/2007					4.44							26.9																
	1.5	1/10/2007					4.91							20.5																
HA24	0.5	1/10/2007					4.9							63.9																
	1.5	1/10/2007					5.23							24.3																
HA25	0.5	1/10/2007					11.6							302																
	1.5	1/10/2007					11.8							15.5																
P1	0.5	10/24/2007					22							653																
P2	0.5	10/24/2007					15.7							200																
P3	0.5	10/24/2007					13.3							202																
P4	0.5	10/24/2007					11.6							103																
P5	0.5	10/24/2007					9.54							64.6																
P6	0.5	10/24/2007					9.05							108																
P7	0.5	10/24/2007					19.9							196																
P8	0.5	10/24/2007					13.8							76.8																
P9	0.5	10/25/2007					111							2,410																
P10	0.5	10/25/2007					15.6							365																
S-1	0.5	3/22/1989					44.0		<1	1,510			179	1,310	2.08	72.1	<5	<0.4		529										
SS1	0.5	11/19/2007					2.64							120																
SS2	0.5	11/19/2007					4.82							75.2																
SS3	0.5	11/19/2007					37							668																
	1.5	11/19/2007					6.79							230																
SS4	0.5	11/19/2007					3.58							18.5																
SS5	0.5	11/19/2007					4.43							44																
SS6	0.5	11/19/2007					16.8							838																
	1.5	11/19/2007					23.7							526																

Table A7: Historical Drainage Ditch Soil Analytical Results - 2005 to 2008

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)																					
			Carbon Tetrachloride	Chlorobenzene	Chlorobromo-methane	Chloroethane	Chloromethane	Chloroform	1,2-Dibromo-3-chloropropane	2-Chlorotoluene	4-Chlorotoluene	Dibromochloro-methane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoro-methane	1,1-Dichloroethane	1,2-Dichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane
B-1	1.5	10/24/2007																						
B-2	1.5	10/24/2007																						
B-3	1.5	10/24/2007																						
B-4	1.5	10/24/2007																						
B-5	1.5	10/24/2007																						
B-6	1.5	10/24/2007																						
B-7	1.5	10/24/2007																						
B-8	1.5	10/24/2007																						
B-9	1.5	10/24/2007																						
B-10	1.5	10/24/2007																						
B-11	1.5	10/24/2007																						
B-12	1.5	10/24/2007																						
B-13	1.5	10/24/2007																						
C-1	2.0	3/27/2008																						
C-2	1.5	3/27/2008																						
C-3	1.5	3/27/2008																						
HA1	0.5	12/15/2005	<0.00573	<0.00229	<0.00573	<0.00573	<0.0115	<0.00287	<0.0115	<0.00573	<0.00573	<0.00573	<0.00573	<0.00573	<0.00573	<0.00573	<0.00573	<0.00573	<0.00229	<0.00143	<0.00344	<0.00344	<0.00287	<0.00573
	1.5	12/15/2005	<0.00691/ <0.0264	<0.00277/ <0.0106	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.0138/ <0.0528	<0.00346/ <0.0132	<0.0138/ <0.0528	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00277/ <0.0106	<0.00173/ <0.00660	<0.00415/ <0.0158	<0.00415/ <0.0158	<0.00346/ <0.0132	<0.00691/ <0.0264
HA2	0.5	12/15/2005	<0.00730	<0.00292	<0.00730	<0.00730	<0.0146	<0.00365	<0.0146	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00730	<0.00292	<0.00183	<0.00438	<0.00438	<0.00365	<0.00730
	1.5	12/15/2005	<0.00461	<0.00184	<0.00461	<0.00461	<0.00922	<0.00230	<0.00922	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00461	<0.00184	<0.00115	<0.00277	<0.00277	<0.00230	<0.00461
HA3	0.5	12/15/2005	<0.0938	<0.0938	<0.0938	<0.0938	<0.469	<0.0938	<0.469	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938
	1.5	12/15/2005	<0.00502	<0.00201	<0.00502	<0.00502	<0.0100	<0.00251	<0.0100	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00502	<0.00201	<0.00126	<0.00301	<0.00301	<0.00251	<0.00502
HA4	0.5	12/15/2005	<0.0739	<0.0296	<0.0739	<0.0739	<0.148	<0.0370	<0.148	<0.0739	<0.0739	<0.0739	<0.0739	<0.0739	<0.0739	<0.0739	<0.0739	<0.0739	<0.0296	<0.0185	<0.0444	<0.0444	<0.0370	<0.0739
	1.5	12/15/2005	<0.00612	<0.00245	<0.00612	<0.00612	<0.0122	<0.00306	<0.0122	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00612	<0.00245	<0.00153	<0.00367	<0.00367	<0.00306	<0.00612
HA5	0.5	12/15/2005	<0.169	<0.169	<0.169	<0.169	<0.844	<0.169	<0.844	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169
	1.5	12/15/2005	<0.00749	<0.00299	<0.00749	<0.00749	<0.0150	<0.00374	<0.0150	<0.00749	<0.00749	<0.00749	<0.00749	<0.00749	<0.00749	<0.00749	<0.00749	<0.00749	<0.00299	<0.00187	<0.00449	<0.00449	<0.00374	<0.00749
HA6	0.5	4/18/2006																						
HA7	0.5	4/18/2006																						
HA8	0.5	4/18/2006																						
HA9	0.5	4/19/2006																						
HA10	0.5	4/19/2006																						
HA11	0.5	4/19/2006																						
HA12	0.5	4/19/2006																						
HA17	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA18	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA19	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA20	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA21	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA22	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA23	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA24	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA25	0.5	1/10/2007																						
	1.5	1/10/2007																						
P1	0.5	10/24/2007																						
P2	0.5	10/24/2007																						
P3	0.5	10/24/2007																						
P4	0.5	10/24/2007																						
P5	0.5	10/24/2007																						
P6	0.5	10/24/2007																						
P7	0.5	10/24/2007																						
P8	0.5	10/24/2007																						
P9	0.5	10/25/2007																						
P10	0.5	10/25/2007																						
S-1	0.5	3/22/1989																						
SS1	0.5	11/19/2007																						
SS2	0.5	11/19/2007																						
SS3	0.5	11/19/2007																						
	1.5	11/19/2007																						
SS4	0.5	11/19/2007																						
SS5	0.5	11/19/2007																						
SS6	0.5	11/19/2007																						
	1.5	11/19/2007																						

Table A7: Historical Drainage Ditch Soil Analytical Results - 2005 to 2008

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)																					
			1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Hexachloro-butadiene	Isopropyl-benzene	4-Isopropyl-toluene	Methylene Chloride	Naphthalene	4-Methyl-2-pentanone	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloro-ethane	1,1,2,2-Tetrachloro-ethane	Tetrachloro-ethene	Toluene	1,2,3-Trichloro-benzene	1,2,4-Trichloro-benzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane
B-1	1.5	10/24/2007																						
B-2	1.5	10/24/2007																						
B-3	1.5	10/24/2007																						
B-4	1.5	10/24/2007																						
B-5	1.5	10/24/2007						<0.0530												<0.0530				
B-6	1.5	10/24/2007																						
B-7	1.5	10/24/2007																						
B-8	1.5	10/24/2007																						
B-9	1.5	10/24/2007																						
B-10	1.5	10/24/2007																						
B-11	1.5	10/24/2007																						
B-12	1.5	10/24/2007																						
B-13	1.5	10/24/2007																						
C-1	2.0	3/27/2008																						
C-2	1.5	3/27/2008																						
C-3	1.5	3/27/2008																						
HA1	0.5	12/15/2005	<0.00573	<0.0115	<0.00573	<0.00573	<0.00143	<0.00458	<0.00573	<0.00573	<0.00573	<0.00401	<0.00573	<0.0229	<0.00573	<0.00115	<0.00573	<0.00573	<0.00229	<0.00172	<0.00573	<0.00573	<0.00287	<0.00143
	1.5	12/15/2005	<0.00691/ <0.0264	<0.0138/ <0.0528	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00173/ <0.00660	<0.00553/ <0.0211	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00484/ <0.0185	<0.00691/ <0.0264	<0.0277/ <0.106	<0.00691/ <0.0264	<0.00138/ <0.00528	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00277/ <0.0106	<0.00207/ <0.00792	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00346/ <0.0132	<0.00173/ <0.00660
HA2	0.5	12/15/2005	<0.00730	<0.0146	<0.00730	<0.00730	<0.00183	<0.00584	<0.00730	<0.00730	<0.00730	<0.00511	<0.00730	<0.0292	<0.00730	<0.00146	<0.00730	<0.00730	<0.00292	<0.00219	<0.00730	<0.00730	<0.00365	<0.00183
	1.5	12/15/2005	<0.00461	<0.00922	<0.00461	<0.00461	<0.00115	<0.00369	<0.00461	<0.00461	<0.00461	<0.00323	<0.00461	<0.0184	<0.00461	<0.000922	<0.00461	<0.00461	<0.00184	<0.00138	<0.00461	<0.00461	<0.00230	<0.00115
HA3	0.5	12/15/2005	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.938	<0.0938	<0.938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938
	1.5	12/15/2005	<0.00502	<0.0100	<0.00502	<0.00502	<0.00126	<0.00402	<0.00502	<0.00502	<0.00502	<0.00351	<0.00502	<0.0201	<0.00502	<0.00100	<0.00502	<0.00502	<0.00201	<0.00151	<0.00502	<0.00502	<0.00251	<0.00126
HA4	0.5	12/15/2005	<0.0739	<0.148	<0.0739	<0.0739	<0.0185	<0.0591	<0.0739	<0.0739	<0.0739	<0.0518	<0.0739	<0.296	<0.0739	<0.0148	<0.0739	<0.0739	<0.0296	<0.0222	<0.0739	<0.0739	<0.0370	<0.0185
	1.5	12/15/2005	<0.00612	<0.0122	<0.00612	<0.00612	<0.00153	<0.00489	<0.00612	<0.00612	<0.00612	<0.00428	<0.00612	<0.0245	<0.00612	<0.00122	<0.00612	<0.00612	<0.00245	<0.00184	<0.00612	<0.00612	<0.00306	<0.00153
HA5	0.5	12/15/2005	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<1.690	<0.169	<1.690	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169
	1.5	12/15/2005	<0.00749	<0.0150	<0.00749	<0.00749	<0.00187	<0.00599	<0.00749	<0.00749	<0.00749	<0.00524	<0.00749	<0.0299	<0.00749	<0.00150	<0.00749	<0.00749	<0.00299	<0.00225	<0.00749	<0.00749	<0.00374	<0.00187
HA6	0.5	4/18/2006																						
HA7	0.5	4/18/2006																						
HA8	0.5	4/18/2006																						
HA9	0.5	4/19/2006																						
HA10	0.5	4/19/2006																						
HA11	0.5	4/19/2006																						
HA12	0.5	4/19/2006																						
HA17	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA18	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA19	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA20	0.5	1/9/2007																						
	1.5	1/9/2007																						
HA21	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA22	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA23	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA24	0.5	1/10/2007																						
	1.5	1/10/2007																						
HA25	0.5	1/10/2007																						
	1.5	1/10/2007																						
P1	0.5	10/24/2007																						
P2	0.5	10/24/2007																						
P3	0.5	10/24/2007																						
P4	0.5	10/24/2007																						
P5	0.5	10/24/2007																						
P6	0.5	10/24/2007																						
P7	0.5	10/24/2007																						
P8	0.5	10/24/2007																						
P9	0.5	10/25/2007																						
P10	0.5	10/25/2007																						
S-1	0.5	3/22/1989																						
SS1	0.5	11/19/2007																						
SS2	0.5	11/19/2007																						
SS3	0.5	11/19/2007																						
	1.5	11/19/2007																						
SS4	0.5	11/19/2007																						
SS5	0.5	11/19/2007																						
SS6	0.5	11/19/2007																						
	1.5	11/19/2007																						

Table A7: Historical Drainage Ditch Soil Analytical Results - 2005 to 2008

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)							PAHs (mg/kg)												
			Trichloroethene	Trichlorofluoro-methane	1,2,3-Trichloropropane	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Vinyl chloride	Total Xylenes	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenzo(a,h)-anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene
B-1	1.5	10/24/2007																				
B-2	1.5	10/24/2007																				
B-3	1.5	10/24/2007																				
B-4	1.5	10/24/2007																				
B-5	1.5	10/24/2007							<0.106	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130
B-6	1.5	10/24/2007																				
B-7	1.5	10/24/2007																				
B-8	1.5	10/24/2007																				
B-9	1.5	10/24/2007																				
B-10	1.5	10/24/2007																				
B-11	1.5	10/24/2007																				
B-12	1.5	10/24/2007																				
B-13	1.5	10/24/2007																				
C-1	2.0	3/27/2008																				
C-2	1.5	3/27/2008																				
C-3	1.5	3/27/2008																				
HA1	0.5	12/15/2005	<0.00287	<0.00573	<0.00573	<0.00573	<0.00573	<0.00287	<0.0115	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	0.0196	<0.0151	<0.0151
	1.5	12/15/2005	<0.00346/ <0.0132	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00691/ <0.0264	<0.00346/ <0.0132	<0.0138/ <0.0528	<0.0129/ <0.0152	<0.0129/ <0.0152	<0.0129/ <0.0152	<0.0129/ 0.0288	<0.0129/ 0.0500	<0.0129/ 0.0769	<0.0129/ 0.0243	<0.0129/ 0.0581	<0.0129/ 0.0612	<0.0129/ <0.0152	<0.0129/ 0.0951	<0.0129/ <0.0152	<0.0129/0.0201
HA2	0.5	12/15/2005	<0.00365	<0.00730	<0.00730	<0.00730	<0.00730	<0.00365	<0.0146	<0.0176	<0.0176	<0.0176	<0.0176	<0.0176	0.0222	<0.0176	0.0205	0.0276	<0.0176	0.0455	<0.0176	<0.0176
	1.5	12/15/2005	<0.00230	<0.00461	<0.00461	<0.00461	<0.00461	<0.00230	<0.00922	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	0.0204	<0.0125	0.0151	0.0179	<0.0125	0.0329	<0.0125	<0.0125
HA3	0.5	12/15/2005	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.0938	<0.281	<0.0133	<0.0133	<0.0133	0.0340	0.0525	0.0982	0.0532	0.0706	0.0804	<0.0133	0.120	<0.0133	0.0385
	1.5	12/15/2005	<0.00251	<0.00502	<0.00502	<0.00502	<0.00502	<0.00251	<0.0100	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118
HA4	0.5	12/15/2005	<0.0370	<0.0739	<0.0739	<0.0739	<0.0739	<0.0370	<0.148	<0.340	<0.340	<0.340	0.554	0.694	0.771	0.352	0.749	0.899	<0.340	1.30	<0.340	<0.340
	1.5	12/15/2005	<0.00306	<0.00612	<0.00612	<0.00612	<0.00612	<0.00306	<0.0122	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	<0.0159	0.0159	<0.0159	0.0191	<0.0159	<0.0159
HA5	0.5	12/15/2005	<0.169	<0.169	<0.169	<0.169	<0.169	<0.169	<0.506	<0.267	<0.267	<0.267	0.862	1.45	1.62	1.19	1.82	1.54	0.435	2.38	<0.267	1.02
	1.5	12/15/2005	<0.00374	<0.00749	<0.00749	<0.00749	<0.00749	<0.00374	<0.0150	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153
HA6	0.5	4/18/2006																				
HA7	0.5	4/18/2006																				
HA8	0.5	4/18/2006																				
HA9	0.5	4/19/2006																				
HA10	0.5	4/19/2006																				
HA11	0.5	4/19/2006																				
HA12	0.5	4/19/2006																				
HA17	0.5	1/9/2007																				
	1.5	1/9/2007																				
HA18	0.5	1/9/2007																				
	1.5	1/9/2007																				
HA19	0.5	1/9/2007																				
	1.5	1/9/2007																				
HA20	0.5	1/9/2007																				
	1.5	1/9/2007																				
HA21	0.5	1/10/2007																				
	1.5	1/10/2007																				
HA22	0.5	1/10/2007																				
	1.5	1/10/2007																				
HA23	0.5	1/10/2007																				
	1.5	1/10/2007																				
HA24	0.5	1/10/2007																				
	1.5	1/10/2007																				
HA25	0.5	1/10/2007																				
	1.5	1/10/2007																				
P1	0.5	10/24/2007																				
P2	0.5	10/24/2007																				
P3	0.5	10/24/2007																				
P4	0.5	10/24/2007																				
P5	0.5	10/24/2007																				
P6	0.5	10/24/2007																				
P7	0.5	10/24/2007																				
P8	0.5	10/24/2007																				
P9	0.5	10/25/2007																				
P10	0.5	10/25/2007																				
S-1	0.5	3/22/1989																				
SS1	0.5	11/19/2007																				
SS2	0.5	11/19/2007																				
SS3	0.5	11/19/2007																				
	1.5	11/19/2007																				
SS4	0.5	11/19/2007																				
SS5	0.5	11/19/2007																				
SS6	0.5	11/19/2007																				
	1.5	11/19/2007																				

Table A7: Historical Drainage Ditch Soil Analytical Results - 2005 to 2008

Sample Location	Sample Depth (ft bgs)	Date	PAHs (mg/kg) 1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene	DATA SOURCE
B-1	1.5	10/24/2007						MFA 2008
B-2	1.5	10/24/2007						MFA 2008
B-3	1.5	10/24/2007						MFA 2008
B-4	1.5	10/24/2007						MFA 2008
B-5	1.5	10/24/2007	<0.0130	<0.0130	<0.0130	<0.0130	<0.0130	MFA 2008
B-6	1.5	10/24/2007						MFA 2008
B-7	1.5	10/24/2007						MFA 2008
B-8	1.5	10/24/2007						MFA 2008
B-9	1.5	10/24/2007						MFA 2008
B-10	1.5	10/24/2007						MFA 2008
B-11	1.5	10/24/2007						MFA 2008
B-12	1.5	10/24/2007						MFA 2008
B-13	1.5	10/24/2007						MFA 2008
C-1	2.0	3/27/2008						MFA 2008
C-2	1.5	3/27/2008						MFA 2008
C-3	1.5	3/27/2008						MFA 2008
HA1	0.5	12/15/2005	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	MFA 2008
	1.5	12/15/2005	<0.0129/ <0.0152	<0.0129/ <0.0152	<0.0129/ <0.0152	<0.0129/ 0.0382	<0.0129/ 0.0657	MFA 2008
HA2	0.5	12/15/2005	<0.0176	<0.0176	<0.0176	0.0180	0.0334	MFA 2008
	1.5	12/15/2005	<0.0125	<0.0125	<0.0125	<0.0125	0.0240	MFA 2008
HA3	0.5	12/15/2005	<0.0133	<0.0133	<0.0133	0.0826	0.134	MFA 2008
	1.5	12/15/2005	<0.0118	<0.0118	<0.0118	<0.0118	<0.0118	MFA 2008
HA4	0.5	12/15/2005	<0.340	<0.340	<0.340	<0.340	1.52	MFA 2008
	1.5	12/15/2005	<0.0159	<0.0159	<0.0159	<0.0159	0.0218	MFA 2008
HA5	0.5	12/15/2005	<0.267	<0.267	<0.267	0.930	2.15	MFA 2008
	1.5	12/15/2005	<0.0153	<0.0153	<0.0153	<0.0153	<0.0153	MFA 2008
HA6	0.5	4/18/2006						MFA 2008
HA7	0.5	4/18/2006						MFA 2008
HA8	0.5	4/18/2006						MFA 2008
HA9	0.5	4/19/2006						MFA 2008
HA10	0.5	4/19/2006						MFA 2008
HA11	0.5	4/19/2006						MFA 2008
HA12	0.5	4/19/2006						MFA 2008
HA17	0.5	1/9/2007						MFA 2008
	1.5	1/9/2007						MFA 2008
HA18	0.5	1/9/2007						MFA 2008
	1.5	1/9/2007						MFA 2008
HA19	0.5	1/9/2007						MFA 2008
	1.5	1/9/2007						MFA 2008
HA20	0.5	1/9/2007						MFA 2008
	1.5	1/9/2007						MFA 2008
HA21	0.5	1/10/2007						MFA 2008
	1.5	1/10/2007						MFA 2008
HA22	0.5	1/10/2007						MFA 2008
	1.5	1/10/2007						MFA 2008
HA23	0.5	1/10/2007						MFA 2008
	1.5	1/10/2007						MFA 2008
HA24	0.5	1/10/2007						MFA 2008
	1.5	1/10/2007						MFA 2008
HA25	0.5	1/10/2007						MFA 2008
	1.5	1/10/2007						MFA 2008
P1	0.5	10/24/2007						MFA 2008
P2	0.5	10/24/2007						MFA 2008
P3	0.5	10/24/2007						MFA 2008
P4	0.5	10/24/2007						MFA 2008
P5	0.5	10/24/2007						MFA 2008
P6	0.5	10/24/2007						MFA 2008
P7	0.5	10/24/2007						MFA 2008
P8	0.5	10/24/2007						MFA 2008
P9	0.5	10/25/2007						MFA 2008
P10	0.5	10/25/2007						MFA 2008
S-1	0.5	3/22/1989						Ecology 1989d
SS1	0.5	11/19/2007						MFA 2008
SS2	0.5	11/19/2007						MFA 2008
SS3	0.5	11/19/2007						MFA 2008
	1.5	11/19/2007						MFA 2008
SS4	0.5	11/19/2007						MFA 2008
SS5	0.5	11/19/2007						MFA 2008
SS6	0.5	11/19/2007						MFA 2008
	1.5	11/19/2007						MFA 2008

Notes:
"<" indicates analyte was not detected above the specified laboratory reporting limit.
J qualifier indicates an estimated concentration.
Indicates analysis not performed/reported.
VOCs = volatile organic compounds
PAHs = polycyclic aromatic hydrocarbons
mg/kg = micrograms per kilogram
ft bgs = feet below ground surface

Table A8: Historical Air and Sub-Slab Vapor Analytical Results

Sample ID	Date	VOCs (detected only) (µg/m^3)								DATA SOURCE
		Butane	1,1-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Isobutane	Trichloro-ethene	Vinyl chloride	
Sub-Slab Soil Vapor Samples										
A1	4/18/2006	73			<3.0	<3.0	5800 J	<4.0	<1.9	MFA 2008
A2	4/18/2006	160			<3.6	<3.6	5500 J	<4.9	<2.3	MFA 2008
A3	4/18/2006	<31/ <31			470/ 460	<13/ <13	2,600 J/ 2,800 J	6,100 /6,000	<8.4/ <8.4	MFA 2008
A5	4/18/2006	<250			1,700	<100	<620	37,000	420	MFA 2008
A6	4/18/2006	350			<2.6	<2.6	>11,000 J	<3.5	<1.7	MFA 2008
A7	4/18/2006	330			<2.6	<2.6	>13,000 J	<3.5	<1.7	MFA 2008
Air Samples										
IA1	6/13/2006		<0.13	<0.063	<0.12	<0.63		0.2	<0.040	MFA 2008
IA2	6/13/2006		<0.13	<0.065	<0.13	<0.65		0.083	<0.042	MFA 2008
IA3	6/13/2006		<0.15	<0.074	<0.15	<0.74		0.11	<0.048	MFA 2008
IA4	6/13/2006		<0.14	<0.069	<0.14	<0.69		0.14	<0.045	MFA 2008
IA5	6/13/2006		<0.16	<0.080	<0.16	<0.80		0.16	<0.051	MFA 2008
IA6	6/13/2006		<0.12/ <0.12	<0.060/ <0.060	<0.12/ <0.12	<0.60/ <0.60		0.15/ 0.15	<0.039/ <0.039	MFA 2008
IA7	6/13/2006		<0.13	<0.065	<0.13	<0.65		0.046	<0.042	MFA 2008
IA8	6/13/2006		<0.13	<0.065	<0.13	<0.65		0.15	<0.042	MFA 2008

Notes:

"<" indicates analyte was not detected above the specified laboratory reporting limit.

">" indicates analyte concentration is estimated to be above the calibrated range.

Indicates analysis not performed/reported.

J qualifier indicates an estimated concentration.

VOCs = volatile organic compounds

µg/m^3 = micrograms per cubic meter

Table A9: Historical Offsite Soil Analytical Results

Sample Location	Sample Depth (ft bgs)	Date	Hydrocarbons (mg/kg)				Metals (mg/kg)												VOCs (mg/kg)						
			Diesel-range	Oil-range	Gasoline-range	Total Petroleum Hydrocarbons (undifferentiated)	Antimony	Arsenic	Beryllium	Cadmium	Total Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Acetone	Benzene	Bromo-dichloro-methane	Bromo-form	Bromo-methane	2-Butanone	Carbon Disulfide
1	6.0	9/19/1989	57		20															<0.025					
2	6.0	9/19/1989	<5		<5															0.079					
3	11.0	9/19/1989	26		<5															0.058					
4	6.0	9/19/1989	214		<5															<0.025					
5	5.0	9/19/1989	<5		<5															<0.025					
B10-2	4.0	12/6/1994				27	<4.78	<4.78	<2.39	<2.39	20.6	14.4	7.66	<1.0	25.4	<4.78	<0.96	29.7		<0.50					
B10-4	6.0	12/6/1994				60														<0.50					
B10-8	11.0	12/6/1994				19														<0.50					
B11-1	2.0	12/6/1994				77	<4.78	<4.32	<2.16	<2.16	37.2	28.5	7.35	<1.0	47.5	<4.32	<0.86	43.2		<0.50					
B11-2	5.0	12/6/1994				17														<0.50					
B11-5	12.0	12/6/1994				19														<0.50					
B12-1	2..0	12/7/1994				120	<4.88	<4.89	<2.44	<2.44	15.6	24.4	9.77	<1.0	14.7	<4.88	<0.98	45.9		<0.50					
B12-4	7.0	12/7/1994				65														<0.50					
B12-7	12.0	12/7/1994				48														<0.50					
B7	0.5	8/28/1990																	<100	<5.0	<5.0	<25	<50	<50	<5.0
	1.5	8/28/1990																	<100	<5.0	<5.0	<25	<50	<50	<5.0
B-7 COMP	NA	4/18/1991																		<0.036	<0.014	<0.014	<0.036		
B-8 COMP	NA	4/18/1991																		<0.036	<0.014	<0.014	<0.036		
B-9 COMP	NA	4/18/1991																		<0.025	<0.010	<0.010	<0.050		
GB-1	1.5	6/6/1996	130	420	<20														2.90	0.074				1.00	
	3.0	6/6/1996	30	<100	<5														0.74	<0.005				0.28	
GB-2	1.5	6/6/1996	50	200	<5														0.25	<0.005				<0.10	
	3.0	6/6/1996	26	<100	<5														<0.10	<0.005				<0.10	
GB-3	1.5	6/6/1996	50	160	<5														0.38	<0.005				<0.10	
	3.0	6/6/1996	<25	<100	<5														0.26	<0.005				<0.10	
GB-4	1.5	6/6/1996						3		<1	10	10	<20					72	<0.10	<0.005				<0.10	
	3.0	6/6/1996	60	140				2		<1	7	8	<20					32	<0.10	<0.005				<0.10	
GB-5	3.0	6/6/1996	60	140	<5								25							<0.05					
GB-6	4.0	6/6/1996	60	120	<5								26							<0.05					
GB-7	4.0	6/6/1996	<25	<100	<5								17							<0.05					
GB-8	4.0	6/6/1996	100	100	237								16							0.12					
GB-9	4.0	6/6/1996	50	180	<5								<10							<0.05					
LD-EW-1	1.0	8/22/1996	262	1,162																					
LD-EW-2	1.0	8/26/1996	152	850																					
LD-EW2-1	1.0	1/2/1997	107	207 [a]																<0.05					
LD-EW3-1	1.0	1/4/1997		179																					
LD-FS-2	2.0	8/22/1996	31	131																					
LD-NW-1	1.0	8/22/1996	103	631																					
LD-NW-2	1.0	8/26/1996	54	190																					
LD-SW-1	1.0	8/22/1996	230	1,046																					
LD-SW-2	1.0	8/26/1996	172	558																					
LD-SW2-1	1.0	1/2/1997	97	194 [a]																0.32					
LD-WW-1	1.0	8/22/1996	148	505																					
LD-WW-2	1.0	8/236/1996	40	178																					
MW-3	8.5	1/26/1990			12																				
SP1	NA	4/17/1991	9 [b]		12															<0.025					
SP2	NA	4/17/1991	8 [b]		5															<0.025					
T1	NA	8/27/1990	<5		10															<0.025					
T2	NA	8/27/1990	<5		<5															<0.025					
T3	NA	8/27/1990	<5		<5															0.036					
T-NW-3.5	3.5	8/22/1996			<5															<0.05					
T-WW-3.5	3.5	8/22/1996			<5															<0.05					
T-EW-3.5	3.5	8/22/1996			<5															<0.05					
T-SW-3.5	3.5	8/22/1996			<5															<0.05					
B1-S1-D9	9.0	1/26/1990	<5		<5																				
B2-S1-D6	6.0	1/26/1990	<5		<5																				
B2-S2-D9	9.0	1/26/1990	<5		<5																				
B3-S1-D8.5	8.5	1/26/1990	<5		12																<0.010	<0.010	<0.025		

Table A9: Historical Offsite Soil Analytical Results

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg)																								
			Carbon Tetra Chloride	Chloro-benzene	Chloro-ethane	Chloro-form	Chloro-methane	Dibromo-chloro-methane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane	1,1-Dichloro-ethylene	trans-1,2-Dichloro-ethylene	cis-1,2-Dichloro-ethylene	1,2-Dichloro-ethane	1,2-Dichloro-propane	trans-1,3-Dichloro-propene	cis-1,3-Dichloro-propene	Ethyl-benzene	Methylene Chloride	4-Methyl-2-Pentanone	Naph-thalene	Styrene	Toluene	1,1,2,2-Tetra-chloro-ethane	Tetra-chloro-ethylene	1,1,1-Trichloro-ethane
1	6.0	9/19/1989																		<0.025					<0.025			
2	6.0	9/19/1989																		0.072					<0.025			
3	11.0	9/19/1989																		0.094					0.12			
4	6.0	9/19/1989																		<0.025					<0.025			
5	5.0	9/19/1989																		<0.025					<0.025			
B10-2	4.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B10-4	6.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B10-8	11.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B11-1	2.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B11-2	5.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B11-5	12.0	12/6/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B12-1	2..0	12/7/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B12-4	7.0	12/7/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B12-7	12.0	12/7/1994		<0.50					<1.0	<1.0	<1.0									<0.50					<0.50			
B7	0.5	8/28/1990	<5.0	<5.0	<5.0	<5.0	<50	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<50		<5.0	4700 E	<5.0	<5.0	<5.0
	1.5	8/28/1990	<5.0	<5.0	<5.0	<5.0	<50	<5.0				<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<50	30 E	<5.0	820 E	<5.0	<5.0	<5.0
B-7 COMP	NA	4/18/1991	<0.014	<0.036	<0.036	<0.014	<0.14	<0.014	<0.036	<0.036	<0.036	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.036	<0.14				<0.036	<0.014	<0.014	<0.014
B-8 COMP	NA	4/18/1991	<0.014	<0.036	<0.036	<0.014	<0.14	<0.014	<0.036	<0.036	<0.036	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.036	<0.14				0.053	<0.014	<0.014	<0.014
B-9 COMP	NA	4/18/1991	<0.010	<0.025	<0.040	<0.010	<0.10	<0.010	<0.025	<0.025	<0.025	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.025	<0.10				0.26	<0.010	<0.010	<0.010
GB-1	1.5	6/6/1996													0.074					1.40					980		1.90	
	3.0	6/6/1996													<0.005					0.031					9.20		0.017	
GB-2	1.5	6/6/1996													<0.005					<0.005					0.08		<0.005	
	3.0	6/6/1996													<0.005					<0.005					0.03		<0.005	
GB-3	1.5	6/6/1996													<0.005					<0.005					0.008		<0.005	
	3.0	6/6/1996													<0.005					<0.005					0.014		<0.005	
GB-4	1.5	6/6/1996													<0.005					<0.005					<0.005		<0.005	
	3.0	6/6/1996													<0.005					<0.005					<0.005		<0.005	
GB-5	3.0	6/6/1996																		<0.1					<0.1			
GB-6	4.0	6/6/1996																		<0.1					<0.1			
GB-7	4.0	6/6/1996																		<0.1					<0.1			
GB-8	4.0	6/6/1996																		0.2					0.3			
GB-9	4.0	6/6/1996																		<0.1					<0.1			
LD-EW-1	1.0	8/22/1996																										
LD-EW-2	1.0	8/26/1996																										
LD-EW2-1	1.0	1/2/1997																		<0.1					1.0			
LD-EW3-1	1.0	1/4/1997																										
LD-FS-2	2.0	8/22/1996																										
LD-NW-1	1.0	8/22/1996																										
LD-NW-2	1.0	8/26/1996																										
LD-SW-1	1.0	8/22/1996																										
LD-SW-2	1.0	8/26/1996																										
LD-SW2-1	1.0	1/2/1997																		3.2					6000			
LD-WW-1	1.0	8/22/1996																										
LD-WW-2	1.0	8/236/1996																										
MW-3	8.5	1/26/1990																										
SP1	NA	4/17/1991																		0.046					<0.025			
SP2	NA	4/17/1991																		0.046					<0.025			
T1	NA	8/27/1990		<0.025					<0.025	<0.025	<0.025									0.068					0.027			
T2	NA	8/27/1990		<0.025					<0.025	<0.025	<0.025									<0.025					0.13			
T3	NA	8/27/1990		<0.025					<0.025	<0.025	<0.025									1.1					0.35			
T-NW-3.5	3.5	8/22/1996																		<0.01					<0.01			
T-WW-3.5	3.5	8/22/1996																		<0.01					<0.01			
T-EW-3.5	3.5	8/22/1996																		<0.01					<0.01			
T-SW-3.5	3.5	8/22/1996																		<0.01					<0.01			
B1-S1-D9	9.0	1/26/1990																										
B2-S1-D6	6.0	1/26/1990																										
B2-S2-D9	9.0	1/26/1990																										
B3-S1-D8.5	8.5	1/26/1990	<0.010	<0.025	<0.025	<0.010	<0.10	<0.010				<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.10					<0.010	<0.010	<0.010

Table A9: Historical Offsite Soil Analytical Results

Sample Location	Sample Depth (ft bgs)	Date	VOCs (mg/kg) 1,1,2-Trichloro-ethane	Trichloro-ethylene	Trichloro-fluoro-methane	Vinyl Acetate	Vinyl Chloride	Total Xylenes	DATA SOURCE
1	6.0	9/19/1989						0.10	GeoEngineers 1989b
2	6.0	9/19/1989						1.62	GeoEngineers 1989b
3	11.0	9/19/1989						0.57	GeoEngineers 1989b
4	6.0	9/19/1989						<0.025	GeoEngineers 1989b
5	5.0	9/19/1989						<0.025	GeoEngineers 1989b
B10-2	4.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B10-4	6.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B10-8	11.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B11-1	2.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B11-2	5.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B11-5	12.0	12/6/1994						<0.50	Pacific Testing Labs 1995
B12-1	2..0	12/7/1994						<0.50	Pacific Testing Labs 1995
B12-4	7.0	12/7/1994						<0.50	Pacific Testing Labs 1995
B12-7	12.0	12/7/1994						<0.50	Pacific Testing Labs 1995
B7	0.5	8/28/1990	<5.0	<5.0		<50	<5.0	30	Applied Consultants 1990b
	1.5	8/28/1990	<5.0	<5.0		<50	<5.0	<5.0	Applied Consultants 1990b
B-7 COMP	NA	4/18/1991	<0.014	<0.014	<0.036		<0.036	<0.036	Applied Consultants 1991
B-8 COMP	NA	4/18/1991	<0.014	<0.014	<0.036		<0.036	<0.036	Applied Consultants 1991
B-9 COMP	NA	4/18/1991	<0.010	<0.010	<0.025		<0.050	0.49	Applied Consultants 1991
GB-1	1.5	6/6/1996						10.0	EMCON 1996
	3.0	6/6/1996						0.110	EMCON 1996
GB-2	1.5	6/6/1996						<0.005	EMCON 1996
	3.0	6/6/1996						0.017	EMCON 1996
GB-3	1.5	6/6/1996						0.014	EMCON 1996
	3.0	6/6/1996						0.006	EMCON 1996
GB-4	1.5	6/6/1996						<0.005	EMCON 1996
	3.0	6/6/1996						<0.005	EMCON 1996
GB-5	3.0	6/6/1996						<0.1	EMCON 1996
GB-6	4.0	6/6/1996						<0.1	EMCON 1996
GB-7	4.0	6/6/1996						<0.1	EMCON 1996
GB-8	4.0	6/6/1996						1.4	EMCON 1996
GB-9	4.0	6/6/1996						<0.1	EMCON 1996
LD-EW-1	1.0	8/22/1996							EMCON 1996
LD-EW-2	1.0	8/26/1996							EMCON 1996
LD-EW2-1	1.0	1/2/1997						0.1	EMCON 1997
LD-EW3-1	1.0	1/4/1997							EMCON 1997
LD-FS-2	2.0	8/22/1996							EMCON 1996
LD-NW-1	1.0	8/22/1996							EMCON 1996
LD-NW-2	1.0	8/26/1996							EMCON 1996
LD-SW-1	1.0	8/22/1996							EMCON 1996
LD-SW-2	1.0	8/26/1996							EMCON 1996
LD-SW2-1	1.0	1/2/1997						9.7	EMCON 1997
LD-WW-1	1.0	8/22/1996							EMCON 1996
LD-WW-2	1.0	8/236/1996							EMCON 1996
MW-3	8.5	1/26/1990							Applied Consultants 1990a
SP1	NA	4/17/1991						0.41	Applied Consultants 1991
SP2	NA	4/17/1991						0.12	Applied Consultants 1991
T1	NA	8/27/1990						1.5	Applied Consultants 1990b
T2	NA	8/27/1990						0.14	Applied Consultants 1990b
T3	NA	8/27/1990						3.3	Applied Consultants 1990b
T-NW-3.5	3.5	8/22/1996						<0.01	EMCON 1996
T-WW-3.5	3.5	8/22/1996						<0.01	EMCON 1996
T-EW-3.5	3.5	8/22/1996						<0.01	EMCON 1996
T-SW-3.5	3.5	8/22/1996						<0.01	EMCON 1996
B1-S1-D9	9.0	1/26/1990							Applied Consultants 1990a
B2-S1-D6	6.0	1/26/1990							Applied Consultants 1990a
B2-S2-D9	9.0	1/26/1990							Applied Consultants 1990a
B3-S1-D8.5	8.5	1/26/1990	<0.010	<0.010	<0.025		<0.025		Applied Consultants 1990a

Notes:

(a) Sample contained components that eluted in oil range, but the chromatogram did not match the typical oil fingerprint.

(b) Sample contained components that eluted in diesel range, but the chromatogram did not match the typical diesel fingerprint.

"<" indicates analyte was not detected above the specified laboratory reporting limit.

Q qualifier indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.

B qualifier indicates analyte detected in an associated method blank at a concentration greater than 1/2 the laboratory reporting limit or 5 percent of either the regulatory limit or analyte concentration in the sample.

E qualifier indicates an estimated value.

Indicates analysis not performed/reported.

VOCs = volatile organic compounds

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

Table A10: Historical Offsite Groundwater Analytical Results

		Hydrocarbons (µg/L)				Total Metals (µg/L)											VOCs (µg/L)				
Sample ID	Date	Diesel-range	Oil-range	Gasoline-range	Total Petroleum Hydrocarbons (undifferentiated)	Arsenic	Beryllium	Cadmium	Total Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Acetone	Benzene	Bromo-dichloro-methane	Bromoform	Bromo-methane
MW-1	1/31/1990																	<0.5	<0.2	<0.2	<0.5
MW-2	2/1/1990																	<0.5	<0.2	<0.2	<0.5
MW-3	2/1/1990																	46	<1.0	<1.0	<2.5
	3/29/1990																	75			
MW-4	8/28/1990	<1,000		<1,000														0.7	<0.2	<0.2	<0.5
	8/16/1995	280	<750	<50		22											<100	<0.5	<5	<5	<10
MW-5	8/28/1990	<1,000		<1,000														<0.5	<0.2	<0.2	<0.5
MW-6	8/28/1990	<1,000		26000 [a]														7.0	<1.0	<1.0	<2.5
	4/19/1991																	<2,500	<1,000	<1,000	<5,000
	12/2/1994	<250			6,900	41	4.5	5.0	118	280	126	<1.0	113	<2.5	9.5	450		9.0			
	12/15/1994																	8.1			
	5/9/1995	2080 [b]	1300 [c]			23		<3	24	40	20					116		13/<25			
	7/31/1995	890 [b]	<750	640		23											<100	20	<5	<5	<10
MW-7	4/19/1991																	<0.5	<0.2	<0.2	<1.0
	12/2/1994	<250			4,630	273	9.5	9.4	345	936	289	<1.0	165	<2.5	<2.5	10,000		<1.0			
	12/15/1994																	<0.5			
	5/9/1995	400 [b]	<750			104		<3	94	168	76					1,240		<5			
	7/31/1995	340 [b]	<750	<50		43											<100	<5	<5	<5	<10
	1/2/1997	360	<750	<50														<0.5			
MW-8	4/19/1991																	<0.5	<0.2	<0.2	<1.0
	12/2/1994	<250			3,180	50	5.7	5.6	257	574	128	<1.0	242	<2.5	51	602		<1.0			
	12/15/1994																	<0.5			
	5/9/1995	650 [b]	840 [a]			38		<3	62	86	14					99		<5			
	7/31/1995	<250	<750	<50		45											<100	<5	<5	<5	<10
	1/2/1997	340	<750	330														9.9			
MW-9	4/19/1991																	1.4	<0.2	<0.2	<1.0
	12/2/1994	<250			3,180	27	2.3	2.9	96	276	87	<1.0	100	28	4.7	350		<1.0			
	12/15/1994																	<0.5			
	5/9/1995	1470 [b]	980 [a]			9		<3	16	39	9					53		<5			
	7/31/1995	730 [b]	<750	<50		<5											<100	<5	<5	<5	<10
	1/2/1997	920	<750	3,930														1.8			
	4/8/1997																	1.8			
	6/23/1997																	1.0			
	9/30/1997																	8.9			
MW-10	12/15/1994																	<0.5			
	5/9/1995	850 [b]	940 [a]			22		<3	77	142	40					138		<5			
	7/31/1995	<250	<750	<50		6											<100	<5	<5	<5	<10
	1/2/1997	340	<750	<50														<0.5			
	4/8/1997																	<0.5			
	6/23/1997																	<0.5			
	9/30/1997																	<0.5			
MW-11	12/15/1994																	5.1			
	5/9/1995	700 [b]	<750			52		<3	70	85	32					108		<5			
	7/31/1995	430 [b]	<750	<50		50											<100	<5	<5	<5	<10
	4/14/1997																	6.0			
	6/23/1997																	4.3			
	9/30/1997																	<0.5			
MW-12	12/15/1994																	<0.5			
	5/9/1995	<250	<750			42		<3	27	47	8					55		<5			
	7/31/1995	310 [b]	<750	<50		29											<100	<5	<5	<5	<10
	1/2/1997	<250	<750	<50														<0.5			
GB-4-WS	6/6/1996	690	<750	<50		<5		<4	11	12	<2					23		<5			
GB-5-WS	6/6/1996	990	<750	70														<5			
OB-1	4/19/1991																	14	<0.2	<0.2	<1.0
RW-1	8/28/1990	<1,000		3,000														1.9	<0.2	<0.2	<0.5
	4/19/1991	<1,000		<1,000														4.8			

Table A10: Historical Offsite Groundwater Analytical Results

Sample ID	Date	VOCs (µg/L)																	
		2-Butanone	Carbon Disulfide	Carbon Tetrachloride	Chloro-benzene	Chloro-ethane	2-Chloroethyl Vinyl Ether	Chloroform	Chloro-methane	Dibromo-chloro-methane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	cis-1,3-Dichloro-propene
MW-1	1/31/1990			<0.2	<0.5	<0.5		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-2	2/1/1990			<0.2	<0.5	<0.5		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-3	2/1/1990			<1.0	<2.5	<2.5		<1.0	<10	<1.0	<2.5	<2.5	<2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	3/29/1990																		
MW-4	8/28/1990			<0.2	<0.5	<0.5		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	8/16/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-5	8/28/1990			<0.2	<0.5	<0.5		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-6	8/28/1990			<1.0	<2.5	<2.5		<1.0	<10	<1.0	<2.5	<2.5	<2.5	<1.0	<1.0	<1.0	1.0	<1.0	<1.0
	4/19/1991			<1,000	<2,500	<5,000		<1,000	<10,000	<1,000	<2,500	<2,500	<2,500	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
	12/2/1994																		
	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-7	4/19/1991			<0.2	<0.5	<1.0		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	12/2/1994																		
	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1/2/1997																		
MW-8	4/19/1991			<0.2	<0.5	<1.0		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	12/2/1994																		
	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1/2/1997																		
MW-9	4/19/1991			<0.2	<0.5	<1.0		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	1.2	<0.2	<0.2
	12/2/1994																		
	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1/2/1997																		
	4/8/1997																		
	6/23/1997																		
	9/30/1997																		
MW-10	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1/2/1997																		
	4/8/1997																		
	6/23/1997																		
	9/30/1997																		
MW-11	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	4/14/1997																		
	6/23/1997																		
	9/30/1997																		
MW-12	12/15/1994																		
	5/9/1995																		
	7/31/1995	<100	<100	<5	<5	<10	<10	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	1/2/1997																		
GB-4-WS	6/6/1996																		
GB-5-WS	6/6/1996																		
OB-1	4/19/1991			<0.2	<0.5	<1.0		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
RW-1	8/28/1990			<0.2	<0.5	<0.5		<0.2	<2.0	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	4/19/1991																		

Table A10: Historical Offsite Groundwater Analytical Results

Sample ID	Date	VOCs (µg/L)													
		trans-1.3-Dichloro-propene	1,2-Dichloro-propane	Ethylbenzene	2-Hexanone	Methylene Chloride	4-Methyl-2-pentanone	Styrene	Tetrachloro-ethylene	1,1,2,2-Tetrochloro-ethane	Toluene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethylene	Trichloro-fluoro-methane
MW-1	1/31/1990	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
MW-2	2/1/1990	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
MW-3	2/1/1990	<1.0	<1.0	11		<10			<1.0	<1.0	<2.5	<1.0	<1.0	6.2	<2.5
	3/29/1990			11							490				
MW-4	8/28/1990	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
	8/16/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
MW-5	8/28/1990	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
MW-6	8/28/1990	<1.0	<1.0	29		<10			10.0	<1.0	15,000	<1.0	<1.0	<1.0	<2.5
	4/19/1991	<1,000	1,200	<2,500		<10,000			<1,000	<1,000	430,000	<1,000	<1,000	<1,000	<2,500
	12/2/1994			<50							15,036				
	12/15/1994			57							10,000				
	5/9/1995			76/ 63							4,400/ 4,300				
	7/31/1995	<5	<5	22	<50	<5	<50	<5	<5	<5	630	<5	<5	<5	<10
MW-7	4/19/1991	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
	12/2/1994			3.0							215				
	12/15/1994			<0.5							<0.5				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	1/2/1997			<1							<1				
MW-8	4/19/1991	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	0.9	<0.2	<0.2	<0.2	<0.5
	12/2/1994			<1.0							8.0				
	12/15/1994			<0.5							10				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	1/2/1997			4							36				
MW-9	4/19/1991	<0.2	<0.2	1.9		<2.0			1.6	<0.2	560	<0.2	<0.2	0.3	<0.5
	12/2/1994			<1.0							31				
	12/15/1994			<0.5							0.61				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	1/2/1997			240							14,000				
	4/8/1997			75							27,000				
	6/23/1997			25							3,950				
	9/30/1997			<1.0							3.0				
MW-10	12/15/1994			<0.5							1.4				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	1/2/1997			<1							<1				
	4/8/1997			<1.0							<1.0				
	6/23/1997			<1.0							<1.0				
	9/30/1997			<1.0							<1.0				
MW-11	12/15/1994			1.6							560				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	4/14/1997			1.0							121				
	6/23/1997			<1.0							<1.0				
	9/30/1997			1.0							53				
MW-12	12/15/1994			<0.5							<0.5				
	5/9/1995			<5							<5				
	7/31/1995	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<10
	1/2/1997			<1							<1				
GB-4-WS	6/6/1996			<5							<5				
GB-5-WS	6/6/1996			<5							<5				
OB-1	4/19/1991	<0.2	<0.2	45		<2.0			<0.2	<0.2	170	<0.2	<0.2	<0.2	<0.5
RW-1	8/28/1990	<0.2	<0.2	<0.5		<2.0			<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5
	4/19/1991			14							<0.5				

Table A10: Historical Offsite Groundwater Analytical Results

Sample ID	Date	VOCs (µg/L)			DATA SOURCE
		Total Xylenes	Vinyl Acetate	Vinyl Chloride	
MW-1	1/31/1990	<0.5		<0.5	Applied Consultants 1990a
MW-2	2/1/1990	<0.5		<0.5	Applied Consultants 1990a
MW-3	2/1/1990	390		<2.5	Applied Consultants 1990a
	3/29/1990	490			Chiyoda 1992b
MW-4	8/28/1990	<0.5		<0.5	Applied Consultants 1990b
	8/16/1995	<5	<50	<10	EMCON 1995b
MW-5	8/28/1990	<0.5		<0.5	Applied Consultants 1990b
MW-6	8/28/1990	130		<2.5	Applied Consultants 1990b
	4/19/1991	<2,500		<5,000	Applied Consultants 1991
	12/2/1994	<50			Pacific Testing Labs 1995
	12/15/1994	430			Pacific Testing Labs 1995
	5/9/1995	510/ 570			EMCON 1995a
	7/31/1995	160	<50	<10	EMCON 1995b
MW-7	4/19/1991	<0.5		<1.0	Pacific Testing Labs 1995
	12/2/1994	9.0			Pacific Testing Labs 1995
	12/15/1994	<1.0			Pacific Testing Labs 1995
	5/9/1995	<5			EMCON 1995a
	7/31/1995	<5	<50	<10	EMCON 1995b
	1/2/1997	<1			EMCON 1997
MW-8	4/19/1991	1.5		<1.0	Applied Consultants 1991
	12/2/1994	<1.0			Pacific Testing Labs 1995
	12/15/1994	<1.0			Pacific Testing Labs 1995
	5/9/1995	<5			EMCON 1995a
	7/31/1995	<5	<50	<10	EMCON 1995b
	1/2/1997	30			EMCON 1997
MW-9	4/19/1991	14		<1.0	Applied Consultants 1991
	12/2/1994	<1.0			Pacific Testing Labs 1995
	12/15/1994	<1.0			Pacific Testing Labs 1995
	5/9/1995	<5			EMCON 1995a
	7/31/1995	<5	<50	<10	EMCON 1995b
	1/2/1997	1,100			EMCON 1997
	4/8/1997	344			EMCON 1998
	6/23/1997	122			EMCON 1998
	9/30/1997	6.0			EMCON 1998
MW-10	12/15/1994	<0.5			Pacific Testing Labs 1995
	5/9/1995	<5			Pacific Testing Labs 1995
	7/31/1995	<5	<50	<10	EMCON 1995b
	1/2/1997	<1			EMCON 1997
	4/8/1997	<1.0			EMCON 1998
	6/23/1997	<1.0			EMCON 1998
	9/30/1997	<1.0			EMCON 1998
MW-11	12/15/1994	13			Pacific Testing Labs 1995
	5/9/1995	<5			Pacific Testing Labs 1995
	7/31/1995	<5	<50	<10	EMCON 1995b
	4/14/1997	9.0			EMCON 1998
	6/23/1997	3.0			EMCON 1998
	9/30/1997	5..0			EMCON 1998
MW-12	12/15/1994	<1.0			Pacific Testing Labs 1995
	5/9/1995	<5			Pacific Testing Labs 1995
	7/31/1995	<5	<50	<10	EMCON 1995b
	1/2/1997	<1			EMCON 1997
GB-4-WS	6/6/1996	<5			EMCON 1996
GB-5-WS	6/6/1996	9			EMCON 1996
OB-1	4/19/1991	330		<1.0	Applied Consultants 1991
RW-1	8/28/1990	180		<0.5	Applied Consultants 1990b
	4/19/1991	180			Applied Consultants 1991

Notes:
(a) Sample contained components that eluted in oil range, but the chromatogram did not match the typical oil fingerprint.
(b) Sample contained components that eluted in diesel range, but the chromatogram did not match the typical diesel fingerprint.
(c) Sample contained components that eluted in gasoline range, but the chromatogram did not match the typical gasoline fingerprint.
"<" indicates analyte was not detected above the specified laboratory reporting limit.
Indicates analysis not performed/reported.
VOCs = volatile organic compounds
µg/L = micrograms per liter

Appendix B

Boring and Well Construction Logs

2014 to 2015 Investigation

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Near SE corner of site		**Well Name**	MW9
DRILLING COMPANY: Holt	DRILLER	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow Stem Auger	DRILL BIT(S) SIZE: 9-inch	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: ground surface	TOTAL DEPTH: 46.0 ft. bgs
BLANK CASING: 2" Schedule 40 PVC Pipe	FROM 0 TO 31 FT.	DATE STARTED: 8/16/14	DATE COMPLETED: 8/16/14
SLOTTED CASING: 2" Schedule 40 PVC Pipe 0.010" Slots	FROM 31 TO 36 FT.	INITIAL WATER DEPTH (FT): 7.0	
SIZE AND TYPE OF FILTER PACK: Colorado 10/20 Silica Sand	FROM 29 TO 38 FT.	LOGGED BY: DKM	
SEAL: 3/8" Bentonite Chips	FROM 1 TO 29 FT. 38 46	SAMPLING METHODS: Split spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: Concrete	FROM 0 TO 1 FT.		

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	PID	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Asphalt and crushed rock base
							Silty SAND Medium brown with gray, fine sand with ~30% silt, trace gravel, sandier intervals below ~5' bgs, medium dense, moist, no odor, no sheen
SS	1	1 3 4			0.0	SM	
			5				
SS	1.3	0 1 1			0.3		
						ML/ CL	**Clayey SILT** Brown, clayey silt with trace sand, ~1" of peat at top of unit, medium stiff, medium plasticity, moist, no odor, no sheen
SS	1.3	1 3 2			0.3		**Silty SAND** Brown, fine sand with 30% silt, discrete thinly-bedded intervals with increased sand or silt content, medium dense, wet, no odor, no sheen
			10				
SS	1.5	1 1 2			0.2	SM	
SS	1.5	1 1 2			0.0		
			15				
SS	1.3	1 1 6			0.0	SP/ SM	**Poorly graded SAND with silt** Dark gray to brown, fine to medium sand with 15% silt, silt content decreases to 17.5 ft. bgs and becomes siltier below, medium dense, wet, no odor, no sheen
SS	1.3	0 1 12		MW9-18-19	0.0	SM	**Silty SAND with gravel** Dark gray, silty fine sand with abundant shell fragments, ~3-inch coarse gravel layer with grains over 1 in. diameter at ~19 feet bgs, medium dense, wet, "tideflats" odor, no sheen
			20				
SS	0.5	50-5			0.0	SP/ SM	**Poorly graded SAND with silt and gravel** Greenish gray transitioning to medium gray at 23 ft. bgs, silty fine sand with 5-15% gravel, 20-30% silt, glacial till, dense to very dense, moist, no odor, no sheen

KJ PNW PRECISION AUG 2014 WELLS.GPJ KJ PNW.GDT 6/25/15

F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

Project Name Ecology Precision Engineering **Project Number** 1396024.00 **Well Name** MW9

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	PID	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Poorly graded SAND with silt and gravel
SS	1	25 50			0.0		Greenish gray transitioning to medium gray at 23 ft. bgs, silty fine sand with 5-15% gravel, 20-30% silt, glacial till, dense to very dense, moist, no odor, no sheen ***(Continued)***
SS	0	50-3	25				
						SP/SM	
SS	0.8	35 50-5			0.0		brown, sandier than above and slighly less dense, faint odor, no sheen
SS	1	41 50-5	30		0.0		abrupt color change to gray, angular gravel below ~31' bgs, no odor, no sheen
						SW	**Well-graded SAND with gravel**
SS	1	45 50		MW9-32.5-33.5	0.0		Gray, medium to coarse sand with gravel, trace silt, medium dense, wet, no odor, no sheen
						SP/SM	**Poorly graded SAND with silt**
SS	1	50-5	35		0.0		Medium brown, medium to fine sand with up to 15% silt and 10% gravel (texture varies locally), medium dense, wet, no odor, no sheen
						SM	
							Silty SAND with gravel
							Brown, silty fine sand with gravel, glacial till, dense, moist, no odor, no sheen
						SP	**Poorly graded SAND**
SS	0.7	50		MW9-38-39	0.0		Gray, medium sand with trace silt and gravel, medium dense, wet, no odor, no sheen
							Poorly graded SAND with silt and gravel
SS	0.7	41 50-1	40		0.0		Gray to greenish gray, medium to fine sand with 20% silt and up 15% gravel, glacial till, dense, moist, no odor, no sheen
						SP/SM	
SS	0.4	50			0.0		
SS	1	25 50-3	45		0.0		

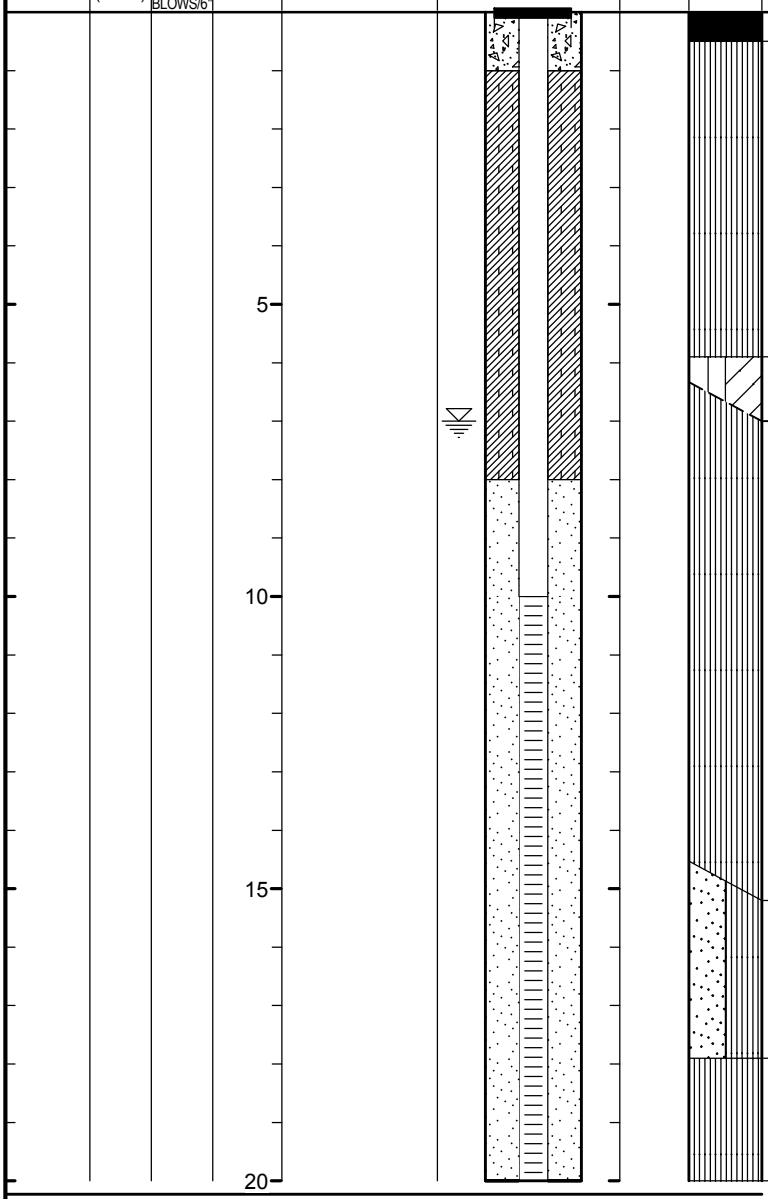
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F-40.1
(6-87) (3-88) (8-90)

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: Near SE corner of site		**Well Name**	MW10
DRILLING COMPANY: Holt	DRILLER:	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow Stem Auger	DRILL BIT(S) SIZE: 9-inch	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: ground surface	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: 2" Schedule 40 PVC Pipe	FROM 0 TO 10 FT.	DATE STARTED: 8/16/14	DATE COMPLETED: 8/16/14
SLOTTED CASING: 2" Schedule 40 PVC Pipe 0.010" Slots	FROM 10 TO 20 FT.	INITIAL WATER DEPTH (FT): 7.0	
SIZE AND TYPE OF FILTER PACK: Colorado 10/20 Silica Sand	FROM 8 TO 20 FT.	LOGGED BY: DKM	
SEAL: 3/8" Bentonite Chips	FROM 1 TO 8 FT.	SAMPLING METHODS: Split spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: Concrete	FROM 0 TO 1 FT.		



SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt and crushed rock base
								SM	**Silty SAND** Medium brown with gray, fine sand with ~30% silt, trace gravel, sandier intervals below ~5' bgs, medium dense, moist, no odor, no sheen
			5					ML/ CL	**Clayey SILT** Brown, clayey silt with trace sand, ~1" of peat at top of unit, medium stiff, medium plasticity, moist, no odor, no sheen
								SM	**Silty SAND** Brown, fine sand with 30% silt, discrete thinly-bedded intervals with increased sand or silt content, medium dense, wet, no odor, no sheen
			10						
			15					SP/ SM	**Poorly graded SAND with silt** Dark gray to brown, fine to medium sand with 15% silt, silt content decreases to 17.5 ft. bgs and becomes siltier below, medium dense, wet, no odor, no sheen
								SM	**Silty SAND with gravel** Dark gray, silty fine sand with abundant shell fragments, ~3-inch coarse gravel layer with grains over 1 in. diameter at ~19 feet bgs, medium dense, wet, "tideflats" odor, no sheen
			20						

NOTES

1. Lithology based on MW-9; MW-9 and MW-10 installed at same location as a shallow and deep well pair.
2. Top of glacial till at ~20 ft. bgs based on lithology from MW-9.

KJ PNW PRECISION AUG 2014 WELLS.GPJ KJ PNW.GDT 6/25/15

F-40.1
(6-87) (3-88) (8-90)

SHEET 1 OF 1

Boring & Well Construction Log

Kennedy/Jenks Consultants

BORING LOCATION: NE part of site in driveway		**Well Name**	MW11
DRILLING COMPANY: Holt	DRILLER:	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow Stem Auger	DRILL BIT(S) SIZE: 9-inch	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: ground surface	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: 2" Schedule 40 PVC Pipe	FROM 0 TO 10 FT.	DATE STARTED: 8/16/14	DATE COMPLETED: 8/16/14
SLOTTED CASING: 2" Schedule 40 PVC Pipe 0.010" Slots	FROM 10 TO 20 FT.	INITIAL WATER DEPTH (FT): 6.0	
SIZE AND TYPE OF FILTER PACK: Colorado 10/20 Silica Sand	FROM 8 TO 20 FT.	LOGGED BY: DKM	
SEAL: 3/8" Bentonite Chips	FROM 1 TO 8 FT.	SAMPLING METHODS: Split spoon	WELL COMPLETION: ■ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: Concrete	FROM 0 TO 1 FT.		

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt and crushed rock base
									Silty SAND Medium brown transitioning to dark gray at 3 ft. bgs, silty fine sand with up to 30% silt, "shiny" surface appearance to some grains below 3 ft. bgs, up to 40% silt locally below 5 ft. bgs, medium dense, moist, no odor, no sheen
SS	1	2 4 5				0.6		SM	
			5						
SS	1.5	2 1 4				0.0		Pt	**PEAT** Brown, woody material (2 in.), soft
						0.0		ML	**Sandy SILT** Medium gray, silt with 40% fine sand and some woody material, trace gravel, medium stiff, wet, no odor, no sheen
SS	1.5	1 1 1				0.0		Pt	**PEAT** Brown, woody material (1 in.), soft
			10					CL/ ML	**Silty CLAY** Medium to light gray transitioning to brownish gray below 9 ft. bgs, silty clay with some root-like woody material, medium stiff above 9 ft. bgs then moderately soft, medium to high plasticity, moist to wet, no odor, no sheen
SS	1.5	1 0 0				0.0			
SS	1.5	1 1 0				0.0		ML/ CL	**Clayey SILT** Medium brown, medium stiff, medium to high plasticity, moist to wet, no odor, no sheen
			15						
SS	1.5	1 3 4				0.0		ML	**SILT with sand** Medium brown, silt with some fine sand and clay, becomes sandier with depth, medium stiff, low plasticity, wet, no odor, no sheen
SS	1	7 27 36		MW11-18-19 DUP MW100		0.0		SP	**Poorly graded SAND** Gray, medium sand, medium dense, wet, no odor, no sheen
SS	1	34 42				0.0		SP	**Poorly graded SAND** Greenish gray, fine to medium sand with up to 10% silt and 10% gravel, weathered glacial till, medium dense, moist to wet, no odor, no sheen
			20					SP/ SM	**Poorly graded SAND with silt** Greenish gray, medium to fine sand with 15-20% silt and 5-10% gravel, glacial till, dense, moist, no odor, no sheen

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South side of current facility building		**Boring Name**	SB1
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 7.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 7 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4.5							**Well-graded GRAVEL with silt and sand** Gray, glacial till, dry, no odor, no sheen
			5	SB1-5	0.0		GW/GM	moist at 5 ft. bgs
	1.5							Drilling refusal at 7 ft. bgs

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

KJ PNW BORING N&E AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 6/25/15

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(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South side of current facility building		**Boring Name**	SB2
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 4.8 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 4.8 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base** Asphalt, gravel, road grade material
	4.2				0.0		GW/GM	**Well-graded GRAVEL with silt and sand** Gray, glacial till, moist Run 1 refusal at 4.8 ft. bgs; Run 2 refusal at 3.5 ft bgs

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. No soil samples analyzed due to low recovery

KJ PNW BORING N&E AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 6/25/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South East side of current facility building		**Boring Name**	SB3
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5		0	SB3-2	91		Solid	**Asphalt and crushed rock base** odor, sheen at 2 ft. bgs
			5		1.0			**Sandy SILT** Brown to brown gray, 60 % silt, 40% sand, some clay lenses, stiff at top becoming soft towards bottom, moist, no odor, no sheen
	3			SB3-8			ML	
			10		0.0			
	4.8						CL/ML	**Silty CLAY** Brown to brown gray, firm, medium plasticity, no odor, no sheen
				SB3				
			15		0.1			**Silty SAND with gravel** Light gray to gray, unable to cut with a knife in places, very dense, moist, no odor, no sheen
	5						SM	wet from 15 ft. to 15.6 ft. bgs.
			20		0.2			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South East side of current facility building		**Boring Name**	SB4
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/7/14	DATE COMPLETED: 8/7/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4		5	SB4-5	0.0			**Well-graded SAND with silt** Brown to gray, very fine to fine sand, 20% silt, 20% clay, dense, dry to moist, no odor, no sheen
	3.8		10	SB4	0.0		SW/SM	Soft, wet at 10 ft. bgs
	5		15		0.0			
	5		20	SB4-20	0.0		SM	**Silty SAND** Red brown to brown mottled with gray, soft, wet, no odor, no sheen
							CL	**Lean CLAY** Brown mottled with gray, some shell fragments, stiff, medium, moist, no odor, no sheen
							SW	**Well-graded SAND with gravel** Gray, glacial till, moist to wet, no odor, no sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

KJ PNW BORING N&E AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 6/25/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: East side of current facility building	**Boring Name** SB5
DRILLING COMPANY: Cascade Drilling, L.P. / DRILLER: Kasey Goble	**Project Name** Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String / DRILL BIT(S) SIZE: 2.25	**Project Number** 1396024.00
ISOLATION CASING: N/A — FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs / TOTAL DEPTH: 23.5 ft. bgs
BLANK CASING: N/A — FROM N/A TO N/A FT.	DATE STARTED: 8/8/14 / DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A — FROM N/A TO N/A FT.	EASTING (FT): N/A / NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A — FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey
SEAL: 3/8" Bentonite chips (hydrated in place) — FROM 0 TO 23.5 FT.	SAMPLING METHODS: Continuous Core / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A — FROM N/A TO N/A FT.	

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	3.5							**Silty SAND** Dark brown to dark gray, up to 35% silt, dense, moist, no odor, no sheen
			5		0.0		SM	
	4.5							Wood debris with clay at 7.5 ft. bgs (2 inches) Wood debris with clay at 8.0 ft. bgs (1 inch)
			10	SB5-11	0.0		GW/GM	**Well-graded GRAVEL with silt and sand** Brown, well graded gravel with silt and very fine to fine sand, wet, no odor, no sheen
	5			SB5				**Silty SAND** Reddish brown to reddish gray, silty sand with zones of sandy silt, medium stiff to stiff, moist, no odor, no sheen
			15		0.0		SM	
	5							
			20		0.0		SM	**Silty SAND with gravel** Light gray to green gray, abundant shell fragments, hard, dry, no odor, no sheen
	3.5						SW	**Well-graded SAND** Light gray to green gray, well graded fine sand, 5% to 10% silt, trace gravel, brittle, hard, dry, no odor, no sheen
					0.0		SP	**Poorly graded SAND** Light brown, poorly graded fine sand, very dense, dry, no odor, no sheen
								Drilling refusal @ 23.5' bgs

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: East side of current facility building	**Boring Name** SB6
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25
	Project Name Ecology Precision Engineering
	Project Number 1396024.00

	FROM	TO	FT.
ISOLATION CASING: N/A	N/A	N/A	
BLANK CASING: N/A	N/A	N/A	
SLOTTED CASING: N/A	N/A	N/A	
SIZE AND TYPE OF FILTER PACK: N/A	N/A	N/A	
SEAL: 3/8" Bentonite chips (hydrated in place)	0	20	
GROUT: N/A	N/A	N/A	

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
EASTING (FT): N/A	NORTHING (FT): N/A
LOGGED BY: J. Sawdey	
SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4.0						SM	**Silty SAND** Brown to dark brown mottled with gray, poorly graded fine sand, up to 40% silt, dense, moist, no odor, no sheen
			5		0.6			**Sandy clayey SILT** Brown to dark brown mottled with gray, stiff, medium, moist, no odor, no sheen
	4.5						ML/CL	
			10		0.0			
	5			SB6				
			15	SB6-16	0.0			**Silty SAND** Brown, silty sand, soft, wet, no odor, no sheen
	5						SM	
							SM	**Silty SAND with gravel** Gray to green, well graded silty sand with gravel, abundant shells, hard, dry, no odor, no sheen
			20		0.0			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: East side of current facility building	**Boring Name** SB7
DRILLING COMPANY: Cascade Drilling, L.P. / DRILLER: Kasey Goble	**Project Name** Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String / DRILL BIT(S) SIZE: 2.25	**Project Number** 1396024.00
ISOLATION CASING: N/A — FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs / TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A — FROM N/A TO N/A FT.	DATE STARTED: 8/8/14 / DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A — FROM N/A TO N/A FT.	EASTING (FT): N/A / NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A — FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey
SEAL: 3/8" Bentonite chips (hydrated in place) — FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core / WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A — FROM N/A TO N/A FT.	

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	3.5							**Silty SAND** Brown, gray brown, very fine to fine sand, silt, some clay, dense, moist, no odor, no sheen
			5		0.3		SM	
	4.5							Woody debris layer from 7.5 ft. to 7.8 ft. bgs Clay lens from 7.8 ft. to 8.0 ft. bgs
			10	SB7-11	0.0		SM	**Silty SAND with gravel** Light brown to brown with gray, silty sand with gravel, well graded, soft, wet, no odor, no sheen
	5						ML	**Sandy SILT** Brown, stiff, moist, no odor, no sheen
			15		0.0			
	5			SB7 SB7-19			SM	**Silty SAND with gravel** Brown to light brown with gray, sand with up to 30% silt, up to 15% gravel, gravel grains up to 0.25 in. diameter, moist to wet, no odor, no sheen
			20		0.0			Greenish gray, silty sand with abundant gravel and shells at 19 ft. bgs, hard, dry, no odor, no sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

KJ PNW BORING N&E AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 6/25/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: East side of current facility building		**Boring Name**	SB8
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4.5							**Silty SAND** Brown to brown with gray, silty clayey sand, trace gravel, dense, moist to wet, no odor, no sheen
			5		0.0		SM	
	5							Woody debris layer at 8 ft. bgs
								Clay lens
			10		0.0			**Silty CLAY** Brown, stiff, moist, wet in places, no odor, no sheen
	5							
			15	SB8-16	0.0		CL/ML	
	5							
			20		0.0		GW/GM	**Well-graded GRAVEL with silt and sand** Gray, well graded gravel with silt and fine sand, glacial till, hard, very dense, no odor, no sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. Groundwater not sampled at this location

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: North side of current facility building		**Boring Name**	SB10
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 14.5 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/8/14	DATE COMPLETED: 8/8/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 14.5 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4.5						GW/GM	**Well-graded GRAVEL with silt and sand** Gray to blue gray, moist, no odor, no sheen
			5		0.0			
				SB10-7			SP	**Poorly graded SAND** Gray to dark gray, dense, wet, no odor, no sheen
	4.5							**Well-graded GRAVEL with silt and sand** Light gray to dark gray, wet, no odor, no sheen
				SB10				
			10		0.0		GW/GM	
	3.5							
					0.0			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. Groundwater grab sample SB10 collected at 10 ft. bgs

KJ PNW BORING N&E AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 6/25/15

F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South-bound shoulder of 14th Avenue South		**Boring Name**	SB11
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 30.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/7/14	DATE COMPLETED: 8/7/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 30 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			0				Solid	**Asphalt and crushed rock base**
	4						ML	**SILT** Dark red to brown transitioning to gray, silt with 10% sand and trace gravel, moist, no odor, no sheen Blue gray, clay lens
	4.8		5	SB11	0.0		SM	**Silty SAND** Light brown mottled with gray, up to 30% silt, trace gravel, wet, no odor, no sheen
			10	SB11-10	0.0		CL/ML	**Silty CLAY** Light brown mottled with gray, clay is lean in places, some organic material, medium plasticity, no odor, no sheen
	5						SM	**Silty SAND** Grades to silty sand with clay, dense, moist, no odor, no sheen
			15		0.0			Medium sand layer (2.5 in.), wet
	5						ML	**SILT** Light brown mottled with gray, Silt with up to 10% sand, trace clay, no odor, no sheen
	0		20		0.0			
			25		0.0			
	3.5						ML	**SILT with sand** Green mottled with gray, becomes sandier with depth, abundant shell fragments, wet, no odor, no sheen
			30	SB11-30	0.0			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. Groundwater grab sample SB11 collected at 7 ft. bgs

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South-bound shoulder of 14th Avenue South		**Boring Name**	SB12
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/7/14	DATE COMPLETED: 8/7/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
							Solid	**Asphalt and crushed rock base**
	4						CL/ML	**Sandy silty CLAY** Gray to blue gray, dense, low, moist, no odor, no sheen
			5		0.4			**Sandy SILT** Brown to red brown mottled with gray, trace clay with thin clay stringers, local trace gravel, trace wood, medium dense, moist, no odor, no sheen
	4							Wet Clay lens from 8 ft. to 10 ft.
			10	SB12	0.0			
				SB12-12			ML	
	5							
			15		0.0			
	2.5							Less dense, soft
			20		0.0			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South-bound shoulder of 14th Avenue South		**Boring Name**	SB13
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/7/14	DATE COMPLETED: 8/7/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 20 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5		0				Solid	**Asphalt and crushed rock base**
			5		0.0		SP	**Poorly graded SAND with gravel** Brown mottled with gray, moist, no odor, no sheen
	4			SB13 SB13-9			CL	**Lean CLAY** Brown to red brown mottled with gray, lean clay with trace sand, medium stiff, moist, no odor, no sheen
			10		0.0		SM	**Silty SAND** Dark gray to dark brown, coarser sand at base, wet, no odor, no sheen
	5							**Clayey SILT with sand** Dark gray to dark brown, up to 40% clay, up to 25% sand, medium stiff transitioning to stiff, moist to wet, no odor, no sheen
			15		0.0		ML/CL	
	4							
			20		0.0			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South-bound shoulder of 14th Avenue South		**Boring Name**	SB14
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Kasey Goble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Direct Push Geoprobe MC-5 Drill String	DRILL BIT(S) SIZE: 2.25	**Project Number**	1396024.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 30.0 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 8/7/14	DATE COMPLETED: 8/7/14
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: 3/8" Bentonite chips (hydrated in place)	FROM 0 TO 30 FT.	SAMPLING METHODS: Continuous Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	2						Solid	**Asphalt and crushed rock base**
	4.5		5	SB14-6	44.5 53.1		SM	**Silty SAND** Brown gray to gray, very fine to medium sand, moist to wet
				SB14			CL/ML	**Sandy silty CLAY** Brown gray to gray, high organic (black) in part, stiff, medium plasticity, moist
	5		10		1.2		SP	**Poorly graded SAND** Brown to red brown, fine to medium sand, trace silt, wet
	2.5		15		0.0		ML	**SILT with sand** Brown, silt with 15% to 20% sand, trace clay, stiff, moist sand lens at 17 ft. bgs
	0		20		0.0			
	5		25		0.0			
			30		0.0		ML	**Sandy SILT** Olive green, sandy silt, abundant shells, moist to wet
							CL	**Lean CLAY** Blue green mottled with gray, abundant shells, hard, moist

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface

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F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: West side of 14TH AVE S		**Boring Name**	SB15
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: James Gobble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow-stem Auger	DRILL BIT(S) SIZE: 8-inch	**Project Number**	1396024*00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 50.5 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 4/15/15	DATE COMPLETED: 4/15/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J.Sawdey / J. Schwarz	
SEAL: N/A	FROM N/A TO N/A FT.	SAMPLING METHODS: Split spoon	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			0					Air Vac clearance to 5-feet. Fill material with gravel, coarse sands, and concrete debris.
			5					
SS	1.5	8 10 10	10		0.4 / NS			**SILT with sand** Brown gray to dark brown gray, approximately 5-10% very fine to fine sand, dense, weak plasticity, damp, wet in sandier sections, no odor or sheen
SS	1.5	8 12 10	15		0.5 / NS		ML	Increased density and stiffness, no localized sandier sections, no odor or sheen
SS	1.5	6 4 6	20		0.4 / NS			Trace of shells, decrease in sand content, no odor or sheen
SS	1.5	15 11 10	25	SB15-26	0.5 / NS		SW/SM	**Well-graded SAND with silt** Gray, greenish gray, abundant shell matierial (up to 20%), fine to medium sand with silt, briney marine odor, low density, no plasticity, wet, no odor or sheen
			30					

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F-40.1
(6-87) (3-88) (8-90)

Project Name Ecology Precision Engineering **Project Number** 1396024*00 **Boring Name** SB15

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	9 15 11			0.2 / NS		SW/SM	**Well-graded SAND with silt** Gray, greenish gray, abundant shell matierial (up to 20%), fine to medium sand with silt, briney marine odor, low density, no plasticity, wet, no odor or sheen ***(Continued)***
SS	0.1	15 21 22	35		0.3 / NS			**Well-graded GRAVEL with silt and sand** Gray, gray brown, tan, approximately 20% silt and 15% fine sand, subrounded gravel up to 1/2-inch diameter, wet, no odor or sheen
SS	1.5	~~19~~ ~~21~~ ~~31~~	40	SB15-41	0.4 / NS		GW/GM	
SS	0.5	~~50~~	45	SB15-45 SB15	0.3 / NS		ML	**Sandy SILT with gravel** Gray, slight blueish gray, glacial till, well rounded to rounded gravel up to 1.5-inch diameter, firm, hard, brittle, very dense, no plasticity, dry, no odor or sheen
			50					

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. ST = sheen test. NS = no sheen, WS = weak sheen, MS = moderate sheen, SS = strong sheen

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Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: West side of 14TH AVE S		**Boring Name**	SB16
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: James Gobble	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow-stem Auger	DRILL BIT(S) SIZE: 8-inch	**Project Number**	1396024*00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 46.5 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 4/16/15	DATE COMPLETED: 4/16/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J.Sawdey / J. Schwarz	
SEAL: N/A	FROM N/A TO N/A FT.	SAMPLING METHODS	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			0					Air Vac clearance to 5-feet. Fill material with gravel, coarse sands, and concrete debris.
			5					
SS	1.5	15 16 15	10		2.2 / NS		SP/SM	**Poorly graded SAND with silt** Gray to dark gray, higher silt content in upper 1-foot of sample (~50%), decreased silt content in lower 0.5-foot of sample (~10%), siltier zones are damp, sand zones are dry, some organic staining, no odor or sheen
SS	1.5	27 31 24	15		1.4 / NS		ML	**SILT** Brown gray to dark brown gray, traces of very fine sand (<5%), moderately dense, stiff, moderate plasticity, damp, no odor or sheen
SS	1.5	8 7 6	20		0.4 / NS			Sparse amounts of shells
SS	1.5	11 12 14	25	SB16-26	0.4 / NS		SP/SM	Decreasing density, more damp, increasing shells **Poorly graded SAND with silt** Gray to green gray, fine to coarse sand with approximately 10% silt, abundant shells, wet, briney odor, no sheen
			30					

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F-40.1
(6-87) (3-88) (8-90)

Project Name Ecology Precision Engineering **Project Number** 1396024*00 **Boring Name** SB16

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	21 27 30			0.4 / NS		ML	**SILT with sand** Gray to blue gray, traces of very fine to fine sand (<5%), trace amount of shells, traces of sand pockets with pyrite, very dense and firm, moderate plasticity, damp, no odor or sheen
SS	1.5	18 21 30	35		0.2 / NS		ML	**Sandy SILT with gravel** Gray mottled with brown, some fine to medium sand (up to 30%), some gravel (up to 10%) up to 1/4-inch diameter, dense, low plasticity, damp, no odor or sheen
SS	0.5	60	40	SB16-40 SB16	0.3 / NS		GW/GM	**Well-graded GRAVEL with silt and sand** Gray to dark gray, gray brown, approximately 30% medium to very coarse sand, some silt, wet, no odor or sheen
SS	0.5	150	45	SB16-46	0.3 / NS		ML	**Sandy SILT with gravel** Gray to blue gray, glacial till, includes cobbles up to 3-inches in diameter, very hard, difficult to break by hand, damp to dry, no odor or sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. ST = sheen test. NS = no sheen, WS = weak sheen, MS = moderate sheen, SS = strong sheen

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Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: West side of 14TH AVE S	**Boring Name** SB17
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: James Gobble
	Project Name Ecology Precision Engineering
DRILLING METHOD(S): Hollow-stem Auger	DRILL BIT(S) SIZE: 8-inch
	Project Number 1396024*00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: N/A	FROM N/A TO N/A FT.
SLOTTED CASING: N/A	FROM N/A TO N/A FT.
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.
SEAL: N/A	FROM N/A TO N/A FT.
GROUT: N/A	FROM N/A TO N/A FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 44.0 ft. bgs
DATE STARTED: 4/16/15	DATE COMPLETED: 4/17/15
EASTING (FT): N/A	NORTHING (FT): N/A
LOGGED BY: J.Sawdey / J. Schwarz	
SAMPLING METHODS	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
								Air Vac clearance to 5-feet. Fill material with gravel, coarse sands, and concrete debris.
			5					
SS	1.5	17 21 20	10		1.4 / NS		SP/SM	**Poorly graded SAND with silt** Brown gray to dark brown gray, traces of silt, soft, damp, no odor or sheen
SS	1.5	6 8 7	15		1.2 / NS			**SILT with sand** Brown gray, 10-15% sand, trace amount of shells, moderately firm, medium plasticity, damp, no odor or sheen
SS	1.5	12 15 13	20		0.9 / NS		ML	Less sand
SS	1.5	15 15 15	25	SB17-26	0.6 / NS		SP/SM	**Poorly graded SAND with silt** Brown gray mottled with greenish gray, moderate amount shells, soft to firm, damp, no odor or sheen
							ML	**SILT with sand** Brown gray, trace amounts of sand, moderate amount of shells, soft, medium plasticity, damp, no odor or sheen
			30					

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F-40.1
(6-87) (3-88) (8-90)

Project Name Ecology Precision Engineering **Project Number** 1396024*00 **Boring Name** SB17

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	14 251 19			0.7 / NS		ML	**SILT with sand** Brown gray, trace amounts of sand, moderate amount of shells, soft, medium plasticity, damp, no odor or sheen ***(Continued)*** Color changes to gray to greenish gray, coarse sand, pockets of sand and pyrite, firm, trace of cobbles
			35		0.5 / NS			
SS	1.5	~~19~~ ~~23~~ 27		SB17			ML	**Sandy SILT with gravel** Light to dark gray, well graded, fine to coarse sand, subrounded to rounded gravel up to 1/2-inch diameter, damp to wet in more gravelly areas, no odor or sheen
			40		0.5 / NS			
SS	1.5	~~27~~ ~~18~~ 31		SB17-40				
SS	0.5	~~150~~		SB17-43.5	0.3 / NS		GW/GM	**Well-graded GRAVEL with silt and sand** Gray to tan gray, glacial till, very hard and dense, dry, no odor or sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. ST = sheen test. NS = no sheen, WS = weak sheen, MS = moderate sheen, SS = strong sheen

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Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: West side of 14TH AVE S	**Boring Name** SB18
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: James Gobble
	Project Name Ecology Precision Engineering
DRILLING METHOD(S): Hollow-stem Auger	DRILL BIT(S) SIZE: 8-inch
	Project Number 1396024*00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.
BLANK CASING: N/A	FROM N/A TO N/A FT.
SLOTTED CASING: N/A	FROM N/A TO N/A FT.
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.
SEAL: N/A	FROM N/A TO N/A FT.
GROUT: N/A	FROM N/A TO N/A FT.

ELEVATION AND DATUM: bgs	TOTAL DEPTH: 39.5 ft. bgs
DATE STARTED: 4/17/15	DATE COMPLETED: 4/17/15
EASTING (FT): N/A	NORTHING (FT): N/A
LOGGED BY: J. Sawdey	
SAMPLING METHODS	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
								Air Vac clearance to 5-feet. Fill material with gravel, coarse sands, and concrete debris.
			5					
SS	1.5	10 12 12	10		0.3 / NS		SW/SM	**Well-graded SAND with silt and gravel** Light brown to brown, brown gray, some gravel, traces of silt, wet, no odor or sheen
								Wood layer
								SILT with sand Brown to maroonish brown, organic woody layers, decreasing very fine to fine sand with depth, moderately dense, firm, medium plasticity, damp, no odor or sheen
SS	1.5	7 8 8	15		0.5 / NS		ML	
SS	1.5	8 7 9	20		0.3 / NS			
SS	1.5	9 12 12	25	SB18-26	0.4 / NS		SW/SM	**Well-graded SAND with silt** Gray to greenish gray, abundant shells, soft, wet, briney odor, no sheen
			30	SB18				

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F-40.1
(6-87) (3-88) (8-90)

Project Name Ecology Precision Engineering **Project Number** 1396024*00 **Boring Name** SB18

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	10 9 9			0.4 / NS		ML	**SILT with sand** Gray to greenish gray, sand occurs in lenses with pyrite, some organic material, very hard and dense, dry, no odor or sheen
			35	SB18	0.3 / NS			
SS	1.5	12 13 19		SB18-36.5			SW/SM	**Well-graded SAND with silt** White quartzitic sand with brown gray silt, medium to coarse sand with muscovite in part (beach sand), soft, damp, no odor or sheen
SS	0.5	200		SB18-39.5	0.1 / NS		GW/GM	**Well-graded GRAVEL with silt and sand** Glacial till, very hard, brittle, dry, no odor or sheen

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. ST = sheen test. NS = no sheen, WS = weak sheen, MS = moderate sheen, SS = strong sheen

KJ PNW BORING N&E APRIL 2015 HSA.GPJ KJ PNW.GDT 6/25/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: East side of 14TH AVE S		**Boring Name**	SB19
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Curtis	**Project Name**	Ecology Precision Engineering
DRILLING METHOD(S): Hollow-stem Auger	DRILL BIT(S) SIZE: 8-inch	**Project Number**	1396024*00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 50.5 ft. bgs
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 4/20/15	DATE COMPLETED: 4/20/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	EASTING (FT): N/A	NORTHING (FT): N/A
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Sawdey	
SEAL: N/A	FROM N/A TO N/A FT.	SAMPLING METHODS	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
								Air Vac clearance to 5-feet.
			5					
SS	1.5	7 4 3	10		0.0 / NS		SP/SM	**Poorly graded SAND with silt** Brown to brownish gray, Approximately 15% silt, fine to medium sand, soft, wet, no odor or sheen
SS	1.5	3 3 3	15		0.0 / NS			
							ML	**SILT with sand** Brown, brownish gray to dark brownish gray, Approximately 10-15% fine sand, moderately firm and dense, medium plasticity, damp, no odor or sheen
SS	1.5	3 4 4	20		0.1 / NS			Silty sand lens at 20 bgs, wet Increased sand (20-25%), weak plasticity
SS	1.5	10 13 14	25		0.1 / NS		SP/SM	**Poorly graded SAND with silt** Brownish gray to dark brownish gray, very fine to fine sand with approximately 20% silt, abundant woody organic material, moderately dense, wet, no odor or sheen
			30					

KJ PNW BORING N&E APRIL 2015 HSA.GPJ KJ PNW.GDT 6/25/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Ecology Precision Engineering **Project Number** 1396024*00 **Boring Name** SB19

SAMPLES TYPE	SAMPLES RECOV. (FEET)	ANALYTICAL SAMPLE INTERVAL	DEPTH (FEET)	SAMPLE NAME		LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
SS	1.5	4 4 5			0.5 / NS		ML	**SILT with sand** Brown, brownish gray to dark brownish gray, Approximately 10-15% fine sand, moderately firm and dense, medium plasticity, damp, slight briney sulfur-like odor, no sheen
SS	1.5	5 7 7	35	SB19-35	0.4 / NS		SM	**Silty SAND** Gray to greenish gray, poor to moderately graded, abundant shells, soft, damp to wet, continued briney and sulfur like odor, no sheen
SS	1.5	8 7 9	40		0.5 / NS			Increased wood material, increasing silt content
SS	1.5	9 14 40	45	SB19 SB19-45	0.6 / NS		GW/GM	**Well-graded GRAVEL with silt and sand** Gray to blue gray, angular gravels up to 1/4-inch diameter, approximately 25% silt and 10% sand, soft, wet, no odor or sheen
							GW/GM	**Well-graded GRAVEL with silt and sand** Gray to dark gray, glacial till, very hard and firm, dry, no odor or sheen
SS	0.5	100+	50	SB19-50	0.3 / NS			

NOTES

1. PID = Photoionization detector (reading in parts per million)
2. bgs = below ground surface
3. ST = sheen test. NS = no sheen, WS = weak sheen, MS = moderate sheen, SS = strong sheen

KJ PNW BORING N&E APRIL 2015 HSA.GPJ KJ PNW.GDT 6/25/15

Historical Lithologic Logs – Precision Engineering

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-1	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/7/05 to 6/9/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	S. Mauldin	Hole Depth	15.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: CONCRETE.
1			100%	GP					0.5 to 13.0 feet: SANDY SILT with GRAVEL (SM); dark yellowish brown; 50% fines, nonplastic; 40% sand, fine to coarse; 10% gravel, fine, rounded to subrounded; micaceous; stiff; dry.
2						GP1-S-1.5			
3									
4			100%	GP					
5									
6			100%	GP					@ 5.5 to 6.0 feet: Reddish brown mottling.
			100%	GP		GP1-S-6.0			
7									
8			78%	GP					
9									
10						GP1-S-10.0			
11									
12									
13			100%	GP					13.0 to 15.0 feet: SILT (ML); dark gray; 100% fines, nonplastic; very stiff; dry.
14									
15									Total Depth : 15.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

GBLWC W:\GINT\GINTWPROJECTS\0053.01\GP1-GP11.GPJ 8/25/07

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-2	1 of 2

Project Name	Precision Engineering	TOC Elevation (feet)	–
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	–
Start/End Date	6/7/05 to 6/9/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	S. Mauldin	Hole Depth	30.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: CONCRETE.
1			69%	GP		GP2-S-1.0			0.5 to 7.0 feet: SANDY SILT with GRAVEL (SM); dark yellowish brown; 50% fines, nonplastic; 40% sand, fine to coarse; 10% gravel, fine, rounded to subrounded; micaceous; stiff; dry.
2									
3									
4			100%	GP					
5									
6			100%	GP					
7									7.0 to 30.0 feet: SILT with SAND (ML); gray; 85% fines, nonplastic; 15% sand, fine; trace medium to coarse gravel; very stiff; dry.
8									
9									
10			64%	GP		GP2-S-10.0			
11									
12									
13									
14									
15			76%	GP GW					@ 15.0 feet: Dark gray; low plasticity; percentages 95% fines and 5% sand.
16									
17									
18						GP2-W-17.5-recon			
19									
20									

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-2	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			78%	GP					
22									
23									
24									
25			100%	GP					
26									
27									
28									
29									
30									

Total Depth : 30.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-3	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/9/05 to 6/9/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	S. Mauldin	Hole Depth	15.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			70%	GP					0 to 0.5 feet: CONCRETE.
1									0.5 to 2.0 feet: SANDY SILT with GRAVEL (SM); dark yellowish brown; 50% fines, nonplastic; 40% sand, fine to coarse; 10% gravel, fine, angular; micaceous; stiff; dry.
2						GP3-S-2.0			2.0 to 5.0 feet: SILT (ML); gray; 100% fines, nonplastic; very stiff; dry.
3									
4									
5			95%	GP					5.0 to 8.0 feet: SANDY SILT with GRAVEL (SM); grayish brown with orangish mottling; 50% fines, nonplastic; 30% sand, fine to coarse; 20% gravel, fine, angular; micaceous; stiff; dry.
6						GP3-S-6.0			
7									
8			83%	GP					8.0 to 15.0 feet: SILT with GRAVELS (ML); dark gray; 100% fines, nonplastic; trace gravel; very stiff; dry.
9									
10									
11									
12			100%	GP					@ 12.0 feet: Damp.
13									
14						GP3-S-14.0			
15									

Total Depth : 15.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-4	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/16/05 to 6/16/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			68%	GP					0 to 0.5 feet: CONCRETE.
1									0.5 to 0.9 feet: GRAVELLY SAND (SW); dark yellowish brown; 10% fines; 70% sand, fine to medium; 20% gravel, fine, subround; micaceous; damp.
2						GP4-S-1.5			0.9 to 9.7 feet: SANDY SILT (ML); dark yellowish brown; 65% fines, non to low plasticity; 35% sand, fine; micaceous; damp to moist.
3									@ 1.2 feet: Dark gray to dark grayish brown.
4									
5			70%	GP					@ 5.0 feet: Wet; trace organics.
6	▽			GW					
7									
8						GP5-W-8.0			
9									
10									9.7 to 10.0 feet: SILT (ML); dark grayish brown with reddish brown mottling; 100% fines, nonplastic; firm; moist to wet.
									Total Depth : 10.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) DTW = depth to water in feet (ft) below ground surface (bgs). The water levels are approximate.

▽ **DTW = 6.2 feet bgs**

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-5	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/16/05 to 6/16/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	20.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			98%	GP					0 to 0.3 feet: ASPHALT.
1									0.3 to 2.5 feet: GRAVELLY SILT (ML): dark grayish brown; 80% fines, nonplastic; 20% gravel, fine to coarse, subangular; trace fine sand; damp.
2						GP5-S-1.5			
3									2.5 to 20.0 feet: SILT with GRAVEL (ML); dark grayish brown; 90 to 95% fines, nonplastic; 5 to 10% gravel, fine; trace fine sand; very stiff; dry to damp.
4									
5			98%	GP					
6									
7									
8						GP5-S-8.0			
9									
10			100%	GP					
11									
12									@ 11.2 to 12.0 feet: Percentages change to 80% fines and 20% gravels.
13									
14	▽		100%	GP		GP5-S-14.0			@ 14.0 feet: Moist to wet.
15									
16				GW					
17									
18			50%	GP		GP5-W-18.0			
19									
20									Total Depth : 20.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) DTW = depth to water in feet (ft) below ground surface (bgs). The water levels are approximate.

▽ **DTW = 14.0 feet bgs**

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-6	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/16/05 to 6/16/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	20.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	GP					0 to 0.5 feet: CONCRETE.
1						GP6-S-1.0			0.5 to 20.0 feet: SANDY SILT with GRAVEL (ML); dark yellowish brown; 65% fines, nonplastic; 20% sand, fine; 15% gravel, fine to coarse, subangular to angular; micaceous; very stiff; dry to damp.
2									@ 0.5 to 1.0 feet: Greenish yellow staining.
3									
4									
5			100%	GP					
6									
7									@ 7.0 feet: Dark gray to dark brownish gray.
8			100%	GP		GP6-S-8.0			@ 8.0 to 11.5 feet: Percentage change to 60% fines, 15% sand, and 25% gravel.
9									
10									
11									
12			100%	GP					
13									
14									
15			100%	GP		GP6-S-14.5			@ 14.5 to 20.0 feet: Sluff in samplers is moist to wet while soil is dry to damp.
16	▽			GW					
17									
18			100%	GP		GP6-W-18.0			
19									
20									Total Depth : 20.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) DTW = depth to water in feet (ft) below ground surface (bgs). The water levels are approximate.

▽ **DTW = 15.9 feet bgs**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-7	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/16/05 to 6/16/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	16.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			25%	GP					0 to 0.5 feet: CONCRETE.
1									0.5 to 1.5 feet: Void below concrete.
2						GP7-S-2.0			1.5 to 16.0 feet: SILTY SAND (SM); dark yellowish brown; 20 to 25% fines, low plasticity; 70% sand, fine; 5 to 10% gravel, fine, subrounded; micaceous; damp.
3									
4									
5			50%	GP					@ 5.0 feet: Damp to moist.
6									
7									
8						GP7-S-8.0			
9									
10			40%	GP					@ 10.0 feet: Wet.
11									
12	▽			GW					
13									
14						GP7-W-14.0			
15									
16									Total Depth : 16.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) DTW = depth to water in feet (ft) below ground surface (bgs). The water levels are approximate. 5) Becuase of the large void below the concrete the borehole was only abandoned to the top of the soil.

▽ **DTW = 12.3 feet bgs**

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
0053.01.03	GP-8	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/16/05 to 6/16/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	12.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			60%	GP					0 to 0.5 feet: CONCRETE.
1									0.5 to 1.0 feet: GRAVELLY SAND (SW); dark yellowish brown; 10% fines; 60% sand, fine to coarse; 30% gravel, fine to medium, subangular; micaceous; damp.
2						GP8-S-1.5			0.9 to 9.7 feet: SANDY SILT (ML); dark brownish gray; 65% fines, non to low plasticity; 35% sand, fine; micaceous; damp to moist.
3									
4									
5			46%	GP					@ 5.0 feet: Trace organics and from approximately 9.6 feet to 9.8 feet below ground surface 100% organics.
6									
7									
8	▽			GW					
9									
10			100%	GP		GP8-W-10.0			9.8 to 11.6 feet: SILT (ML); dark grayish brown; 100% fines, nonplastic; trace fine sand; firm; moist to wet.
11									
12									11.6 to 12.0 feet: GRAVELLY SILT (ML); dark grayish brown; 70% fines, nonplastic; 10% sand, fine; 20% gravel, fine, subround; stiff; damp to moist.

Total Depth : 12.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) DTW = depth to water in feet (ft) below ground surface (bgs). The water levels are approximate.

▽ DTW = 7.7 feet bgs

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-9	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/17/05 to 6/17/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			28%	GP					0 to 0.5 feet: CONCRETE.
									0.5 to 1.5 feet: Void below concrete.
2						GP9-S-2.0			1.5 to 10.0 feet: SILTY SAND (SM); dark yellowish brown; 40% fines, low plasticity; 55% sand, fine; 5% gravel, medium, subangular; damp.
3									
4									
5			4%	GP					@ 4.9 feet: Wet.
6									
7									
8									
9									
10									Total Depth : 10.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed. 4) Becuase of the large void below the concrete the borehole was only abandoned to the top of the soil.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-10	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	–
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	–
Start/End Date	6/17/05 to 6/17/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	15.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			75%	GP					0 to 0.4 feet: CONCRETE.
1									0.4 to 15.0 feet: SANDY SILT with GRAVEL (ML); dark yellowish brown; 60% fines, nonplastic; 25% sand, fine; 15% gravel, fine to coarse, subround to angular; micaceous; stiff; dry to damp.
2						GP10-S-1.5			@ 1.5 feet: Brownish gray.
3									
4			100%	GP					
5									
6									
7			100%	GP		GP10-S-7.0			@ 7.0 to 12.0 feet: Percentages 65% fines, 30% sand, and 5% gravel.
8									
9									
10			100%	GP					
11									
12									
13			100%	GP					
14						GP10-S-13.5			@ 14.0 feet: Moist to wet and percentages 65% fines, 30% sand, and 5% gravel.
15									Total Depth : 15.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

GBLWC W:\GINTGINTWPROJECTS\0053.01\GP1-GP11.GPJ 8/26/07

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0053.01.03	GP-11	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	--
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	--
Start/End Date	6/17/05 to 6/17/05	Northing	
Driller/Equipment	Boart Longyear/Geoprobe	Easting	
Geologist/Engineer	A. Hughes	Hole Depth	7.0-feet
Sample Method	Direct Push	Outer Hole Diam	2-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			95%	GP					0 to 0.4 feet: CONCRETE.
1									0.4 to 4.0 feet: SILTY SAND with GRAVEL (SM); dark yellowish brown; 30% fines, nonplastic; 55% sand, fine to coarse; 15% gravel, fine to coarse, subangular to angular; firm; dry.
2						GP11-S-2.0			
3									
4			100%	GP					4.0 to 7.0 feet: SANDY SILT (ML); dark yellowish brown with reddish brown mottling; 70% fines, nonplastic; 30% sand, fine; trace fine, subrounded gravel; damp to moist.
5									
6									
7			100%	GP		GP11-S-6.5			@ 6.5 feet: Moist to wet.
									Refusal at 7.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe. 3) Borings were not surveyed.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP12	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			50%	GP					0 to 0.5 feet: CONCRETE.
2									0.5 to 8.0 feet: GRAVELLY SAND with SILT (SW); 15% fines, nonplastic; 60% sand, fine to medium; 25% gravels, fine to medium, angular to subrounded; dry.
3						GP12-S-3.0			
4			100%	GP					@ 4.0 feet: Increase in courseness; sand, course; gravel, fine to medium.
5						GP12-S-5.0			@ 5.0 feet: Wet.
6									
7									
8									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP13	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			75%	GP		GP13-S-1.0			0 to 0.5 feet: CONCRETE.
1									0.5 to 3.5 feet: SILTY SAND (SM); dark brown; 30% fines, nonplastic; 70% sand, fine, dense; damp.
2									
3									
4			75%	GP					3.5 to 4.5 feet: SILT with SAND (ML); dark brown; 85% fines, low plasticity; 15% sand, fine; moist.
5									4.5 to 8.0 feet: GRAVELLY SILT with SAND (ML); dark grayish brown; 70% fines, low to medium plasticity; 10% sand, fine; 20% gravels, fine to medium; moist.
6				GW		GP13-S-6.0			@ 6.0 feet: Wet.
7									
8						GP13-W-8.0			
9									
10									

Total Depth: 10.0 feet bgs

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP14	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: CONCRETE.
1			100%	GP					0.5 to 1.0 feet: SILTY SAND with GRAVEL (SM); brown; 30% fines, nonplastic; 60% sand, fine; 10% gravels, fine to medium, subangular; dry.
2									1.0 to 7.0 feet: SANDY SILT with GRAVEL (ML); yellowish brown; 70% fines, nonplastic; 20% sand, fine; 10% gravels, fine to medium, subangular; dry.
3						GP14-S-3.0			
4			100%	GP					
5									
6			100%	GP		GP14-S-6.0			
7									7.0 to 8.0 feet: SILTY SAND with GRAVEL (SM); light yellowish brown; 30% fines, nonplastic; 60% sand, fine to course; 10% gravels, fine to medium; wet.
8									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP15	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			100%	GP					0 to 0.5 feet: CONCRETE.
2									0.5 to 8.0 feet: SILTY SAND (SM); dark gray; 20% fines, nonplastic; 80% sand, fine; trace gravels, fine; damp.
3						GP15-S-3.0			
4			100%	GP					
5									@ 5.0 feet: Organic debris; black; wet.
6				GW		GP15-S-6.0			
7									
8						GP15-W-8.0			
9									
10									

Total Depth: 10.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP16	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	10.5-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
									0 to 0.5 feet: CONCRETE.
1			100%	GP		GP16-S-1.0			0.5 to 8.0 feet: SILTY SAND with GRAVEL (SM); gray with iron staining; 20% fines, nonplastic; 65% sand, fine; 15% gravels, fine to medium, angular to subrounded; damp.
2									
3									@ 3.0 feet: Color change to yellowish brown; dry.
4			100%	GP					@ 4.0 feet: Water in the top of the sample.
5						GP16-S-5.0			
6									@ 6.0 feet: Dry.
7			100%	GP					@ 7.0 feet: Wet.
8									8.0 to 10.5 feet: SANDY SILT with GRAVEL (ML); light gray; 70% fines, nonplastic, stiff; 20% sand, fine; 10% gravels, fine to medium, subrounded; dry.
9									
10									@ 9.5 feet: Color change to yellowish brown.
									Total Depth: 10.5 feet bgs. Hit refusal.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP17	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	GP					0 to 0.5 feet: CONCRETE.
1						GP17-S-1.0			0.5 to 7.0 feet: SANDY SILT with GRAVEL(ML); dark brown; 70% fines, nonplastic; 20% sand, fine; 10% gravels, fine to medium; angular to subrounded; damp.
2									
3									
4									
			100%	GP					
5									
6						GP17-S-6.0			@ 6.0 feet: Color change to gray; wet.
7									7.0 to 8.0 feet: SANDY SILT (ML); yellowish brown with iron staining; 70% fines, nonplastic; 30% sand, fine to medium; damp.
8									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP18	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	4.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			100%	GP		GP18-S-1.0			0 to 0.5 feet: CONCRETE.
2									0.5 to 4.0 feet: SILTY SAND with GRAVEL (SM); light gray; 20% fines, nonplastic; 70% sand, fine, dense; 10% gravels, fine to medium; odor; damp.
3			100%	GP					@ 2.0 feet: Color change to dark brown; dry.
4									@ 2.5 feet: Color change to yellowish brown.

Total Depth: 4.0 feet bgs. Hit refusal.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP19	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	9.5-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	GP					0 to 0.5 feet: CONCRETE.
1						GP19-S-1.0 GPDUP-S-1.0			0.5 to 2.0 feet: SILTY SAND with GRAVEL (SM); gray with brown mottling; 30% fines, nonplastic; 60% sand, fine; 10% gravels, fine to medium, angular to subrounded; damp.
2									2.0 to 8.0 feet: SANDY SILT (ML); dark brown; 60% fines, low plasticity, stiff; 40% sand, fine; damp to moist.
3									
4			100%	GP					
5									@ 5.0 feet: Trace gravels, fine to medium.
6									
7						GP19-S-7.0			@ 7.0 feet: Wet.
8			100%	GP					8.0 to 9.5 feet: SILTY SAND with GRAVEL (SM); yellowish brown; 30% fines, nonplastic; 60% sand, fine; 10% gravels, fine to medium; dry.
9									

Total Depth: 9.5 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP20	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			80%	GP					0 to 0.5 feet: CONCRETE.
1						GP20-S-1.0			0.5 to 1.5 feet: SILTY SAND with GRAVEL (SM); brownish gray; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine to medium, subrounded; slight odor; damp to moist.
2									1.5 to 8.0 feet: SILTY SAND (SM); dark blackish brown; 35% fines, nonplastic; 65% sand, fine; trace organics at top of sample; slight odor; moist
3									
4			100%	GP					
5									Grades to sandy silt.
6						GP20-S-6.0			
7									@ 7.0 feet: Wet.
8									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP21	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			50%	GP					0 to 0.5 feet: CONCRETE.
1						GP21-S-1.0			0.5 to 4.0 feet: SILTY SAND with GRAVEL (SM); light yellowish brown; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine, subangular; dry to damp.
2									@ 2.0 feet: Color change to gray; damp.
3									
4									
			100%	GP					4.0 to 8.0 feet: SILTY SAND (SM); dark blackish brown; 35% fines, low to medium plasticity; 65% sand, fine; moist.
5									
6									
7						GP21-S-6.5			@ 7.0 feet: Wet.
8									

Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP22	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/13/05 to 12/13/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	12.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	GP					0 to 0.5 feet: CONCRETE.
1						GP22-S-1.0			0.5 to 12.0 feet: SILTY SAND with GRAVEL (SM); brown; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine to medium, angular to subrounded; dry.
2									
3									@ 3.0 feet: Color change to yellowish brown.
4			100%	GP					
5						GP22-S-5.0			@ 5.0 feet: Color change to gray; increase in density.
6			100%	GP					
7									
8			100%	GP					
9									
10			100%	GP		GP22-S-10.0			@ 10.0 feet: Color change to brown; wet.
11									@ 11.0 feet: Color change to yellowish brown; dry.
12									

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP23	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	11.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			100%	GP		GP23-S-1.0			0 to 0.5 feet: CONCRETE.
2									0.5 to 11.0 feet: SILTY SAND with GRAVEL (SM); light yellowish brown; 20% fines, nonplastic; 70% sand, fine, loose; 10% gravels; dry.
3									@ 2.0 feet: Color change to gray; dense.
4			100%	GP					
5									
6			100%	GP					
7						GP23-S-7.0			
8			100%	GP					
9									
10			100%	GP					
11						GP23-S-10.5			

Total Depth: 11.0 feet bgs. Hit refusal.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Maul Foster & Alongi, Inc.

Project Number	Well Number	Sheet
8006.08.04	GP24	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: CONCRETE.
1			100%	GP					0.5 to 5.5 feet: SILTY SAND with GRAVEL (SM); gray; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine to medium, subangular to subrounded; dry.
2									
3						GP24-S-3.0 GPDUP-S-3.0			
4			100%	GP					
5									
6									5.5 to 6.5 feet: SANDY SILT (ML); gray; 70% fines, nonplastic, very stiff; 30% sand, fine; dry.
7			100%	GP		GP24-S-6.5			6.5 to 9.5 feet: SILTY SAND with GRAVEL (SM); gray; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine to medium, subangular to subrounded; dry.
8									
9						GP24-S-9.0			
10									9.5 to 10.0 feet: SANDY SILT (ML); gray; 70% fines, nonplastic, very stiff; 30% sand, fine; dry.
									Total Depth: 10.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP25	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	10.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			100%	GP					0 to 0.5 feet: ASPHALT.
1						GP25-S-1.0			0.5 to 7.0 feet: SAND with GRAVEL (SW); light gray; trace fines; 85% sand, fine, dense; 15% gravels, fine to medium, angular to subrounded; dry.
2									
3			100%	GP					
4									
5									
6									
7			100%	GP		GP25-S-7.0			7.0 to 10.0 feet: SANDY SILT (ML); brownish gray; 70% fines; 30% sand, fine to medium; wet.
8									
9									
10									

Total Depth: 10.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP26	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	9.5-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
									0 to 0.5 feet: ASPHALT.
1			100%	GP		GP26-S-1.0			0.5 to 9.5 feet: SAND with GRAVEL (SW); light gray with spots of brownish yellow; 85% sand, fine, dense; 15% gravel, fine to medium; dry.
2									
3									
4			100%	GP					
5									
6									@ 6.0 feet: Color change to spots of greenish yellow.
7			100%	GP		GP26-S-7.0			
8			100%	GP					
9									
						GP26-S-9.5			Total Depth: 9.5 feet bgs. Hit refusal.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP27	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	13.5-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			100%	GP					0 to 0.5 feet: ASPHALT.
1						GP27-S-1.0			0.5 to 13.5 feet: SAND with GRAVEL (SW); light gray; trace fines; 85% sand, fine, dense; 15% gravels, fine to medium, angular to subrounded; dry.
2									
3									
4			100%	GP					
5									
6									@ 6.0 feet: Color change to slight pinkish color with spots of yellow.
7						GP27-S-6.5			
8			100%	GP					@ 8.0 feet: Decrease in courseness; gravels, fine.
9									
10									
11			100%	GP					
12									
13			100%	GP					
						GP27-S-13.0			

Total Depth: 13.5 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

GBLWC W:\GINT\GINTW\PROJECTS\8006.08\GP12-GP32.GPJ 8/25/07

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP28	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	9.5-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: ASPHALT
1			100%	GP		GP28-S-1.0			0.5 to 4.0 feet: SILTY SAND with GRAVEL (SM); light brownish gray; 30% fines, nonplastic; 60% sand, fine; 10% gravels, fine to medium, angular to subrounded; damp to moist.
2									
3			100%	GP					
4									
5									4.0 to 9.5 feet: SAND with GRAVEL (SW); light gray with spots of brown; trace fines; 85% sand, fine; 15% gravels, fine to medium, angular to subrounded; dry.
6									
7			100%	GP		GP28-S-7.0			
8									@ 7.5 feet: Moist to Wet.
9									

Total Depth: 9.5 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP29	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: ASPHALT.
1			100%	GP		GP29-S-1.0			0.5 to 2.0 feet: GRAVELLY SAND with SILT (SW); greenish gray; 5% fines, nonplastic; 70% sand, fine; 25% gravels, fine to medium; damp.
2									
3									2.0 to 6.5 feet: SILTY SAND (SM); dark brown; 30% fines, nonplastic; 70% sand, fine; damp.
4			100%	GP					
5									
6						GP29-S-6.0			
7									6.5 to 8.0 feet: SANDY SILT with GRAVEL (ML); brown; 60% fines, medium plasticity; 30% sand, fine to medium; 10% gravels, fine; trace organics and woody debris; wet.
8									

Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP30	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	GP					0 to 0.5 feet: ASPHALT.
1						GP30-S-1.0			0.5 to 8.0 feet: SILTY SAND (SM); greenish gray; 30% fines, nonplastic; 70% sand, fine; trace gravels, fine; damp.
2									
3									
4									@ 3.5 feet: Color change to dark brown; some organics.
			100%	GP					
5									
6						GP30-S-6.0			
7									@ 6.5 feet: Color change to blackish brown; wet.
8									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP31	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/12/05 to 12/12/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	8.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			50%	GP					0 to 0.5 feet: ASPHALT.
1						GP31-S-1.0			0.5 to 3.0 feet: SILTY SAND with GRAVEL (SM); greenish gray; 20% fines, nonplastic; 70% sand, fine; 10% gravels, fine; damp.
2									
3									3.0 to 8.0 feet: SILTY SAND (SM); dark brown; 20% fines, nonplastic; 80% sand, fine; damp to moist.
4			100%	GP					
5									
6						GP31-S-6.0			
7									@ 6.5 feet: Color change to blackish brown; wet.
8									7.5 to 8.0 feet: WOODY DEBRIS.
									Total Depth: 8.0 feet bgs.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	GP32	1 of 1

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, Washington 98108	Surface Elevation (feet)	
Start/End Date	12/14/05 to 12/14/05	Northing	
Driller/Equipment	Cascade Drilling/Geoprobe	Easting	
Geologist/Engineer	M. Gibson	Hole Depth	3.0-feet
Sample Method	Direct Push	Outer Hole Diam	3 1/4-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			100%			GP32-S-1.0			0 to 0.5 feet: CONCRETE.
2									0.5 to 3.0 feet: SILTY SAND with GRAVEL (SM); orangish brown; 20 % fines, nonplastic; 70% sand, fine, dense; 10% gravels, fine to medium; odor; damp.
3									@ 1.0 feet: Color change to yellowish brown; dry.

Total Depth: 3.0 feet bgs. Hit refusal.

NOTES: 1) Abandon borehole with 3/8-inch bentonite chips hydrated with potable water. 2) GP = geoprobe.

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LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	MW-1
LOCATION	Precision Engineering	PAGE	1 OF 2
DRILLED BY	Tacoma Pump & Drill	REFERENCE ELEV.	99.87'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	40.00'
LOGGED BY	Stu Ryman	DATE COMPLETED	6/16/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
S-1	SS	50/2"		5				0 - 28 feet: GRAVELLY SANDY SILT (TILL); light grey; fine to coarse; dry to moist, very dense. (SM/ML)
S-2	SS	50/2"		10				
S-3	SS	50/2"		15				
								--- @ 18 feet: Ground water encountered.
S-4	SS	50/2"		20				
S-5	SS	50/0"		25				
								28 - 39 feet: SAND; grey; medium grained with some subrounded gravels; very dense. (SP)
S-6	SS	50/1"		30				
S-7	SS	50/4"		35				
				40				39 - 40 feet: GRAVELLY SANDY SILT; grey;

REMARKS

1) Dual completion monitoring well and piezometer. 2) See LITHLOGIC DESCRIPTION for Well and Piezometer Completion Details.

SWEET-EDWARDS/EMCON

S20-01.04.PENGR.CJE.09/06/8

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	MW-1
LOCATION	Precision Engineering	PAGE	2 OF 2
DRILLED BY	Tacoma Pump & Drill	REFERENCE ELEV.	99.87'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	40.00'
LOGGED BY	Stu Ryman	DATE COMPLETED	6/16/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				45				fine to coarse; dense. (GM)
				50				Bottom of boring at 40 feet. Well and Piezometer Completion Details: Monitoring well constructed of 2-inch Schedule 40 PVC with 10-foot, 0.010-inch slot screen. Piezometer constructed of 1-inch Schedule 80 PVC with 5-foot, 0.010-inch slot screen. Cement surface seal, 0-2 feet; bentonite chips, 2-13 feet and 20-28 feet; washed pea gravel, 13-20 feet and 28-40 feet.
				55				
				60				
				65				
				70				
				75				
				80				

REMARKS

1) Dual completion monitoring well and piezometer. 2) See LITHLOGIC DESCRIPTION for Well and Piezometer Completion Details.

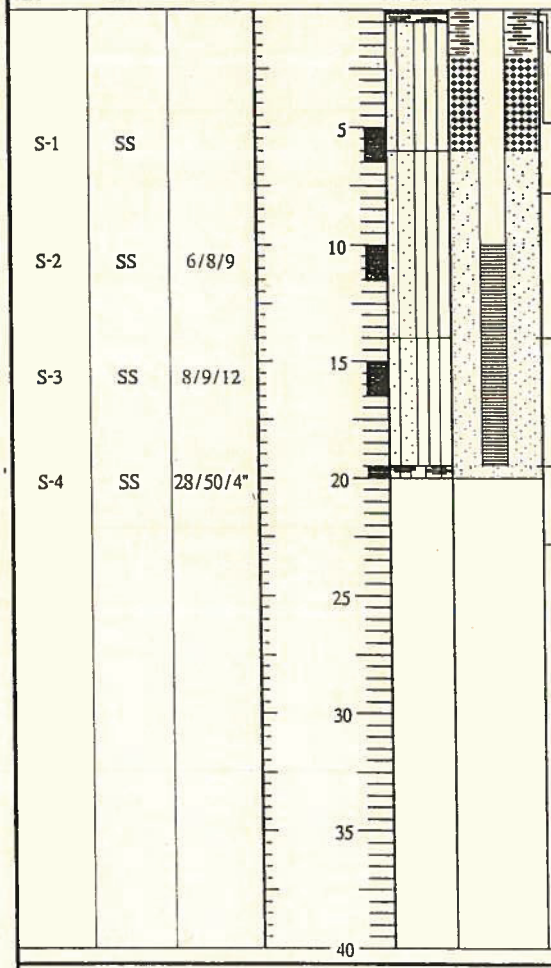
SWEET-EDWARDS/EMCON

S20-01.04.PENGR.CJF.02/06/

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	MW-2
LOCATION	Precision Engineering	PAGE	1 OF 1
DRILLED BY	Tacoma Pump & Drill	REFERENCE ELEV.	99.03'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	20.00'
LOGGED BY	Stu Ryman	DATE COMPLETED	6/15/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	LITHOLOGIC DESCRIPTION
			0 - 0.17 foot: ASPHALT. (AS.)
			0.17 - 0.5 foot: GRAVELLY SAND; grey; base coarse. (GP)
S-1	SS		0.5 - 6 feet: SILTY SAND; dark grey; fine to medium; wet; loose. (SM/ML)
S-2	SS	6/8/9	6 - 14 feet: SILTY SAND; black; fine; interbedded organic debris; loose. (SM/ML)
S-3	SS	8/9/12	14 - 19.5 feet: SILTY SAND; grey brown; fine; interbedded silts and sands; loose to medium dense. (SM/ML)
S-4	SS	28/50/4"	19.5 - 20 feet: GRAVELLY SANDY SILT (TILL); blue grey; dense. (GM)
			Bottom of boring at 20 feet.



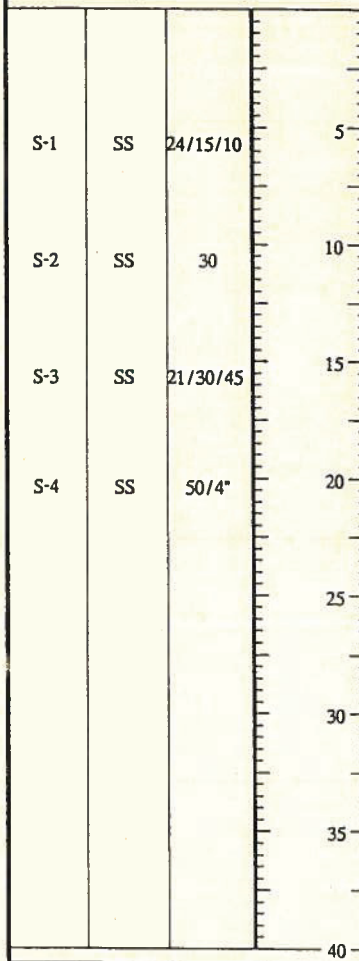
REMARKS

1) Monitoring well consturcted of 2" Schedule 40 PVC with 10', 0.01" slot screen. 2) Cement surface seal; 0-2'; bentonite chips, 2-6'; 8x12 Colorado Silica Sand, 6-20'.

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	MW-3
LOCATION	Precision Engineering	PAGE	1 OF 1
DRILLED BY	Tacoma Pump & Drill	REFERENCE ELEV.	99.74'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	20.00'
LOGGED BY	Stu Ryman	DATE COMPLETED	6/15/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	LITHOLOGIC DESCRIPTION
S-1	SS	24/15/10	0 - 14 feet: SILTY SAND; dark grey to black; fine, moist; medium dense. (SM/ML)
			--- Interbedded organics.
S-2	SS	30	
S-3	SS	21/30/45	14 - 19 feet: SILTY SAND; grey; fine; medium dense. (SM/L)
S-4	SS	50/4"	19 - 20 feet: SILTY GRAVELLY SAND (TILL); grey; brown weathered surface; fine to coarse; very dense. (SM/ML)
			Bottom of boring at 20 feet.



REMARKS

1) Monitoring well consturcted of 2" Schedule 40 PVC with 10', 0.010" slot screen. 2) Cement surface seal, 0-3'; bentonite chips, 3-6.5'; 8x12 Colorado Silica Sand, 6.5-19.5'.

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	MW-4
LOCATION	Precision Engineering	PAGE	1 OF 1
DRILLED BY	Tacoma Pump & Drill	REFERENCE ELEV.	101.47'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	25.00'
LOGGED BY	Stu Ryman	DATE COMPLETED	6/16/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				5, 10, 15, 20, 25, 30, 35, 40				

0 - 0.17 foot: ASPHALT. (AS)

0.17 - 0.5 foot: GRAVELLY SAND; brown, base coarse. (GP)

0.5 - 25 feet: GRAVELLY SILTY SAND (TILL); grey; fine to very fine sand; dry to moist; very dense. (SM/ML)

--- @ 18 feet: increased moisture.

Bottom of boring at 25 feet.

Well Completion Details:

Monitoring well constucted of 2-inch Schedule 40 PVC with 10-foot, 0.010-inch slot screen.

Cement surface seal, 0-2 feet; bentonite chips, 2-14 feet; 8x12 Colorado silica sand, 14-25 feet.

REMARKS

1) Soil sample not attempted due to dense till. 2) See LITHLOGIC DESCRIPTION column for Well Completion Details.

SWEET-EDWARDS/EMCON

S20-01.04.PENGR.C.IF.09/05/8

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW5	1 of 2

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	
Start/End Date	12/15/05 to 12/15/05	Northing	
Driller/Equipment	Cascade Drilling/Hollow Stem Auger	Easting	
Geologist/Engineer	Merideth Gibson	Hole Depth	20.5-feet
Sample Method	Split Spoon	Outer Hole Diam	10.25-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1–9									0 to 10.0 feet: See boring log for GP19.
10–11			10%	SS			50/2"		10.0 to 20.5 feet: SANDY SILT with GRAVEL; grayish brown; 70% fines, low plasticity; 20% sand, fine to medium; 10% gravel, fine to medium; wet.
12–13			25%	SS			50/4"		
14–15			25%	SS			50/4"		@ 15.0 feet: Large Gravel, subrounded.
16–17			28%	SS			50/5"		@ 17.5 feet: Large Gravel approximately 3-inches in diameter; damp.
18–20									

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

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Maul Foster & Alongi, Inc.	Geologic Borehole Log/Well Construction		
	Project Number: 8006.08.04	Well Number: MW5	Sheet: 2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	SS			50/6"		@ 20.0 feet: Dry.
									Total Depth: 20.5 feet bgs.

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW6	1 of 2

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	
Start/End Date	12/15/05 to 12/15/05	Northing	
Driller/Equipment	Cascade Drilling/Hollow Stem Auger	Easting	
Geologist/Engineer	Merideth Gibson	Hole Depth	20.8-feet
Sample Method	Split Spoon	Outer Hole Diam	10.25-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0 to 0.5 feet: ASPHALT.
3			56%	SS			19 50/6"		2.5 to 3.0 feet: SANDY GRAVEL (GW); dark brown with lenses of green and black; 40% sand, fine to medium; 60% gravel, fine to medium; damp.
5			100%	SS			11 12 13		3.0 to 6.0 feet: SILTY SAND (SM); dark gray; 35% fines, non plastic; 65% sand, fine, dense; moist.
6									6.0 to 8.0 feet: WOODY DEBRIS.
8			90%	SS			10 11 10		8.0 to 20.0 feet: SILT with SAND (ML); light grayish brown with spots of black; 90% fines, low plasticity; 10% sand, fine; trace organics; wet.
10			100%	SS			10 11 15		@ 10.0 feet: Color change to pinkish grayish brown.
13			100%	SS			24 20 19		@ 12.5 feet: Increase in stiffness.
15			90%	SS					@ 15.0 feet: Color change to grayish brown with spots of black.
16									@ 16.5 feet: Trace woody debris.
18			100%	SS			20 19 12		
20									

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW6	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	SS					20.0 to 20.75 feet: SILTY GRAVEL with SAND (GM); grayish brown; 20% fines, medium plasticity; 15% sand, fine to course; 65% gravels, fine to medium, approximately 3-inches in diamete; wet.

Total Depth: 20.75 feet bgs.

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW7	1 of 2

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	
Start/End Date	12/16/05 to 12/16/05	Northing	
Driller/Equipment	Cascade Drilling/Hollow Stem Auger	Easting	
Geologist/Engineer	Merideth Gibson	Hole Depth	35.5-feet
Sample Method	Split Spoon	Outer Hole Diam	10.25-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1									0 to 0.5 feet: ASPHALT.
2									
3			67%	SS			4 5 5		2.5 to 3.5 feet: GRAVELLY SAND (SW); dark brown; trace fines; 70% sand, fine to course; 30% gravels, fine; dry to damp.
4									3.5 to 5.0 feet: SILTY SAND (SM); dark grayish brown; 30% fines, low plasticity; 70% sand, fine; damp.
5			100%	SS			3 6 5		5.0 to 7.5 feet: SANDY SILT with GRAVEL (ML); light grayish brown; 70% fines, non plastic; 20% sand, fine; 10% gravels, fine to medium; trace organics; damp to moist.
6									
7									
8			100%	SS			1 2 4		7.5 to 13.5 feet: SANDY SILT (ML); light grayish brown; 70% fines, non plastic; 30% sand, fine, dense; trace organics; moist. @ 8.5 feet: Wet.
9									
10									
11			100%	SS			3 4 4		
12									@ 11.5 feet: Woody debris.
13			100%	SS			5 6 7		@ 12.5 feet: Color change to light pinkish grayish brown; increase in fines, some clay.
14									13.5 to 16.0 feet: SAND with SILT (SP-SM); dark brown; 15% fines, non plastic; 85% sand, fine; trace shells; wet.
15			100%	SS			3 3 3		
16									16.0 to 18.0 feet: SILT with SAND (ML); grayish brown; 85% fines, low to medium plasticity; 15% sand, fine; trace shells; wet.
17									
18			67%	SS			8 10 26		18.0 to 28.8 feet: GRAVELLY SAND with SILT (SW); greenish gray; 10% fines, non plastic; 50% sand, fine to course; 40% gravels, fine to medium, some approximately 3-inches in diameter, subrounded; dry to damp.
19									
20									

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW7	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21									
22			50%	SS			50/6"		
23									@ 22.5 feet: Increase in sand, decrease in fines; dry to damp.
24			50%	SS			50/6"		
25									
26			50%	SS			50/5"		@ 25.5 feet: Color change to yellowish brown with iron staining; increase in fines to 15%; dry.
27									
28			50%	SS			50/5"		
29									28.8 to 29.0 feet: SAND with SILT (SP-SM); dark gray; 15% fines; 85% sand, fine; dry.
30			90%	SS			50/6"		29.0 to 32.5 feet: SAND with GRAVEL (SW); dark gray; trace fines; 85% sand, medium; 15% gravels, fine, subangular to subrounded; wet.
31									
32									
33			90%	SS			17 50/6"		32.5 to 33.5 feet: SAND (SP); dark gray; 100% sand, medium; trace gravels; wet.
34									33.5 to 35.5 feet: GRAVELLY SAND with SILT (SW); dark brown; 10% fines; 60% sand, fine; 30% gravels; dry.
35			100%	SS			50/6"		

Total Depth: 35.5 feet bgs.

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

GBLWC W:\GINT\GINTWP\PROJECTS\8006.08\MW5 - MW8.GPJ 8/25/07

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW8	1 of 2

Project Name	Precision Engineering	TOC Elevation (feet)	
Project Location	1231 S. Director Street, Seattle, WA 98108	Surface Elevation (feet)	
Start/End Date	12/15/05 to 12/15/05	Northing	
Driller/Equipment	Cascade Drilling/Hollow Stem Auger	Easting	
Geologist/Engineer	Merideth Gibson	Hole Depth	20.2-feet
Sample Method	Split Spoon	Outer Hole Diam	10.25-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1									0 to 0.5 feet: ASPHALT.
2									
3			75%	SS			14 23 13		2.5 to 3.5 feet: SAND with GRAVEL; greenish gray; trace fines; 85% sand, fine; 15% gravels, fine to medium; dry.
4									3.5 to 5.0 feet: SAND with SILT (SP-SM); gray with spots of black; 30% fines, non plastic; 70% sand, fine; trace hard substance with beads of white material in the center, strong odor; damp to moist.
5			100%	SS			2 6 9		5.0 to 8.0 feet: SANDY SILT (ML); dark blackish brown with lenses of greenish gray; 70% fines, non plastic; 30% sand; moist. @ 6.0 feet: Color change to dark brown.
6									
7									
8			100%	SS			5 8 8		8.0 to 11.0 feet: SILT with SAND (ML); light grayish brown; 85% fines, medium plasticity; 15% sand, fine; trace organics; wet.
9									
10									
11			100%	SS			7 8 14		11.0 to 15.0 feet: SILT (ML); grayish brown; 95% fines, low plasticity; 5% sand, fine; wet.
12									
13			67%	SS			17 50/6"		
14									
15									
16			67%	SS			22 50/6"		15.0 to 17.5 feet: GRAVELLY SAND with SILT NODULES(SW); dark brownish gray; 10% fines; 60% sand, medium; 30% gravels, fine to medium; wet.
17									
18			34%	SS			50/3"		17.5 to 20.2 feet: GRAVEL with SILT and SAND (GW-GM); dark brownish gray; 10% fines; low plasticity; 10% sand, fine to medium; 80% gravels, medium to course; wet.
19									
20									

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

GBLWC W:\GINT\GINTWPROJECTS\8006.08\MW5 - MW8.GPJ 8/25/07

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
8006.08.04	MW8	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
			100%	SS			50/2"		Total Depth: 20.2 feet bgs.

NOTES: 1.) SS = 2.5-inch x 1.5-foot long steel split spoon sampler. 2.) bgs = below ground surface.

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	P-1
LOCATION	Precision Engineering	PAGE	1 OF 1
DRILLED BY	Soil Sampling Srvc.	REFERENCE ELEV.	97.26'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	30.00'
LOGGED BY	John North	DATE COMPLETED	8/30/88

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
1	SS	22/12/11						0 - 27 feet: SILT; light brown grading to gray; organic rich; thinly bedded; medium dense; moist at 3 feet. (ML)
2	SS	4/6/8		5				--- SILT; as above, grey; moist; organic rich; soft; clayey at 6 feet.
3	SS	3/4/6						--- SILT; as above, grey brown; 0-10% sand; organic rich; soft; wet.
4	SS			10				
5	SS							
6	SS			15				--- SILT; as above, without organics.
7	SS							
8	SS			20				
				25				27 - 30 feet: SILT; as above; harder drilling (GLACIAL TILL?). (ML)
				30				Bottom of boring at 30 feet.
				35				Additional Remarks:
								Samples 4 through 8 pushed into soil.
								Piezometer Completion Details:
								Piezometer constructed of 1-inch Schedule 80 PVC with 14 feet of saw cut screen.
								Cement surface seal, 0-2 feet; bentonite chips, 2-4.5 feet; 8x12 Colorado silica sand, 4.5-20.5 feet; slough, 20.5-30 feet.
				40				

REMARKS

FIELD LOCATION OF BORING: SE corner, Director St & 14th Ave S. 2) All samples collected using a 2" split spoon sampler, 140 lb hammer, and a 30" drop. 3) See LITHOLIGIC DESCRIPTION for Well Completion Details.

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	P-2
LOCATION	Precision Engineering	PAGE	1 OF 2
DRILLED BY	Soil Sampling Srvc.	REFERENCE ELEV.	96.20'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	39.50'
LOGGED BY	John North	DATE COMPLETED	4/6/89

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	LITHOLOGIC DESCRIPTION
1	SS	0/6/6	0 - 3.5 feet: SILTY SAND; dark yellowish brown, 10-20% non-plastic fines; 60-70% fine to coarse sand; 10-20% fine gravel, subrounded to 1/2 inch in diameter; loose; moist. (ALLUVIUM) (SM)
2	SS	2/2/2	3.5 - 8 feet: SILTY SAND; as above, olive grey color. (SM)
3	SS	2/2/2	8 - 24 feet: SILT; olive grey to olive black; 70-80% non-plastic to low plastic fines; 20-30% very fine to fine sand; soft; cohesive; moist to wet; laminated at 8 feet; burrows or root casts at 9 feet. (MARINE/DELTAIC DEPOSITS) (ML)
			--- Shell fragments.
4	SS	2/2/2	--- SILT; as above, common white bivalve shell fragments and trace wood fragments.
5	SS	0/0/0	--- SILT; as above, light grey with increased plasticity.
			24 - 30 feet: SILTY SAND; olive grey; 30-40% non-plastic to low plastic fines; 60-70% very fine to fine sand; cohesive, wet; loose; abundant white bivalve shell fragments. (MARINE/DELTAIC DEPOSITS) (SM)
6	SS	3/2/3	--- SILTY SAND; as above, dark greenish grey to bluish grey; with pebbles; mica flakes and quartz granules at 29 to 29.5 feet.
7	SS	6/10/12	30 - 32 feet: SILTY GRAVEL; olive grey; 30% non-plastic to low plastic fines; 30% very fine to coarse grained sand; 40% fine rounded gravel; cohesive; medium dense; wet; common white bivalve shell fragments. (MARINE/DELTAIC DEPOSITS) (GM)
8	SS	7/2/6	

REMARKS

FIELD LOCATION OF BORING: Off 14th Ave east of PEI Plant. 2) Slots hand-cut using a hacksaw on alternating sides at a 6" interval. 3) See LITHLOGIC COLUMN for Additional Remarks and Well Completion Details.

LOG OF EXPLORATORY BORING

PROJECT NAME	Phase I Site Assessment	BORING NO.	P-2
LOCATION	Precision Engineering	PAGE	2 OF 2
DRILLED BY	Soil Sampling Srvc.	REFERENCE ELEV.	96.20'
DRILL METHOD	H.S. Auger	TOTAL DEPTH	39.50'
LOGGED BY	John North	DATE COMPLETED	4/6/89

SAMPLE NUMBER	SAMPLE TYPE	PENE-TRATION RATE/TIME	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				45				32 - 39 feet: SILTY SAND; light olive grey; 30-40% non-plastic to low plastic fines; 50-60% very fine to medium grained sand; 0-20% fine rounded gravel; cohesive; loose to medium dense; wet. (DELTAIC DEPOSITS) (SM)
				50				39 - 39.5 feet: SILT; light bluish grey; 80% low plastic fines; 10% very fine grained sand; 10% fine rounded gravel; cohesive; wet. (GLACIAL TILL?) (ML)
				55				Bottom of boring at 39.5 feet. Additional Remarks: All samples collected using a 2-inch split spoon sampler, 140 lb hammer, and a 30-inch drop. Well Completion Details: Concrete surface seal, 0-1 foot; bentonite chips, 1-2 feet; slough, 2-15 feet; 8x12 Colorado silica sand, 15-33 feet; slough, 33-39.5 feet.
				60				
				65				
				70				
				75				
				80				

REMARKS

FIELD LOCATION OF BORING: Off 14th Ave east of PEI Plant. 2) Slots hand-cut using a hacksaw on alternating sides at a 6" interval. 3) See LITHLOGIC COLUMN for Additional Remarks and Well Completion Details.

Historical Lithologic Logs – Seattle Limousine

BORING LOG

Date: January 26, 1990

Boring No. 1 MW-1

Project No. 1001

Depth Ft.	Soil Clas Smbl	Sample No.	Soil Description	Comments
			Sand and gravel road base material	
			Gray black clayey silt	
2				
4				
6			Well Screen	
8			✱ – Soil Sample B1-S1	B1-S1-D9'
10			▽ Water table	
12				
14				
			Bottom of Boring 1 at 15 feet	
16				
18				
20				

APPLIED CONSULTANTS
environmental geology & engineering

Chiyoda Construction

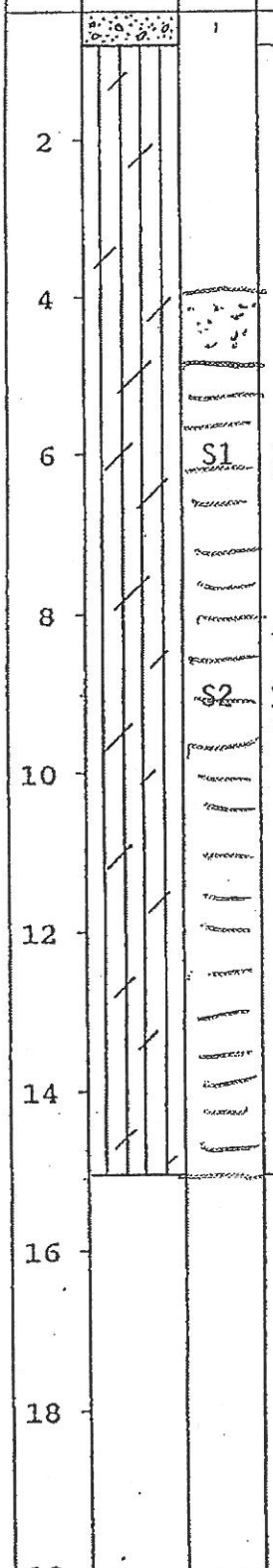
Approved by
Date 2/22/90

BORING LOG

Date: January 26, 1990

Boring No. 2 MW-2

Project No. 1001



Soil Description	Comments
Sand and gravel road base material	
Gray black clayey silt	
	B2-S1-D6'
	B2-S2-D9'
	Water table
Bottom of Boring 2 at 15 feet	

APPLIED CONSULTANTS
environmental geology & engineering

Chiyoda Construction

Approved by
Date 2/22/90

BORING LOG

Date: January 26, 1990

Boring No. 3 MW-3

Project No. 1001

Depth Ft.	Soil Clas Smbl	Sample No.	Soil Description	Comments
			Sand and gravel road base material	
			Gray black clayey silt	
2				
4				
6				
8		S1		B3-S1-D8.5'
10			▽ Water table	
12				
14				
			Bottom of Boring 3 at 15 feet	
16				
18				
20				

APPLIED CONSULTANTS
environmental geology & engineering

Chiyoda Construction

Approved by
Date 2/22/90

MW-4

BORING LOG / MONITORING WELL DIAGRAM

Job Name and Number: CHIYODA CONSTRUCTION	Diameter and Type of Well Casing: N/A
Boring/Monitoring Well Identification: B-4 NORTH HOLE	Screen Size and Type: N/A
Date of Completion/Installation:	Filter Pack Type: N/A
Logged by: BERNARD LUTHER	Type of plug/Sanitary Seal: N/A
Elevation and Datum: N/A	Type of Monitoring Well Cap: N/A
Top of Casing Elevation: N/A	Well Cover Type: N/A
Water Level (Depth): 6 FT.	Notes:

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE I.D. NO.	OVM AND PID (PPM)	BLOW CNTS.	WELL DETAILS	NOTES
	GRAVEL ROAD BASE (3")						Soil Samples?
	LIGHT REDDISH GRAY, SILTY FINE-TO-MEDIUM SAND						
	BLACK, MEDIUM SAND						
5		V					5 -WATERTABLE
	GRAY, CLAY						
10							10
15	BOTTOM OF HOLE 15'						15
20							20
25							25
30							30

APPLIED CONSULTANTS
environmental/geology & engineering

Drawn By: WBM	Date: 11-29-90	Checked By:	Date:	Approved By:	Date: 12/4/90

MW-5

BORING LOG / MONITORING WELL DIAGRAM

Job Name and Number: CHIYODA CONSTRUCTION	Diameter and Type of Well Casing: N/A
Boring/Monitoring Well Identification: B-5 EAST HOLE	Screen Size and Type: N/A
Date of Completion/Installation:	Filter Pack Type: N/A
Logged by: BERNARD ~~&UTHER~~	Type of plug/Sanitary Seal: N/A
Elevation and Datum: N/A	Type of Monitoring Well Cap: N/A
Top of Casing Elevation: N/A	Well Cover Type: N/A
Water Level (Depth): 4 FT	Notes:

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE I.D.NO.	OVM AND PID (PPM)	BLOW CNTS.	WELL DETAILS	NOTES
	A/C ASPHALT (0-2") GRAVEL BASE (2"-6")						Soil Samples?
	BLACK, MEDIUM SAND						
	DARK GRAY, CLAY						-WATERTABLE
5							5
10							10
15	BOTTOM OF HOLE 15'						15
20							20
25							25
30							30

APPLIED CONSULTANTS
environmental geology & engineering

Drawn By: WBM	Date: 11-29-90	Checked By:	Date:	Approved By:	Date: 12/4/90

MW-6, 1

BORING LOG / MONITORING WELL DIAGRAM

Job Name and Number: CHIYODA CONSTRUCTION	Diameter and Type of Well Casing: N/A
Boring/Monitoring Well Identification: B-6 SOUTH HOLE	Screen Size and Type: N/A
Date of Completion/Installation:	Filter Pack Type: N/A
Logged by: BERNARD LUTHER	Type of plug/Sanitary Seal: N/A
Elevation and Datum: N/A	Type of Monitoring Well Cap: N/A
Top of Casing Elevation: N/A	Well Cover Type: N/A
Water Level (Depth): N/A	Notes:

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE I.D. NO.	OVM AND PID (PPM)	BLOW CNTS.	WELL DETAILS	NOTES
	GRAVEL			>10,000			RESIN SMELL
	REDDISH-BROWN, FINE-TO-MEDIUM SAND						Soil Samples ?
5	GRAY, SAND						Water Table ?
	PEAT LAYER						
	GRAY, CLAY						
10							
15	BOTTOM OF HOLE 15'						
20							
25							
30							

APPLIED CONSULTANTS
environmental geology & engineering

Drawn By: WBM	Date: 11-29-90	Checked By:	Date:	Approved By:	Date: 12/4/90

MW6, 2

LOG OF TEST BORING

BORING MW6

PROJECT: K&C Development
LOCATION: 1237 South Director Street, Seattle
DRILL METHOD: B-65 Truck-Mounted Drill Rig
GROUND WATER DEPTH: 4 feet
SAMPLE INTERVALS: 2.5 feet
REMARKS:

Cert. No.: 9401.6625
START: 1/25/94
FINISH: 1/25/94
BORING NO: MW6
ELEVATION: 0
SCALE: 2.5 feet per inch

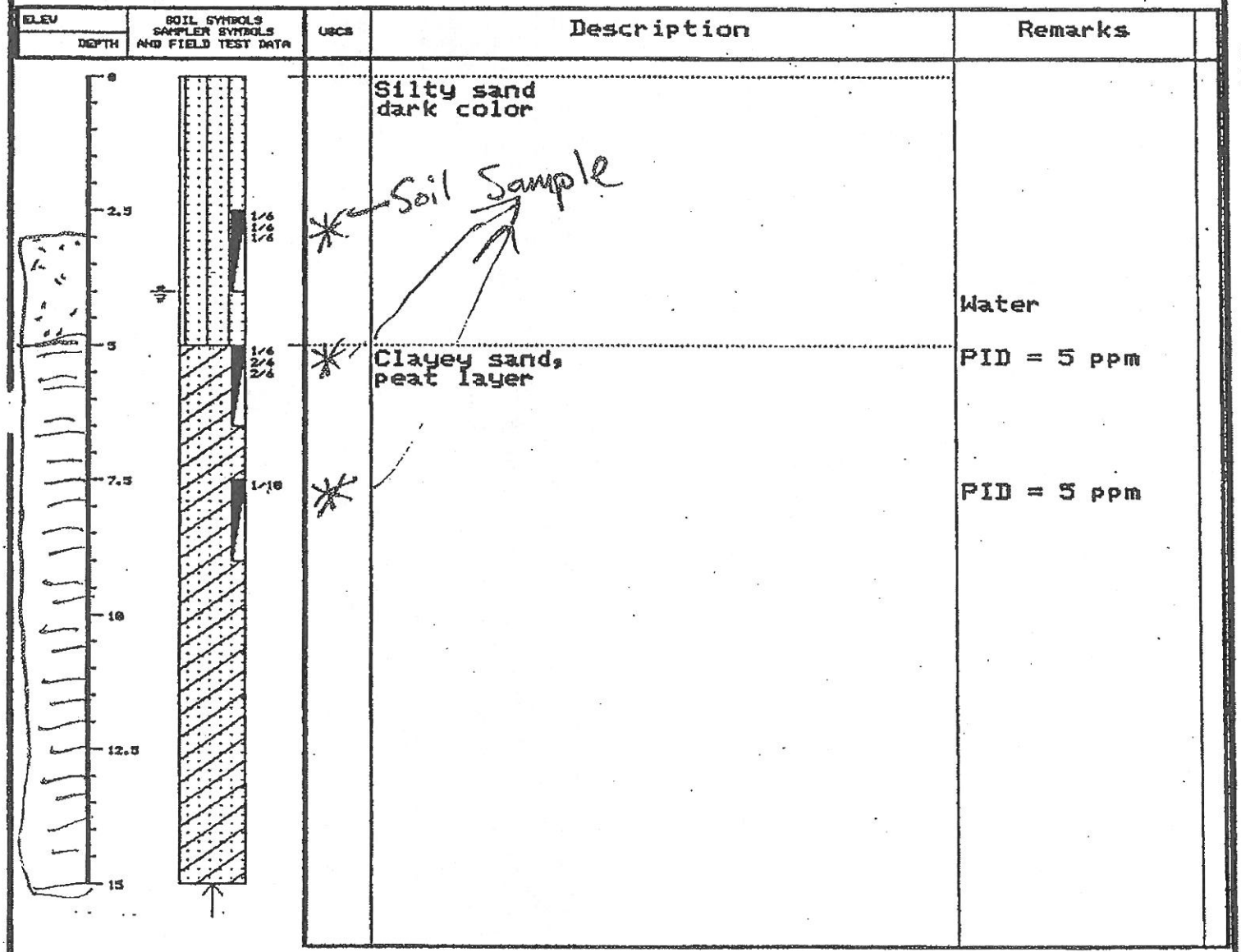


Figure Number 3

PACIFIC TESTING LABORATORIES

BORING LOG / MONITORING WELL DIAGRAM

MW7

Job Name and Number: Chiyoda International - Seatac 1001	Diameter and Type of Well Casing: 2" SCH 40 PVC
Boring/Monitoring Well Identification: B7/MW7	Screen Size and Type: .010" Slot
Date of Completion/Installation: 18 April 1991	Filter Pack Type: #3/16 Sand
Logged by: BJL and KJS	Type of plug: Bentonite and Concrete
Water Level (Depth from ground surface): 6'	Type of Monitoring Well Cap: 2" Locking
Notes:	Well Cover Type: Steel monument - 6" square x 5'

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE I.D. NO.	OVM (PPM)	SOIL SYMBOLS	WELL DETAILS	NOTES
0	Dark gray to black, organic rich silty clay (CL)					STEEL MONUMENT COVER
						LOCKING WELL CAP
						CONCRETE/BENTONITE
	1 composite Soil Sample					
5						PERFORATIONS BEGIN AT 4 FEET
						2" DIAMETER SCH. 40 SLOTTED PVC CASING SLOT SIZE: .010"
						FILTER PACK: #3/16 SAND
10						6" DIAMETER BORE HOLE
	Bottom of boring at 14'					THREADED PVC END CAP

LEGEND

- Silty clay
- Concrete and Bentonite
- Filter pack

APPLIED CONSULTANTS
environmental geology & engineering

Drawn By: KJS	Date: 4/25/91	Checked and Approved By:	Date: 6/10/91

BORING LOG / MONITORING WELL DIAGRAM

MW8

Job Name and Number: Chiyoda International - Seatac 1001	Diameter and Type of Well Casing: 2" SCH 40 PVC
Boring/Monitoring Well Identification: B8/MW8	Screen Size and Type: .010" Slot
Date of Completion/Installation: 18 April 1991	Filter Pack Type: #3/16 Sand
Logged by: BJL and KJS	Type of plug: Bentonite and Concrete
Water Level (Depth from ground surface): 4.5'	Type of Monitoring Well Cap: 2" Locking
Notes:	Well Cover Type: 12" diameter, water tight and flush mounted

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE I.D. NO.	OVM (PPM)	SOIL SYMBOLS	WELL DETAILS	NOTES
	Dark gray to brown silty sand (SM)					TRAFFIC RATED STEEL DRIVEOVER COVER; LOCKING WELL CAP; CONCRETE/ BENTONITE
	Greenish gray sandy clay with cobbles (CL)					PERFORATIONS BEGIN AT 2 FEET
	1 Composite Soil Sample					
5	2" Peat layer (Pl)					2" DIAMETER SCH. 40 SLOTTED PVC CASING SLOT SIZE: .010"; FILTER PACK: #3/16 SAND
	Orangish brown silty clay (CL)					
10						THREADED PVC END CAP
	Bottom of boring at 12'				6" BORE HOLE DIAMETER	

LEGEND

- Silty sands
- Silty or sandy clay
- Peat
- Concrete and bentonite
- Filter pack

APPLIED CONSULTANTS
environmental/geology & engineering

Drawn By: KJS	Date: 4/25/91	Checked and Approved By:	Date: 6/10/91

BORING LOG / MONITORING WELL DIAGRAM

MW9

Job Name and Number: Chiyoda International - Seatac 1001	Diameter and Type of Well Casing: 2" SCH 40 PVC
Boring/Monitoring Well Identification: B9/MW9	Screen Size and Type: .010" Slot
Date of Completion/Installation: 18 April 1991	Filter Pack Type: #3/16 Sand
Logged by: BJL and KJS	Type of plug: Bentonite and Concrete
Water Level (Depth from ground surface): 4'	Type of Monitoring Well Cap: 2" Locking
Notes:	Well Cover Type: Steel Monument-6" square x 5'

DEPTH (FEET)	SOIL DESCRIPTION	SAMPLE I.D. NO.	OVM (PPM)	SOIL SYMBOLS	WELL DETAILS	NOTES
	Yelowish brown silty sand with cobbles (SM)					STEEL MONUMENT COVER; LOCKING WELL CAP; CONCRETE/BENTONITE
	1 Composite Soil Sample					PERFORATIONS BEGIN AT 3 FEET
5	Blueish gray, saturated, fine to medium sand (SW)					2" DIAMETER SCH. 40 SLOTTED PVC CASING
	Peat (Pl)					
	Dark gray, saturated, organic rich silty clay (CL)					FILTER PACK: #3/16 SAND
10						THREADED PVC END CAP
	Bottom of boring at 13'				6" BORE HOLE DIAMETER	

APPLIED CONSULTANTS
environmental geology & engineering

LEGEND

- Sand
- Silty sand
- Peat
- Silty clay
- Concrete and Bentonite
- Filter pack

Drawn By: KJS	Date: 4/25/91	Checked and Approved By:	Date: 6/10/91

EXPLORATION BORING LOG

BORING 10

PROJECT: Chiyoda International Corporation

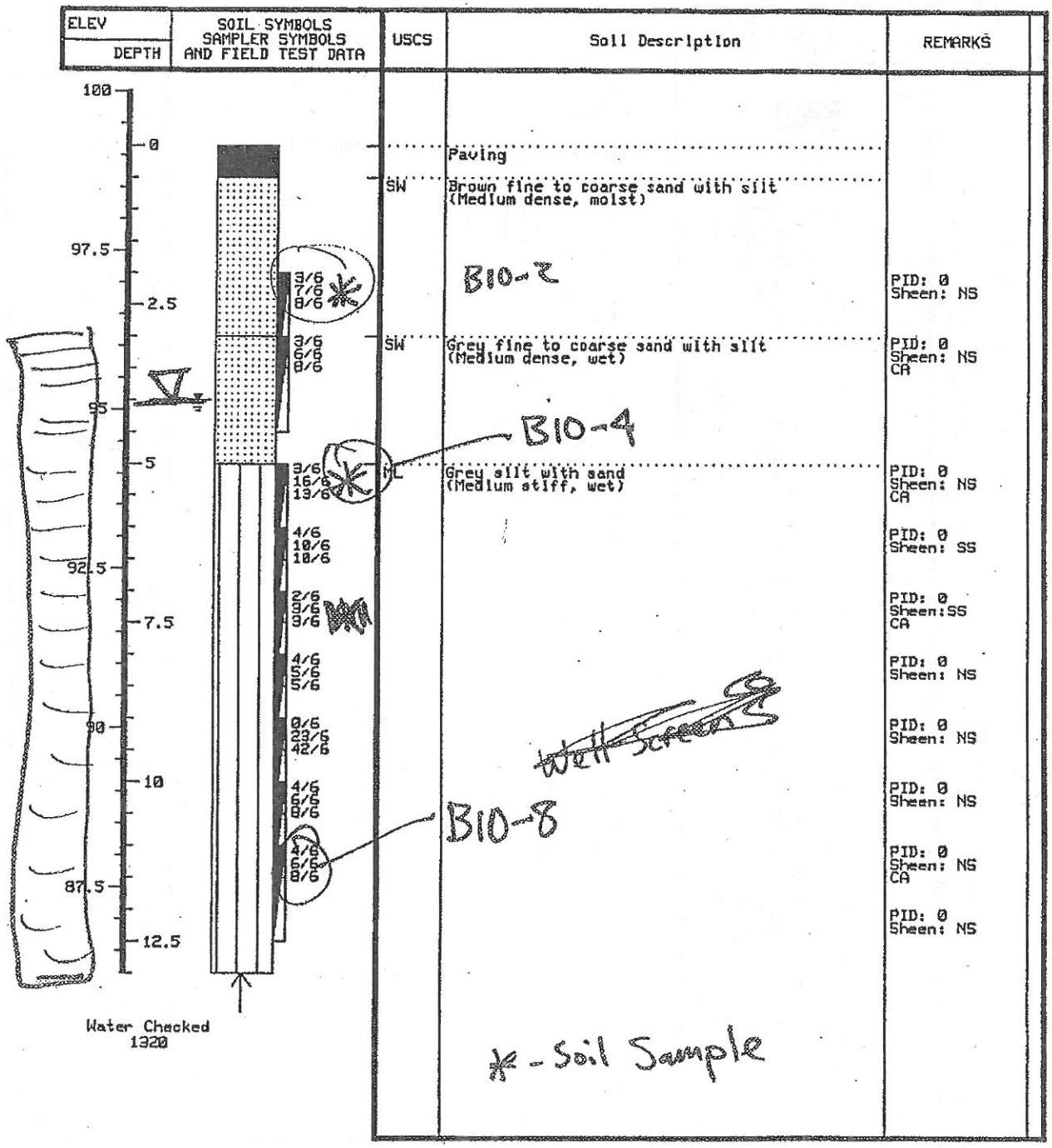
EXCAVATION DATE: Start: 1200 CERTIFICATION: 9411-6630

Finish: 1320

GROUND WATER DEPTH (ft): 4 ft

GEOLOGIST Kristen Burgess, Chris Argue

BORING:10 EL(ft):99.15 SCALE(ft/inch):2.5



Well installed at 13 feet.

Figure Number 1

PACIFIC TESTING LABORATORIES

EXPLORATION BORING LOG

BORING 11

PROJECT: Chiyoda International Corporation

EXCAVATION DATE: Start: 0945

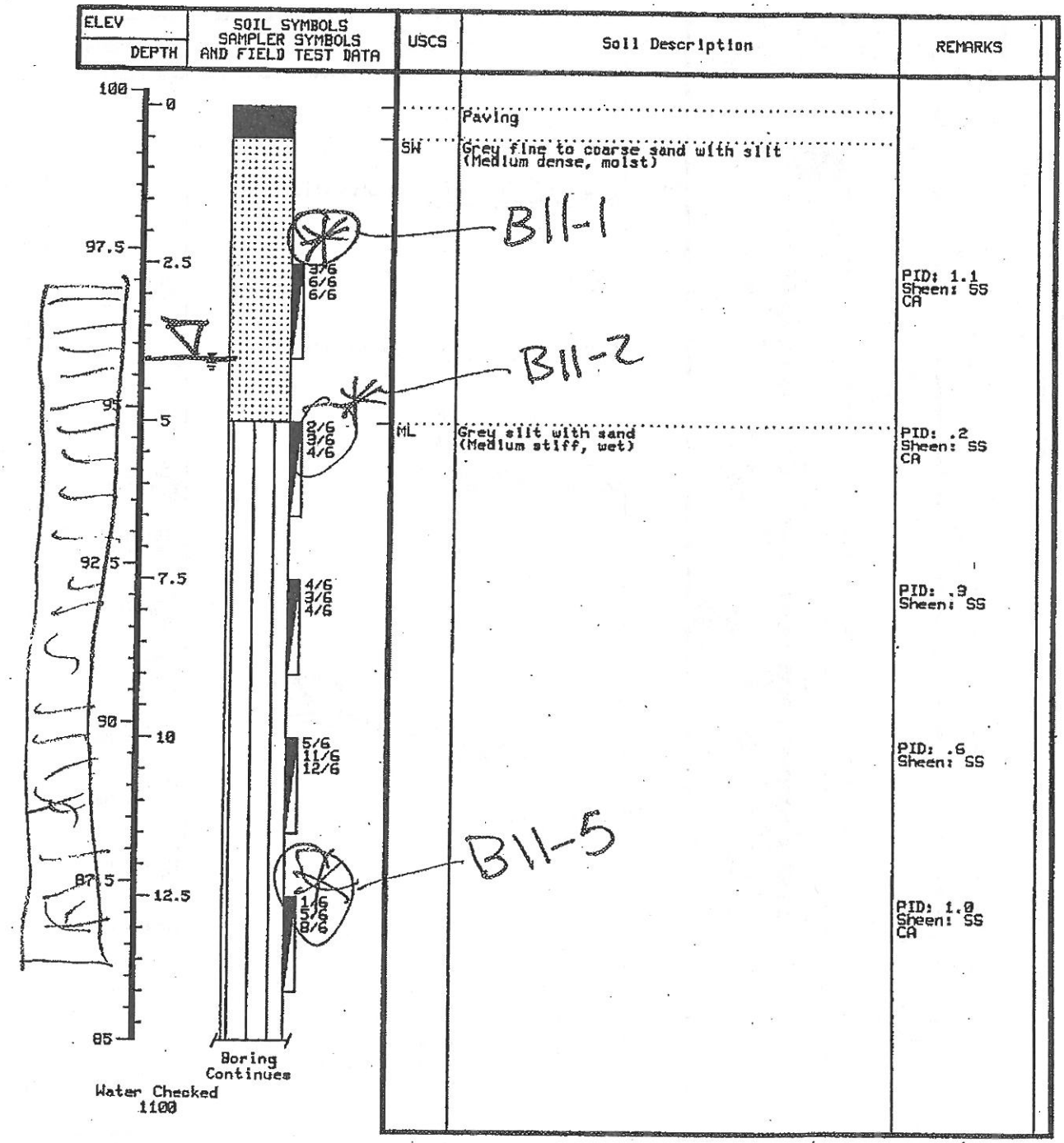
Finish: 1100

CERTIFICATION: 9411-6630

GROUND WATER DEPTH (ft): 4 ft

GEOLOGIST Kristen Burgess, Chris Argue

BORING:11 EL(ft):99.77 SCALE(ft/inch):2.5



Well installed at 13 feet.

Figure Number 2

PACIFIC TESTING LABORATORIES

EXPLORATION BORING LOG

BORING 11

PROJECT: Chiyoda International Corporation

EXCAVATION DATE: Start: 0945

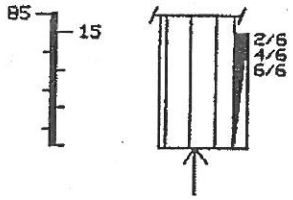
Finish: 1100

CERTIFICATION: 9411-6630

GROUND WATER DEPTH (ft): 4 ft

GEOLOGIST Kristen Burgess, Chris Argue

BORING:11 EL(ft):99.77 SCALE(ft/inch):2.5

ELEV / DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	REMARKS
				

Well installed at 13 feet.

Figure Number 3

PACIFIC TESTING LABORATORIES

EXPLORATION BORING LOG

BORING 12

PROJECT: Chiyoda International Corporation

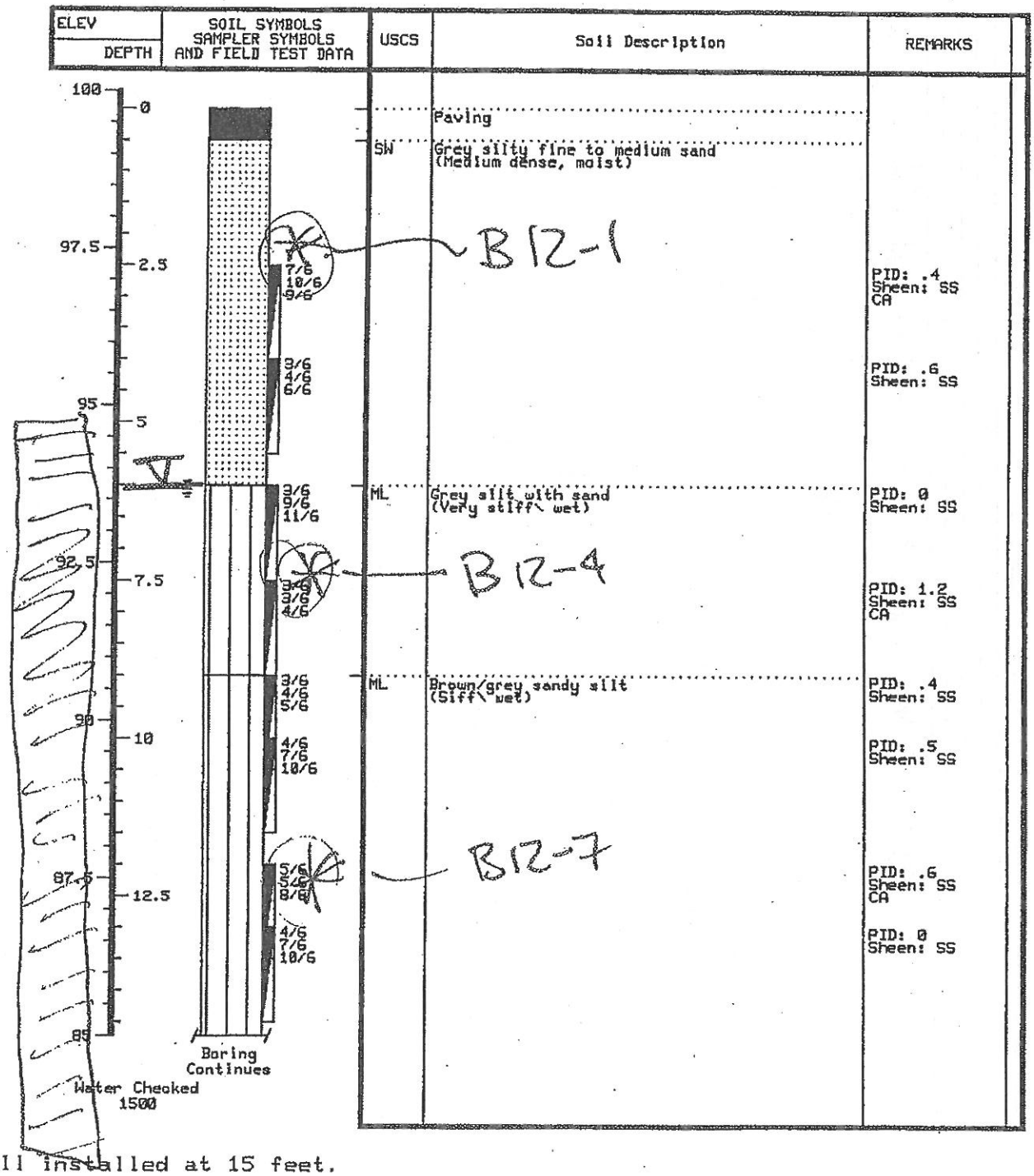
EXCAVATION DATE: Start: 1300 CERTIFICATION: 9411-6630

Finish: 1500

GROUND WATER DEPTH (ft): 6ft

GEOLOGIST Kristen Burgess, Chris Argue

BORING:12 EL(ft):99.72 SCALE(ft/inch):2.5



Well installed at 15 feet.

Figure Number 4

PACIFIC TESTING LABORATORIES

EXPLORATION BORING LOG

BORING 12

PROJECT: Chiyoda International Corporation

EXCAVATION DATE: Start: 1300

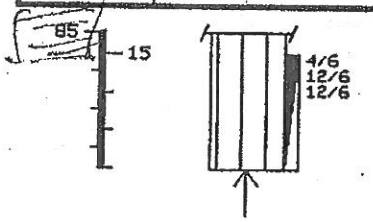
Finish: 1500

CERTIFICATION: 9411-6630

GROUND WATER DEPTH (ft): 6ft

GEOLOGIST Kristen Burgess, Chris Argue

BORING:12 EL(ft):99.72 SCALE(ft/inch):2.5

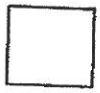
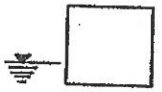
ELEV / DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	REMARKS
				PID: 0 Sheen: NS

Well installed at 15 feet.

Figure Number 5

PACIFIC TESTING LABORATORIES

Legend:

Symbol:	Description:	Symbol:	Description:
	Paving		
	Grey fine to coarse sand with silt (Medium dense, moist)		
	Grey silt with sand (Medium stiff, wet)		Paving
	Standard penetration test. 140 lb. hammer dropped 30"		Water measured at time indicated
	End of Boring		

Notes:

1. Exploratory borings were made using a truck mounted hollow stemm auger.
2. A sketch of the boring locations is included.
3. Boring, sampling, and recording was completed as per ASTM D 420
4. These logs are subject to the limitations, conclusions, and recommendations in this report.
5. PID = Headspace vapor test using a photoionization detector
6. Sheen Key: NS = no sheen, SS = slight sheen
7. CA = Chemical analysis

Appendix C

Analytical Laboratory Reports

Table C-1: Summary of Analytical Soil Samples Collected During 2014 to 2015 Remedial Investigation

Sample Name	Location	Depth (ft bgs)	Date	Rationale	Analytes				
					Metals	Hexavalent Chromium	VOCs	Diesel-Range Hydro-carbons	Gasoline-Range Hydro-carbons
SB1-5	South side of current facility building - SB1	5	8/8/2014	Characterize lithology and analyze geochemistry of shallow soils along the southern property boundary.	X	X	X	X	
SB3-2	Southeast side of current facility building - SB3	2	8/8/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary.	X			X	
SB3-8	Southeast side of current facility building - SB3	8	8/8/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary.	X	X	X	X	
SB4-5	Southeast side of current facility building - SB4	4	8/7/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary.	X	X	X	X	
SB4-20	Southeast side of current facility building - SB4	20	8/7/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary.	X	X	X	X	
SB5-11	East side of current facility building - SB5	11	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along eastern property boundary.	X	X	X	X	
SB6-16	East side of current facility building - SB5	16	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along eastern property boundary.	X	X	X	X	
SB7-11	East side of current facility building - SB7	11	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along eastern property boundary.	X	X	X	X	
SB7-19	East side of current facility building - SB7	19	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along eastern property boundary.	X	X	X	X	
SB8-16	East side of current facility building - SB8	16	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along eastern property boundary.	X	X	X	X	
SB10-7	North side of current facility building - SB10	7	8/8/2014	Characterize lithology and analyze geochemistry of shallow to intermediate depth soils along northern property boundary.	X	X	X	X	
SB11-10	Southbound shoulder of 14th Avenue South - SB11	10	8/7/2014	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South.	X	X	X	X	
SB11-30	Southbound shoulder of 14th Avenue South - SB11	30	8/7/2014	Characterize lithology and analyze geochemistry of deeper offsite soils along 14th Ave. South.	X	X	X		
SB12-12	Southbound shoulder of 14th Avenue South - SB12	12	8/7/2014	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South	X	X	X	X	
SB13-9	Southbound shoulder of 14th Avenue South - SB13	9	8/7/2014	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South.	X	X	X	X	
SB14-6	Southbound shoulder of 14th Avenue South - SB14	6	8/7/2014	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South.	X	X	X	X	
SB15-26	Southbound shoulder of 14th Avenue South - SB15	26	4/15/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly in the green-gray sandy alluvium.	X	X	X	X	X
SB15-41	Southbound shoulder of 14th Avenue South - SB15	41	4/15/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly at the base of the alluvium.	X	X	X	X	
SB15-45	Southbound shoulder of 14th Avenue South - SB15	45	4/15/2015	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South, particularly in the glacial till.	X	X			

Table C-1: Summary of Analytical Soil Samples Collected During 2014 to 2015 Remedial Investigation

Sample Name	Location	Depth (ft bgs)	Date	Rationale	Analytes				
					Metals	Hexavalent Chromium	VOCs	Diesel-Range Hydro-carbons	Gasoline-Range Hydro-carbons
SB16-26	Southbound shoulder of 14th Avenue South - SB16	26	4/16/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly in the green-gray sandy alluvium.	X	X	X	X	X
SB16-40	Southbound shoulder of 14th Avenue South - SB16	40	4/16/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly at the base of the alluvium.	X	X			
SB16-46	Southbound shoulder of 14th Avenue South - SB16	46	4/16/2015	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South, particularly in the glacial till.	X	X			
SB17-26	Southbound shoulder of 14th Avenue South - SB17	26	4/17/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly in the green-gray sandy alluvium.	X	X	X	X	X
SB17-40	Southbound shoulder of 14th Avenue South - SB17	40	4/17/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly at the base of the alluvium.	X	X	X	X	X
SB17-43.5	Southbound shoulder of 14th Avenue South - SB17	43.5	4/17/2015	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South, particularly in the glacial till.	X	X	X		
SB18-26	Southbound shoulder of 14th Avenue South - SB18	26	4/17/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly in the green-gray sandy alluvium.	X	X	X	X	X
SB18-36.5	Southbound shoulder of 14th Avenue South - SB18	36.5	4/17/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly at the base of the alluvium.	X	X	X	X	
SB18-39.5	Southbound shoulder of 14th Avenue South - SB18	39.5	4/17/2015	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South, particularly in the glacial till.	X	X			
SB19-35	Northbound shoulder of 14th Avenue South - SB19	35	4/20/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly in the green-gray sandy alluvium.	X	X	X	X	X
SB19-45	Northbound shoulder of 14th Avenue South - SB19	45	4/20/2015	Characterize lithology and analyze geochemistry of offsite soils along 14th Ave. South, particularly at the base of the alluvium.	X	X	X	X	
SB19-50	Northbound shoulder of 14th Avenue South - SB19	50	4/20/2015	Characterize lithology and analyze geochemistry of shallow offsite soils along 14th Ave. South, particularly in the glacial till.	X	X	X	X	
MW9-18-19	Southeast corner of Site - MW9	18-19	8/16/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary	X	X	X	X	X
MW9-32.5-33.5	Southeast corner of Site - MW9	32.5-33.5	8/16/2014	Characterize lithology and analyze geochemistry of deep soils along eastern property boundary	X	X	X	X	X
MW9-38-39	Southeast corner of Site - MW9	38-39	8/16/2014	Characterize lithology and analyze geochemistry of deep soils near southeastern property boundary	X	X	X	X	X
MW11-18-19	Northeast corner of property - MW11	18-19	8/16/2014	Characterize lithology and analyze geochemistry of shallow soils along eastern property boundary	X	X	X	X	X

Notes:

Metals are analyzed using EPA Method 6010C.

Hexavalent chromium is analyzed using EPA Method 7196A.

VOCs are analyzed using EPA Method 8260C.

Diesel-range hydrocarbons are analyzed using Method NWTPH-Dx.

Gasoline-range hydrocarbons are analyzed using Method NWTPH-Gx.

ft bgs = feet below ground surface

VOC = volatile organic compound

Table C-2: Soil Analytical Results August 2014 through April 2015

Sample ID	Depth (ft bgs)	Date	Hydrocarbons (Method NWTPH-Dx) (mg/kg)			Metals (EPA Method 6010C) (mg/kg)					VOCs (EPA Method 8260C) (mg/kg)												
			Diesel-range hydro-carbons	Oil-range hydro-carbons	Gasoline-range hydro-carbons (Method NWTPH-Gx)	Arsenic	Chromium	Hexavalent chromium (by EPA Method 7196A)	Lead	Selenium	Acetone	Acrolein	Acrylo-nitrile	Benzene	Bromo-benzene	Bromo-chloro-methane	Bromo-dichloro-methane	Bromo-ethane	Bromo-form	Bromo-methane	2-Butanone	n-Butyl-benzene	sec-Butyl-benzene
SB1-5	5	8/8/2014	7.5	62		<5	48.7	<0.440	<2	<5	0.015 Q	<0.049	<0.0049	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0049	<0.0010	<0.0010
SB3-2	2	8/8/2014	10,000	12,000																			
SB3-8	8	8/8/2014	<5.8	14		<6	67.3	<0.452	<2	<6	0.025 Q	<0.037	<0.0037	<0.0007	<0.0007	<0.0007	<0.0007	<0.0015	<0.0007	<0.0007	<0.0037	<0.0007	<0.0007
SB4-5	5	8/7/2014	65	220		7	22.7	<0.572	11	<6	0.032 Q	<0.088	<0.0088	<0.0018	<0.0018	<0.0018	<0.0018	<0.0035	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018
SB4-20	20	8/7/2014	<6.2	<12		6	14.9	<0.482	<2	<6	0.036 Q	<0.055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011
SB5-11	11	8/8/2014	420	1,900		<7	15.7	<0.552	<3	<7	0.058 Q	<0.068	<0.0068	<0.0014	<0.0014	<0.0014	<0.0014	<0.0027	<0.0014	<0.0014	<0.0068	<0.0014	<0.0014
SB6-16	16	8/8/2014	15	49		<7	10.0	<0.571	<3	<7	0.027 Q	<0.070	<0.0070	<0.0014	<0.0014	<0.0014	<0.0014	<0.0028	<0.0014	<0.0014	<0.0070	<0.0014	<0.0014
SB7-11	11	8/8/2014	38	440		<7	17.7	<0.554	4	<7	0.061 Q	<0.077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015
SB7-19	19	8/8/2014	<5.9	<12		<6	24.8	<0.462	<2	<6	0.016 Q	<0.032	<0.0032	<0.0006	<0.0006	<0.0006	<0.0006	<0.0013	<0.0006	<0.0006	<0.0032	<0.0006	<0.0006
SB8-16	16	8/8/2014	74	560		<7	23.7	<0.544	7	<7	0.070 Q	<0.076	<0.0076	<0.0015	<0.0015	<0.0015	<0.0015	<0.0030	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015
SB10-7	7	8/8/2014	<5.6	<11		<5	30.3	<0.445	2	<5	0.017 Q	<0.055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011
SB11-10	10	8/7/2014	9.7	30		<6	11.7	<0.472	6	<6	0.035 Q	<0.064	<0.0064	<0.0013	<0.0013	<0.0013	<0.0013	<0.0025	<0.0013	<0.0013	<0.0064	<0.0013	<0.0013
SB11-30	30	8/7/2014				6	20.9	<0.484	<2	<6													
SB12-12	12	8/7/2014	<6.5	19		<7	17.0	<0.516	<3	<7	0.055 Q	<0.060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012
SB13-9	9	8/7/2014	<6.7	18		<8	16.8	<0.534	<3	<8	0.037 Q	<0.072	<0.0072	<0.0014	<0.0014	<0.0014	<0.0014	<0.0029	<0.0014	<0.0014	<0.0072	<0.0045 Q	0.0081
SB14-6	6	8/7/2014	74	730		<5	27.6	<0.425	56	<5	<0.010	<0.100	<0.0010	0.0021	<0.0021	<0.0021	<0.0021	<0.0041	<0.0021	<0.0021	<0.010	0.011 Q	0.0036
SB15-26	26	4/15/2015	<6.7	<13	9.5	5.9	17.9	<0.519	2.9	0.9	<0.0067	<0.067	<0.0067	<0.0013	<0.0013	<0.0013	<0.0013	<0.0027	<0.0013	<0.0013	<0.0067	<0.0013	<0.0013
SB15-41	41	4/15/2015	<5.8	<12		4.9	43.4	<0.502	4.0	<0.6	<0.0060	<0.060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012
SB16-26	26	4/16/2015	<7.3	<15	8.8	5.6	18.6	<0.525	2.6	<0.6	0.029	<0.073	<0.0073	<0.0015	<0.0015	<0.0015	<0.0015	<0.0029	<0.0015	<0.0015	<0.0070	<0.0015	<0.0015
SB16-40	40	4/16/2015				3.1	26.1	<0.476	2.3	<0.5													
SB16-46	46	4/16/2015				2.9	24.5	<0.441	2.4	<0.5													
SB17-26	26	4/16/2015	<6.5	<13	8.7	4.8	18.4	<0.499	2.1	<0.6	0.034	<0.075	<0.0075	<0.0015	<0.0015	<0.0015	<0.0015	<0.0030	<0.0015	<0.0015	<0.0075	<0.0045	<0.0015
SB17-40	40	4/17/2015	<6.2	<12		2.5	21.2	<0.426	1.7	<0.5	<0.0051	<0.051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010
SB17-43.5	43.5	4/17/2015				2.8	25.3	1.78	1.9	<0.6	0.0088	<0.047	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0050	<0.0009	<0.0009
SB18-26	26	4/17/2015	<6.7	<13	7.8	6.4	19.5	<0.51	2.9	<0.6	0.025	<0.069	<0.0069	<0.0014	<0.0014	<0.0014	<0.0014	<0.0028	<0.0014	<0.0014	<0.0069	<0.0014	<0.0014
SB18-36.5	36.5	4/17/2015	<5.5	<11		2.3	18.1	<0.459	1.8	<0.5	<0.0041	<0.041	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0017	<0.0008	<0.0008	<0.0041	<0.0008	<0.0008
SB18-39.5	39.5	4/17/2015				2.1	21.9	<0.426	1.7	<0.5													
SB19-35	35	4/20/2015	<6.4	<13	7.7	8.5	20.4	<0.500	2.5	<0.6	0.034	<0.077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015
SB19-45	45	4/20/2015	<6.0	<12		6.2	46	<0.469	4.6	<1.0	<0.0048	<0.048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010
SB19-50	50	4/20/2015	<6.3	<13		3.7	43.8	<0.508	3.9	<0.6	<0.0054	<0.054	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0054	<0.0011	<0.0011
MW9-18-19	18-19	8/16/2014	<6.2	14		10	19	<0.492	<6	<10	0.028	<0.051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0021	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010
MW9-32.5-33.5	32.5-33.5	8/16/2014	<5.7	<11		<5	17.8	<0.448	<2	<5	0.0086	<0.047	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0047	<0.0009	<0.0009
MW9-38-39	38-39	8/16/2014	9.3	14		<5	32.3	<0.471	<2	<5	0.016	<0.048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010
MW11-18-19/ duplicate	18-19	8/16/2014	6.2/ NA	<11/ NA		<6/ <5	38.0/ 37.8	<0.455/ <0.448	2/ <2	<6/ <5	0.013/ 0.016	<0.044/ <0.053	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0018/ <0.0021	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011

Table C-2: Soil Analytical Results August 2014 through April 2015

Sample ID	Depth (ft bgs)	Date	VOCs (EPA Method 8260C) (mg/kg)																			
			tert-Butyl-benzene	Carbon Disulfide	Carbon Tetra-chloride	1,1,2-Trichlor-1,2,2-trifluoro-ethane (CFC-113)	Chloro-benzene	Chloro-ethane	2-Chloro-ethylvinyl-ether	Chloro-form	Chloro-methane	2-Chloro-toluene	4-Chloro-toluene	1,2-Dibromo-3-chloro-propane	Dibromo-chloro-methane	1,2-Dibro-moethane	Dibromo-methane	trans-1,4-Dichloro-2-butene	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane
SB1-5	5	8/8/2014	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0049	<0.0010	<0.0010	<0.0010	<0.0010	<0.0049	<0.0010	<0.0010	<0.0010	<0.0049	<0.0010	<0.0010	<0.0010	<0.0010
SB3-2	2	8/8/2014																				
SB3-8	8	8/8/2014	<0.0007	0.012 Q	<0.0007	<0.0015	<0.0007	<0.0007	<0.0037	<0.0007	<0.0007	<0.0007	<0.0007	<0.0037	<0.0007	<0.0007	<0.0007	<0.0037	<0.0007	<0.0007	<0.0007	<0.0007
SB4-5	5	8/7/2014	<0.0018	0.0045 Q	<0.0018	<0.0035	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018	<0.0018
SB4-20	20	8/7/2014	<0.0011	0.0063 Q	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011
SB5-11	11	8/8/2014	<0.0014	0.0056 Q	<0.0014	<0.0027	<0.0014	<0.0014	<0.0068	<0.0014	<0.0014	<0.0014	<0.0014	<0.0068	<0.0014	<0.0014	<0.0014	<0.0068	<0.0014	<0.0014	<0.0014	<0.0014
SB6-16	16	8/8/2014	<0.0014	0.0028 Q	<0.0014	<0.0028	<0.0014	<0.0014	<0.0070	<0.0014	<0.0014	<0.0014	<0.0014	<0.0070	<0.0014	<0.0014	<0.0014	<0.0070	<0.0014	<0.0014	<0.0014	<0.0014
SB7-11	11	8/8/2014	<0.0015	0.0091 Q	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015
SB7-19	19	8/8/2014	<0.0006	0.0043 Q	<0.0006	<0.0013	<0.0006	<0.0006	<0.0032	<0.0006	<0.0006	<0.0006	<0.0006	<0.0032	<0.0006	<0.0006	<0.0006	<0.0032	<0.0006	<0.0006	<0.0006	<0.0006
SB8-16	16	8/8/2014	<0.0015	0.011 Q	<0.0015	<0.0030	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015	<0.0015	<0.0015
SB10-7	7	8/8/2014	<0.0011	0.0017 Q	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011
SB11-10	10	8/7/2014	<0.0013	0.0048 Q	<0.0013	<0.0025	<0.0013	<0.0013	<0.0064	<0.0013	<0.0013	<0.0013	<0.0013	<0.0064	<0.0013	<0.0013	<0.0013	<0.0064	<0.0013	<0.0013	<0.0013	<0.0013
SB11-30	30	8/7/2014																				
SB12-12	12	8/7/2014	<0.0012	0.021 Q	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012
SB13-9	9	8/7/2014	<0.0014	0.0030 Q	<0.0014	<0.0029	<0.0014	<0.0014	<0.0072	<0.0014	<0.0014	<0.0014	<0.0014	<0.0072	<0.0014	<0.0014	<0.0014	<0.0072	<0.0014	<0.0014	<0.0014	<0.0014
SB14-6	6	8/7/2014	<0.0021	0.0067 Q	<0.0021	<0.0041	<0.0021	<0.0021	<0.010	<0.0021	<0.0021	<0.0021	<0.0021	<0.010	<0.0021	<0.0021	<0.0021	<0.010	<0.0021	<0.0021	<0.0021	<0.0021
SB15-26	26	4/15/2015	<0.0013	0.0028	<0.0013	<0.0027	<0.0013	<0.0013	<0.0067	<0.0013	<0.0013	<0.0013	<0.0013	<0.0067	<0.0013	<0.0013	<0.0013	<0.0067	<0.0013	<0.0013	<0.0013	<0.0013
SB15-41	41	4/15/2015	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012
SB16-26	26	4/16/2015	<0.0015	0.0069 Q	<0.0015	<0.0029	<0.0015	<0.0015	<0.0070	<0.0015	<0.0015	<0.0020	<0.0020	<0.0070	<0.0015	<0.0020	<0.0015	<0.0073	<0.0020	<0.0020	<0.0020	<0.0020
SB16-40	40	4/16/2015																				
SB16-46	46	4/16/2015																				
SB17-26	26	4/16/2015	<0.0015	0.0032 Q	<0.0015	<0.0030	<0.0015	<0.0015	<0.0075	<0.0015	<0.0015	<0.0015	<0.0015	<0.0075	<0.0015	<0.0015	<0.0015	<0.0075	<0.0015	<0.0015	<0.0015	<0.0015
SB17-40	40	4/17/2015	<0.0010	0.0016	<0.0010	<0.0020	<0.0010	<0.0010	<0.0051	<0.0010	0.0016 M	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010
SB17-43.5	43.5	4/17/2015	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0050	<0.0009	<0.0009	<0.0010	<0.0010	<0.0050	<0.0009	<0.0010	<0.0009	<0.0047	<0.0010	<0.0010	<0.0010	<0.0010
SB18-26	26	4/17/2015	<0.0014	0.0034	<0.0014	<0.0028	<0.0014	<0.0014	<0.0069	<0.0014	<0.0014	<0.0014	<0.0014	<0.0069	<0.0014	<0.0014	<0.0014	<0.0069	<0.0014	<0.0014	<0.0014	<0.0014
SB18-36.5	36.5	4/17/2015	<0.0008	<0.0008	<0.0008	<0.0017	<0.0008	<0.0008	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
SB18-39.5	39.5	4/17/2015																				
SB19-35	35	4/20/2015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015
SB19-45	45	4/20/2015	<0.0010	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010
SB19-50	50	4/20/2015	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011	<0.0054	<0.0011	<0.0011	<0.0011	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011
MW9-18-19	18-19	8/16/2014	<0.0010	0.0018 Q	<0.0010	<0.0021	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010
MW9-32.5-33.5	32.5-33.5	8/16/2014	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009	<0.0047	<0.0009	<0.0009	<0.0009	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009
MW9-38-39	38-39	8/16/2014	<0.0010	0.0016 Q	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	0.0015	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010
MW11-18-19/ duplicate	18-19	8/16/2014	<0.0009/ <0.0011	0.001 Q/ <0.0011	<0.0009/ <0.0011	<0.0018/ <0.0021	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ 0.0018	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011

Table C-2: Soil Analytical Results August 2014 through April 2015

Sample ID	Depth (ft bgs)	Date	VOCs (EPA Method 8260C) (mg/kg)																			
			1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	1,2-Dichloro-propane	1,3-Dichloro-propane	2,2-Dichloro-propane	1,1-Dichloro-propene	cis-1,3-Dichloro-propene	trans-1,3-Dichloro-propene	Ethyl-benzene	Hexa-chloro-butadiene	2-Hexanone	Iodo-methane	Isopropyl-benzene	4-Isopropyl-toluene	4-Methyl-2-pentanone	Methylene Chloride	Naph-thalene	n-Propyl-benzene
SB1-5	5	8/8/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0049	<0.0049	<0.0010	<0.0010	<0.0010	<0.0049	<0.0020	<0.0049	<0.0010
SB3-2	2	8/8/2014																				
SB3-8	8	8/8/2014	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0037	<0.0037	<0.0007	<0.0007	<0.0007	<0.0037	0.0024	<0.0037	<0.0007
SB4-5	5	8/7/2014	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0088	<0.0018	<0.0018	<0.0018	<0.0088	0.0039	<0.0088	<0.0018
SB4-20	20	8/7/2014	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0055	0.0028	<0.0055	<0.0011
SB5-11	11	8/8/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0068	<0.0068	<0.0014	<0.0014	<0.0014	<0.0068	0.0048	<0.0068	<0.0014
SB6-16	16	8/8/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0070	<0.0070	<0.0014	<0.0014	<0.0014	<0.0070	0.0048	<0.0070	<0.0014
SB7-11	11	8/8/2014	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0077	0.0094	<0.0077	<0.0015
SB7-19	19	8/8/2014	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0032	<0.0032	<0.0006	<0.0006	<0.0006	<0.0032	0.0024	<0.0032	<0.0006
SB8-16	16	8/8/2014	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0076	<0.0076	<0.0015	<0.0015	<0.0015	<0.0076	<0.0030	<0.0076	<0.0015
SB10-7	7	8/8/2014	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0055	0.0026	<0.0055	<0.0011
SB11-10	10	8/7/2014	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0064	<0.0064	<0.0013	<0.0013	<0.0013	<0.0064	0.0083	<0.0064	<0.0013
SB11-30	30	8/7/2014																				
SB12-12	12	8/7/2014	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0060	<0.0024	<0.0060	<0.0012
SB13-9	9	8/7/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0072	<0.0072	<0.0014	<0.0014	<0.0014	<0.0072	0.0035	<0.0072	<0.0014
SB14-6	6	8/7/2014	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	0.056	<0.010	<0.010	<0.0021	0.015	0.0040	<0.010	<0.0041	0.028	0.046
SB15-26	26	4/15/2015	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0067	<0.0067	<0.0013	<0.0013	<0.0013	<0.0067	<0.0027	<0.0067	<0.0013
SB15-41	41	4/15/2015	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0060	<0.0024	<0.0060	<0.0012
SB16-26	26	4/16/2015	<0.0020	<0.0020	<0.0015	<0.0015	<0.0020	<0.0020	<0.0020	<0.0020	<0.0015	<0.0015	<0.0015	<0.0073	<0.0070	<0.0015	<0.0015	<0.0020	<0.0070	0.0049	<0.0073	<0.0015
SB16-40	40	4/16/2015																				
SB16-46	46	4/16/2015																				
SB17-26	26	4/16/2015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0075	<0.0075	<0.0015	<0.0015	<0.0015	<0.0075	0.003	<0.0075	<0.0015
SB17-40	40	4/17/2015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0051	0.0028	<0.0051	<0.0010
SB17-43.5	43.5	4/17/2015	<0.0010	<0.0010	<0.0009	<0.0009	<0.0010	<0.0010	<0.0010	<0.0010	<0.0009	<0.0009	<0.0009	<0.0047	<0.0050	<0.0009	<0.0009	<0.0010	<0.0050	0.0024	<0.0047	<0.0009
SB18-26	26	4/17/2015	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0069	<0.0069	<0.0014	<0.0014	<0.0014	<0.0069	0.0031	<0.0069	<0.0014
SB18-36.5	36.5	4/17/2015	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0041	<0.0041	<0.0008	<0.0008	<0.0008	<0.0041	0.0019	<0.0041	<0.0008
SB18-39.5	39.5	4/17/2015																				
SB19-35	35	4/20/2015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0077	<0.0031	<0.0077	<0.0015
SB19-45	45	4/20/2015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0048	0.0024	<0.0048	<0.0010
SB19-50	50	4/20/2015	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0054	<0.0054	<0.0011	<0.0011	<0.0011	<0.0054	0.0026	<0.0054	<0.0011
MW9-18-19	18-19	8/16/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0051	0.0051 B	<0.0051	<0.0010
MW9-32.5-33.5	32.5-33.5	8/16/2014	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0047	<0.0047	<0.0009	<0.0009	<0.0009	<0.0047	0.0055 B	<0.0047	<0.0009
MW9-38-39	38-39	8/16/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0048	0.0055 B	<0.0048	<0.0010
MW11-18-19/ duplicate	18-19	8/16/2014	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	0.005 B/ 0.0041 B	<0.0044/ <0.0053	<0.0009/ <0.0011

Table C-2: Soil Analytical Results August 2014 through April 2015

Sample ID	Depth (ft bgs)	Date	VOCs (EPA Method 8260C) (mg/kg)																	
			Styrene	1,1,1,2-Tetra-chloro-ethane	1,1,2,2-Tetra-chloro-ethane	Tetra-chloro-ethene	Toluene	1,2,3-Trichloro-benzene	1,2,4-Trichloro-benzene	1,1,1-Trichloro-ethane	1,1,2-Trichloro-ethane	Trichloro-ethene	Trichloro-fluoro-methane	1,2,3-Trichloro-propane	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Vinyl Acetate	Vinyl Chloride	m, p-Xylene	O-Xylene
SB1-5	5	8/8/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0049	<0.0049	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0049	<0.0010	<0.0010	<0.0010
SB3-2	2	8/8/2014																		
SB3-8	8	8/8/2014	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0037	<0.0037	<0.0007	<0.0007	<0.0007	<0.0007	<0.0015	<0.0007	<0.0007	<0.0037	<0.0007	<0.0007	<0.0007
SB4-5	5	8/7/2014	<0.0018	<0.0018	<0.0018	<0.0018	<0.0018	<0.0088	<0.0088	<0.0018	<0.0018	<0.0018	<0.0018	<0.0035	<0.0018	<0.0018	<0.0088	<0.0018	<0.0018	<0.0018
SB4-20	20	8/7/2014	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011
SB5-11	11	8/8/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0068	<0.0068	<0.0014	<0.0014	<0.0014	<0.0014	<0.0027	<0.0014	<0.0014	<0.0068	<0.0014	<0.0014	<0.0014
SB6-16	16	8/8/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0070	<0.0070	<0.0014	<0.0014	<0.0014	<0.0014	<0.0028	<0.0014	<0.0014	<0.0070	<0.0014	<0.0014	<0.0014
SB7-11	11	8/8/2014	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015
SB7-19	19	8/8/2014	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0032	<0.0032	<0.0006	<0.0006	<0.0006	<0.0006	<0.0013	<0.0006	<0.0006	<0.0032	<0.0006	<0.0006	<0.0006
SB8-16	16	8/8/2014	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0076	<0.0076	<0.0015	<0.0015	<0.0015	<0.0015	<0.0030	<0.0015	<0.0015	<0.0076	<0.0015	<0.0015	<0.0015
SB10-7	7	8/8/2014	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0055	<0.0055	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0055	<0.0011	<0.0011	<0.0011
SB11-10	10	8/7/2014	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0064	<0.0064	<0.0013	<0.0013	<0.0013	<0.0013	<0.0025	<0.0013	<0.0013	<0.0064	<0.0013	<0.0013	<0.0013
SB11-30	30	8/7/2014																		
SB12-12	12	8/7/2014	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012
SB13-9	9	8/7/2014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0072	<0.0072	<0.0014	<0.0014	<0.0014	<0.0014	<0.0029	<0.0014	<0.0014	<0.0072	<0.0014	<0.0014	<0.0014
SB14-6	6	8/7/2014	<0.0021	<0.0021	<0.0021	<0.0021	0.0071	<0.010	<0.010	<0.0021	<0.0021	<0.0021	<0.0021	<0.0041	0.008	0.016	<0.010	<0.0021	0.029	<0.0021
SB15-26	26	4/15/2015	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0067	<0.0067	<0.0013	<0.0013	<0.0013	<0.0013	<0.0027	<0.0013	<0.0013	<0.0067	<0.0013	<0.0013	<0.0013
SB15-41	41	4/15/2015	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0060	<0.0060	<0.0012	<0.0012	<0.0012	<0.0012	<0.0024	<0.0012	<0.0012	<0.0060	<0.0012	<0.0012	<0.0012
SB16-26	26	4/16/2015	<0.0015	<0.0020	<0.0020	<0.0015	<0.0015	<0.0070	<0.0070	<0.0020	<0.0020	<0.0015	<0.0015	<0.0030	<0.0020	<0.0020	<0.0073	<0.0015	<0.0015	<0.0015
SB16-40	40	4/16/2015																		
SB16-46	46	4/16/2015																		
SB17-26	26	4/16/2015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0075	<0.0075	<0.0015	<0.0015	<0.0015	<0.0015	<0.0030	<0.0015	<0.0015	<0.0075	<0.0015	<0.0015	<0.0015
SB17-40	40	4/17/2015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010
SB17-43.5	43.5	4/17/2015	<0.0009	<0.0010	<0.0010	<0.0009	<0.0009	<0.0050	<0.0050	<0.0010	<0.0010	<0.0009	<0.0009	<0.0020	<0.0010	<0.0010	<0.0047	<0.0009	<0.0009	<0.0009
SB18-26	26	4/17/2015	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0069	<0.0069	<0.0014	<0.0014	<0.0014	<0.0014	<0.0028	<0.0014	<0.0014	<0.0069	<0.0014	<0.0014	<0.0014
SB18-36.5	36.5	4/17/2015	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0041	<0.0041	<0.0008	<0.0008	<0.0008	<0.0008	<0.0017	<0.0008	<0.0008	<0.0041	<0.0008	<0.0008	<0.0008
SB18-39.5	39.5	4/17/2015																		
SB19-35	35	4/20/2015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0077	<0.0077	<0.0015	<0.0015	<0.0015	<0.0015	<0.0031	<0.0015	<0.0015	<0.0077	<0.0015	<0.0015	<0.0015
SB19-45	45	4/20/2015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010
SB19-50	50	4/20/2015	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0054	<0.0054	<0.0011	<0.0011	<0.0011	<0.0011	<0.0022	<0.0011	<0.0011	<0.0054	<0.0011	<0.0011	<0.0011
MW9-18-19	18-19	8/16/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0051	<0.0051	<0.0010	<0.0010	<0.0010	<0.0010	<0.0021	<0.0010	<0.0010	<0.0051	<0.0010	<0.0010	<0.0010
MW9-32.5-33.5	32.5-33.5	8/16/2014	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0047	<0.0047	<0.0009	<0.0009	<0.0009	<0.0009	<0.0019	<0.0009	<0.0009	<0.0047	<0.0009	<0.0009	<0.0009
MW9-38-39	38-39	8/16/2014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0048	<0.0048	<0.0010	<0.0010	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	<0.0048	<0.0010	<0.0010	<0.0010
MW11-18-19/ duplicate	18-19	8/16/2014	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0018/ <0.0021	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0044/ <0.0053	<0.0009/ <0.0011	<0.0009/ <0.0011	<0.0009/ <0.0011

Notes:

"<" indicates analyte was not detected above the specified laboratory reporting limit.

Q qualifier indicates a detected analyzte with an initial or continuing calibration that does not meed established acceptance criteria.

B qualifier indicates analytice detected in an associated Method blank at a concentration greater than 1/2 the reporting limit or 5% of either the regulatory limit or analyte concentration in the sample.

Cleanup levels listed for chromium are for trivalent chromium.

Analysis not performed/reported.

ft bgs = feet below ground surface

VOCs = volatile organic compounds

mg/kg = milligrams per kilogram

NA = not analyzed

Table C-3: Summary of Analytical Groundwater Samples Collected During 2015 to 2015 Remedial Investigation

Sample Name	Location	Depth (ft bgs)	Date	Rationale	Analytes					
					Metals	Hexavalent Chromium	VOCs	Gasoline-Range Hydro-carbons	Diesel-Range Hydro-carbons	Oil-Range Hydro-carbons
SB3	Southeastern side of current facility building	12-17	8/8/2014	Characterize groundwater quality and flow conditions near southern property line	total	X	X		X	X
SB4	Southeast ernside of current facility building	7-12	8/7/2014	Characterize groundwater quality and flow conditions near southern property line	total	X	X			
SB5	Eastern side of current facility building	11-16	8/8/2014	Characterize groundwater quality and flow conditions near eastern property line	total	X	X		X	X
SB6	Eastern side of current facility building	12-17	8/8/2014	Characterize groundwater quality and flow conditions near eastern property line	total	X	X		X	X
SB7	Eastern side of current facility building	14-19	8/8/2014	Characterize groundwater quality and flow conditions near eastern property line	total	X	X		X	X
SB10	Northern side of current facility building	4.5-14.5	8/8/2014	Characterize groundwater quality and flow conditions near northern property line	total	X	X		X	X
SB11	South-bound shoulder of 14th Avenue South	6-11	8/7/2014	Characterize groundwater quality and flow conditions to the east of site	total	X	X		X	X
SB12	South-bound shoulder of 14th Avenue South	8-13	8/7/2014	Characterize groundwater quality and flow conditions to the east of site	total	X				
SB13	South-bound shoulder of 14th Avenue South	5-10	8/7/2014	Characterize groundwater quality and flow conditions to the east of site	total	X				
SB14	South-bound shoulder of 14th Avenue South	4-14	8/7/2014	Characterize groundwater quality and flow conditions to the east of site	total	X	X		X	X
SB15	South-bound shoulder of 14th Avenue South	36-46	4/15/2015	Characterize groundwater quality and flow conditions to the east of site	total and dissolved	X	X	X	X	X
SB16	South-bound shoulder of 14th Avenue South	37-47	4/16/2015	Characterize groundwater quality and flow conditions to the east of site	total and dissolved	X	X	X	X	X
SB17	South-bound shoulder of 14th Avenue South	34-44	4/17/2015	Characterize groundwater quality and flow conditions to the east of site	total and dissolved	X	X	X	X	X
SB18	South-bound shoulder of 14th Avenue South	29.5-39.5	4/17/2015	Characterize groundwater quality and flow conditions to the east of site	total and dissolved	X	X	X	X	X
SB19	Northbound shoulder of 14th Avenue South	40.5-50.5	4/20/2015	Characterize groundwater quality and flow conditions to the east of site	total and dissolved	X	X	X	X	X
MW1	Southwestern corner of site	35	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW2	Southeastern side of current facility building	15	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW3	Northeastern corner of site	13	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW4	Southern side of current facility building	20	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW5	Inside current facility building, within former chrome shop area	15	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X

Table C-3: Summary of Analytical Groundwater Samples Collected During 2015 to 2015 Remedial Investigation

					Analytes					
Sample Name	Location	Depth (ft bgs)	Date	Rationale	Metals	Hexavalent Chromium	VOCs	Gasoline-Range Hydro-carbons	Diesel-Range Hydro-carbons	Oil-Range Hydro-carbons
MW6	Along property line on east-central portion of site	15	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW7	Along property line on eastern portion of site	29	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW8	Southeastern corner of site	14.5	Q1 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW9	Along property line, southeaster corner of site	33.5	Q2 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW10	Along property line, soiutheastern corner of site	15	Q2 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X
MW11	Near northeastern corner of property	15	Q2 (2014) to Q4 (03/2015)	Characterize and monitor groundwater conditions	total	X	X		X	X

Notes:

Samples collected prior to March 2015 were analyzed for metals using EPA Method 6010C. Samples collected in March and April 2015 were analyzed for metals using EPA Method 200.8. Total metals analyses are un-filtered samples; dissolved metals analyses were performed on filtered samples.

Hexavalent chromium is analyzed using EPA Method 3500Cr-B.

VOCs are analyzed using EPA Method 8260C.

Diesel-range hydrocarbons are analyzed using Method NWTPH-Dx.

Gasoline-range hydrocarbons are analyzed using Method NWTPH-Gx.

ft bgs = feet below ground surface

VOC = volatile organic compound

May 2014

Analytical Resources, Incorporated
Analytical Chemists and Consultants

9 May 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job No.: YI59

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received three water samples on May 1, 2014. The samples were analyzed for hexavalent chromium as requested.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-6. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YI59

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YI59	Turn-around Requested:	Page: 1 of 1	
ARI Client Company: Kennedy / Jenks	Phone: 253-835-6400	Date: 5/1/14	Ice Present? Y
Client Contact: Jessica Favagalli		No. of Coolers: 1	Cooler Temps: 2.3
Client Project Name: Precision Engineering			
Client Project #: 1396024*00	Samplers: JF & Diane Rauch		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: HEX Chrome	Notes/Comments
MW-6	4/30/14	1335	GW	1	X	Per QAPP
MW-7	4/30/14	1530	GW	1	X	
MW-3	4/30/14	1645	GW	1	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Diane Rauch	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenks Consultants	Company: ARI	Company:	Company:
	Date & Time: 5/1/14 8:15	Date & Time: 5/1/14 815	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ARI-SOP-SC11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks
Project Name: Precision Engineering
COC No(s): NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: YE59
Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
Were custody papers included with the cooler? YES NO
Were custody papers properly filled out (ink, signed, etc.) YES NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 2.3
Time: 815
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 90877952
Cooler Accepted by: AV Date: 5/1/14 Time: 815

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:
Was sufficient ice used (if appropriate)? NA YES NO
Were all bottles sealed in individual plastic bags? YES NO
Did all bottles arrive in good condition (unbroken)? YES NO
Were all bottle labels complete and legible? YES NO
Did the number of containers listed on COC match with the number of containers received? YES NO
Did all bottle labels and tags agree with custody papers? YES NO
Were all bottles used correct for the requested analyses? YES NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO
Were all VOC vials free of air bubbles? NA YES NO
Was sufficient amount of sample sent in each bottle? YES NO
Date VOC Trip Blank was made at ARI: NA
Was Sample Split by ARI: NA YES Date/Time: Equipment: Split by:

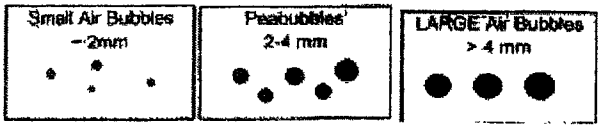
Samples Logged by: AV Date: 5/1/14 Time: 840

** ***Notify Project Manager of discrepancies or concerns*** **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

YE59 : 00003

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YI59
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-6	YI59A	14-8319	Water	04/30/14 13:35	05/01/14 08:15
2.	MW-7	YI59B	14-8320	Water	04/30/14 15:30	05/01/14 08:15
3.	MW-3	YI59C	14-8321	Water	04/30/14 16:45	05/01/14 08:15

YI59.00064

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

T159.00005

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Y159.00006

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

Y159.00007

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 05/02/14
Date Received: 05/01/14
Page 1 of 1

QC Report No: YI59-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-6 YI59A 14-8319	04/30/14	Water	05/01/14	0.010	< 0.010 U
MW-7 YI59B 14-8320	04/30/14	Water	05/01/14	0.010	< 0.010 U
MW-3 YI59C 14-8321	04/30/14	Water	05/01/14	0.010	0.028

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

YI59.00608

METHOD BLANK RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	05/01/14 08:45	mg/L	< 0.010 U

YI59.00009

STANDARD REFERENCE RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	05/01/14 08:45	mg/L	0.625	0.630	99.2%

YI59.00016

REPLICATE RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YI59A Client ID: MW-6					
Hexavalent Chromium	05/01/14	mg/L	< 0.010	< 0.010	NA

YI59.00011

MS/MSD RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YI59A Client ID: MW-6						
Hexavalent Chromium	05/01/14	mg/L	< 0.010	< 0.010 U	0.063	NA

YI59.00412

Analytical Resources, Incorporated
Analytical Chemists and Consultants

9 May 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job No.: YI78

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received eight water samples and one trip blank on May 1, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCALs that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for several compounds were high following the analyses of the LCS/LCSD associated with the VOC analyses of these samples. Since none of these compounds were detected in any sample associated with these LCS/LCSD, the high biases do not compromise any LOQ. No corrective actions were taken.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-8. The percent recovery for hexavalent chromium was low following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YI78

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YA78	Turn-around Requested:	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: 253.835.6400	Date: 5/1/14	Ice Present? Y
Client Contact: Jessica Faragalli		No. of Coolers: 2	Cooler Temps: 3.8, 3.7
Client Project Name: Precision Engineering			
Client Project #: 1396024*00	Samplers: JF & Diane Rauch		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: NWTPH-Dx	Metals	VOCs	Hex Chrome					Notes/Comments
													Metals: Cr, Pb, As & Se
MW-6	4/30/14	1335	GW	6	✓	✓	✓						Very aerated
MW-7	4/30/14	1530	GW	6	✓	✓	✓						
MW-3	4/30/14	1645	GW	6	✓	✓	✓						
MW-8	5/1/14	1035	GW	6	✓	✓	✓	✓					moderately aerated
MW-2	5/1/14	1300	GW	6	✓	✓	✓	✓					
MW-5	5/1/14	1400	GW	6	✓	✓	✓	✓					
MW-10	5/1/14	1410	GW	6	✓	✓	✓	✓					
MW-4	5/1/14	1630	GW	6	✓	✓	✓	✓					
Trip Blank	5/1/14			2			✓						

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Diane Rauch	Printed Name: Jennifer Mittsop	Printed Name:	Printed Name
	Company: Kennedy/Jenks Consultants	Company: ARI	Company:	Company:
	Date & Time: 5/1/14 1730	Date & Time: 5/1/14 1730	Date & Time	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

ARI : 9A78

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks
Project Name: Precision Engineering
COC No(s): _____ NA
Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____
Assigned ARI Job No: YI78
Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 3.8 3.7
Time: _____
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 90877952

Cooler Accepted by: JM Date: 5/1/14 Time: 1730

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	4-30-14	

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TB Date: 5-2-14 Time: 810

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions: MW-6 2 Lg
TB- 2 pb

By: TC Date: 5-2-14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm"	(< 2 mm)
Peabubbles → "pb"	(2 to < 4 mm)
Large → "lg"	(4 to < 6 mm)
Headspace → "hs"	(> 6 mm)

YI78 : 08075

PRESERVATION VERIFICATION 05/02/14
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YI78**

Inquiry Number: NONE
Analysis Requested: 05/02/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 05/02/14

Project #: 1396024*00
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-8405 **YI78A**	MW-6						TOT Fail															
14-8406 **YI78B**	MW-7						TOT Pass															
14-8407 **YI78C**	MW-3						TOT Pass															
14-8408 **YI78D**	MW-8						TOT Pass															
14-8409 **YI78E**	MW-2						TOT Pass															
14-8410 **YI78F**	MW-5						TOT Pass															
14-8411 **YI78G**	MW-10						TOT Pass															
14-8412 **YI78H**	MW-4						TOT Pass															

14-8405 - 14-8412

Checked By TS Date 5-2-14

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YI78
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-6	YI78A	14-8405	Water	04/30/14 13:35	05/02/14 17:30
2.	MW-7	YI78B	14-8406	Water	04/30/14 15:30	05/02/14 17:30
3.	MW-3	YI78C	14-8407	Water	04/30/14 16:45	05/02/14 17:30
4.	MW-8	YI78D	14-8408	Water	05/01/14 10:35	05/02/14 17:30
5.	MW-2	YI78E	14-8409	Water	05/01/14 13:00	05/02/14 17:30
6.	MW-5	YI78F	14-8410	Water	05/01/14 14:00	05/02/14 17:30
7.	MW-10	YI78G	14-8411	Water	05/01/14 14:10	05/02/14 17:30
8.	MW-4	YI78H	14-8412	Water	05/01/14 16:30	05/02/14 17:30
9.	Trip Blanks	YI78I	14-8413	Water	04/30/14	05/02/14 17:30

YI78:00005

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Y178:28685

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YITG:00007

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

YTS : 00003

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-6**
 SAMPLE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 18:00

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-6**
 SAMPLE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Date Analyzed: 05/02/14 18:00

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-7**
 SAMPLE

Lab Sample ID: YI78B
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 16:04

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-7**
 SAMPLE

Lab Sample ID: YI78B
LIMS ID: 14-8406
Matrix: Water
Date Analyzed: 05/02/14 16:04

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	98.5%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-3**
 SAMPLE

Lab Sample ID: YI78C
LIMS ID: 14-8407
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 16:32

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: YI78C
LIMS ID: 14-8407
Matrix: Water
Date Analyzed: 05/02/14 16:32

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	98.0%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-8**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YI78D
LIMS ID: 14-8408
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 18:30

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

Lab Sample ID: YI78D
LIMS ID: 14-8408
Matrix: Water
Date Analyzed: 05/02/14 18:30

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	96.9%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-2**
 SAMPLE

Lab Sample ID: YI78E
LIMS ID: 14-8409
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 19:01

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

Lab Sample ID: YI78E
LIMS ID: 14-8409
Matrix: Water
Date Analyzed: 05/02/14 19:01

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	97.0%
Bromofluorobenzene	94.9%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-5**
 SAMPLE

Lab Sample ID: YI78F
LIMS ID: 14-8410
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/05/14 14:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	**Trichloroethene**	**1.0**	**3.1**	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: YI78F
LIMS ID: 14-8410
Matrix: Water
Date Analyzed: 05/05/14 14:33

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	102%
Bromofluorobenzene	96.5%
d4-1,2-Dichlorobenzene	99.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-10**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YI78G
LIMS ID: 14-8411
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/05/14 15:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	**Trichloroethene**	**1.0**	**3.6**	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-10**
 SAMPLE

Lab Sample ID: YI78G
LIMS ID: 14-8411
Matrix: Water
Date Analyzed: 05/05/14 15:02

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.5%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-4**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YI78H
LIMS ID: 14-8412
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 17:01

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-4**
 SAMPLE

Lab Sample ID: YI78H
LIMS ID: 14-8412
Matrix: Water
Date Analyzed: 05/02/14 17:01

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	98.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blanks**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YI78I
LIMS ID: 14-8413
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 17:29

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blanks**
 SAMPLE

Lab Sample ID: YI78I
LIMS ID: 14-8413
Matrix: Water
Date Analyzed: 05/02/14 17:29

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	100%
Bromofluorobenzene	97.0%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-050214A**
 METHOD BLANK

Lab Sample ID: MB-050214A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/02/14 12:55

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: MB-050214A
LIMS ID: 14-8405
Matrix: Water
Date Analyzed: 05/02/14 12:55

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	99.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-050514A**
 METHOD BLANK

Lab Sample ID: MB-050514A
LIMS ID: 14-8410
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/05/14 14:05

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: MB-050514A
LIMS ID: 14-8410
Matrix: Water
Date Analyzed: 05/05/14 14:05

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.9%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-050214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-050214A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PAB
LCSD: NT3/PAB
Date Analyzed LCS: 05/02/14 11:58
LCSD: 05/02/14 12:26

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.9	10.0	109%	10.2	10.0	102%	6.6%
Bromomethane	11.4	10.0	114%	11.3	10.0	113%	0.9%
Vinyl Chloride	11.3	10.0	113%	10.4	10.0	104%	8.3%
Chloroethane	11.8	10.0	118%	8.47	10.0	84.7%	32.9%
Methylene Chloride	10.6	10.0	106%	10.0	10.0	100%	5.8%
Acetone	48.6	50.0	97.2%	47.3	50.0	94.6%	2.7%
Carbon Disulfide	11.0	10.0	110%	10.6	10.0	106%	3.7%
1,1-Dichloroethene	9.32	10.0	93.2%	9.67	10.0	96.7%	3.7%
1,1-Dichloroethane	10.7	10.0	107%	10.7	10.0	107%	0.0%
trans-1,2-Dichloroethene	10.2	10.0	102%	10.3	10.0	103%	1.0%
cis-1,2-Dichloroethene	11.0	10.0	110%	10.4	10.0	104%	5.6%
Chloroform	10.4	10.0	104%	9.43	10.0	94.3%	9.8%
1,2-Dichloroethane	11.1	10.0	111%	10.8	10.0	108%	2.7%
2-Butanone	61.8	50.0	124%	58.8	50.0	118%	5.0%
1,1,1-Trichloroethane	10.1	10.0	101%	9.59	10.0	95.9%	5.2%
Carbon Tetrachloride	11.7	10.0	117%	11.0	10.0	110%	6.2%
Vinyl Acetate	11.9	10.0	119%	11.4	10.0	114%	4.3%
Bromodichloromethane	11.2	10.0	112%	10.6	10.0	106%	5.5%
1,2-Dichloropropane	11.2	10.0	112%	10.6	10.0	106%	5.5%
cis-1,3-Dichloropropene	12.0	10.0	120%	11.4	10.0	114%	5.1%
Trichloroethene	10.8	10.0	108%	10.6	10.0	106%	1.9%
Dibromochloromethane	11.6	10.0	116%	11.3	10.0	113%	2.6%
1,1,2-Trichloroethane	11.2	10.0	112%	10.7	10.0	107%	4.6%
Benzene	11.3	10.0	113%	10.8	10.0	108%	4.5%
trans-1,3-Dichloropropene	12.4	10.0	124%	11.7	10.0	117%	5.8%
2-Chloroethylvinylether	11.7	10.0	117%	11.5	10.0	115%	1.7%
Bromoform	12.5	10.0	125%	12.1	10.0	121%	3.3%
4-Methyl-2-Pentanone (MIBK)	60.9	50.0	122%	59.8	50.0	120%	1.8%
2-Hexanone	59.4	50.0	119%	59.1	50.0	118%	0.5%
Tetrachloroethene	10.7	10.0	107%	10.5	10.0	105%	1.9%
1,1,2,2-Tetrachloroethane	12.2	10.0	122%	12.0	10.0	120%	1.7%
Toluene	11.3	10.0	113%	10.9	10.0	109%	3.6%
Chlorobenzene	11.3	10.0	113%	11.0	10.0	110%	2.7%
Ethylbenzene	11.6	10.0	116%	11.2	10.0	112%	3.5%
Styrene	11.0	10.0	110%	10.9	10.0	109%	0.9%
Trichlorofluoromethane	11.7	10.0	117%	10.9	10.0	109%	7.1%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.2 Q	10.0	102%	9.25 Q	10.0	92.5%	9.8%
m,p-Xylene	22.4	20.0	112%	21.9	20.0	110%	2.3%

Lab Sample ID: LCS-050214A
LIMS ID: 14-8405
Matrix: Water

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2-Dichlorobenzene	11.4	10.0	114%	10.9	10.0	109%	4.5%
1,3-Dichlorobenzene	11.5	10.0	115%	10.9	10.0	109%	5.4%
1,4-Dichlorobenzene	11.4	10.0	114%	10.8	10.0	108%	5.4%
Acrolein	89.6 Q	50.0	179%	91.9 Q	50.0	184%	2.5%
Iodomethane	12.9 Q	10.0	129%	11.1 Q	10.0	111%	15.0%
Bromoethane	10.9	10.0	109%	9.96	10.0	99.6%	9.0%
Acrylonitrile	10.3	10.0	103%	9.98	10.0	99.8%	3.2%
1,1-Dichloropropene	11.1	10.0	111%	10.5	10.0	105%	5.6%
Dibromomethane	10.7	10.0	107%	10.8	10.0	108%	0.9%
1,1,1,2-Tetrachloroethane	11.5	10.0	115%	11.2	10.0	112%	2.6%
1,2-Dibromo-3-chloropropane	11.9	10.0	119%	11.9	10.0	119%	0.0%
1,2,3-Trichloropropane	11.5	10.0	115%	11.2	10.0	112%	2.6%
trans-1,4-Dichloro-2-butene	11.9	10.0	119%	11.4	10.0	114%	4.3%
1,3,5-Trimethylbenzene	11.5	10.0	115%	11.3	10.0	113%	1.8%
1,2,4-Trimethylbenzene	11.8	10.0	118%	11.3	10.0	113%	4.3%
Hexachlorobutadiene	12.3	10.0	123%	11.5	10.0	115%	6.7%
1,2-Dibromoethane	11.2	10.0	112%	11.1	10.0	111%	0.9%
Bromochloromethane	10.8	10.0	108%	10.5	10.0	105%	2.8%
2,2-Dichloropropane	11.8	10.0	118%	10.8	10.0	108%	8.8%
1,3-Dichloropropane	11.1	10.0	111%	10.7	10.0	107%	3.7%
Isopropylbenzene	11.8	10.0	118%	11.3	10.0	113%	4.3%
n-Propylbenzene	11.8	10.0	118%	11.4	10.0	114%	3.4%
Bromobenzene	11.5	10.0	115%	11.0	10.0	110%	4.4%
2-Chlorotoluene	11.4	10.0	114%	10.2	10.0	102%	11.1%
4-Chlorotoluene	11.5	10.0	115%	11.4	10.0	114%	0.9%
tert-Butylbenzene	11.5	10.0	115%	11.1	10.0	111%	3.5%
sec-Butylbenzene	11.8	10.0	118%	11.4	10.0	114%	3.4%
4-Isopropyltoluene	11.6	10.0	116%	11.3	10.0	113%	2.6%
n-Butylbenzene	12.1	10.0	121%	11.7	10.0	117%	3.4%
1,2,4-Trichlorobenzene	12.8	10.0	128%	12.4	10.0	124%	3.2%
Naphthalene	16.0 Q	10.0	160%	15.9 Q	10.0	159%	0.6%
1,2,3-Trichlorobenzene	13.2	10.0	132%	13.2	10.0	132%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	99.1%	99.6%
d8-Toluene	99.8%	100%
Bromofluorobenzene	97.5%	97.5%
d4-1,2-Dichlorobenzene	102%	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-050514A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-050514A
LIMS ID: 14-8410
Matrix: Water
Data Release Authorized:
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/PAB
LCSD: NT3/PAB
Date Analyzed LCS: 05/05/14 12:16
LCSD: 05/05/14 12:45

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.5	10.0	105%	10.4	10.0	104%	1.0%
Bromomethane	10.9	10.0	109%	11.5	10.0	115%	5.4%
Vinyl Chloride	11.0	10.0	110%	11.0	10.0	110%	0.0%
Chloroethane	9.61	10.0	96.1%	10.2	10.0	102%	6.0%
Methylene Chloride	10.6	10.0	106%	10.7	10.0	107%	0.9%
Acetone	49.3	50.0	98.6%	52.2	50.0	104%	5.7%
Carbon Disulfide	10.8	10.0	108%	10.9	10.0	109%	0.9%
1,1-Dichloroethene	9.87	10.0	98.7%	10.5	10.0	105%	6.2%
1,1-Dichloroethane	11.2	10.0	112%	10.6	10.0	106%	5.5%
trans-1,2-Dichloroethene	10.4	10.0	104%	10.7	10.0	107%	2.8%
cis-1,2-Dichloroethene	10.7	10.0	107%	10.8	10.0	108%	0.9%
Chloroform	11.0	10.0	110%	11.0	10.0	110%	0.0%
1,2-Dichloroethane	11.0	10.0	110%	11.0	10.0	110%	0.0%
2-Butanone	53.4	50.0	107%	54.6	50.0	109%	2.2%
1,1,1-Trichloroethane	11.3	10.0	113%	10.8	10.0	108%	4.5%
Carbon Tetrachloride	11.6	10.0	116%	11.4	10.0	114%	1.7%
Vinyl Acetate	11.3	10.0	113%	11.3	10.0	113%	0.0%
Bromodichloromethane	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,2-Dichloropropane	11.0	10.0	110%	10.9	10.0	109%	0.9%
cis-1,3-Dichloropropene	11.7	10.0	117%	11.8	10.0	118%	0.9%
Trichloroethene	10.4	10.0	104%	10.4	10.0	104%	0.0%
Dibromochloromethane	10.8	10.0	108%	10.8	10.0	108%	0.0%
1,1,2-Trichloroethane	10.8	10.0	108%	10.6	10.0	106%	1.9%
Benzene	11.1	10.0	111%	11.1	10.0	111%	0.0%
trans-1,3-Dichloropropene	12.0	10.0	120%	12.0	10.0	120%	0.0%
2-Chloroethylvinylether	11.4	10.0	114%	11.3	10.0	113%	0.9%
Bromoform	11.5	10.0	115%	11.2	10.0	112%	2.6%
4-Methyl-2-Pentanone (MIBK)	56.6	50.0	113%	57.6	50.0	115%	1.8%
2-Hexanone	53.7	50.0	107%	54.3	50.0	109%	1.1%
Tetrachloroethene	10.6	10.0	106%	10.0	10.0	100%	5.8%
1,1,2,2-Tetrachloroethane	11.2	10.0	112%	11.4	10.0	114%	1.8%
Toluene	11.1	10.0	111%	11.1	10.0	111%	0.0%
Chlorobenzene	11.0	10.0	110%	10.8	10.0	108%	1.8%
Ethylbenzene	11.2	10.0	112%	11.0	10.0	110%	1.8%
Styrene	11.0	10.0	110%	10.6	10.0	106%	3.7%
Trichlorofluoromethane	11.3	10.0	113%	11.6	10.0	116%	2.6%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.76	10.0	97.6%	9.01	10.0	90.1%	8.0%
m,p-Xylene	22.3	20.0	112%	21.9	20.0	110%	1.8%

Lab Sample ID: LCS-050514A QC Report No: YI78-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-8410 Project: Precision Engineering
Matrix: Water 1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2-Dichlorobenzene	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,3-Dichlorobenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
1,4-Dichlorobenzene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Acrolein	95.0 Q	50.0	190%	99.8 Q	50.0	200%	4.9%
Iodomethane	12.6 Q	10.0	126%	11.9 Q	10.0	119%	5.7%
Bromoethane	11.0	10.0	110%	11.5	10.0	115%	4.4%
Acrylonitrile	10.2	10.0	102%	10.6	10.0	106%	3.8%
1,1-Dichloropropene	11.2	10.0	112%	10.8	10.0	108%	3.6%
Dibromomethane	10.8	10.0	108%	11.1	10.0	111%	2.7%
1,1,1,2-Tetrachloroethane	11.2	10.0	112%	10.9	10.0	109%	2.7%
1,2-Dibromo-3-chloropropane	10.9	10.0	109%	11.1	10.0	111%	1.8%
1,2,3-Trichloropropane	10.4	10.0	104%	10.4	10.0	104%	0.0%
trans-1,4-Dichloro-2-butene	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,3,5-Trimethylbenzene	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,2,4-Trimethylbenzene	11.2	10.0	112%	11.0	10.0	110%	1.8%
Hexachlorobutadiene	11.4	10.0	114%	10.6	10.0	106%	7.3%
1,2-Dibromoethane	11.1	10.0	111%	11.0	10.0	110%	0.9%
Bromochloromethane	11.0	10.0	110%	11.1	10.0	111%	0.9%
2,2-Dichloropropane	11.9 Q	10.0	119%	11.7 Q	10.0	117%	1.7%
1,3-Dichloropropane	10.6	10.0	106%	10.5	10.0	105%	0.9%
Isopropylbenzene	11.1	10.0	111%	10.9	10.0	109%	1.8%
n-Propylbenzene	11.6	10.0	116%	11.3	10.0	113%	2.6%
Bromobenzene	10.6	10.0	106%	10.3	10.0	103%	2.9%
2-Chlorotoluene	11.1	10.0	111%	10.9	10.0	109%	1.8%
4-Chlorotoluene	11.1	10.0	111%	11.0	10.0	110%	0.9%
tert-Butylbenzene	11.0	10.0	110%	10.8	10.0	108%	1.8%
sec-Butylbenzene	11.2	10.0	112%	11.2	10.0	112%	0.0%
4-Isopropyltoluene	11.0	10.0	110%	11.0	10.0	110%	0.0%
n-Butylbenzene	11.7	10.0	117%	11.2	10.0	112%	4.4%
1,2,4-Trichlorobenzene	12.0	10.0	120%	11.6	10.0	116%	3.4%
Naphthalene	13.7 Q	10.0	137%	13.7 Q	10.0	137%	0.0%
1,2,3-Trichlorobenzene	12.2	10.0	122%	12.1	10.0	121%	0.8%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.2%	98.7%
d8-Toluene	100%	102%
Bromofluorobenzene	98.0%	100%
d4-1,2-Dichlorobenzene	100%	100%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-050214A	Method Blank	10	104%	100%	97.7%	99.3%	0
LCS-050214A	Lab Control	10	99.1%	99.8%	97.5%	102%	0
LCSD-050214A	Lab Control Dup	10	99.6%	100%	97.5%	100%	0
YI78A	MW-6	10	104%	100%	99.8%	101%	0
YI78B	MW-7	10	106%	98.5%	96.8%	100%	0
YI78C	MW-3	10	107%	99.2%	98.0%	102%	0
YI78D	MW-8	10	101%	96.9%	97.4%	101%	0
YI78E	MW-2	10	103%	97.0%	94.9%	101%	0
MB-050514A	Method Blank	10	102%	98.9%	96.3%	104%	0
LCS-050514A	Lab Control	10	96.2%	100%	98.0%	100%	0
LCSD-050514A	Lab Control Dup	10	98.7%	102%	100%	100%	0
YI78F	MW-5	10	101%	102%	96.5%	99.2%	0
YI78G	MW-10	10	101%	99.5%	96.2%	101%	0
YI78H	MW-4	10	107%	99.2%	98.8%	98.9%	0
YI78I	Trip Blanks	10	101%	100%	97.0%	101%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-8405 to 14-8413

YI78:00035

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0502 Quant Type: ISTD
Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.53144	0.58387	0.58387	0.010	9.86560	20.00000	Averaged	
2 Chloromethane	1.21653	1.29968	1.29968	0.100	6.83502	20.00000	Averaged	
3 Vinyl Chloride	0.95257	1.02915	1.02915	0.010	8.03942	20.00000	Averaged	
4 Bromomethane	0.37041	0.38361	0.38361	0.010	3.56427	20.00000	Averaged	
5 Chloroethane	0.49151	0.41731	0.41731	0.010	-15.09564	20.00000	Averaged	
6 Trichlorofluoromethane	0.72009	0.80362	0.80362	0.010	11.59984	20.00000	Averaged	
7 1,1-Dichloroethene	0.50198	0.44043	0.44043	0.010	-12.26023	20.00000	Averaged	
8 Carbon Disulfide	1.65954	1.74707	1.74707	0.010	5.27432	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.34588	0.25907	0.25907	0.010	-25.09924	20.00000	Averaged	<-
10 Iodomethane	0.57602	0.72006	0.72006	0.010	25.00676	20.00000	Averaged	<-
11 Bromoethane	0.36089	0.38688	0.38688	0.010	7.19956	20.00000	Averaged	
12 Acrolein	79.89032	50.00000	0.11390	0.010	59.78064	20.00000	Quadratic	<-
13 Methylene Chloride	0.54584	0.54548	0.54548	0.010	-0.06677	20.00000	Averaged	
14 Acetone	0.21454	0.19143	0.19143	0.010	-10.77262	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.53810	0.52447	0.52447	0.010	-2.53264	20.00000	Averaged	
16 Methyl tert butyl ether	1.50580	1.61103	1.61103	0.010	6.98838	20.00000	Averaged	
17 1,1-Dichloroethane	1.22143	1.24088	1.24088	0.100	1.59277	20.00000	Averaged	
18 Acrylonitrile	0.31627	0.31209	0.31209	0.010	-1.32119	20.00000	Averaged	
19 Vinyl Acetate	1.72716	1.89258	1.89258	0.010	9.57755	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.56798	0.58409	0.58409	0.010	2.83720	20.00000	Averaged	
22 2,2-Dichloropropane	0.62566	0.59500	0.59500	0.010	-4.90066	20.00000	Averaged	
23 Bromochloromethane	0.25742	0.28562	0.28562	0.010	10.95742	20.00000	Averaged	
24 Chloroform	0.87582	0.92929	0.92929	0.010	6.10451	20.00000	Averaged	
25 Carbon Tetrachloride	0.40994	0.45339	0.45339	0.010	10.59883	20.00000	Averaged	
$ 26 Dibromofluoromethane	0.43900	0.43735	0.43735	0.010	-0.37683	20.00000	Averaged	
27 1,1,1-Trichloroethane	0.76457	0.76701	0.76701	0.010	0.31821	20.00000	Averaged	
28 2-Butanone	0.37628	0.41316	0.41316	0.010	9.80247	20.00000	Averaged	
29 1,1-Dichloropropene	0.46146	0.47949	0.47949	0.010	3.90701	20.00000	Averaged	
30 Benzene	1.31503	1.41206	1.41206	0.010	7.37791	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.59083	0.58951	0.58951	0.010	-0.22284	20.00000	Averaged	
33 1,2-Dichloroethane	0.51599	0.53672	0.53672	0.010	4.01755	20.00000	Averaged	
34 Trichloroethene	0.35741	0.35365	0.35365	0.010	-1.05265	20.00000	Averaged	
37 Dibromomethane	0.18911	0.19251	0.19251	0.010	1.79533	20.00000	Averaged	
38 1,2-Dichloropropane	0.46053	0.47916	0.47916	0.010	4.04677	20.00000	Averaged	
39 Bromodichloromethane	0.41403	0.44047	0.44047	0.010	6.38657	20.00000	Averaged	

YITS: 68636

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0502 Quant Type: ISTD
Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 2-Chloroethyl Vinyl Ether	0.28809	0.31484	0.31484	0.010	9.28503	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.51469	0.58107	0.58107	0.010	12.89717	20.00000	Averaged
$ 43 d8-Toluene	1.20634	1.19556	1.19556	0.010	-0.89401	20.00000	Averaged
44 Toluene	0.84892	0.89296	0.89296	0.010	5.18770	20.00000	Averaged
45 Tetrachloroethene	0.37670	0.39051	0.39051	0.010	3.66432	20.00000	Averaged
46 4-Methyl-2-Pentanone	0.50504	0.55680	0.55680	0.010	10.24802	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.45528	0.52008	0.52008	0.010	14.23326	20.00000	Averaged
48 1,1,2-Trichloroethane	0.27983	0.29854	0.29854	0.010	6.68469	20.00000	Averaged
49 Chlorodibromomethane	0.33912	0.36951	0.36951	0.010	8.96318	20.00000	Averaged
50 1,3-Dichloropropane	0.54930	0.57222	0.57222	0.010	4.17350	20.00000	Averaged
51 1,2-Dibromoethane	0.28189	0.29118	0.29118	0.010	3.29708	20.00000	Averaged
52 2-Hexanone	0.40606	0.43866	0.43866	0.010	8.02784	20.00000	Averaged
54 Chlorobenzene	0.97973	1.04722	1.04722	0.300	6.88881	20.00000	Averaged
55 Ethyl Benzene	1.70801	1.83368	1.83368	0.010	7.35757	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.33175	0.36378	0.36378	0.010	9.65705	20.00000	Averaged
57 m,p-xylene	0.67700	0.72305	0.72305	0.010	6.80231	20.00000	Averaged
58 o-Xylene	0.68178	0.71440	0.71440	0.010	4.78419	20.00000	Averaged
59 Styrene	1.12033	1.18302	1.18302	0.010	5.59573	20.00000	Averaged
60 Bromoform	0.40083	0.45790	0.45790	0.100	14.23854	20.00000	Averaged
61 Isopropyl Benzene	3.04336	3.39226	3.39226	0.010	11.46439	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.53998	0.51917	0.51917	0.010	-3.85312	20.00000	Averaged
63 Bromobenzene	0.74025	0.78381	0.78381	0.010	5.88446	20.00000	Averaged
64 N-Propyl Benzene	3.43426	3.80825	3.80825	0.010	10.89002	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.70376	0.78699	0.78699	0.010	11.82684	20.00000	Averaged
66 2-Chloro Toluene	2.49530	2.50358	2.50358	0.010	0.33173	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.62644	2.84536	2.84536	0.010	8.33521	20.00000	Averaged
68 1,2,3-Trichloropropane	0.22508	0.23525	0.23525	0.010	4.51887	20.00000	Averaged
70 Trans-1,4-Dichloro 2-Butene	0.37679	0.40601	0.40601	0.010	7.75494	20.00000	Averaged
71 4-Chloro Toluene	2.34022	2.55873	2.55873	0.010	9.33743	20.00000	Averaged
72 T-Butyl Benzene	2.13375	2.29671	2.29671	0.010	7.63713	20.00000	Averaged
73 1,2,4-Trimethylbenzene	2.61952	2.87040	2.87040	0.010	9.57760	20.00000	Averaged
74 S-Butyl Benzene	2.91751	3.16641	3.16641	0.010	8.53146	20.00000	Averaged
75 4-Isopropyl Toluene	2.52029	2.65059	2.65059	0.010	5.16990	20.00000	Averaged
76 1,3-Dichlorobenzene	1.44214	1.55217	1.55217	0.010	7.62973	20.00000	Averaged
78 1,4-Dichlorobenzene	1.50299	1.60054	1.60054	0.010	6.49061	20.00000	Averaged

Y178:66637

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0502 Quant Type: ISTD
Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
79 N-Butyl Benzene	2.12732	2.30896	2.30896	0.010	8.53827	20.00000	Averaged	
$ 80 d4-1,2-Dichlorobenzene	0.91989	0.92756	0.92756	0.010	0.83350	20.00000	Averaged	
81 1,2-Dichlorobenzene	1.41127	1.50742	1.50742	0.010	6.81267	20.00000	Averaged	
82 1,2-Dibromo 3-Chloropropane	0.14674	0.16264	0.16264	0.010	10.83321	20.00000	Averaged	
83 Hexachloro 1,3-Butadiene	0.28306	0.28003	0.28003	0.010	-1.07135	20.00000	Averaged	
84 1,2,4-Trichlorobenzene	0.75936	0.85314	0.85314	0.010	12.35054	20.00000	Averaged	
85 Naphthalene	1.56626	2.09652	2.09652	0.010	33.85492	20.00000	Averaged	<-
86 1,2,3-Trichlorobenzene	0.63346	0.72655	0.72655	0.010	14.69525	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i
Lab File ID: cc0505.d
Analysis Type: WATER
Lab Sample ID: CC0505
Method: /chem3/nt3.i/05052014.b/8260C042314L.m

Injection Date: 05-MAY-2014 11:43
Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Init. Cal. Times: 13:20 16:37
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.53144	0.59221	0.59221	0.010	11.43590	20.00000	Averaged	
2 Chloromethane	1.21653	1.31166	1.31166	0.100	7.81973	20.00000	Averaged	
3 Vinyl Chloride	0.95257	1.08195	1.08195	0.010	13.58214	20.00000	Averaged	
4 Bromomethane	0.37041	0.40752	0.40752	0.010	10.01874	20.00000	Averaged	
5 Chloroethane	0.49151	0.47754	0.47754	0.010	-2.84241	20.00000	Averaged	
6 Trichlorofluoromethane	0.72009	0.82450	0.82450	0.010	14.49837	20.00000	Averaged	
7 1,1-Dichloroethene	0.50198	0.48583	0.48583	0.010	-3.21697	20.00000	Averaged	
8 Carbon Disulfide	1.65954	1.92951	1.92951	0.010	16.26782	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.34588	0.40771	0.40771	0.010	17.87443	20.00000	Averaged	
10 Iodomethane	0.57602	0.76342	0.76342	0.010	32.53334	20.00000	Averaged	<-
11 Bromoethane	0.36089	0.41024	0.41024	0.010	13.67224	20.00000	Averaged	
12 Acrolein	92.52100	50.00000	0.13315	0.010	85.04200	20.00000	Quadratic	<-
13 Methylene Chloride	0.54584	0.62088	0.62088	0.010	13.74687	20.00000	Averaged	
14 Acetone	0.21454	0.22106	0.22106	0.010	3.03834	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.53810	0.55921	0.55921	0.010	3.92313	20.00000	Averaged	
16 Methyl tert butyl ether	1.50580	1.69326	1.69326	0.010	12.44972	20.00000	Averaged	
17 1,1-Dichloroethane	1.22143	1.40464	1.40464	0.100	14.99978	20.00000	Averaged	
18 Acrylonitrile	0.31627	0.33387	0.33387	0.010	5.56607	20.00000	Averaged	
19 Vinyl Acetate	1.72716	2.00016	2.00016	0.010	15.80632	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.56798	0.61596	0.61596	0.010	8.44780	20.00000	Averaged	
22 2,2-Dichloropropane	0.62566	0.75482	0.75482	0.010	20.64363	20.00000	Averaged	<-
23 Bromochloromethane	0.25742	0.29822	0.29822	0.010	15.85032	20.00000	Averaged	
24 Chloroform	0.87582	0.99972	0.99972	0.010	14.14610	20.00000	Averaged	
25 Carbon Tetrachloride	0.40994	0.47253	0.47253	0.010	15.26762	20.00000	Averaged	
$ 26 Dibromofluoromethane	0.43900	0.44451	0.44451	0.010	1.25431	20.00000	Averaged	
27 1,1,1-Trichloroethane	0.76457	0.86603	0.86603	0.010	13.26901	20.00000	Averaged	
28 2-Butanone	0.37628	0.40892	0.40892	0.010	8.67358	20.00000	Averaged	
29 1,1-Dichloropropene	0.46146	0.50120	0.50120	0.010	8.61253	20.00000	Averaged	
30 Benzene	1.31503	1.44154	1.44154	0.010	9.61983	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.59083	0.60061	0.60061	0.010	1.65601	20.00000	Averaged	
33 1,2-Dichloroethane	0.51599	0.56679	0.56679	0.010	9.84567	20.00000	Averaged	
34 Trichloroethene	0.35741	0.37238	0.37238	0.010	4.18721	20.00000	Averaged	
37 Dibromomethane	0.18911	0.20177	0.20177	0.010	6.69120	20.00000	Averaged	
38 1,2-Dichloropropane	0.46053	0.51345	0.51345	0.010	11.49141	20.00000	Averaged	
39 Bromodichloromethane	0.41403	0.44473	0.44473	0.010	7.41501	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 05-MAY-2014 11:43
Lab File ID: cc0505.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0505 Quant Type: ISTD
Method: /chem3/nt3.i/05052014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 2-Chloroethyl Vinyl Ether	0.28809	0.31527	0.31527	0.010	9.43569	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.51469	0.59841	0.59841	0.010	16.26566	20.00000	Averaged
$ 43 d8-Toluene	1.20634	1.20166	1.20166	0.010	-0.38817	20.00000	Averaged
44 Toluene	0.84892	0.92391	0.92391	0.010	8.83361	20.00000	Averaged
45 Tetrachloroethene	0.37670	0.38616	0.38616	0.010	2.51027	20.00000	Averaged
46 4-Methyl-2-Pentanone	0.50504	0.56531	0.56531	0.010	11.93412	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.45528	0.53980	0.53980	0.010	18.56297	20.00000	Averaged
48 1,1,2-Trichloroethane	0.27983	0.29992	0.29992	0.010	7.18079	20.00000	Averaged
49 Chlorodibromomethane	0.33912	0.37459	0.37459	0.010	10.46033	20.00000	Averaged
50 1,3-Dichloropropane	0.54930	0.59659	0.59659	0.010	8.60937	20.00000	Averaged
51 1,2-Dibromoethane	0.28189	0.30694	0.30694	0.010	8.88702	20.00000	Averaged
52 2-Hexanone	0.40606	0.43673	0.43673	0.010	7.55387	20.00000	Averaged
54 Chlorobenzene	0.97973	1.06083	1.06083	0.300	8.27760	20.00000	Averaged
55 Ethyl Benzene	1.70801	1.89998	1.89998	0.010	11.23945	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.33175	0.37143	0.37143	0.010	11.96352	20.00000	Averaged
57 m,p-xylene	0.67700	0.75525	0.75525	0.010	11.55806	20.00000	Averaged
58 o-Xylene	0.68178	0.73958	0.73958	0.010	8.47765	20.00000	Averaged
59 Styrene	1.12033	1.23150	1.23150	0.010	9.92290	20.00000	Averaged
60 Bromoform	0.40083	0.46568	0.46568	0.100	16.17817	20.00000	Averaged
61 Isopropyl Benzene	3.04336	3.39192	3.39192	0.010	11.45316	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.53998	0.53944	0.53944	0.010	-0.10002	20.00000	Averaged
63 Bromobenzene	0.74025	0.78942	0.78942	0.010	6.64278	20.00000	Averaged
64 N-Propyl Benzene	3.43426	3.92163	3.92163	0.010	14.19145	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.70376	0.77944	0.77944	0.010	10.75391	20.00000	Averaged
66 2-Chloro Toluene	2.49530	2.75930	2.75930	0.010	10.57968	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.62644	2.91639	2.91639	0.010	11.03961	20.00000	Averaged
68 1,2,3-Trichloropropane	0.22508	0.22736	0.22736	0.010	1.01328	20.00000	Averaged
70 Trans-1,4-Dichloro 2-Butene	0.37679	0.43382	0.43382	0.010	15.13570	20.00000	Averaged
71 4-Chloro Toluene	2.34022	2.60663	2.60663	0.010	11.38434	20.00000	Averaged
72 T-Butyl Benzene	2.13375	2.32199	2.32199	0.010	8.82196	20.00000	Averaged
73 1,2,4-Trimethylbenzene	2.61952	2.92630	2.92630	0.010	11.71146	20.00000	Averaged
74 S-Butyl Benzene	2.91751	3.24927	3.24927	0.010	11.37133	20.00000	Averaged
75 4-Isopropyl Toluene	2.52029	2.73483	2.73483	0.010	8.51246	20.00000	Averaged
76 1,3-Dichlorobenzene	1.44214	1.56343	1.56343	0.010	8.41043	20.00000	Averaged
78 1,4-Dichlorobenzene	1.50299	1.57563	1.57563	0.010	4.83299	20.00000	Averaged

Y178:00039

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 05-MAY-2014 11:43
Lab File ID: cc0505.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0505 Quant Type: ISTD
Method: /chem3/nt3.i/05052014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
79 N-Butyl Benzene	2.12732	2.38401	2.38401	0.010	12.06608	20.00000	Averaged	
$ 80 d4-1,2-Dichlorobenzene	0.91989	0.93658	0.93658	0.010	1.81409	20.00000	Averaged	
81 1,2-Dichlorobenzene	1.41127	1.48370	1.48370	0.010	5.13210	20.00000	Averaged	
82 1,2-Dibromo 3-Chloropropane	0.14674	0.15596	0.15596	0.010	6.28535	20.00000	Averaged	
83 Hexachloro 1,3-Butadiene	0.28306	0.29423	0.29423	0.010	3.94596	20.00000	Averaged	
84 1,2,4-Trichlorobenzene	0.75936	0.84807	0.84807	0.010	11.68247	20.00000	Averaged	
85 Naphthalene	1.56626	1.99299	1.99299	0.010	27.24479	20.00000	Averaged	<-
86 1,2,3-Trichlorobenzene	0.63346	0.72125	0.72125	0.010	13.85781	20.00000	Averaged	

Y178:69646

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: YI78-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024*00

Matrix: Water

Date Received: 05/01/14

Data Release Authorized:
Reported: 05/08/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-050314	Method Blank	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8405	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		98.3%
YI78A	MW-6	05/03/14	05/05/14	1.00	**Diesel Range**	**0.10**	**0.72**
14-8405	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.85**
					o-Terphenyl		76.0%
YI78B	MW-7	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8406	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		78.0%
YI78C	MW-3	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8407	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		91.4%
YI78D	MW-8	05/03/14	05/05/14	1.00	**Diesel Range**	**0.10**	**0.34**
14-8408	HC ID: **DRO/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.29**
					o-Terphenyl		87.8%
YI78E	MW-2	05/03/14	05/05/14	1.00	**Diesel Range**	**0.10**	**0.24**
14-8409	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.26**
					o-Terphenyl		66.4%
YI78F	MW-5	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8410	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		86.1%
YI78G	MW-10	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8411	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		80.2%
YI78H	MW-4	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8412	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		71.2%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YI78:00041

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: MW-6
MS/MSD

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Date Extracted MS/MSD: 05/03/14

Date Analyzed MS: 05/05/14 19:22
MSD: 05/05/14 19:43
Instrument/Analyst MS: FID9/JLW
MSD: FID9/JLW

Sample Amount MS: 240 mL
MSD: 240 mL
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 1.00
MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	0.72	5.95	6.25	83.7%	6.11	6.25	86.2%	2.7%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	86.3%	82.1%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-050314
LCS/LCSD

Lab Sample ID: LCS-050314
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/03/14

Date Analyzed LCS: 05/05/14 17:16
LCSD: 05/05/14 17:37
Instrument/Analyst LCS: FID9/JLW
LCSD: FID9/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.39	3.00	79.7%	2.60	3.00	86.7%	8.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.1%	103%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YI78
Matrix: Water
Project: Precision Engineering
Date Received: 05/01/14
1396024*00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-8405-050314MB1	Method Blank	500 mL	1.00 mL	05/03/14
14-8405-050314LCS1	Lab Control	500 mL	1.00 mL	05/03/14
14-8405-050314LCSD1	Lab Control Dup	500 mL	1.00 mL	05/03/14
14-8405-YI78A	MW-6	500 mL	1.00 mL	05/03/14
14-8405-YI78AMS	MW-6	240 mL	1.00 mL	05/03/14
14-8405-YI78AMSD	MW-6	240 mL	1.00 mL	05/03/14
14-8406-YI78B	MW-7	500 mL	1.00 mL	05/03/14
14-8407-YI78C	MW-3	500 mL	1.00 mL	05/03/14
14-8408-YI78D	MW-8	500 mL	1.00 mL	05/03/14
14-8409-YI78E	MW-2	500 mL	1.00 mL	05/03/14
14-8410-YI78F	MW-5	500 mL	1.00 mL	05/03/14
14-8411-YI78G	MW-10	500 mL	1.00 mL	05/03/14
14-8412-YI78H	MW-4	500 mL	1.00 mL	05/03/14

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client ID	OTER	TOT OUT
MB-050314	98.3%	0
LCS-050314	93.1%	0
LCSD-050314	103%	0
MW-6	76.0%	0
MW-6 MS	86.3%	0
MW-6 MSD	82.1%	0
MW-7	78.0%	0
MW-3	91.4%	0
MW-8	87.8%	0
MW-2	66.4%	0
MW-5	86.1%	0
MW-10	80.2%	0
MW-4	71.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-8405 to 14-8412

Data File: /chem2/fid9.i/20140505.b/0505a015.d

Date : 05-MAY-2014 16:55

Client ID: YI78MBW1

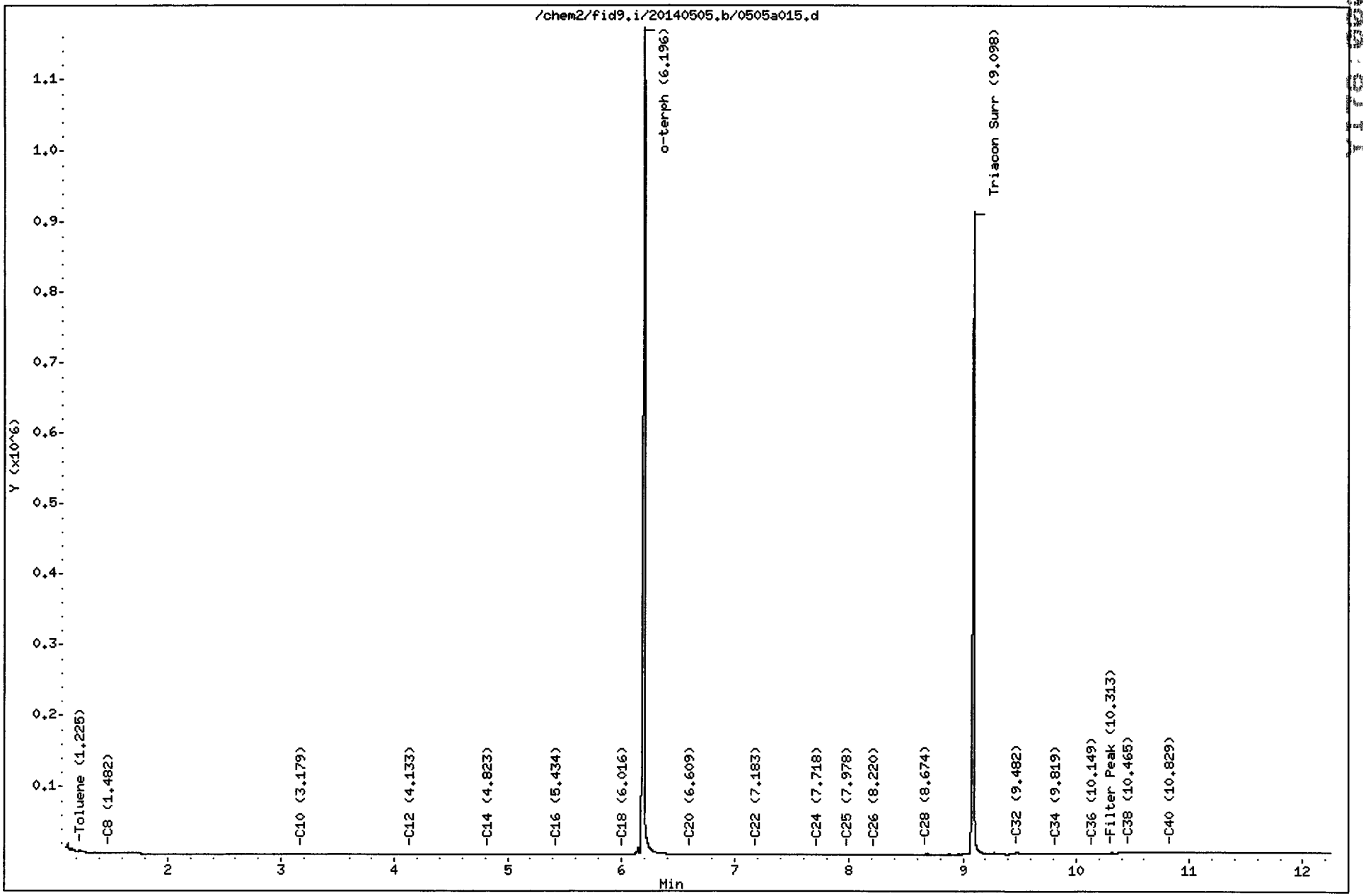
Sample Info: YI78MBW1

Instrument: fid9.i

Operator: JW

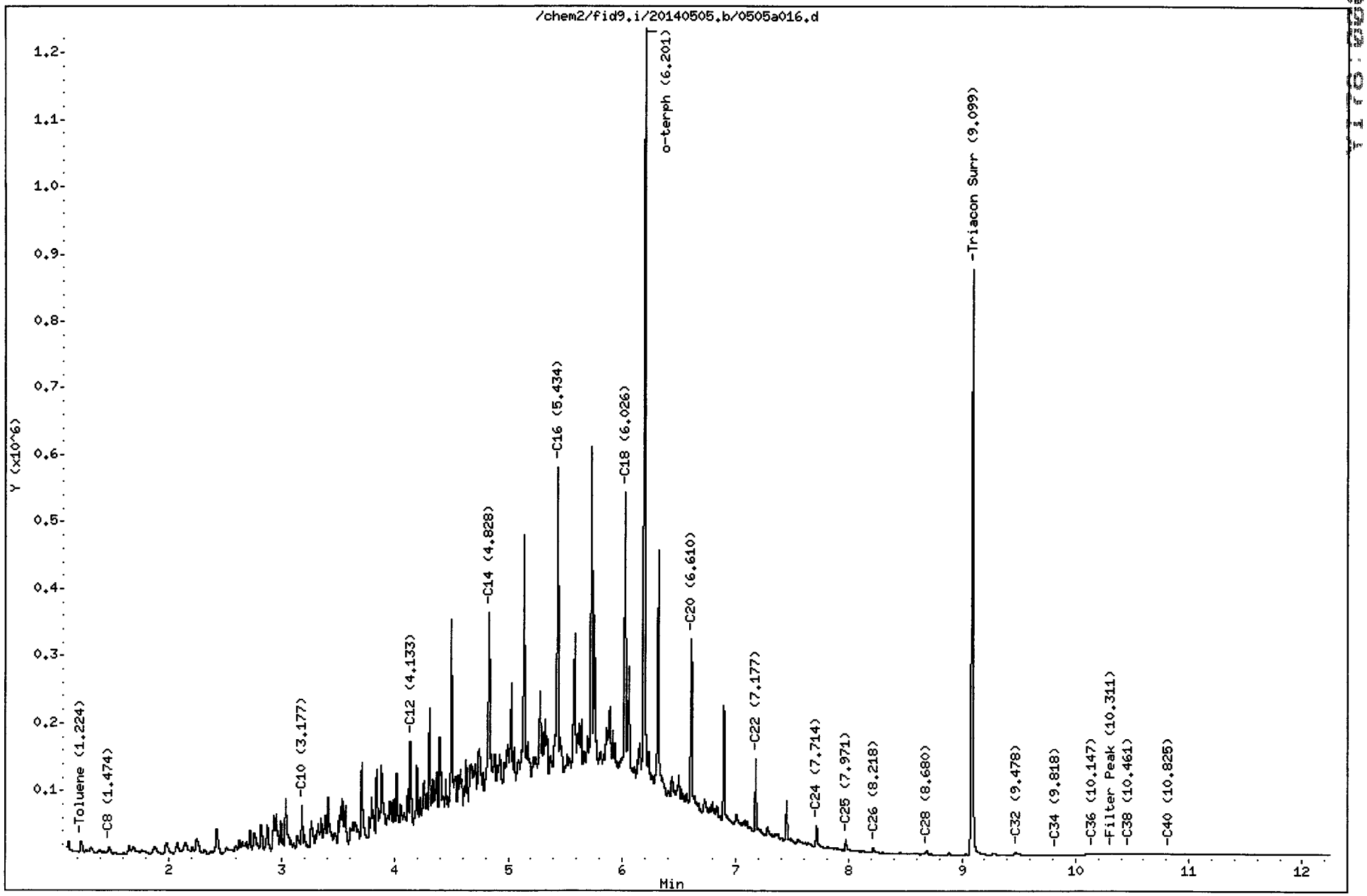
Column phase: RTX-1

Column diameter: 0.25

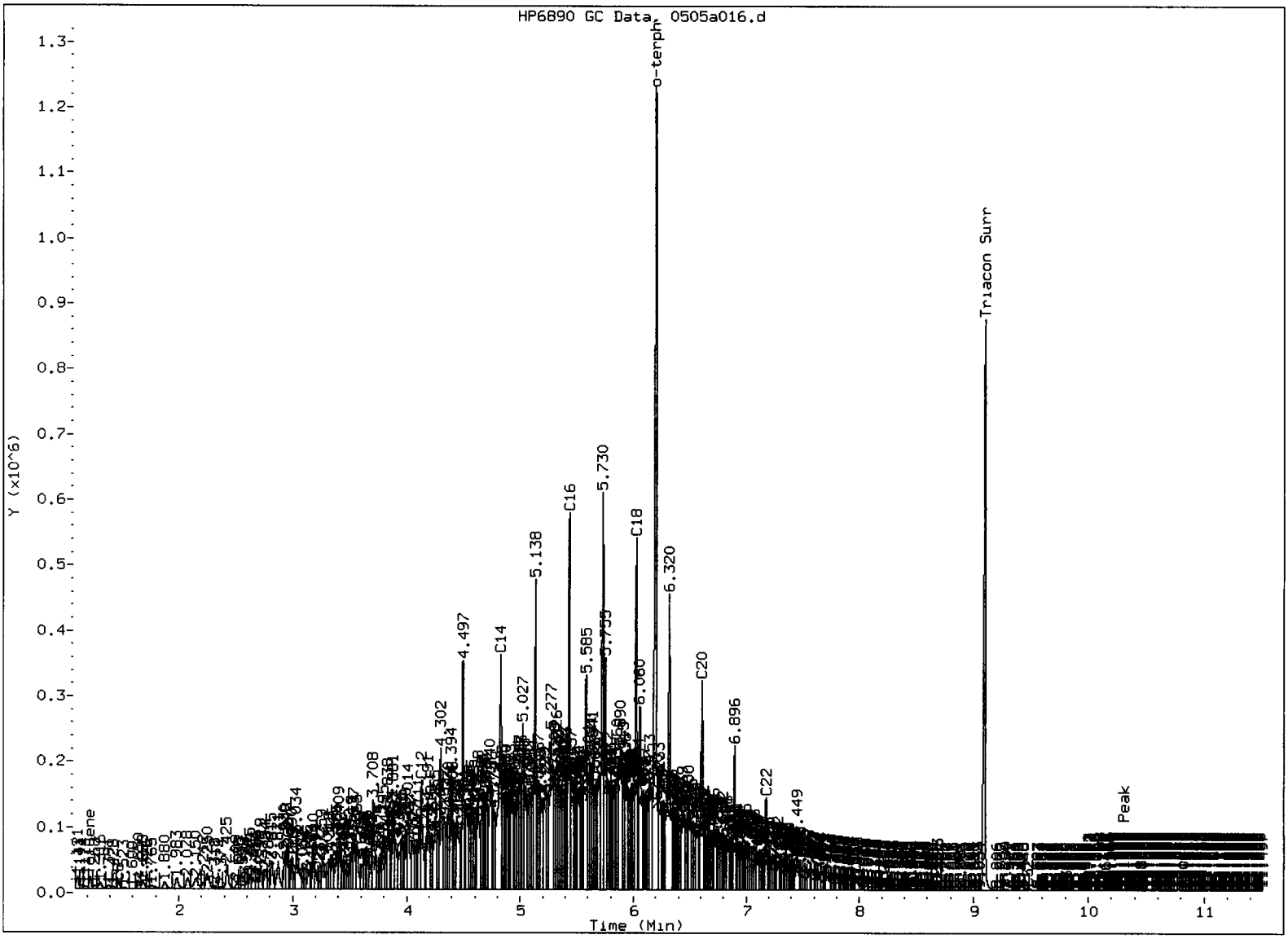


Data File: /chem2/fid9.i/20140505.b/0505a016.d
Date : 05-MAY-2014 17:16
Client ID: YI78LCSW1
Sample Info: YI78LCSW1

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 YI78LCSW1 FID:9A SIGNAL



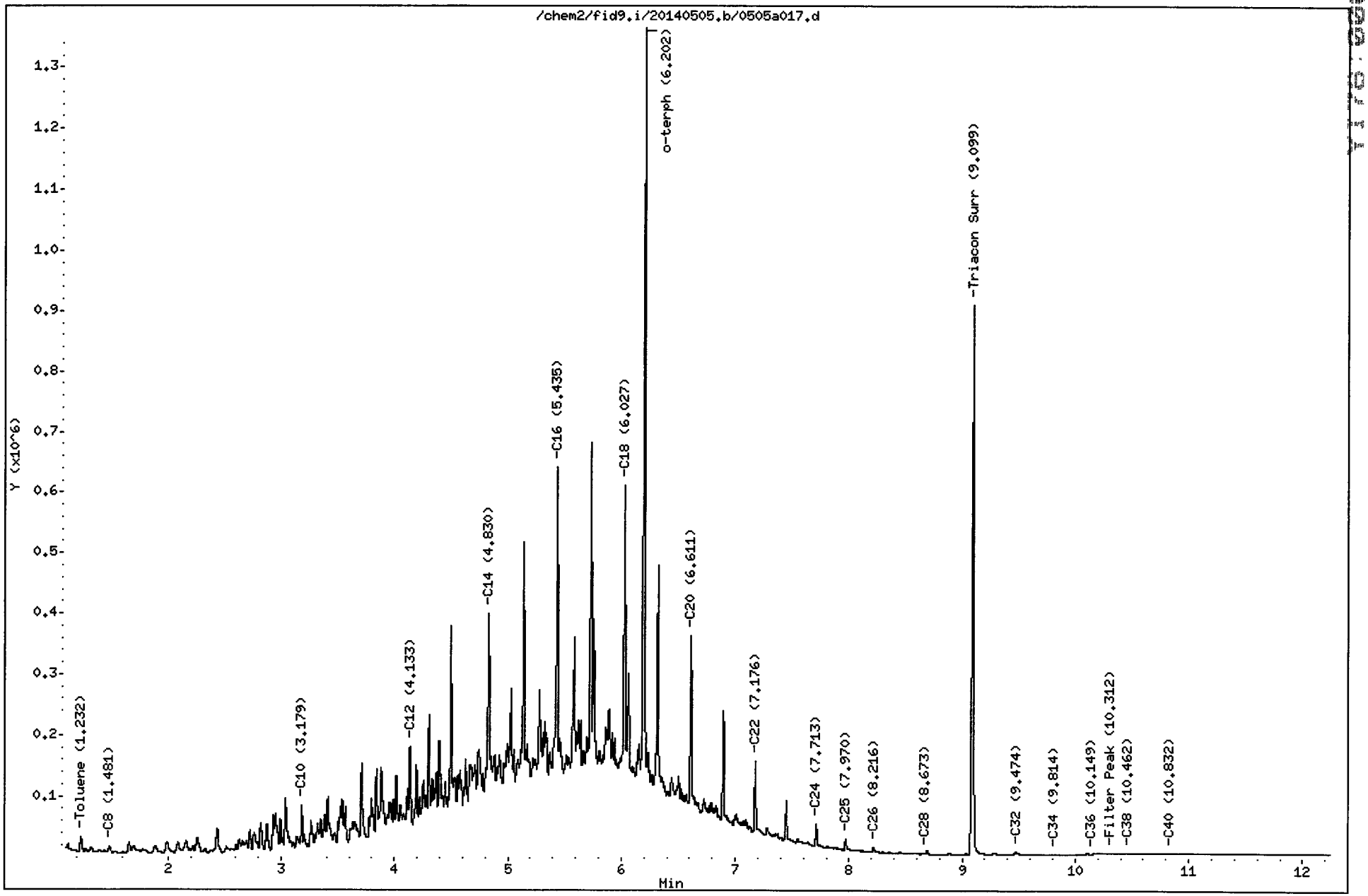
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

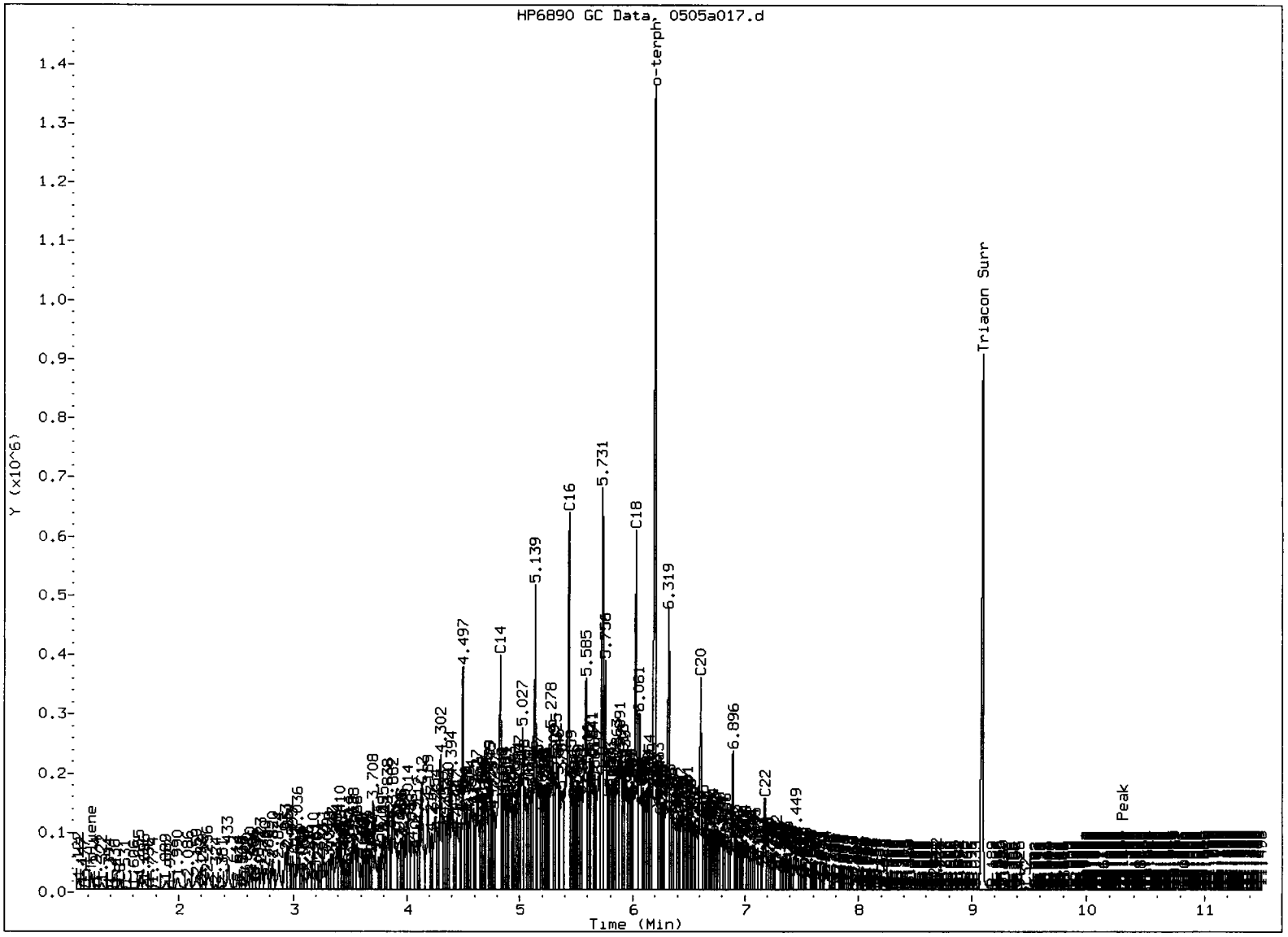
Analyst: JW Date: 5/6/14

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Date : 05-MAY-2014 17:37
Client ID: YI78LCSDW1
Sample Info: YI78LCSDW1

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 YI78LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

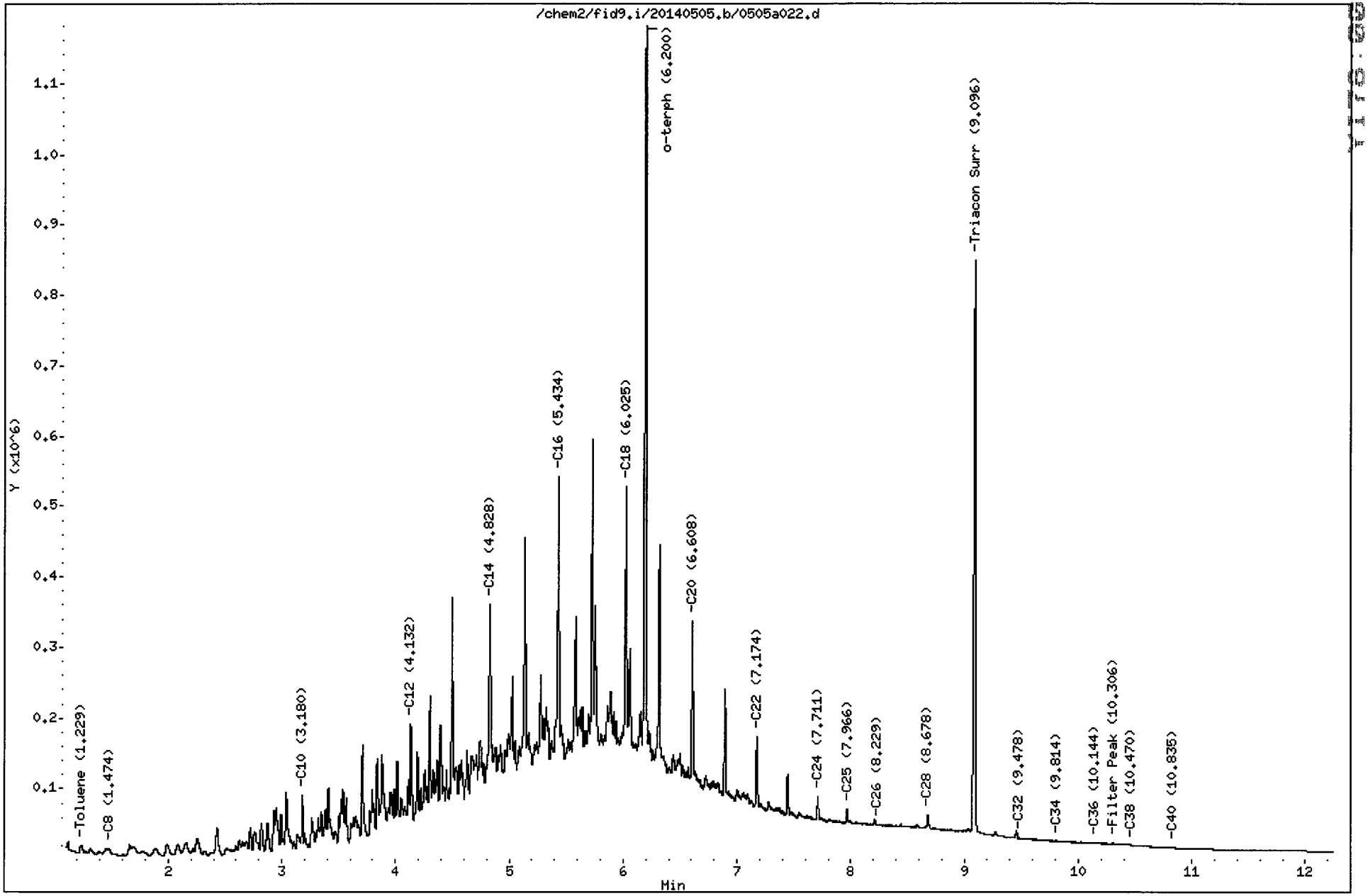
Analyst: JW Date: 5/6/14

YI78-00059

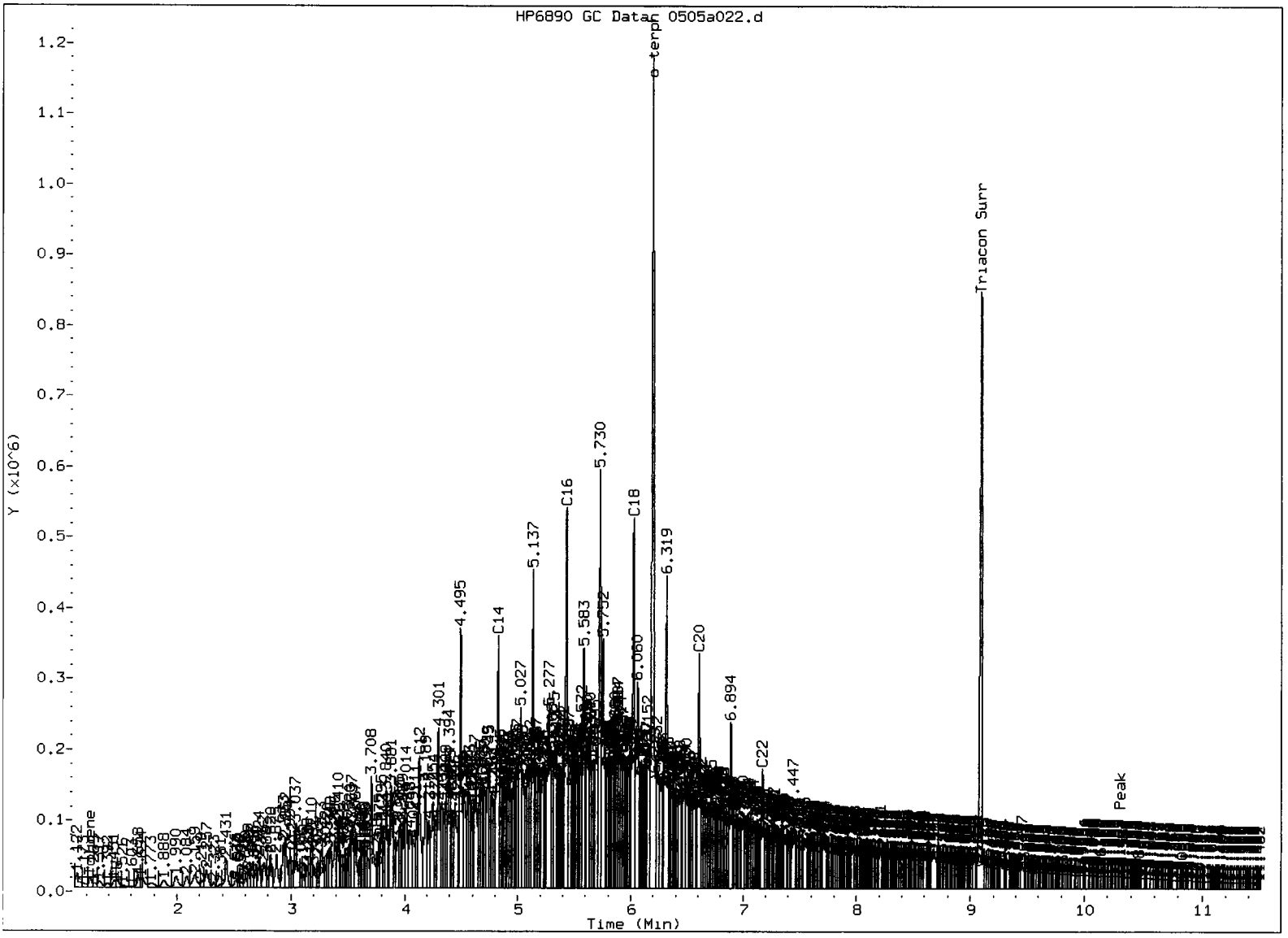
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Date : 05-MAY-2014 19:22
Client ID: MW-6 MS
Sample Info: YI78AMS

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 YI78AMS FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a023.d

Date : 05-MAY-2014 19:43

Client ID: MW-6 MSD

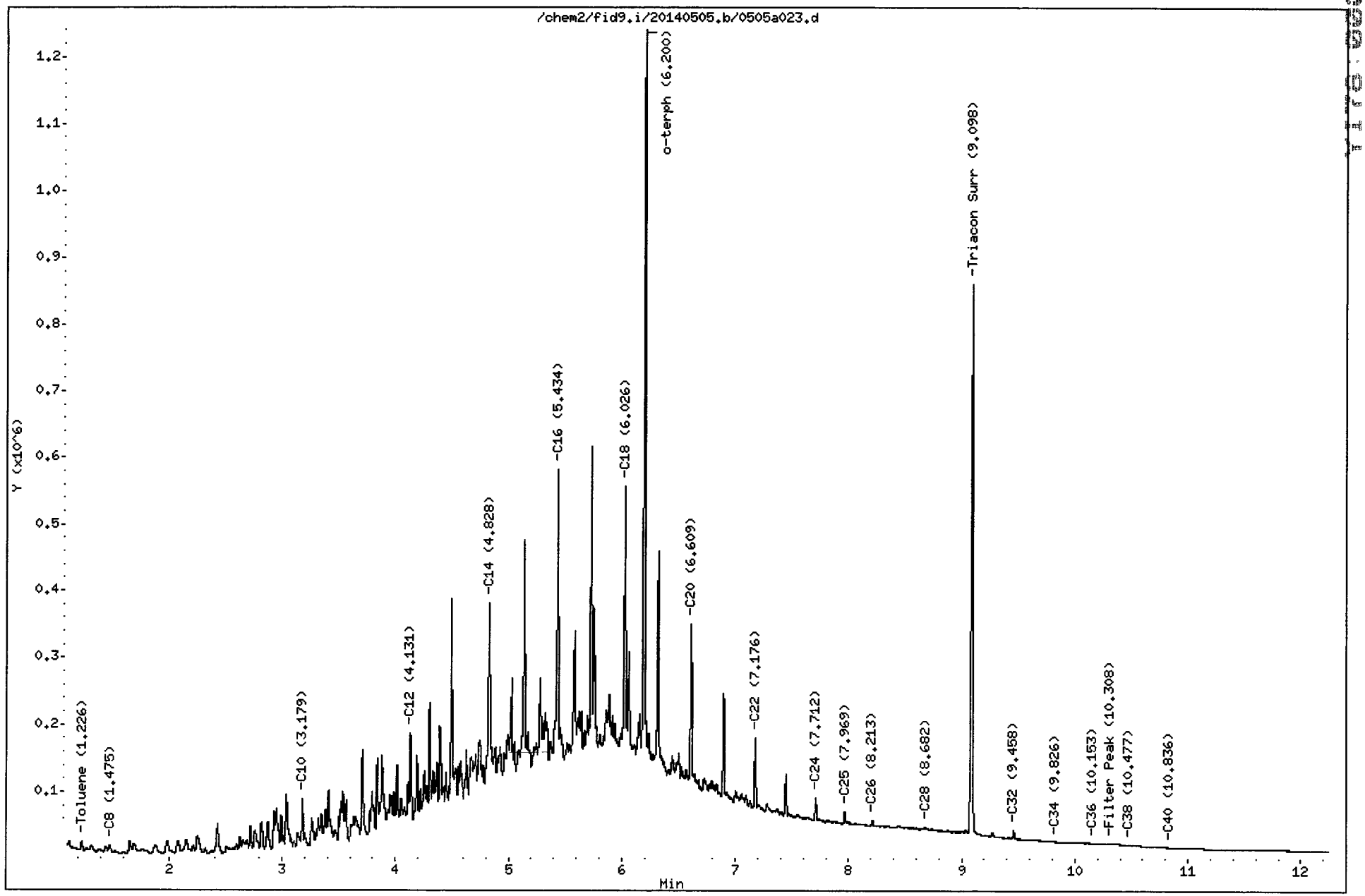
Sample Info: YI78AMSD

Instrument: fid9.i

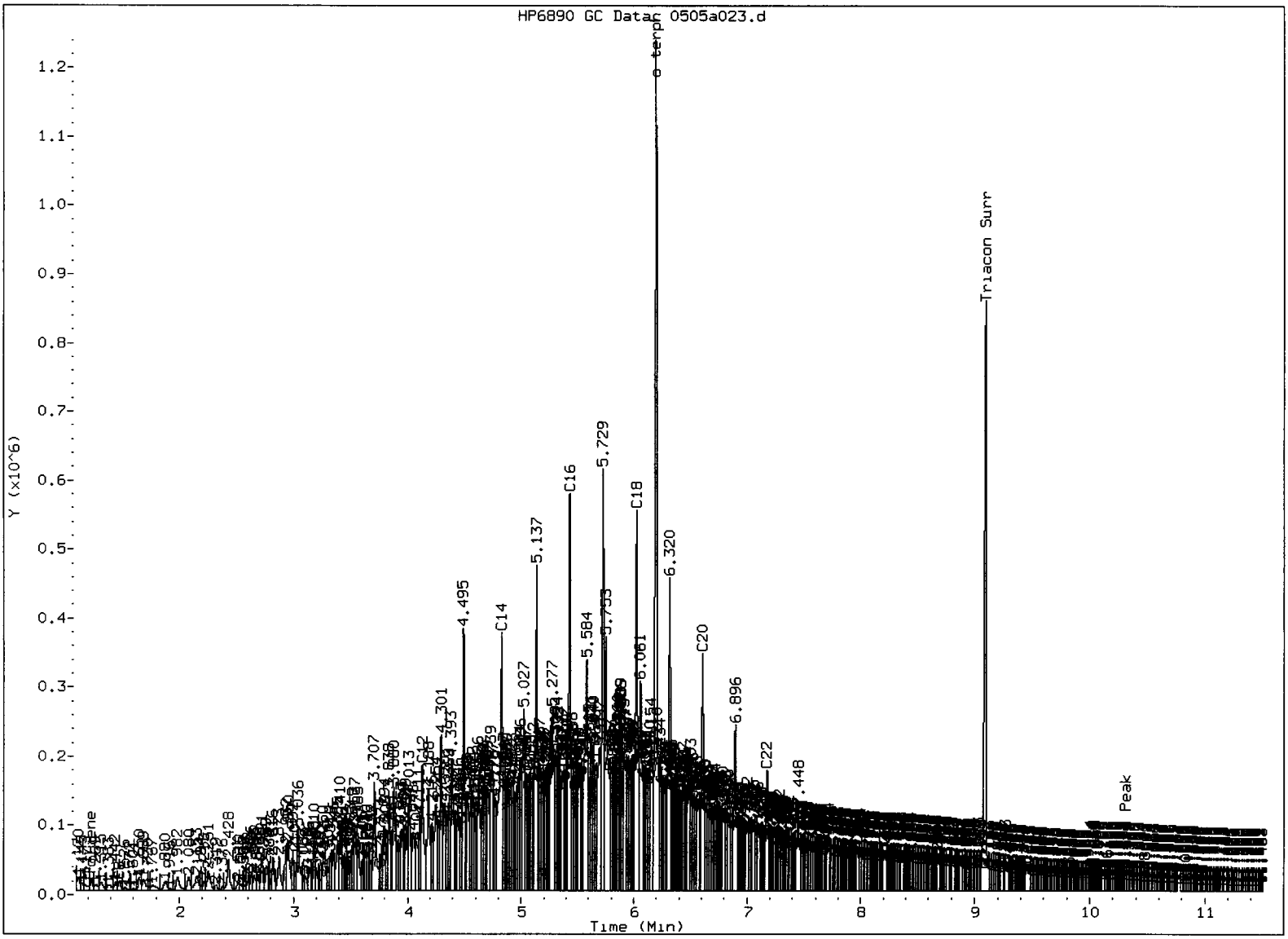
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:9A-2C/RTX-1 YI78AMSD FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

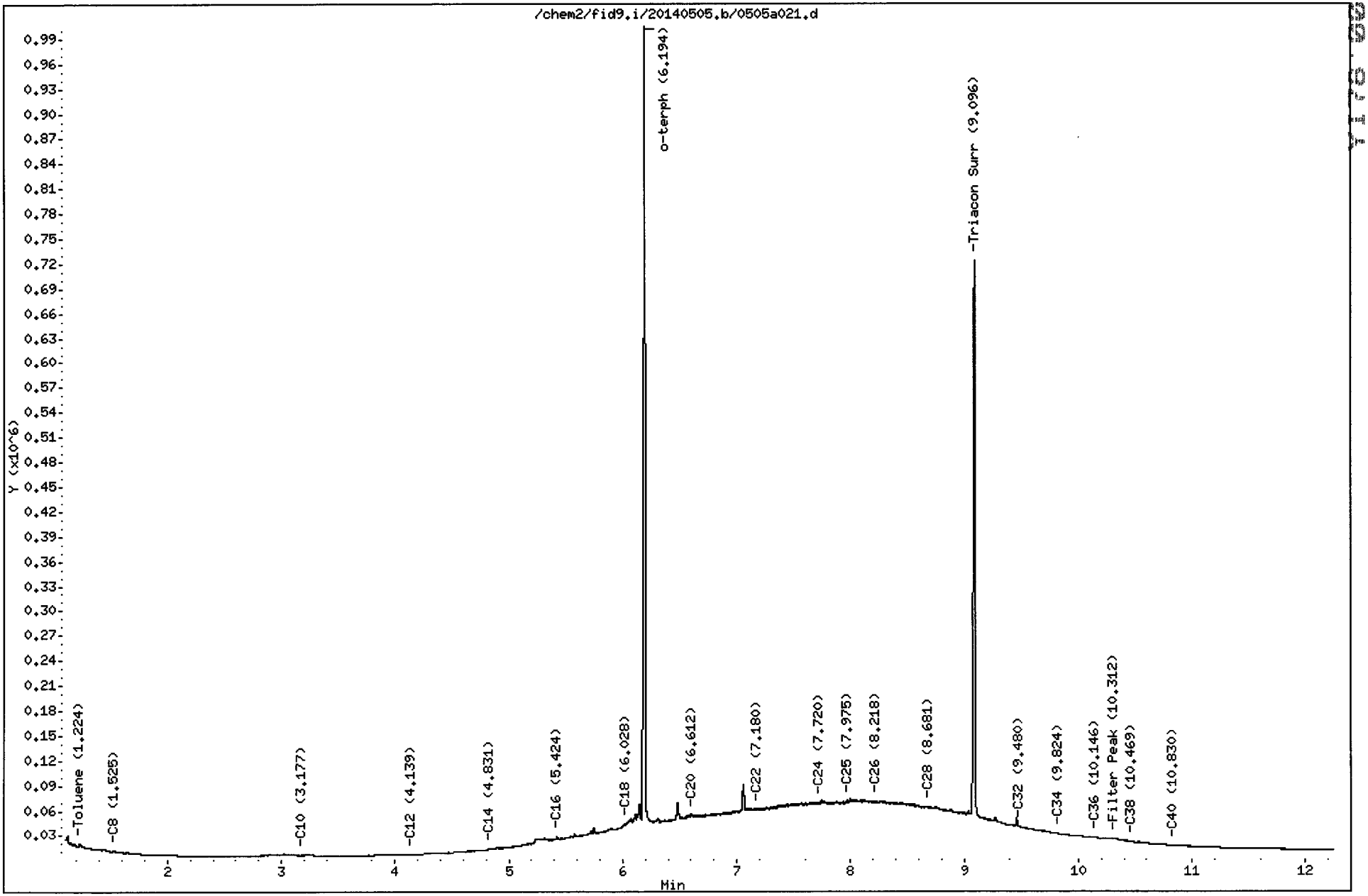
Analyst: JN Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a021.d
Date : 05-MAY-2014 19:01
Client ID: MW-6
Sample Info: YI78A

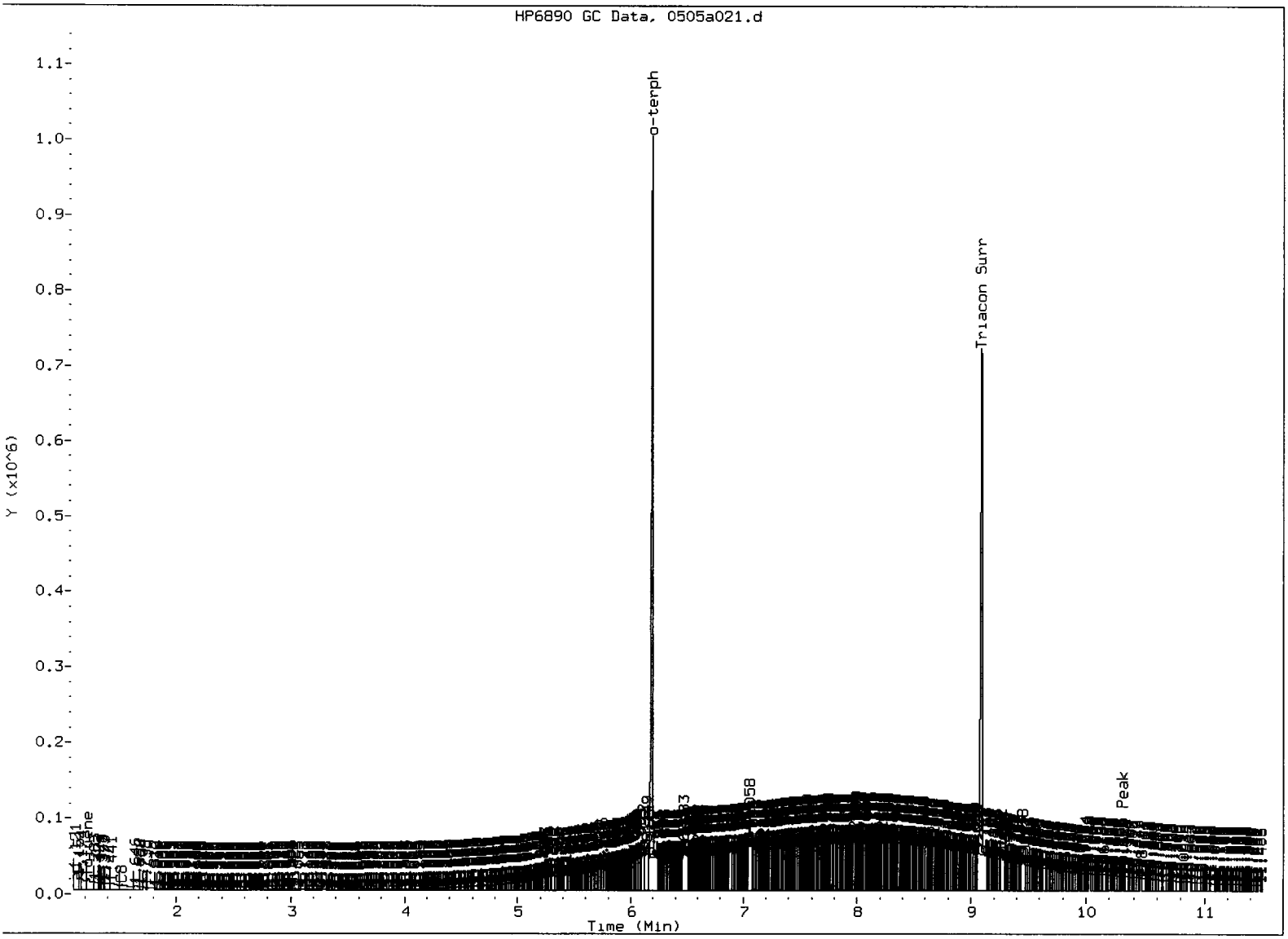
Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 YI78A FID:9A SIGNAL



MANUAL INTEGRATION

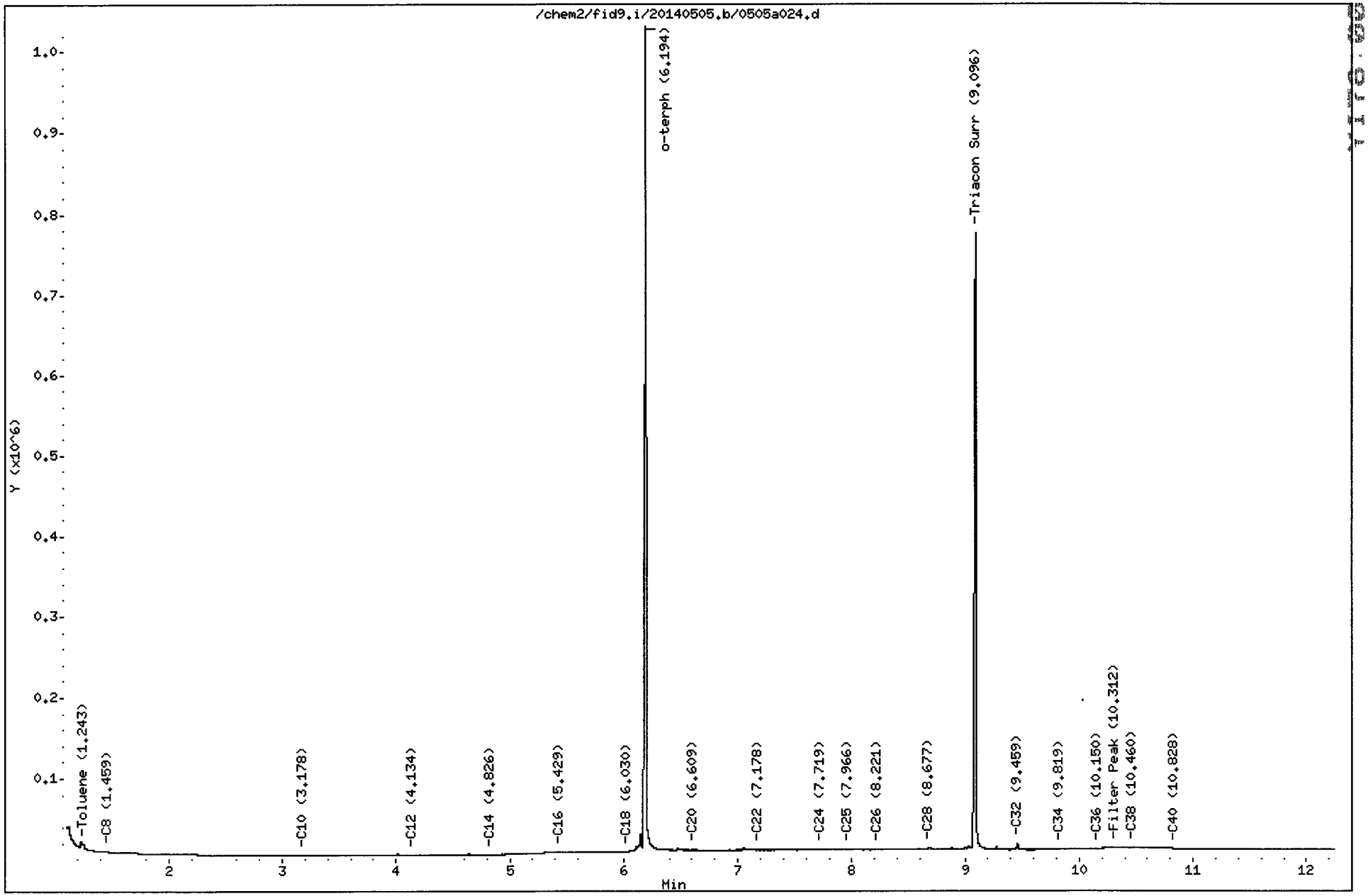
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/6/14

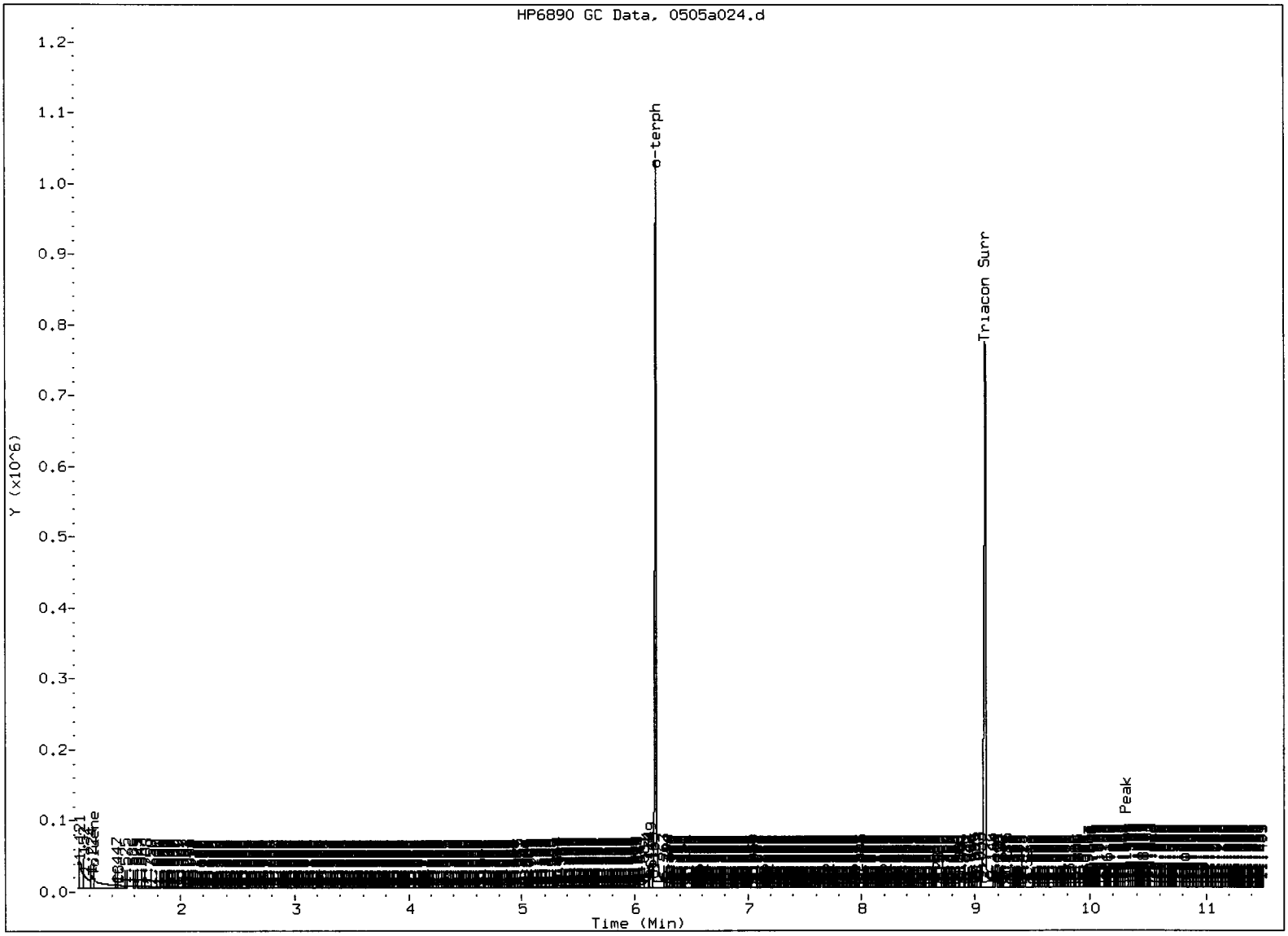
Data File: /chem2/fid9.i/20140505.b/0505a024.d
Date : 05-MAY-2014 20:04
Client ID: MW-7
Sample Info: YI78B

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 YI78B FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a025.d

Date : 05-MAY-2014 20:25

Client ID: MW-3

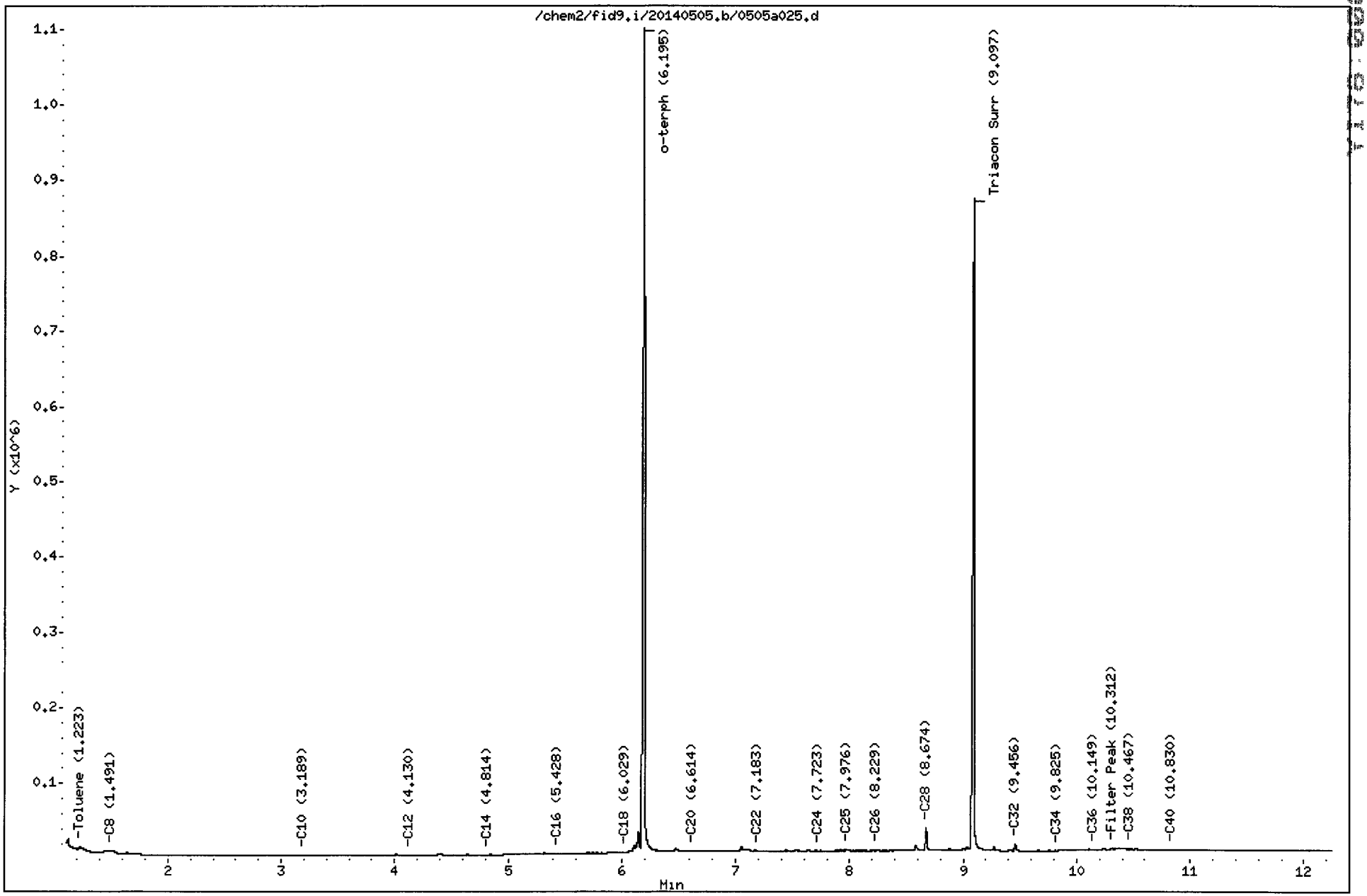
Sample Info: YI78C

Instrument: fid9.i

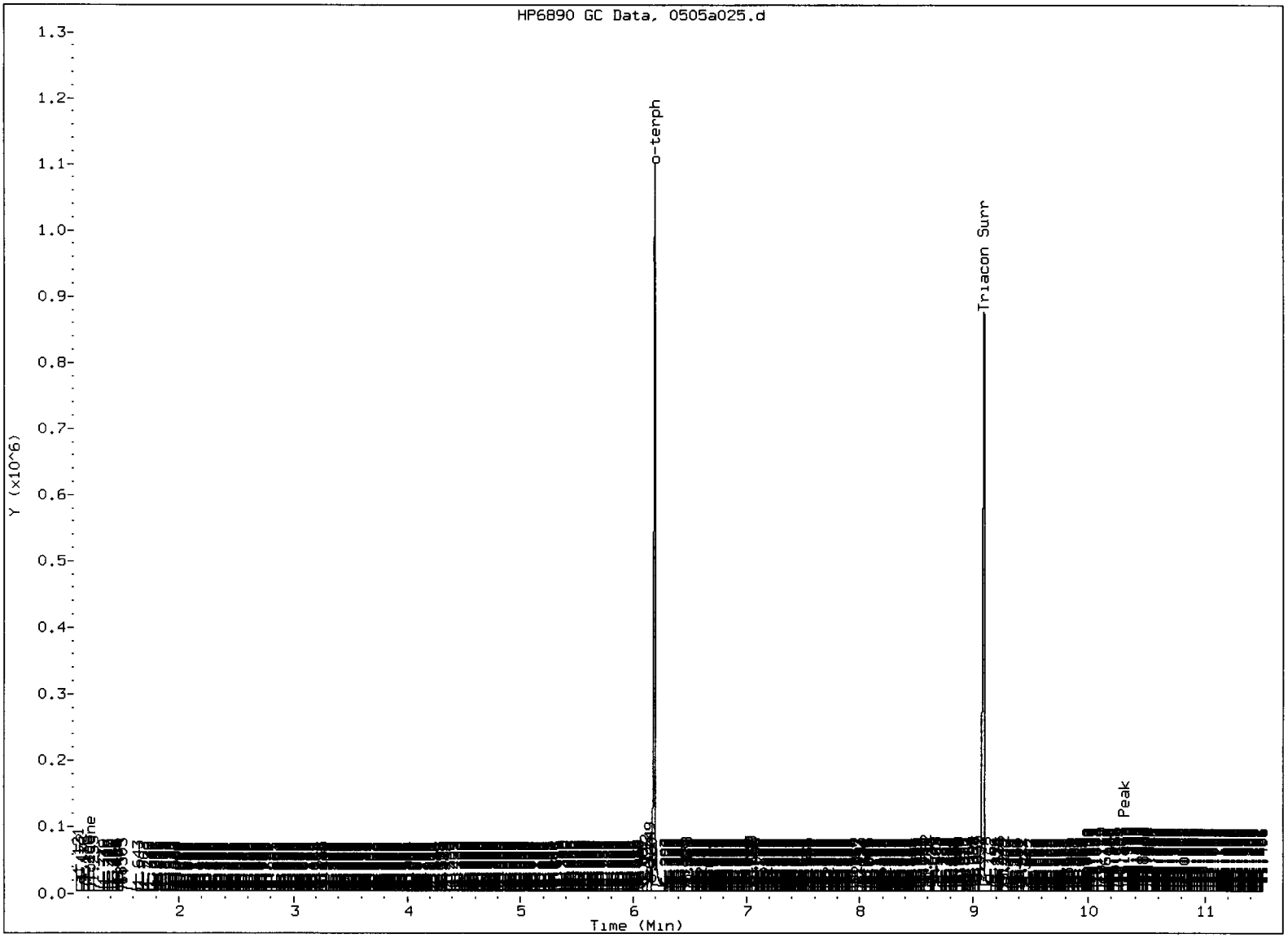
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:9A-2C/RTX-1 YI78C FID:9A SIGNAL



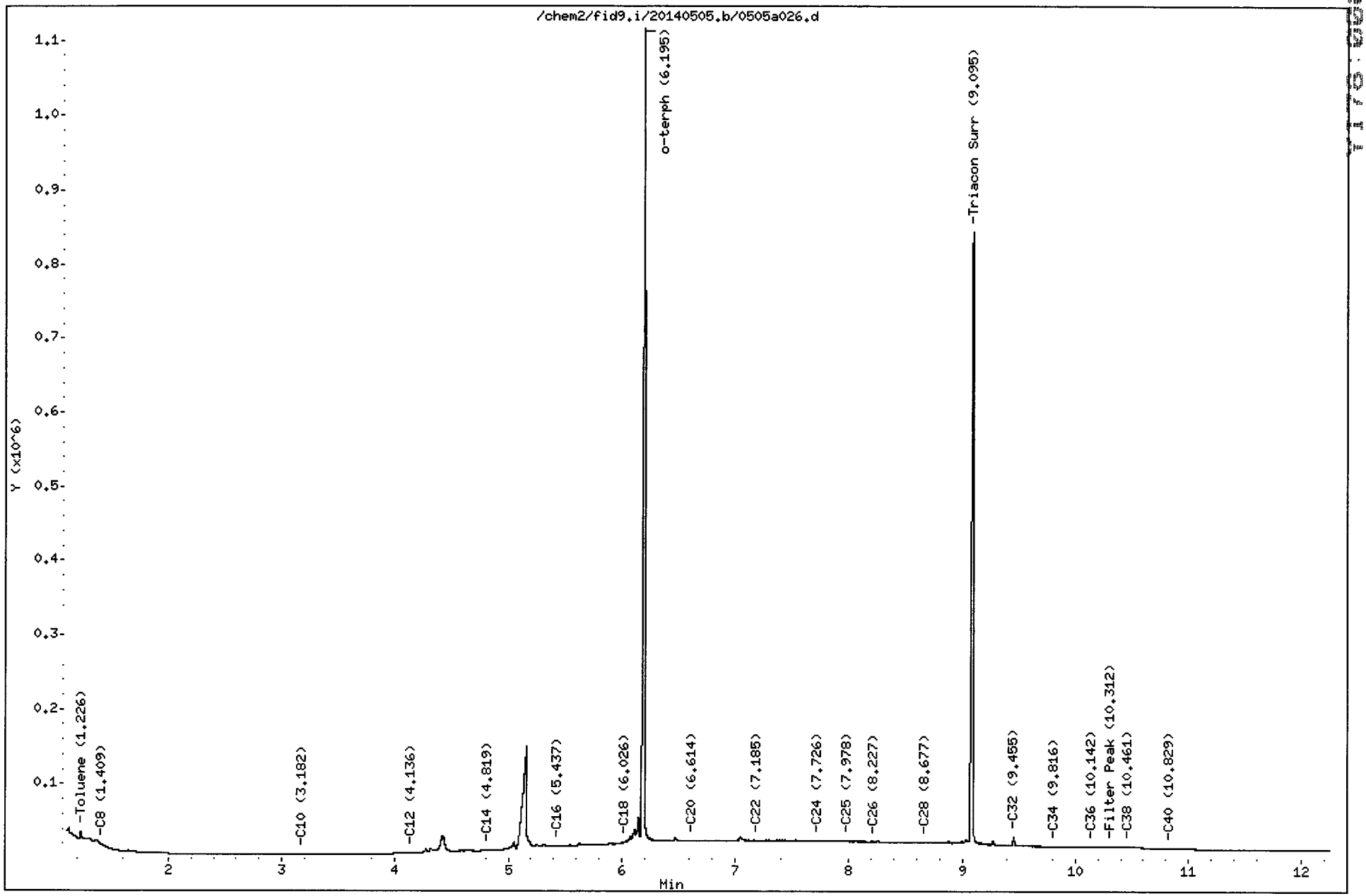
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

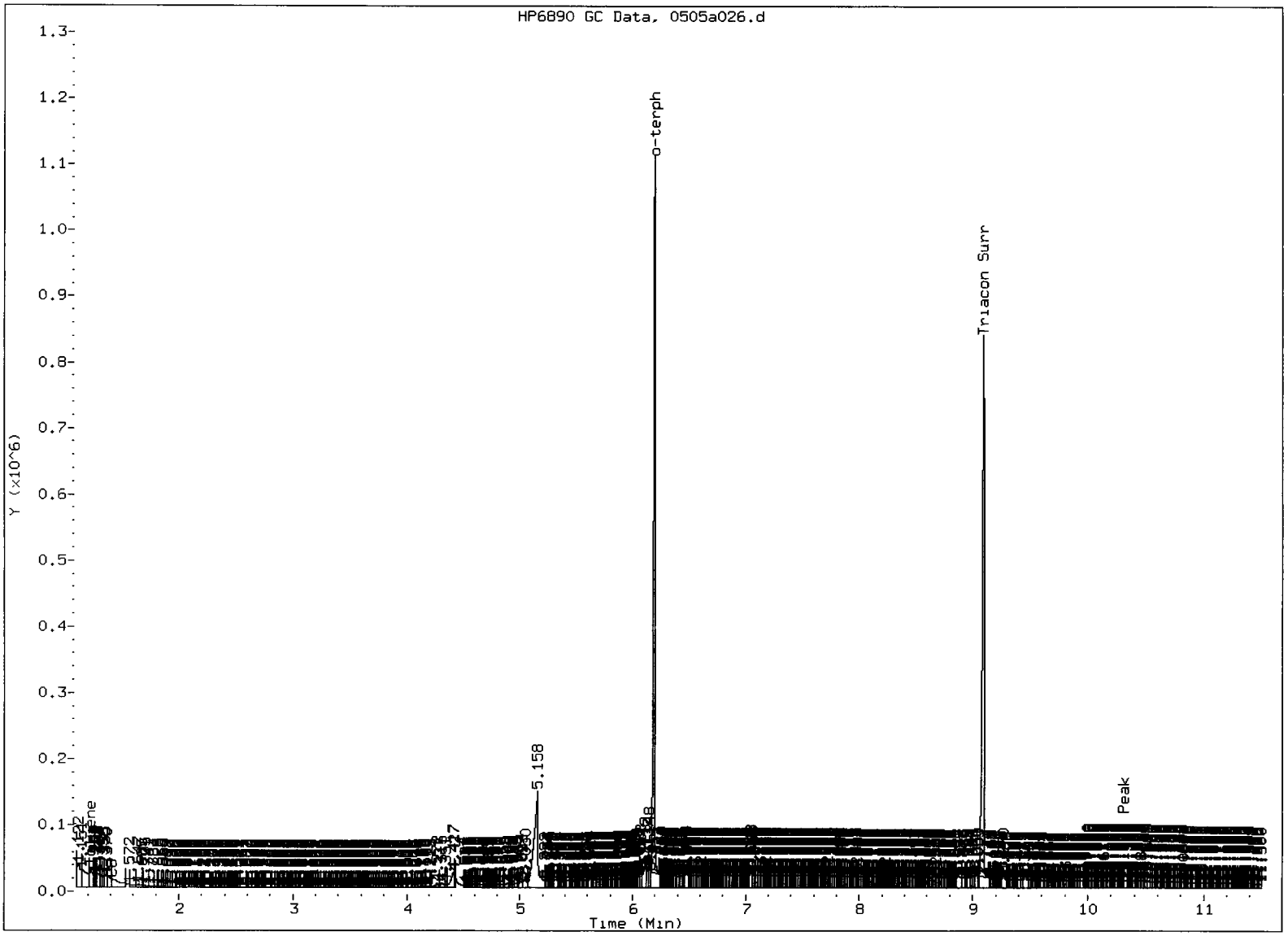
Analyst: JW Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a026.d
Date : 05-MAY-2014 20:46
Client ID: MW-8
Sample Info: YI78D

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 YI78D FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a027.d

Date : 05-MAY-2014 21:07

Client ID: MW-2

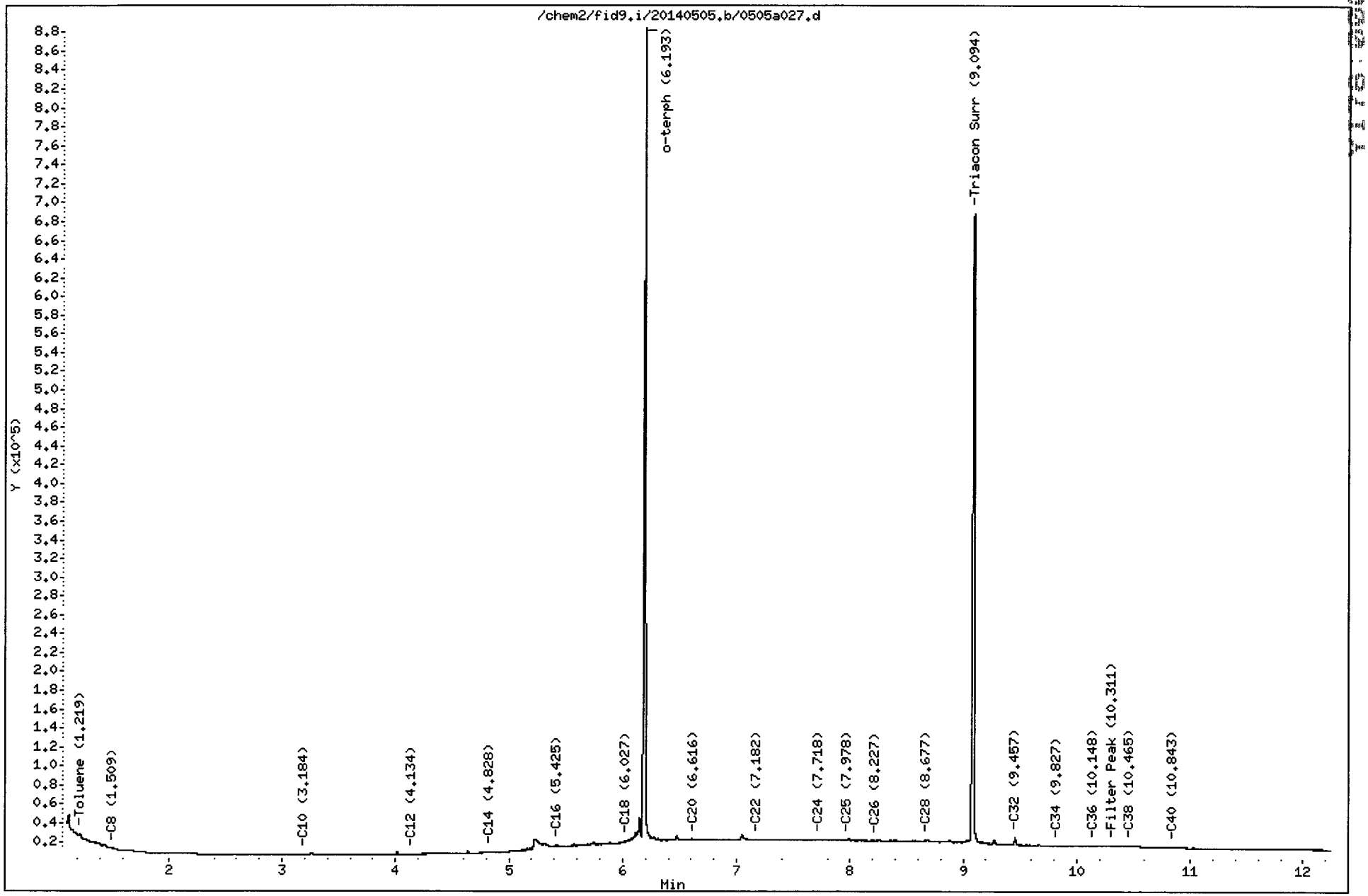
Sample Info: YI78E

Instrument: fid9.i

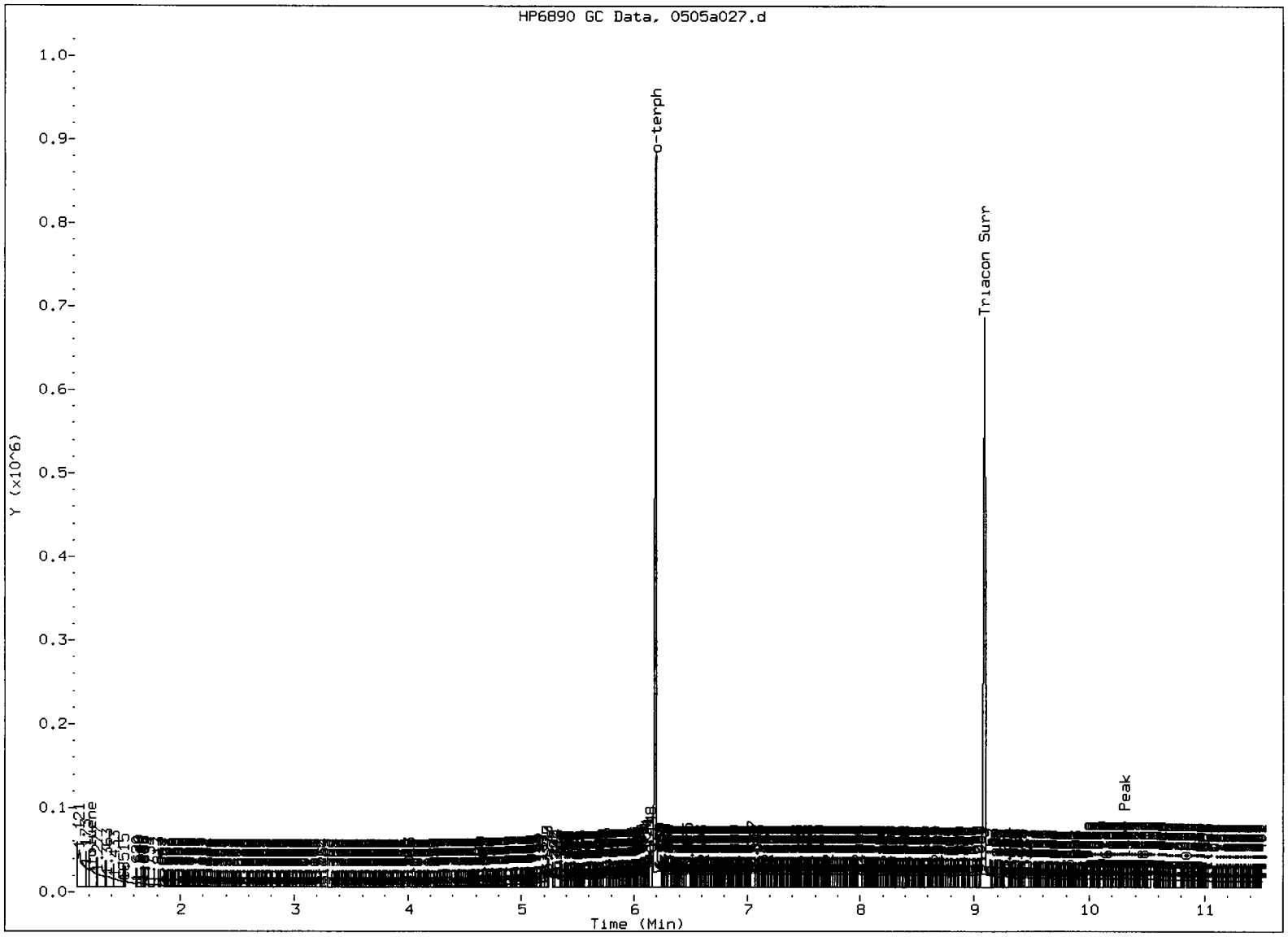
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:9A-2C/RTX-1 YI78E FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: SW Date: 5/6/14

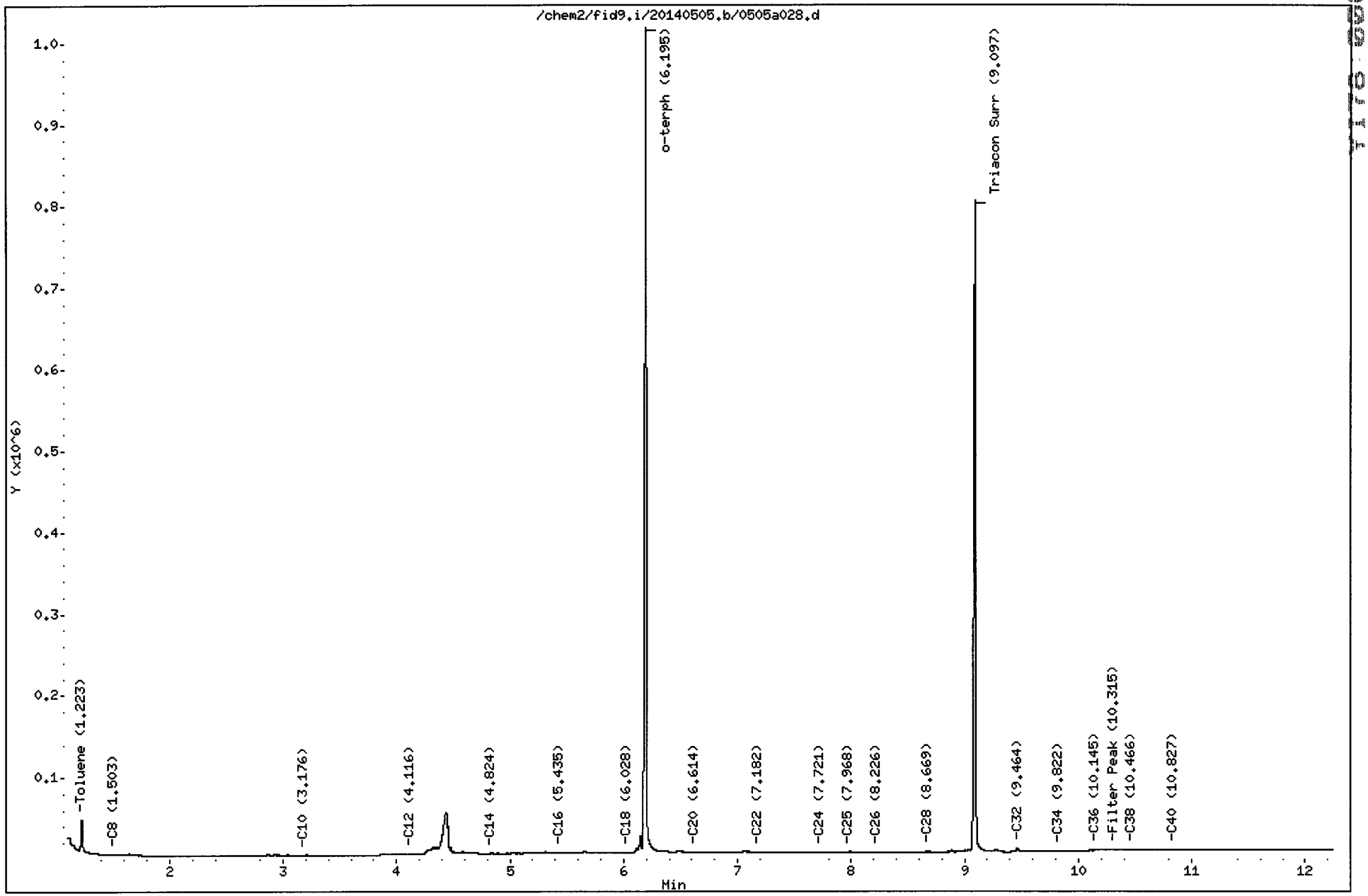
YI78:88884

Data File: /chem2/fid9.i/20140505.b/0505a028.d
Date : 05-MAY-2014 21:28
Client ID: MW-5
Sample Info: YI78F

Instrument: fid9.i

Operator: JW
Column diameter: 0.25

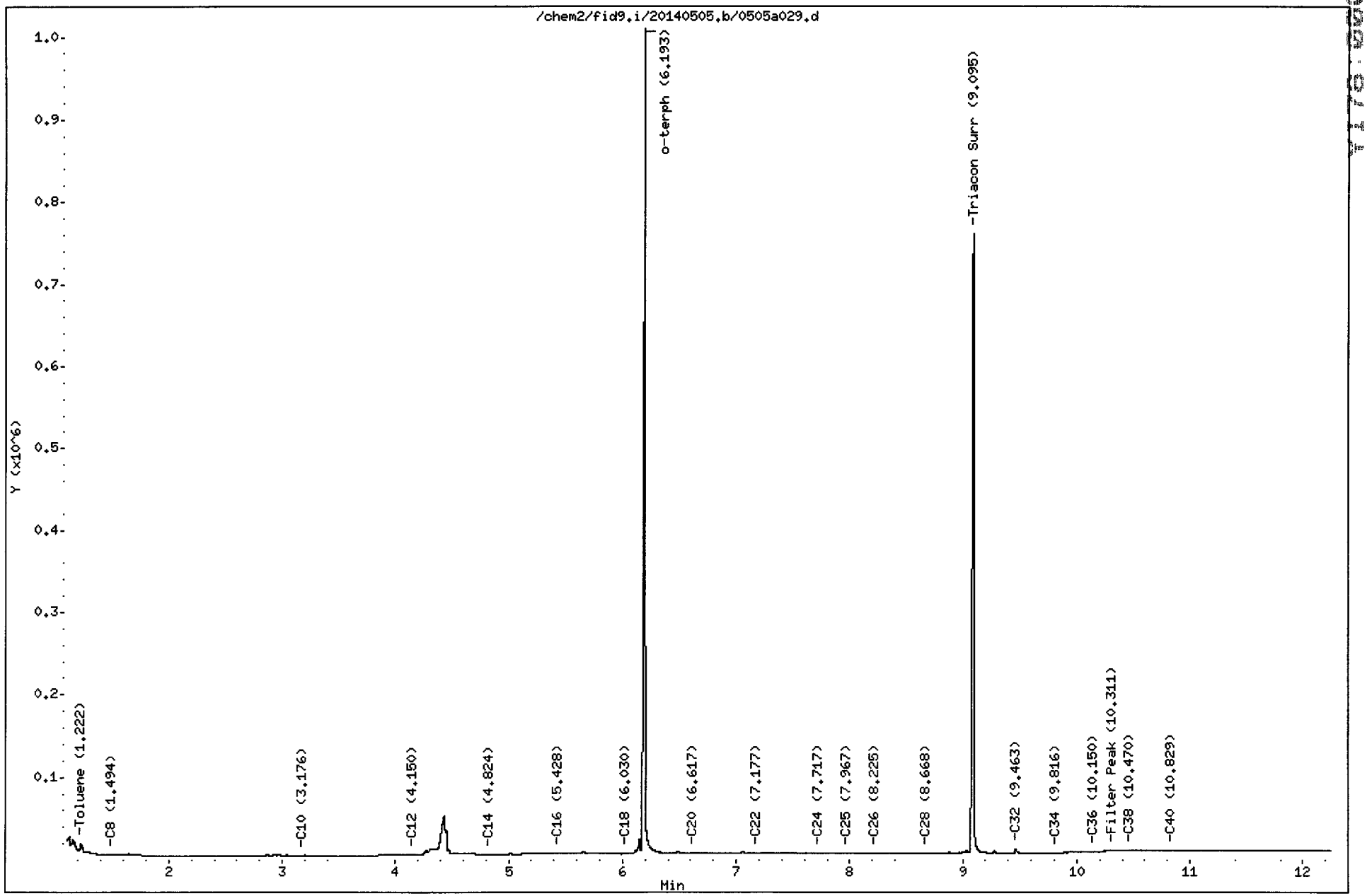
Column phase: RTX-1



Data File: /chem2/fid9.i/20140505.b/0505a029.d
Date : 05-MAY-2014 21:49
Client ID: MW-10
Sample Info: YI78G

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1

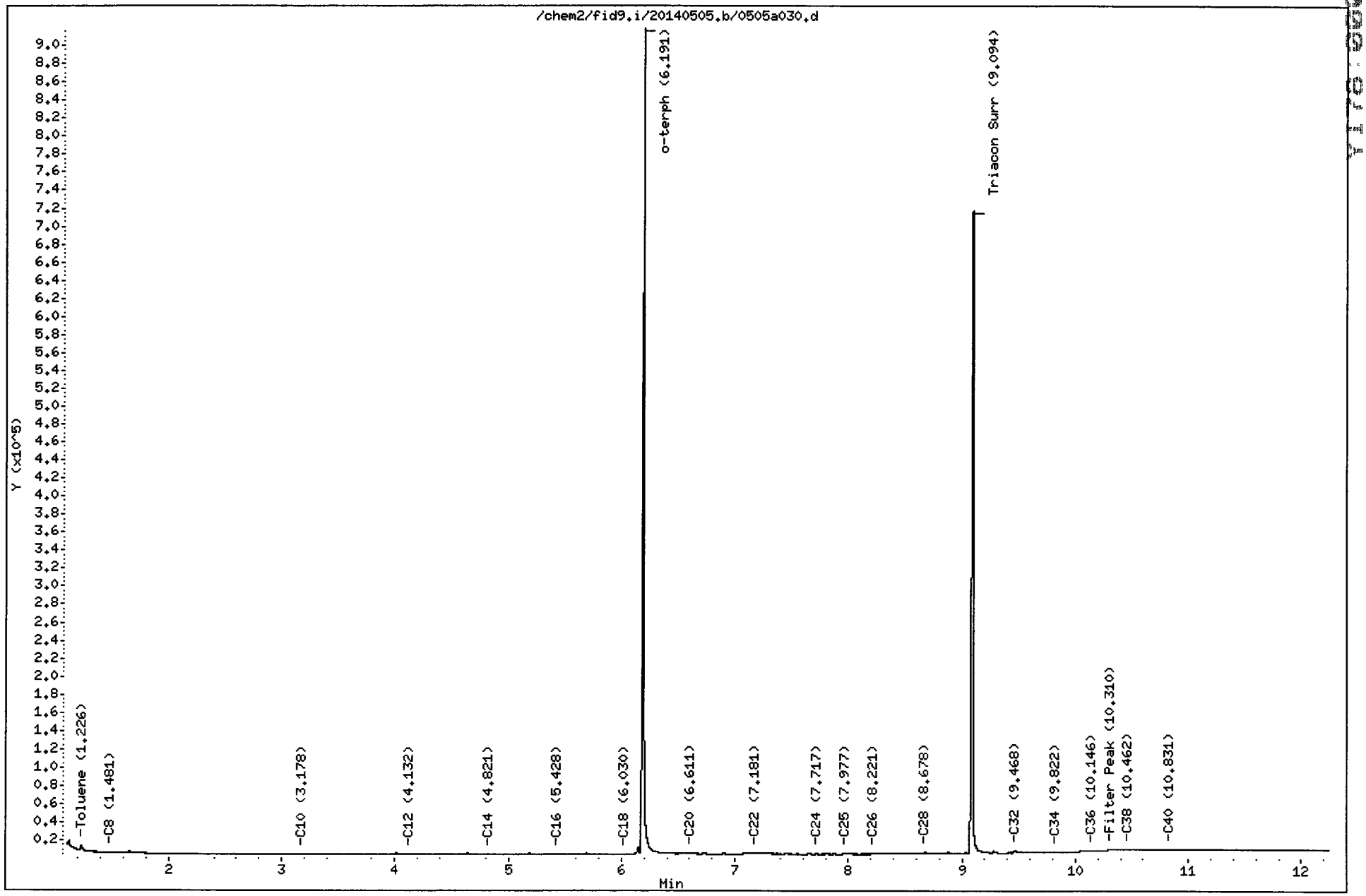


Data File: /chem2/fid9.i/20140505.b/0505a030.d
Date : 05-MAY-2014 22:10
Client ID: MW-4
Sample Info: YI78H

Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

Data Release Authorized:
Reported: 05/02/14
Date Received: 05/01/14
Page 1 of 1

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-8 YI78D 14-8408	05/01/14	Water	05/01/14 050114#1	0.010	0.023
MW-2 YI78E 14-8409	05/01/14	Water	05/01/14 050114#1	0.010	< 0.010 U
MW-5 YI78F 14-8410	05/01/14	Water	05/01/14 050114#1	1.00	80.0
MW-10 YI78G 14-8411	05/01/14	Water	05/01/14 050114#1	1.00	84.5
MW-4 YI78H 14-8412	05/01/14	Water	05/01/14 050114#1	0.010	0.013

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	05/01/14 18:00	mg/L	< 0.010 U

YI78:00063

STANDARD REFERENCE RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	05/01/14 18:00	mg/L	0.621	0.630	98.6%

YI78:00070

REPLICATE RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YI78D Client ID: MW-8					
Hexavalent Chromium	05/01/14	mg/L	0.023	0.024	4.3%

YI78:00071

MS/MSD RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YI78D Client ID: MW-8						
Hexavalent Chromium	05/01/14	mg/L	0.023	0.024	0.063	1.6%

YI78:00072

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-6
SAMPLE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	**7440-38-2**	**Arsenic**	0.05	**0.08**	
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**0.031**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW-6
DUPLICATE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.08	0.08	0.0%	+/- 0.05	L
Chromium	6010C	0.031	0.030	3.3%	+/- 20%	
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-6
MATRIX SPIKE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.08	2.28	2.00	110%	
Chromium	6010C	0.031	0.566	0.500	107%	
Lead	6010C	0.02 U	1.97	2.00	98.5%	
Selenium	6010C	0.05 U	2.18	2.00	109%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

YI78:00075

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-7
SAMPLE

Lab Sample ID: YI78B
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: YI78C
LIMS ID: 14-8407
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YI78:60877

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-8
SAMPLE

Lab Sample ID: YI78D
LIMS ID: 14-8408
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**0.011**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YI78:00078

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-2
SAMPLE

Lab Sample ID: YI78E
LIMS ID: 14-8409
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**0.007**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW-5
SAMPLE

Lab Sample ID: YI78F
LIMS ID: 14-8410
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**75.1**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YI78:69668

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-10
SAMPLE

Lab Sample ID: YI78G
LIMS ID: 14-8411
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**80.5**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-4
SAMPLE

Lab Sample ID: YI78H
LIMS ID: 14-8412
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	**7440-47-3**	**Chromium**	0.005	**0.005**	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: YI78MB
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YI78:00003

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: YI78LCS
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE/BLANK SPIKE DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Dup Found	Spike Added	Spike Recovery	Spike Dup Recovery	RPD	Q
Arsenic	6010C	2.09	2.08	2.00	104%	104%	0.5%	
Chromium	6010C	0.542	0.541	0.500	108%	108%	0.2%	
Lead	6010C	2.07	2.06	2.00	104%	103%	0.5%	
Selenium	6010C	2.05	2.04	2.00	102%	102%	0.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

YI78:00064

August 2014

Analytical Resources, Incorporated
Analytical Chemists and Consultants

20 August 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job Nos.: YV50, YV51

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five water samples and seven soil samples on August 7, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the 8/12/14 VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for carbon disulfide and 1,1-dichloroethane were high following the analyses of the LCS/LCSD associated with the VOC analyses of the soil samples. Since carbon disulfide is know to recover poorly and 1,1-dichloroethane was not detected in any sample associated with these LCS/LCSD, no corrective actions were taken.

A small amount of hexechlorobutadiene was detected in the method blank associated with the OVC analyses of the water samples. Since this compound was not detected in any sample associated with this blank, no corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFiles: YV50, YV51

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YA150	Turn-around Requested:	Page: 2 of 2	
ARI Client Company: Kennedy / Jenks	Phone: 253 835 6400	Date: 8/7	Ice Present?
Client Contact: Jessica / Ty		No. of Coolers:	Cooler Temps:
Client Project Name: Precision Engineering			
Client Project #:	Samplers: JJ JF RL		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Jars	TPH Dx	TOT Metals	TCLP					Notes/Comments
SB4	8/7	1620	GW	5	X		X	X					
SB14		1415		7	X	X	X	X					
SB11		0940		7	X	X	X	X					
SB12		1055		2			X	X					
SB13		1230		2			X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joseph Sunberg	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/7 1705 RL	Date & Time: 8/7/14 1725	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

revised 2008 - USAL

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

Project Name: Precision Engineering

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YV50

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 12.4 24.4 ___ ___

Time: 1725

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 8/7/14 Time: 1725

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? YES (NO)

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA (YES) NO

Were all VOC vials free of air bubbles? NA YES (NO)

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI... (NA) _____

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

TS C

Samples Logged by: _____ Date: 8.7.14 Time: 837

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

SB 4 3 Lg

SB 14 3 Lg

Diesel bottle given for SB 12

By: TS Date: 8-8-14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles >4 mm

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 08/08/14
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YV50**

Inquiry Number: NONE
Analysis Requested: 08/08/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 08/07/14

Project #:
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-16219 **YV50A**	SB4						TOT Fail															
14-16220 **YV50B**	SB14						TOT Pass															
14-16221 **YV50C**	SB11						TOT Pass															
14-16222 **YV50D**	SB12						TOT Pass															
14-16223 **YV50E**	SB13						TOT Pass															

Checked By TS Date 8-8-14

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YV50
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB4	YV50A	14-16219	Water	08/07/14 16:20	08/07/14 17:25
2.	SB14	YV50B	14-16220	Water	08/07/14 14:15	08/07/14 17:25
3.	SB11	YV50C	14-16221	Water	08/07/14 09:40	08/07/14 17:25
4.	SB12	YV50D	14-16222	Water	08/07/14 10:55	08/07/14 17:25
5.	SB13	YV50E	14-16223	Water	08/07/14 12:30	08/07/14 17:25

YV50:00005

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YV50 : 00006

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YVSO : 00007

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

YV50 : 00008

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081414A**

METHOD BLANK

Lab Sample ID: MB-081414A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized: MW
Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/LH
Date Analyzed: 08/14/14 18:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

YV50:00089

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081414A**

METHOD BLANK

Lab Sample ID: MB-081414A
LIMS ID: 14-16219
Matrix: Water
Date Analyzed: 08/14/14 18:14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	**Hexachlorobutadiene**	**0.50**	**0.66**	
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	100%
Bromofluorobenzene	96.7%
d4-1,2-Dichlorobenzene	98.4%

YV50:00010

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized: MW
Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/14/14 20:11

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4**

SAMPLE

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Date Analyzed: 08/14/14 20:11

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	**Naphthalene**	**2.5**	**3.1**	
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.7%
d8-Toluene	95.5%
Bromofluorobenzene	98.4%
d4-1,2-Dichlorobenzene	99.0%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

YV50:00012

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB14**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV50B
LIMS ID: 14-16220
Matrix: Water
Data Release Authorized: MW
Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/14/14 20:41

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	**Toluene**	**1.0**	**2.2**	
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	**Ethylbenzene**	**1.0**	**16**	
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	**m,p-Xylene**	**2.0**	**26**	
95-47-6	**o-Xylene**	**1.0**	**5.0**	
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

YV50:00013

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB14**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV50B
LIMS ID: 14-16220
Matrix: Water
Date Analyzed: 08/14/14 20:41

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	**1,3,5-Trimethylbenzene**	**1.0**	**6.6**	
95-63-6	**1,2,4-Trimethylbenzene**	**1.0**	**13**	
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	**Isopropylbenzene**	**1.0**	**2.3**	
103-65-1	**n-Propylbenzene**	**1.0**	**5.0**	
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	**Naphthalene**	**2.5**	**6.2**	
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.1%
d8-Toluene	102%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

YV50:00014

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV50C
LIMS ID: 14-16221
Matrix: Water
Data Release Authorized: MW
Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/14/14 21:11

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB11**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV50C
LIMS ID: 14-16221
Matrix: Water
Date Analyzed: 08/14/14 21:11

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.1%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081414A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized: MW
Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/LH
LCSD: NT3/LH
Date Analyzed LCS: 08/14/14 17:18
LCSD: 08/14/14 17:46

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.0	10.0	100%	9.90	10.0	99.0%	1.0%
Bromomethane	9.65	10.0	96.5%	9.95	10.0	99.5%	3.1%
Vinyl Chloride	10.0	10.0	100%	9.54	10.0	95.4%	4.7%
Chloroethane	9.06	10.0	90.6%	8.35	10.0	83.5%	8.2%
Methylene Chloride	9.39	10.0	93.9%	9.64	10.0	96.4%	2.6%
Acetone	45.0	50.0	90.0%	45.2	50.0	90.4%	0.4%
Carbon Disulfide	9.66	10.0	96.6%	9.71	10.0	97.1%	0.5%
1,1-Dichloroethene	9.55	10.0	95.5%	7.84	10.0	78.4%	19.7%
1,1-Dichloroethane	9.79	10.0	97.9%	9.40	10.0	94.0%	4.1%
trans-1,2-Dichloroethene	9.22	10.0	92.2%	9.72	10.0	97.2%	5.3%
cis-1,2-Dichloroethene	9.20	10.0	92.0%	8.76	10.0	87.6%	4.9%
Chloroform	9.67	10.0	96.7%	9.50	10.0	95.0%	1.8%
1,2-Dichloroethane	9.50	10.0	95.0%	9.51	10.0	95.1%	0.1%
2-Butanone	47.1	50.0	94.2%	47.4	50.0	94.8%	0.6%
1,1,1-Trichloroethane	9.84	10.0	98.4%	9.79	10.0	97.9%	0.5%
Carbon Tetrachloride	9.58	10.0	95.8%	9.38	10.0	93.8%	2.1%
Vinyl Acetate	9.32	10.0	93.2%	9.55	10.0	95.5%	2.4%
Bromodichloromethane	9.60	10.0	96.0%	9.71	10.0	97.1%	1.1%
1,2-Dichloropropane	9.40	10.0	94.0%	9.18	10.0	91.8%	2.4%
cis-1,3-Dichloropropene	9.80	10.0	98.0%	9.61	10.0	96.1%	2.0%
Trichloroethene	9.25	10.0	92.5%	8.92	10.0	89.2%	3.6%
Dibromochloromethane	9.31	10.0	93.1%	9.45	10.0	94.5%	1.5%
1,1,2-Trichloroethane	9.52	10.0	95.2%	9.25	10.0	92.5%	2.9%
Benzene	9.88	10.0	98.8%	9.89	10.0	98.9%	0.1%
trans-1,3-Dichloropropene	9.11	10.0	91.1%	9.20	10.0	92.0%	1.0%
2-Chloroethylvinylether	10.5	10.0	105%	9.92	10.0	99.2%	5.7%
Bromoform	9.93	10.0	99.3%	10.0	10.0	100%	0.7%
4-Methyl-2-Pentanone (MIBK)	49.5	50.0	99.0%	50.3	50.0	101%	1.6%
2-Hexanone	50.7	50.0	101%	50.4	50.0	101%	0.6%
Tetrachloroethene	9.64	10.0	96.4%	9.29	10.0	92.9%	3.7%
1,1,2,2-Tetrachloroethane	9.27	10.0	92.7%	9.39	10.0	93.9%	1.3%
Toluene	9.41	10.0	94.1%	9.28	10.0	92.8%	1.4%
Chlorobenzene	9.62	10.0	96.2%	9.76	10.0	97.6%	1.4%
Ethylbenzene	9.55	10.0	95.5%	9.60	10.0	96.0%	0.5%
Styrene	9.72	10.0	97.2%	9.84	10.0	98.4%	1.2%
Trichlorofluoromethane	9.41	10.0	94.1%	7.64	10.0	76.4%	20.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.48	10.0	94.8%	10.8	10.0	108%	13.0%
m,p-Xylene	19.9	20.0	99.5%	19.5	20.0	97.5%	2.0%

YV50:00017

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081414A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A
LIMS ID: 14-16219
Matrix: Water

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.82	10.0	98.2%	9.73	10.0	97.3%	0.9%
1,2-Dichlorobenzene	9.61	10.0	96.1%	9.72	10.0	97.2%	1.1%
1,3-Dichlorobenzene	9.57	10.0	95.7%	9.44	10.0	94.4%	1.4%
1,4-Dichlorobenzene	9.07	10.0	90.7%	9.27	10.0	92.7%	2.2%
Acrolein	44.9	50.0	89.8%	46.5	50.0	93.0%	3.5%
Iodomethane	10.1	10.0	101%	9.34	10.0	93.4%	7.8%
Bromoethane	10.1	10.0	101%	9.19	10.0	91.9%	9.4%
Acrylonitrile	9.77	10.0	97.7%	9.98	10.0	99.8%	2.1%
1,1-Dichloropropene	9.58	10.0	95.8%	9.58	10.0	95.8%	0.0%
Dibromomethane	9.82	10.0	98.2%	9.94	10.0	99.4%	1.2%
1,1,1,2-Tetrachloroethane	9.98	10.0	99.8%	9.97	10.0	99.7%	0.1%
1,2-Dibromo-3-chloropropane	8.70	10.0	87.0%	9.46	10.0	94.6%	8.4%
1,2,3-Trichloropropane	9.77	10.0	97.7%	9.37	10.0	93.7%	4.2%
trans-1,4-Dichloro-2-butene	8.50	10.0	85.0%	9.33	10.0	93.3%	9.3%
1,3,5-Trimethylbenzene	9.54	10.0	95.4%	9.71	10.0	97.1%	1.8%
1,2,4-Trimethylbenzene	9.86	10.0	98.6%	10.0	10.0	100%	1.4%
Hexachlorobutadiene	10.5 B	10.0	105%	10.6 B	10.0	106%	0.9%
1,2-Dibromoethane	9.77	10.0	97.7%	9.17	10.0	91.7%	6.3%
Bromochloromethane	9.67	10.0	96.7%	9.55	10.0	95.5%	1.2%
2,2-Dichloropropane	9.48	10.0	94.8%	9.37	10.0	93.7%	1.2%
1,3-Dichloropropane	9.95	10.0	99.5%	9.73	10.0	97.3%	2.2%
Isopropylbenzene	9.67	10.0	96.7%	9.72	10.0	97.2%	0.5%
n-Propylbenzene	9.64	10.0	96.4%	9.70	10.0	97.0%	0.6%
Bromobenzene	9.80	10.0	98.0%	9.75	10.0	97.5%	0.5%
2-Chlorotoluene	9.79	10.0	97.9%	9.62	10.0	96.2%	1.8%
4-Chlorotoluene	9.45	10.0	94.5%	9.52	10.0	95.2%	0.7%
tert-Butylbenzene	9.72	10.0	97.2%	9.52	10.0	95.2%	2.1%
sec-Butylbenzene	9.47	10.0	94.7%	9.53	10.0	95.3%	0.6%
4-Isopropyltoluene	9.70	10.0	97.0%	9.88	10.0	98.8%	1.8%
n-Butylbenzene	9.46	10.0	94.6%	9.34	10.0	93.4%	1.3%
1,2,4-Trichlorobenzene	9.53	10.0	95.3%	8.87	10.0	88.7%	7.2%
Naphthalene	10.4	10.0	104%	9.24	10.0	92.4%	11.8%
1,2,3-Trichlorobenzene	9.87	10.0	98.7%	9.14	10.0	91.4%	7.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.4%	95.4%
d8-Toluene	99.6%	99.4%
Bromofluorobenzene	101%	98.7%
d4-1,2-Dichlorobenzene	100%	101%

YV50:00018

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-081414A	Method Blank	10	101%	100%	96.7%	98.4%	0
LCS-081414A	Lab Control	10	97.4%	99.6%	101%	100%	0
LCSD-081414A	Lab Control Dup	10	95.4%	99.4%	98.7%	101%	0
YV50A	SB4	10	99.7%	95.5%	98.4%	99.0%	0
YV50B	SB14	10	99.1%	102%	97.2%	102%	0
YV50C	SB11	10	101%	99.1%	95.6%	104%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-16219 to 14-16221

YV50:00019

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YV50-Kennedy Jenks Consultants,
Project: Precision Engineering

Matrix: Water

Date Received: 08/07/14

Data Release Authorized:
Reported: 08/19/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV	DF	Range/Surrogate	RL	Result
MB-081414	Method Blank	08/14/14	08/16/14	1.00		Diesel Range	0.10	< 0.10 U
14-16220	HC ID: ---		FID3B	1.0		Motor Oil Range	0.20	< 0.20 U
						o-Terphenyl		105%
YV50B	SB14	08/14/14	08/16/14	1.00		**Diesel Range**	**0.10**	**0.38**
14-16220	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0		**Motor Oil Range**	**0.20**	**0.46**
						o-Terphenyl		66.0%
YV50C	SB11	08/14/14	08/16/14	1.00		**Diesel Range**	**0.10**	**0.44**
14-16221	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0		**Motor Oil Range**	**0.20**	**0.49**
						o-Terphenyl		70.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YV50 : 00020

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-081414
LCS/LCSD

Lab Sample ID: LCS-081414
LIMS ID: 14-16220
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 08/14/14

Date Analyzed LCS: 08/16/14 15:48
LCSD: 08/16/14 16:14
Instrument/Analyst LCS: FID3B/VTS
LCSD: FID3B/VTS

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.63	3.00	87.7%	2.66	3.00	88.7%	1.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.5%	91.5%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

YV50:00021

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YV50
Matrix: Water
Project: Precision Engineering
Date Received: 08/07/14

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-16220-081414MB1	Method Blank	500 mL	1.00 mL	08/14/14
14-16220-081414LCS1	Lab Control	500 mL	1.00 mL	08/14/14
14-16220-081414LCSD1	Lab Control Dup	500 mL	1.00 mL	08/14/14
14-16220-YV50B	SB14	500 mL	1.00 mL	08/14/14
14-16221-YV50C	SB11	500 mL	1.00 mL	08/14/14

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Client ID	OTER	TOT OUT
MB-081414	105%	0
LCS-081414	93.5%	0
LCSD-081414	91.5%	0
SB14	66.0%	0
SB11	70.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-16220 to 14-16221

FORM-II TPHD

YV50 00023

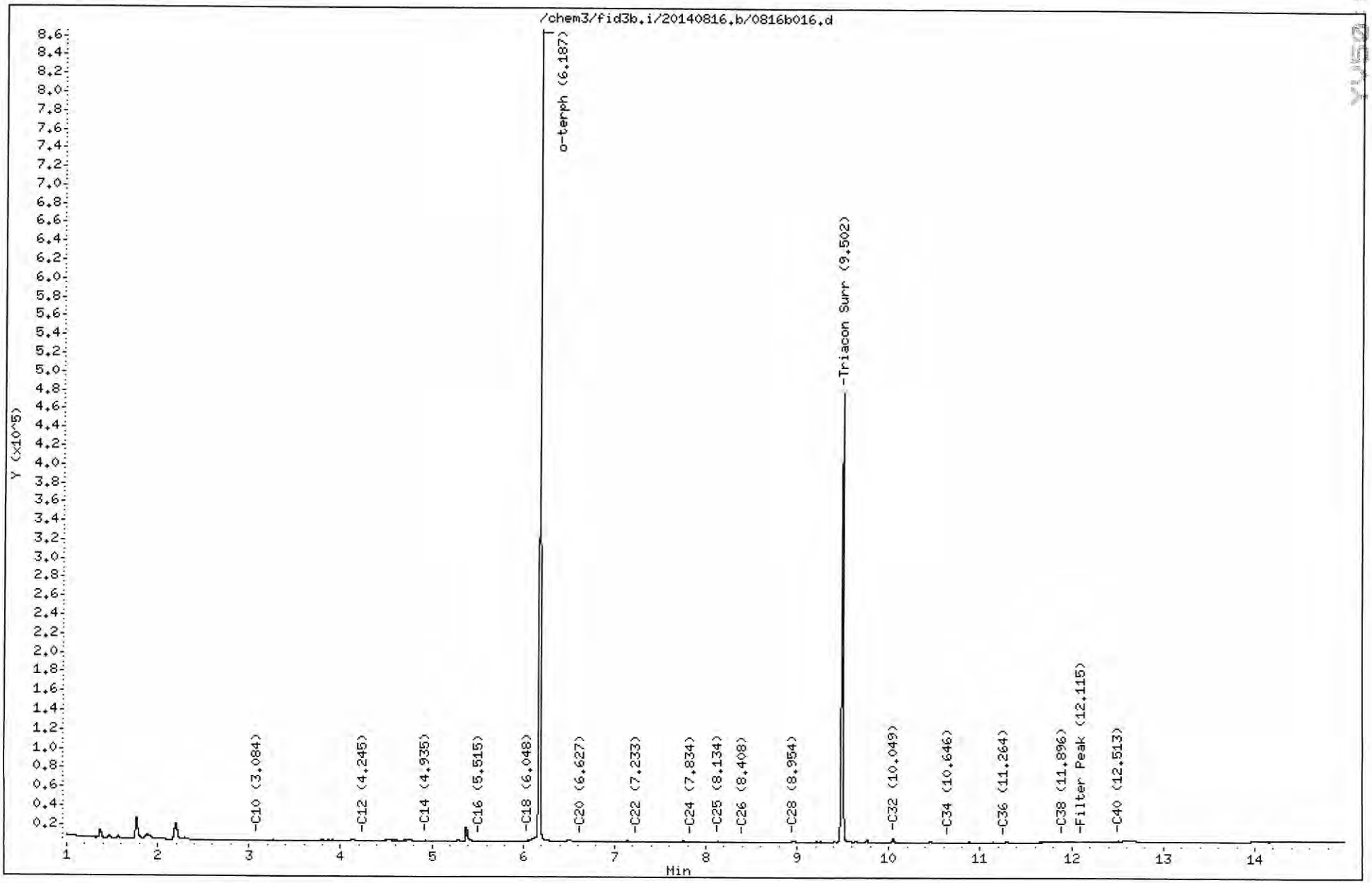
Data File: /chem3/fid3b.i/20140816.b/0816b016.d
Date : 16-AUG-2014 15:22
Client ID: YV50MBW1
Sample Info: YV50MBW1

Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

YV50 080924



Data File: /chem3/fid3b.i/20140816.b/0816b017.d
Date : 16-AUG-2014 15:48
Client ID: YV50LCSW1
Sample Info: YV50LCSW1

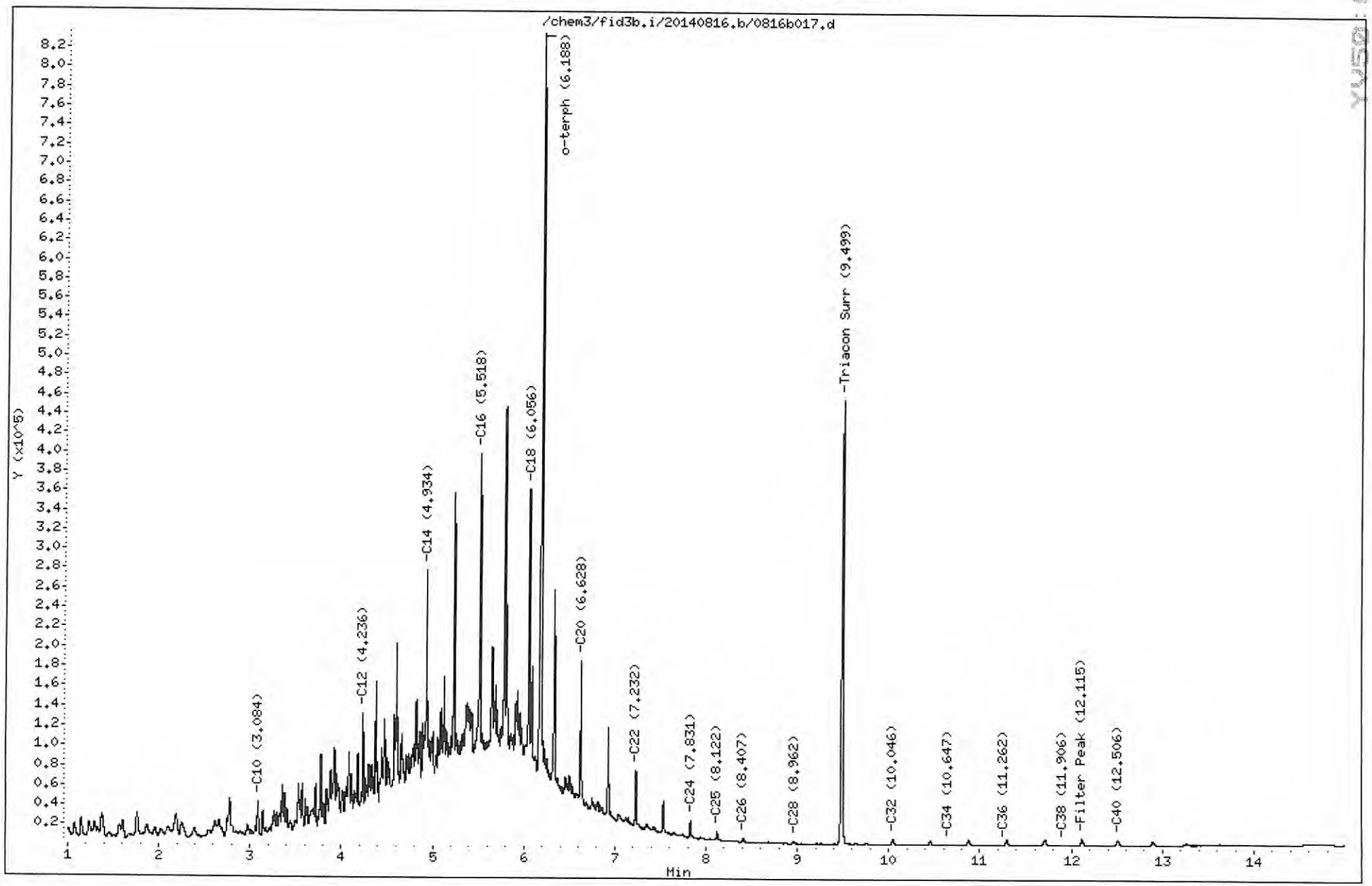
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Instrument: fid3b.i

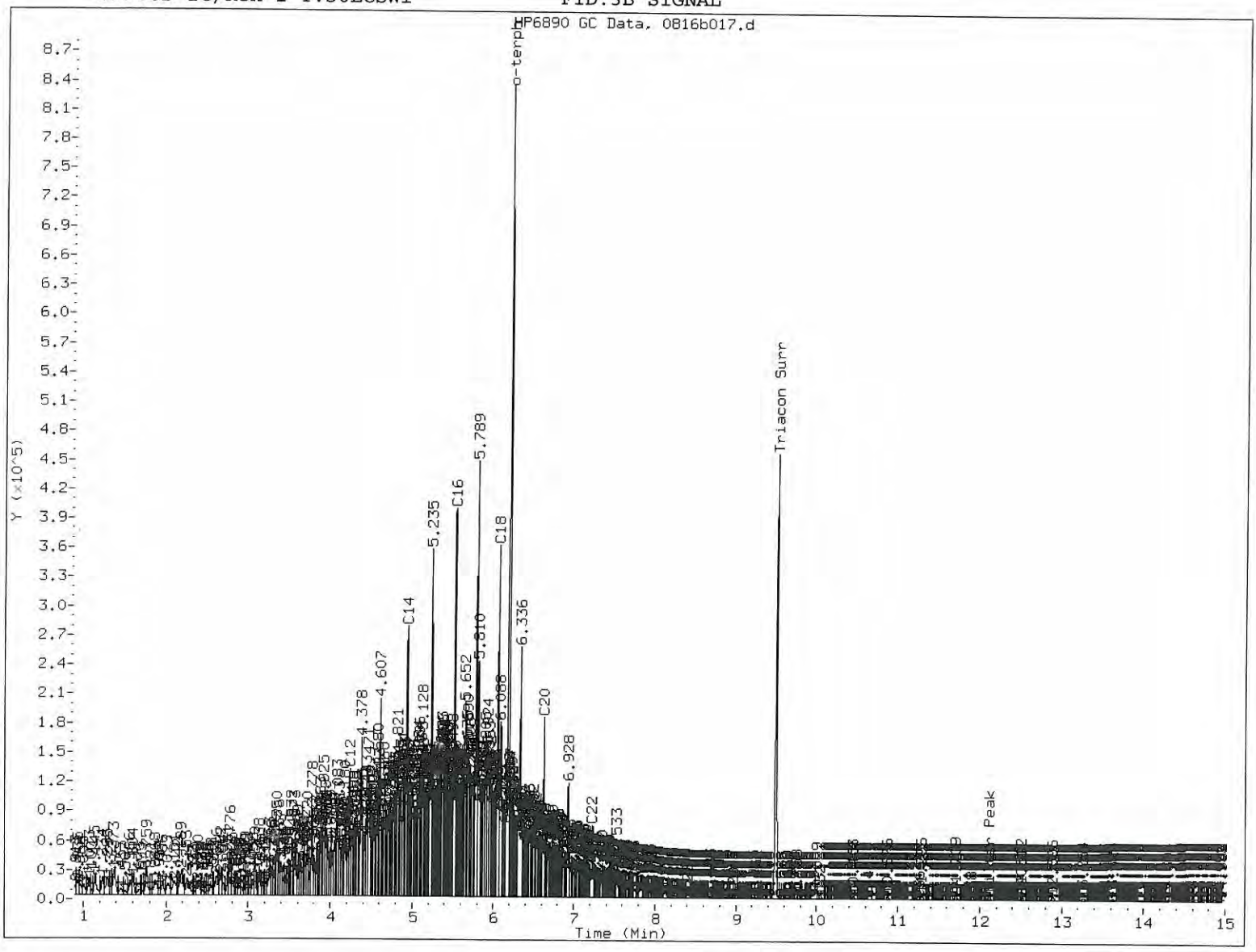
Operator: VTS
Column diameter: 0.25

V 8.19.14

YV50: 00025



FID:3B-2C/RTX-1 YV50LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-15-24

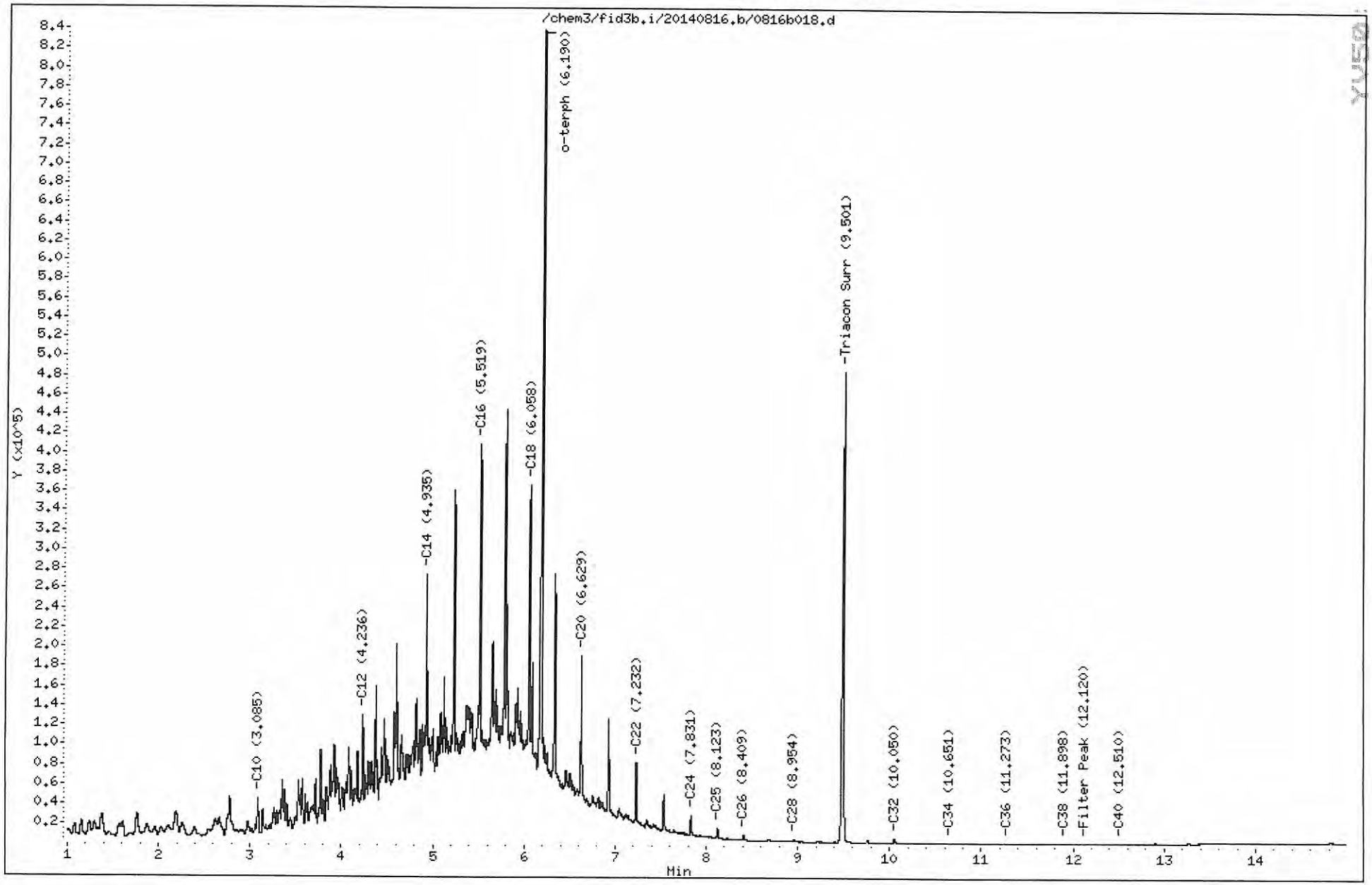
Data File: /chem3/fid3b.i/20140816.b/0816b018.d
Date : 16-AUG-2014 16:14
Client ID: YV50LCSDW1
Sample Info: YV50LCSDW1

Column phase: RTX-1

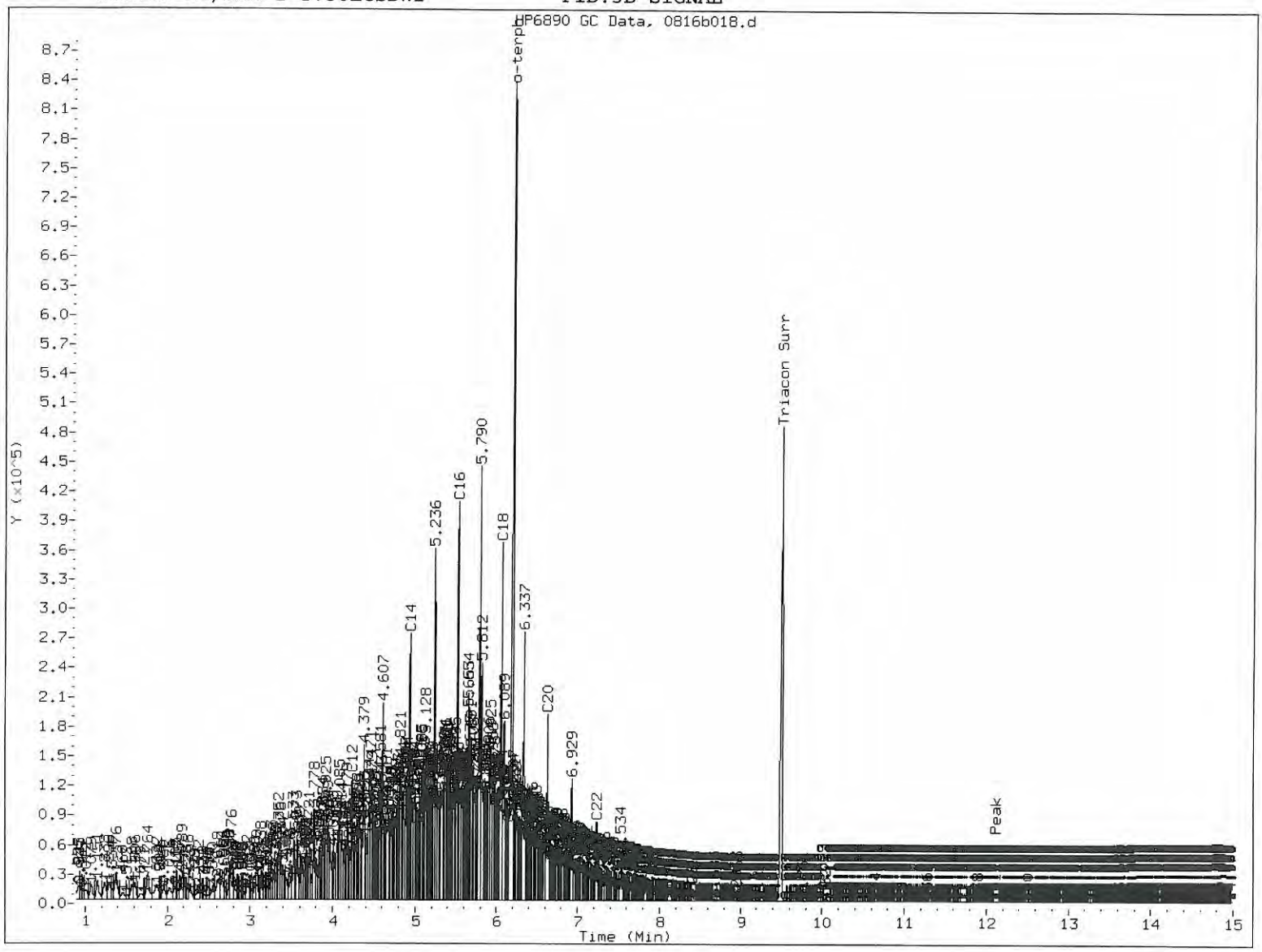
Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

YV50: 00027



FID:3B-2C/RTX-1 YV50LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-19-24

Data File: /chem3/fid3b.i/20140816.b/0816b019.d
Date : 16-AUG-2014 16:41
Client ID: SB14
Sample Info: YV50B

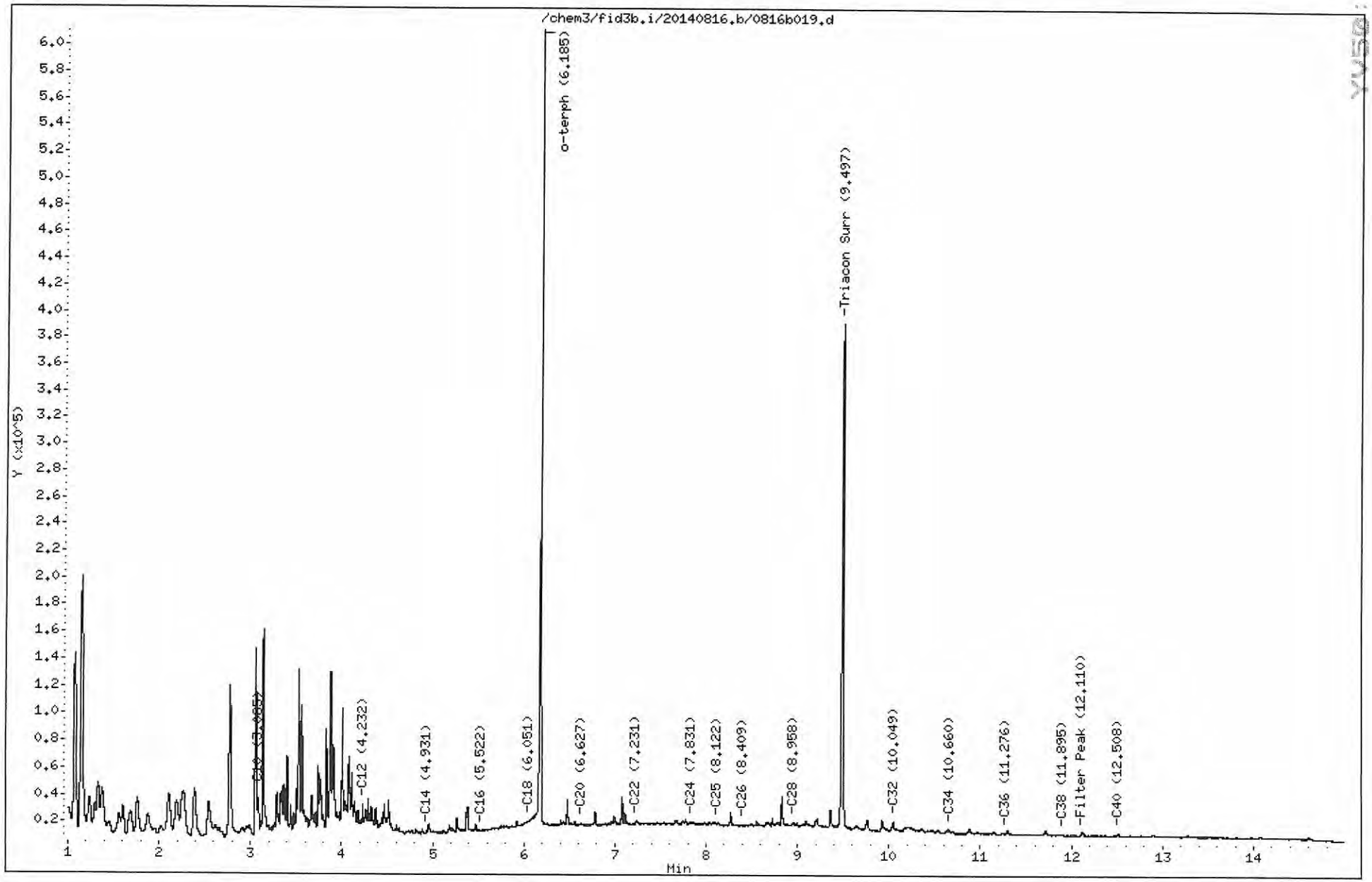
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

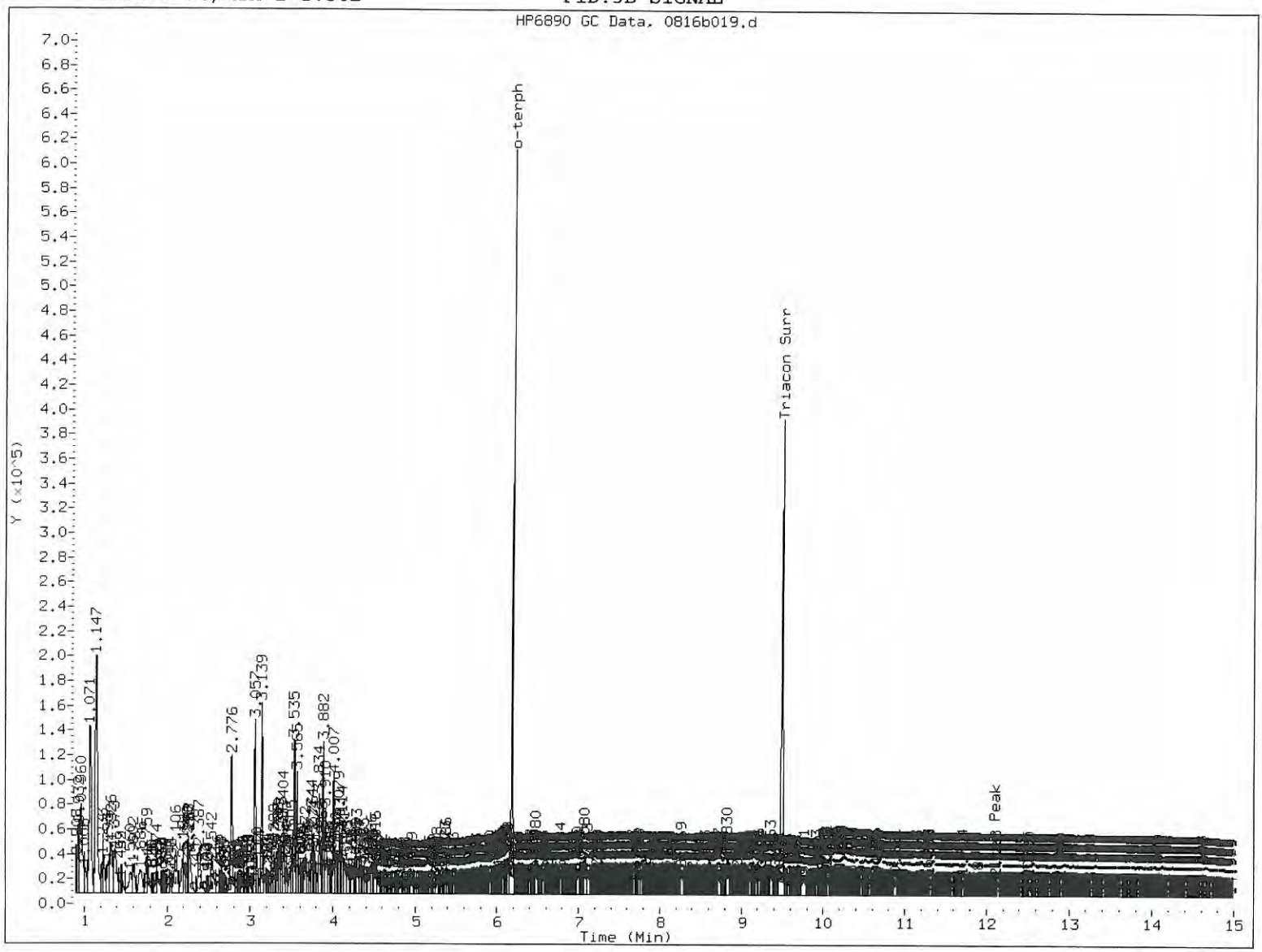
V
8.19.14

YV50; 88029



FID:3B-2C/RTX-1 YV50B

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

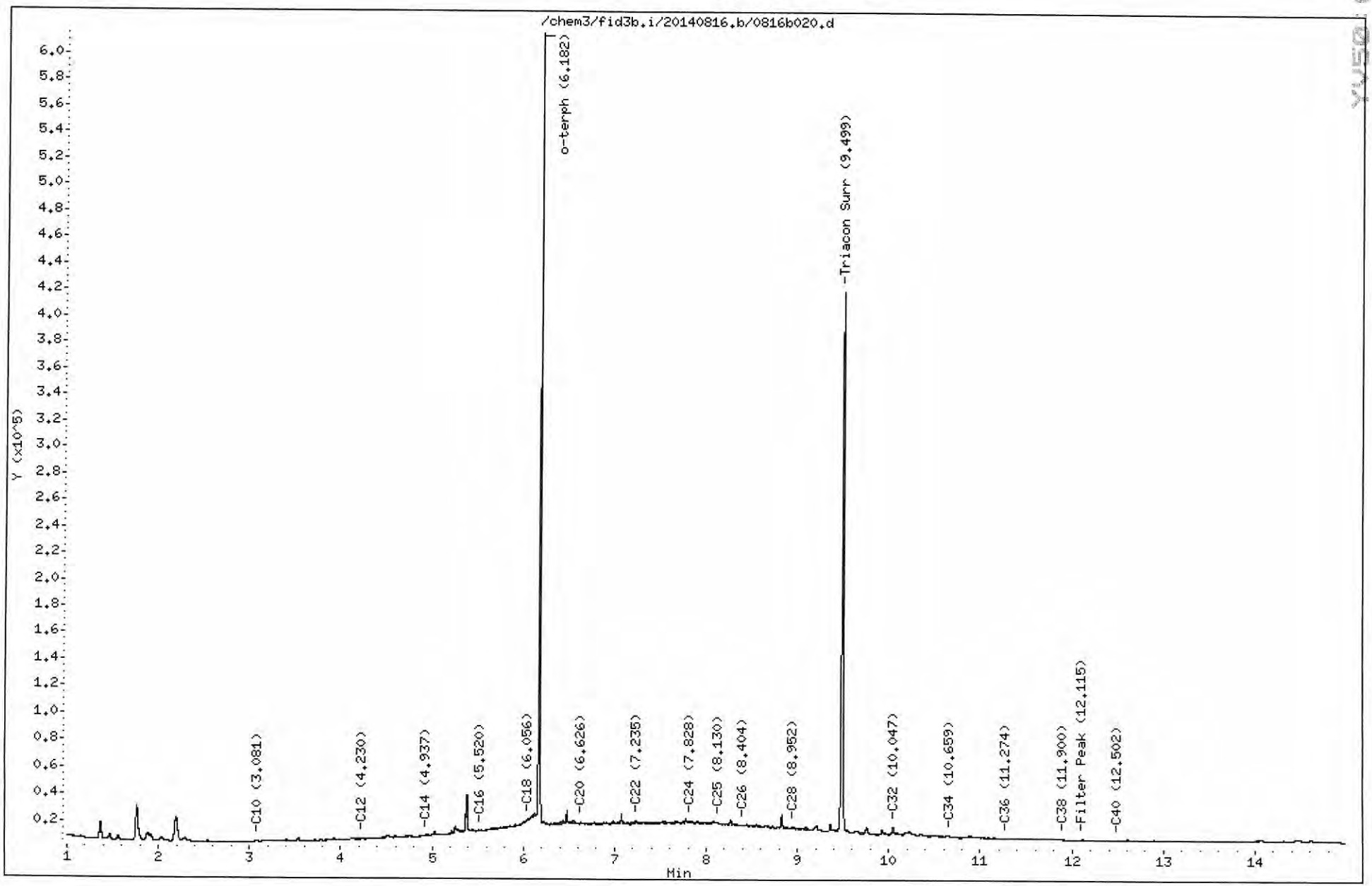
Analyst: _____ Date: 8.19.11

Data File: /chem3/fid3b.i/20140816.b/0816b020.d
Date : 16-AUG-2014 17:07
Client ID: SB11
Sample Info: YV50C

Column phase: RTX-1

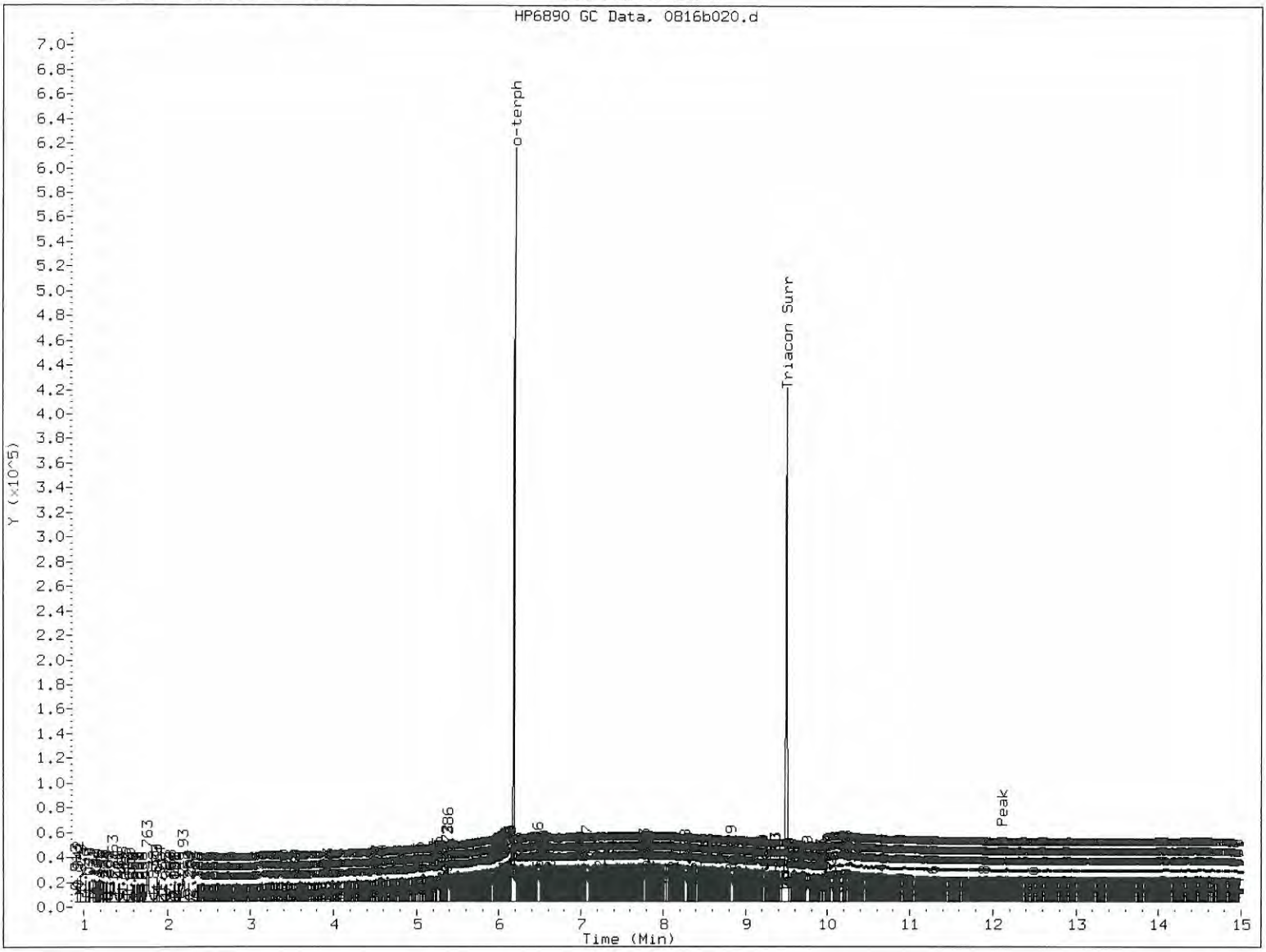
Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25



FID:3B-2C/RTX-1 YV50C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: CS Date: 8.19.21

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

Data Release Authorized:
Reported: 08/12/14
Date Received: 08/07/14
Page 1 of 1

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
SB4 YV50A 14-16219	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB14 YV50B 14-16220	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB11 YV50C 14-16221	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB12 YV50D 14-16222	08/07/14	Water	08/07/14 080714#1	0.010	0.014
SB13 YV50E 14-16223	08/07/14	Water	08/07/14 080714#1	0.010	0.012

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

YV50:00032

METHOD BLANK RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/07/14 17:57	mg/L	< 0.010 U

YV50:00033

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/07/14 17:57	mg/L	0.646	0.630	102.5%

YV50:00034

REPLICATE RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YV50A Client ID: SB4					
Hexavalent Chromium	08/07/14	mg/L	< 0.010	< 0.010	NA

YV50:00035

MS/MSD RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YV50A Client ID: SB4						
Hexavalent Chromium	08/07/14	mg/L	< 0.010	< 0.010 U	0.063	NA

YV50:00035

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB4
SAMPLE

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.05	**0.08**	
3010A	08/12/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.063**	
3010A	08/12/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.04**	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YV50 : 00037

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB4
DUPLICATE

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.08	0.07	13.3%	+/- 0.05	L
Chromium	6010C	0.063	0.057	10.0%	+/- 20%	
Lead	6010C	0.04	0.04	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB4
MATRIX SPIKE

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.08	2.29	2.00	110%	
Chromium	6010C	0.063	0.574	0.500	102%	
Lead	6010C	0.04	2.06	2.00	101%	
Selenium	6010C	0.05 U	2.22	2.00	111%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB14
SAMPLE

Lab Sample ID: YV50B
LIMS ID: 14-16220
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.047**	
3010A	08/12/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.07**	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB11
SAMPLE

Lab Sample ID: YV50C
LIMS ID: 14-16221
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.05	**0.06**	
3010A	08/12/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.010**	
3010A	08/12/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.04**	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB12
SAMPLE

Lab Sample ID: YV50D
LIMS ID: 14-16222
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.05	**0.06**	
3010A	08/12/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.076**	
3010A	08/12/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.06**	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YV50:00042

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB13
SAMPLE

Lab Sample ID: YV50E
LIMS ID: 14-16223
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.031**	
3010A	08/12/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.02**	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: YV50MB
LIMS ID: 14-16223
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YV50:00044

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: YV50LCS
LIMS ID: 14-16223
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.10	2.00	105%	
Chromium	6010C	0.533	0.500	107%	
Lead	6010C	2.10	2.00	105%	
Selenium	6010C	2.08	2.00	104%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

YV50:00045

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 1451	Turn-around Requested:	Page: 1 of 2	
ARI Client Company: Kennedy / Jenks	Phone: 253 835 6400	Date: 8/7	Ice Present? Y
Client Contact: Jessica / Ty		No. of Coolers: 2	Cooler Temps: 0.4, 2.4.4
Client Project Name: Precision Engineering			
Client Project #:	Samplers: Joseph Sunday		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	TPH-Dx	Metals	Cl-					Notes/Comments
SB4-5	8/7	1600	Soil	8	X	X	X	X					
SB4-20		1645	Soil										
SB14-6		1420											
SB11-10		0910											
SB11-20		0915											
SB12-12		1020											
SB13-9		1215											

Comments/Special Instructions	Relinquished by (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joseph Sunday	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Kennedy / Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/7 1725	Date & Time: 8/7/14 1725	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Sub-Out 08/04/14

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

Project Name: Precision Eng

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YV51

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 12.4 24.4 ___ ___

Time: 1735

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877958

Cooler Accepted by: AV Date: 8/7/14 Time: 1735

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		YES	(NO)
Did all bottle labels and tags agree with custody papers?		YES	(NO)
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: YS Date: 8-7-14 Time: 800

** *Notify Project Manager of discrepancies or concerns* **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions: SB-11-30 No Voa or Diesel ~~Containers~~ given.

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
		

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YV51
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB4-5	YV51A	14-16224	Soil	08/07/14 16:00	08/07/14 17:25
2.	SB4-20	YV51B	14-16225	Soil	08/07/14 16:45	08/07/14 17:25
3.	SB14-6	YV51C	14-16226	Soil	08/07/14 14:20	08/07/14 17:25
4.	SB11-10	YV51D	14-16227	Soil	08/07/14 09:10	08/07/14 17:25
5.	SB11-30	YV51E	14-16228	Soil	08/07/14 09:15	08/07/14 17:25
6.	SB12-12	YV51F	14-16229	Soil	08/07/14 10:20	08/07/14 17:25
7.	SB13-9	YV51G	14-16230	Soil	08/07/14 12:15	08/07/14 17:25

YV50:00048

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4-5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV51A
LIMS ID: 14-16224
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 14:58

Sample Amount: 2.85 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 25.4%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.8	< 1.8	U
74-83-9	Bromomethane	1.8	< 1.8	U
75-01-4	Vinyl Chloride	1.8	< 1.8	U
75-00-3	Chloroethane	1.8	< 1.8	U
75-09-2	**Methylene Chloride**	**3.5**	**3.9**	
67-64-1	**Acetone**	**8.8**	**32**	**Q**
75-15-0	**Carbon Disulfide**	**1.8**	**4.5**	**Q**
75-35-4	1,1-Dichloroethene	1.8	< 1.8	U
75-34-3	1,1-Dichloroethane	1.8	< 1.8	U
156-60-5	trans-1,2-Dichloroethene	1.8	< 1.8	U
156-59-2	cis-1,2-Dichloroethene	1.8	< 1.8	U
67-66-3	Chloroform	1.8	< 1.8	U
107-06-2	1,2-Dichloroethane	1.8	< 1.8	U
78-93-3	2-Butanone	8.8	< 8.8	U
71-55-6	1,1,1-Trichloroethane	1.8	< 1.8	U
56-23-5	Carbon Tetrachloride	1.8	< 1.8	U
108-05-4	Vinyl Acetate	8.8	< 8.8	U
75-27-4	Bromodichloromethane	1.8	< 1.8	U
78-87-5	1,2-Dichloropropane	1.8	< 1.8	U
10061-01-5	cis-1,3-Dichloropropene	1.8	< 1.8	U
79-01-6	Trichloroethene	1.8	< 1.8	U
124-48-1	Dibromochloromethane	1.8	< 1.8	U
79-00-5	1,1,2-Trichloroethane	1.8	< 1.8	U
71-43-2	Benzene	1.8	< 1.8	U
10061-02-6	trans-1,3-Dichloropropene	1.8	< 1.8	U
110-75-8	2-Chloroethylvinylether	8.8	< 8.8	U
75-25-2	Bromoform	1.8	< 1.8	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	8.8	< 8.8	U
591-78-6	2-Hexanone	8.8	< 8.8	U
127-18-4	Tetrachloroethene	1.8	< 1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	1.8	< 1.8	U
108-88-3	Toluene	1.8	< 1.8	U
108-90-7	Chlorobenzene	1.8	< 1.8	U
100-41-4	Ethylbenzene	1.8	< 1.8	U
100-42-5	Styrene	1.8	< 1.8	U
75-69-4	Trichlorofluoromethane	1.8	< 1.8	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.5	< 3.5	U
179601-23-1	m,p-Xylene	1.8	< 1.8	U
95-47-6	o-Xylene	1.8	< 1.8	U
95-50-1	1,2-Dichlorobenzene	1.8	< 1.8	U
541-73-1	1,3-Dichlorobenzene	1.8	< 1.8	U
106-46-7	1,4-Dichlorobenzene	1.8	< 1.8	U
107-02-8	Acrolein	88	< 88	U
74-88-4	Iodomethane	1.8	< 1.8	U
74-96-4	Bromoethane	3.5	< 3.5	U
107-13-1	Acrylonitrile	8.8	< 8.8	U
563-58-6	1,1-Dichloropropene	1.8	< 1.8	U
74-95-3	Dibromomethane	1.8	< 1.8	U
630-20-6	1,1,1,2-Tetrachloroethane	1.8	< 1.8	U
96-12-8	1,2-Dibromo-3-chloropropane	8.8	< 8.8	U
96-18-4	1,2,3-Trichloropropane	3.5	< 3.5	U
110-57-6	trans-1,4-Dichloro-2-butene	8.8	< 8.8	U
108-67-8	1,3,5-Trimethylbenzene	1.8	< 1.8	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4-5**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV51A
LIMS ID: 14-16224
Matrix: Soil
Date Analyzed: 08/12/14 14:58

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.8	< 1.8	U
87-68-3	Hexachlorobutadiene	8.8	< 8.8	U
106-93-4	1,2-Dibromoethane	1.8	< 1.8	U
74-97-5	Bromochloromethane	1.8	< 1.8	U
594-20-7	2,2-Dichloropropane	1.8	< 1.8	U
142-28-9	1,3-Dichloropropane	1.8	< 1.8	U
98-82-8	Isopropylbenzene	1.8	< 1.8	U
103-65-1	n-Propylbenzene	1.8	< 1.8	U
108-86-1	Bromobenzene	1.8	< 1.8	U
95-49-8	2-Chlorotoluene	1.8	< 1.8	U
106-43-4	4-Chlorotoluene	1.8	< 1.8	U
98-06-6	tert-Butylbenzene	1.8	< 1.8	U
135-98-8	sec-Butylbenzene	1.8	< 1.8	U
99-87-6	4-Isopropyltoluene	1.8	< 1.8	U
104-51-8	n-Butylbenzene	1.8	< 1.8	U
120-82-1	1,2,4-Trichlorobenzene	8.8	< 8.8	U
91-20-3	Naphthalene	8.8	< 8.8	U
87-61-6	1,2,3-Trichlorobenzene	8.8	< 8.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	100%
Bromofluorobenzene	94.9%
d4-1,2-Dichlorobenzene	104%

YV50:00050

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4-20**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV51B
LIMS ID: 14-16225
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 15:23

Sample Amount: 4.57 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 19.3%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	**Methylene Chloride**	**2.2**	**2.8**	
67-64-1	**Acetone**	**5.5**	**36**	**Q**
75-15-0	**Carbon Disulfide**	**1.1**	**6.3**	**Q**
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.5	< 5.5	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.5	< 5.5	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.5	< 5.5	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.5	< 5.5	U
591-78-6	2-Hexanone	5.5	< 5.5	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	55	< 55	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.5	< 5.5	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.5	< 5.5	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.5	< 5.5	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB4-20**
 SAMPLE

Lab Sample ID: YV51B
LIMS ID: 14-16225
Matrix: Soil
Date Analyzed: 08/12/14 15:23

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.5	< 5.5	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.5	< 5.5	U
91-20-3	Naphthalene	5.5	< 5.5	U
87-61-6	1,2,3-Trichlorobenzene	5.5	< 5.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%
d8-Toluene	101%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	103%

YV50:00052

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB14-6**
SAMPLE

Lab Sample ID: YV51C
LIMS ID: 14-16226
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 15:48

Sample Amount: 2.42 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 10.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	2.1	< 2.1	U
74-83-9	Bromomethane	2.1	< 2.1	U
75-01-4	Vinyl Chloride	2.1	< 2.1	U
75-00-3	Chloroethane	2.1	< 2.1	U
75-09-2	Methylene Chloride	4.1	< 4.1	U
67-64-1	Acetone	10	< 10	U
75-15-0	**Carbon Disulfide**	**2.1**	**6.7**	**Q**
75-35-4	1,1-Dichloroethene	2.1	< 2.1	U
75-34-3	1,1-Dichloroethane	2.1	< 2.1	U
156-60-5	trans-1,2-Dichloroethene	2.1	< 2.1	U
156-59-2	cis-1,2-Dichloroethene	2.1	< 2.1	U
67-66-3	Chloroform	2.1	< 2.1	U
107-06-2	1,2-Dichloroethane	2.1	< 2.1	U
78-93-3	2-Butanone	10	< 10	U
71-55-6	1,1,1-Trichloroethane	2.1	< 2.1	U
56-23-5	Carbon Tetrachloride	2.1	< 2.1	U
108-05-4	Vinyl Acetate	10	< 10	U
75-27-4	Bromodichloromethane	2.1	< 2.1	U
78-87-5	1,2-Dichloropropane	2.1	< 2.1	U
10061-01-5	cis-1,3-Dichloropropene	2.1	< 2.1	U
79-01-6	Trichloroethene	2.1	< 2.1	U
124-48-1	Dibromochloromethane	2.1	< 2.1	U
79-00-5	1,1,2-Trichloroethane	2.1	< 2.1	U
71-43-2	**Benzene**	**2.1**	**2.1**	
10061-02-6	trans-1,3-Dichloropropene	2.1	< 2.1	U
110-75-8	2-Chloroethylvinylether	10	< 10	U
75-25-2	Bromoform	2.1	< 2.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10	< 10	U
591-78-6	2-Hexanone	10	< 10	U
127-18-4	Tetrachloroethene	2.1	< 2.1	U
79-34-5	1,1,2,2-Tetrachloroethane	2.1	< 2.1	U
108-88-3	**Toluene**	**2.1**	**7.1**	
108-90-7	Chlorobenzene	2.1	< 2.1	U
100-41-4	**Ethylbenzene**	**2.1**	**56**	
100-42-5	Styrene	2.1	< 2.1	U
75-69-4	Trichlorofluoromethane	2.1	< 2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	< 4.1	U
179601-23-1	**m,p-Xylene**	**2.1**	**29**	
95-47-6	o-Xylene	2.1	< 2.1	U
95-50-1	1,2-Dichlorobenzene	2.1	< 2.1	U
541-73-1	1,3-Dichlorobenzene	2.1	< 2.1	U
106-46-7	1,4-Dichlorobenzene	2.1	< 2.1	U
107-02-8	Acrolein	100	< 100	U
74-88-4	Iodomethane	2.1	< 2.1	U
74-96-4	Bromoethane	4.1	< 4.1	U
107-13-1	Acrylonitrile	10	< 10	U
563-58-6	1,1-Dichloropropene	2.1	< 2.1	U
74-95-3	Dibromomethane	2.1	< 2.1	U
630-20-6	1,1,1,2-Tetrachloroethane	2.1	< 2.1	U
96-12-8	1,2-Dibromo-3-chloropropane	10	< 10	U
96-18-4	1,2,3-Trichloropropane	4.1	< 4.1	U
110-57-6	trans-1,4-Dichloro-2-butene	10	< 10	U
108-67-8	**1,3,5-Trimethylbenzene**	**2.1**	**16**	

YV50 : 00053

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB14-6**
 SAMPLE

Lab Sample ID: YV51C
LIMS ID: 14-16226
Matrix: Soil
Date Analyzed: 08/12/14 15:48

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	**1,2,4-Trimethylbenzene**	**2.1**	**8.0**	
87-68-3	Hexachlorobutadiene	10	< 10	U
106-93-4	1,2-Dibromoethane	2.1	< 2.1	U
74-97-5	Bromochloromethane	2.1	< 2.1	U
594-20-7	2,2-Dichloropropane	2.1	< 2.1	U
142-28-9	1,3-Dichloropropane	2.1	< 2.1	U
98-82-8	**Isopropylbenzene**	**2.1**	**15**	
103-65-1	**n-Propylbenzene**	**2.1**	**46**	
108-86-1	Bromobenzene	2.1	< 2.1	U
95-49-8	2-Chlorotoluene	2.1	< 2.1	U
106-43-4	4-Chlorotoluene	2.1	< 2.1	U
98-06-6	tert-Butylbenzene	2.1	< 2.1	U
135-98-8	**sec-Butylbenzene**	**2.1**	**3.6**	
99-87-6	**4-Isopropyltoluene**	**2.1**	**4.0**	
104-51-8	**n-Butylbenzene**	**2.1**	**11**	**Q**
120-82-1	1,2,4-Trichlorobenzene	10	< 10	U
91-20-3	**Naphthalene**	**10**	**28**	
87-61-6	1,2,3-Trichlorobenzene	10	< 10	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	133%
d8-Toluene	104%
Bromofluorobenzene	95.7%
d4-1,2-Dichlorobenzene	99.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB11-10**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV51D
LIMS ID: 14-16227
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 16:13

Sample Amount: 3.92 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 19.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.3	< 1.3	U
74-83-9	Bromomethane	1.3	< 1.3	U
75-01-4	Vinyl Chloride	1.3	< 1.3	U
75-00-3	Chloroethane	1.3	< 1.3	U
75-09-2	**Methylene Chloride**	**2.5**	**8.3**	
67-64-1	**Acetone**	**6.4**	**35**	**Q**
75-15-0	**Carbon Disulfide**	**1.3**	**4.8**	**Q**
75-35-4	1,1-Dichloroethene	1.3	< 1.3	U
75-34-3	1,1-Dichloroethane	1.3	< 1.3	U
156-60-5	trans-1,2-Dichloroethene	1.3	< 1.3	U
156-59-2	cis-1,2-Dichloroethene	1.3	< 1.3	U
67-66-3	Chloroform	1.3	< 1.3	U
107-06-2	1,2-Dichloroethane	1.3	< 1.3	U
78-93-3	2-Butanone	6.4	< 6.4	U
71-55-6	1,1,1-Trichloroethane	1.3	< 1.3	U
56-23-5	Carbon Tetrachloride	1.3	< 1.3	U
108-05-4	Vinyl Acetate	6.4	< 6.4	U
75-27-4	Bromodichloromethane	1.3	< 1.3	U
78-87-5	1,2-Dichloropropane	1.3	< 1.3	U
10061-01-5	cis-1,3-Dichloropropene	1.3	< 1.3	U
79-01-6	Trichloroethene	1.3	< 1.3	U
124-48-1	Dibromochloromethane	1.3	< 1.3	U
79-00-5	1,1,2-Trichloroethane	1.3	< 1.3	U
71-43-2	Benzene	1.3	< 1.3	U
10061-02-6	trans-1,3-Dichloropropene	1.3	< 1.3	U
110-75-8	2-Chloroethylvinylether	6.4	< 6.4	U
75-25-2	Bromoform	1.3	< 1.3	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.4	< 6.4	U
591-78-6	2-Hexanone	6.4	< 6.4	U
127-18-4	Tetrachloroethene	1.3	< 1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.3	< 1.3	U
108-88-3	Toluene	1.3	< 1.3	U
108-90-7	Chlorobenzene	1.3	< 1.3	U
100-41-4	Ethylbenzene	1.3	< 1.3	U
100-42-5	Styrene	1.3	< 1.3	U
75-69-4	Trichlorofluoromethane	1.3	< 1.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.5	< 2.5	U
179601-23-1	m,p-Xylene	1.3	< 1.3	U
95-47-6	o-Xylene	1.3	< 1.3	U
95-50-1	1,2-Dichlorobenzene	1.3	< 1.3	U
541-73-1	1,3-Dichlorobenzene	1.3	< 1.3	U
106-46-7	1,4-Dichlorobenzene	1.3	< 1.3	U
107-02-8	Acrolein	64	< 64	U
74-88-4	Iodomethane	1.3	< 1.3	U
74-96-4	Bromoethane	2.5	< 2.5	U
107-13-1	Acrylonitrile	6.4	< 6.4	U
563-58-6	1,1-Dichloropropene	1.3	< 1.3	U
74-95-3	Dibromomethane	1.3	< 1.3	U
630-20-6	1,1,1,2-Tetrachloroethane	1.3	< 1.3	U
96-12-8	1,2-Dibromo-3-chloropropane	6.4	< 6.4	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	6.4	< 6.4	U
108-67-8	1,3,5-Trimethylbenzene	1.3	< 1.3	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB11-10**
 SAMPLE

Lab Sample ID: YV51D
LIMS ID: 14-16227
Matrix: Soil
Date Analyzed: 08/12/14 16:13

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.3	< 1.3	U
87-68-3	Hexachlorobutadiene	6.4	< 6.4	U
106-93-4	1,2-Dibromoethane	1.3	< 1.3	U
74-97-5	Bromochloromethane	1.3	< 1.3	U
594-20-7	2,2-Dichloropropane	1.3	< 1.3	U
142-28-9	1,3-Dichloropropane	1.3	< 1.3	U
98-82-8	Isopropylbenzene	1.3	< 1.3	U
103-65-1	n-Propylbenzene	1.3	< 1.3	U
108-86-1	Bromobenzene	1.3	< 1.3	U
95-49-8	2-Chlorotoluene	1.3	< 1.3	U
106-43-4	4-Chlorotoluene	1.3	< 1.3	U
98-06-6	tert-Butylbenzene	1.3	< 1.3	U
135-98-8	sec-Butylbenzene	1.3	< 1.3	U
99-87-6	4-Isopropyltoluene	1.3	< 1.3	U
104-51-8	n-Butylbenzene	1.3	< 1.3	U
120-82-1	1,2,4-Trichlorobenzene	6.4	< 6.4	U
91-20-3	Naphthalene	6.4	< 6.4	U
87-61-6	1,2,3-Trichlorobenzene	6.4	< 6.4	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%
d8-Toluene	103%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB12-12**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: YV51F
LIMS ID: 14-16229
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 16:38

Sample Amount: 4.16 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 23.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.2	< 1.2	U
74-83-9	Bromomethane	1.2	< 1.2	U
75-01-4	Vinyl Chloride	1.2	< 1.2	U
75-00-3	Chloroethane	1.2	< 1.2	U
75-09-2	Methylene Chloride	2.4	< 2.4	U
67-64-1	**Acetone**	**6.0**	**55**	**Q**
75-15-0	**Carbon Disulfide**	**1.2**	**21**	**Q**
75-35-4	1,1-Dichloroethene	1.2	< 1.2	U
75-34-3	1,1-Dichloroethane	1.2	< 1.2	U
156-60-5	trans-1,2-Dichloroethene	1.2	< 1.2	U
156-59-2	cis-1,2-Dichloroethene	1.2	< 1.2	U
67-66-3	Chloroform	1.2	< 1.2	U
107-06-2	1,2-Dichloroethane	1.2	< 1.2	U
78-93-3	2-Butanone	6.0	< 6.0	U
71-55-6	1,1,1-Trichloroethane	1.2	< 1.2	U
56-23-5	Carbon Tetrachloride	1.2	< 1.2	U
108-05-4	Vinyl Acetate	6.0	< 6.0	U
75-27-4	Bromodichloromethane	1.2	< 1.2	U
78-87-5	1,2-Dichloropropane	1.2	< 1.2	U
10061-01-5	cis-1,3-Dichloropropene	1.2	< 1.2	U
79-01-6	Trichloroethene	1.2	< 1.2	U
124-48-1	Dibromochloromethane	1.2	< 1.2	U
79-00-5	1,1,2-Trichloroethane	1.2	< 1.2	U
71-43-2	Benzene	1.2	< 1.2	U
10061-02-6	trans-1,3-Dichloropropene	1.2	< 1.2	U
110-75-8	2-Chloroethylvinylether	6.0	< 6.0	U
75-25-2	Bromoform	1.2	< 1.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.0	< 6.0	U
591-78-6	2-Hexanone	6.0	< 6.0	U
127-18-4	Tetrachloroethene	1.2	< 1.2	U
79-34-5	1,1,2,2-Tetrachloroethane	1.2	< 1.2	U
108-88-3	Toluene	1.2	< 1.2	U
108-90-7	Chlorobenzene	1.2	< 1.2	U
100-41-4	Ethylbenzene	1.2	< 1.2	U
100-42-5	Styrene	1.2	< 1.2	U
75-69-4	Trichlorofluoromethane	1.2	< 1.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.4	< 2.4	U
179601-23-1	m,p-Xylene	1.2	< 1.2	U
95-47-6	o-Xylene	1.2	< 1.2	U
95-50-1	1,2-Dichlorobenzene	1.2	< 1.2	U
541-73-1	1,3-Dichlorobenzene	1.2	< 1.2	U
106-46-7	1,4-Dichlorobenzene	1.2	< 1.2	U
107-02-8	Acrolein	60	< 60	U
74-88-4	Iodomethane	1.2	< 1.2	U
74-96-4	Bromoethane	2.4	< 2.4	U
107-13-1	Acrylonitrile	6.0	< 6.0	U
563-58-6	1,1-Dichloropropene	1.2	< 1.2	U
74-95-3	Dibromomethane	1.2	< 1.2	U
630-20-6	1,1,1,2-Tetrachloroethane	1.2	< 1.2	U
96-12-8	1,2-Dibromo-3-chloropropane	6.0	< 6.0	U
96-18-4	1,2,3-Trichloropropane	2.4	< 2.4	U
110-57-6	trans-1,4-Dichloro-2-butene	6.0	< 6.0	U
108-67-8	1,3,5-Trimethylbenzene	1.2	< 1.2	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB12-12**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV51F
LIMS ID: 14-16229
Matrix: Soil
Date Analyzed: 08/12/14 16:38

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.2	< 1.2	U
87-68-3	Hexachlorobutadiene	6.0	< 6.0	U
106-93-4	1,2-Dibromoethane	1.2	< 1.2	U
74-97-5	Bromochloromethane	1.2	< 1.2	U
594-20-7	2,2-Dichloropropane	1.2	< 1.2	U
142-28-9	1,3-Dichloropropane	1.2	< 1.2	U
98-82-8	Isopropylbenzene	1.2	< 1.2	U
103-65-1	n-Propylbenzene	1.2	< 1.2	U
108-86-1	Bromobenzene	1.2	< 1.2	U
95-49-8	2-Chlorotoluene	1.2	< 1.2	U
106-43-4	4-Chlorotoluene	1.2	< 1.2	U
98-06-6	tert-Butylbenzene	1.2	< 1.2	U
135-98-8	sec-Butylbenzene	1.2	< 1.2	U
99-87-6	4-Isopropyltoluene	1.2	< 1.2	U
104-51-8	n-Butylbenzene	1.2	< 1.2	U
120-82-1	1,2,4-Trichlorobenzene	6.0	< 6.0	U
91-20-3	Naphthalene	6.0	< 6.0	U
87-61-6	1,2,3-Trichlorobenzene	6.0	< 6.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	102%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB13-9**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV51G
LIMS ID: 14-16230
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 17:03

Sample Amount: 3.46 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 26.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.9**	**3.5**	
67-64-1	**Acetone**	**7.2**	**37**	**Q**
75-15-0	**Carbon Disulfide**	**1.4**	**3.0**	**Q**
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	7.2	< 7.2	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	7.2	< 7.2	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	7.2	< 7.2	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.2	< 7.2	U
591-78-6	2-Hexanone	7.2	< 7.2	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.9	< 2.9	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	72	< 72	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.9	< 2.9	U
107-13-1	Acrylonitrile	7.2	< 7.2	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	7.2	< 7.2	U
96-18-4	1,2,3-Trichloropropane	2.9	< 2.9	U
110-57-6	trans-1,4-Dichloro-2-butene	7.2	< 7.2	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB13-9**
 SAMPLE

Lab Sample ID: YV51G
LIMS ID: 14-16230
Matrix: Soil
Date Analyzed: 08/12/14 17:03

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	7.2	< 7.2	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	**sec-Butylbenzene**	**1.4**	**8.1**	
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	**n-Butylbenzene**	**1.4**	**4.5**	**Q**
120-82-1	1,2,4-Trichlorobenzene	7.2	< 7.2	U
91-20-3	Naphthalene	7.2	< 7.2	U
87-61-6	1,2,3-Trichlorobenzene	7.2	< 7.2	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	118%
d8-Toluene	102%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	103%

YV50:00060

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**
 METHOD BLANK

Lab Sample ID: MB-081214A
LIMS ID: 14-16224
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 13:56

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**
 METHOD BLANK

Lab Sample ID: MB-081214A QC Report No: YV51-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-16224 Project: Precision Engineering
Matrix: Soil
Date Analyzed: 08/12/14 13:56

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	101%

YV50:00062

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A
LIMS ID: 14-16224
Matrix: Soil
Data Release Authorized:
Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 08/12/14 13:07
LCSD: 08/12/14 13:32

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.6	50.0	87.2%	41.8	50.0	83.6%	4.2%
Bromomethane	76.0 Q	50.0	152%	72.8 Q	50.0	146%	4.3%
Vinyl Chloride	47.7	50.0	95.4%	47.0	50.0	94.0%	1.5%
Chloroethane	53.8	50.0	108%	49.8	50.0	99.6%	7.7%
Methylene Chloride	49.5	50.0	99.0%	47.4	50.0	94.8%	4.3%
Acetone	320 Q	250	128%	318 Q	250	127%	0.6%
Carbon Disulfide	98.5 Q	50.0	197%	85.9 Q	50.0	172%	13.7%
1,1-Dichloroethene	87.2 Q	50.0	174%	76.9 Q	50.0	154%	12.6%
1,1-Dichloroethane	52.6	50.0	105%	51.8	50.0	104%	1.5%
trans-1,2-Dichloroethene	53.4	50.0	107%	51.8	50.0	104%	3.0%
cis-1,2-Dichloroethene	52.0	50.0	104%	51.2	50.0	102%	1.6%
Chloroform	53.1	50.0	106%	52.4	50.0	105%	1.3%
1,2-Dichloroethane	49.6	50.0	99.2%	50.3	50.0	101%	1.4%
2-Butanone	256	250	102%	261	250	104%	1.9%
1,1,1-Trichloroethane	54.4	50.0	109%	52.9	50.0	106%	2.8%
Carbon Tetrachloride	52.4	50.0	105%	51.1	50.0	102%	2.5%
Vinyl Acetate	51.4	50.0	103%	52.4	50.0	105%	1.9%
Bromodichloromethane	49.6	50.0	99.2%	49.7	50.0	99.4%	0.2%
1,2-Dichloropropane	48.2	50.0	96.4%	48.1	50.0	96.2%	0.2%
cis-1,3-Dichloropropene	50.6	50.0	101%	50.6	50.0	101%	0.0%
Trichloroethene	50.8	50.0	102%	50.1	50.0	100%	1.4%
Dibromochloromethane	48.9	50.0	97.8%	49.3	50.0	98.6%	0.8%
1,1,2-Trichloroethane	48.0	50.0	96.0%	48.4	50.0	96.8%	0.8%
Benzene	50.2	50.0	100%	49.7	50.0	99.4%	1.0%
trans-1,3-Dichloropropene	50.5	50.0	101%	51.1	50.0	102%	1.2%
2-Chloroethylvinylether	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Bromoform	47.9	50.0	95.8%	48.0	50.0	96.0%	0.2%
4-Methyl-2-Pentanone (MIBK)	250	250	100%	259	250	104%	3.5%
2-Hexanone	249	250	99.6%	254	250	102%	2.0%
Tetrachloroethene	51.9	50.0	104%	49.8	50.0	99.6%	4.1%
1,1,2,2-Tetrachloroethane	46.6	50.0	93.2%	46.3	50.0	92.6%	0.6%
Toluene	49.2	50.0	98.4%	50.2	50.0	100%	2.0%
Chlorobenzene	49.8	50.0	99.6%	48.6	50.0	97.2%	2.4%
Ethylbenzene	51.5	50.0	103%	50.1	50.0	100%	2.8%
Styrene	52.5	50.0	105%	51.6	50.0	103%	1.7%
Trichlorofluoromethane	51.0 Q	50.0	102%	49.2 Q	50.0	98.4%	3.6%
1,1,2-Trichloro-1,2,2-trifluoroetha	58.0	50.0	116%	55.2	50.0	110%	4.9%

YV50:00063

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A QC Report No: YV51-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-16224 Project: Precision Engineering
Matrix: Soil

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	105	100	105%	103	100	103%	1.9%
o-Xylene	52.8	50.0	106%	51.7	50.0	103%	2.1%
1,2-Dichlorobenzene	49.4	50.0	98.8%	48.6	50.0	97.2%	1.6%
1,3-Dichlorobenzene	52.0	50.0	104%	50.1	50.0	100%	3.7%
1,4-Dichlorobenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Acrolein	280	250	112%	283	250	113%	1.1%
Iodomethane	62.4	50.0	125%	53.9	50.0	108%	14.6%
Bromoethane	56.0	50.0	112%	53.6	50.0	107%	4.4%
Acrylonitrile	50.0	50.0	100%	51.7	50.0	103%	3.3%
1,1-Dichloropropene	51.0	50.0	102%	49.9	50.0	99.8%	2.2%
Dibromomethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%
1,1,1,2-Tetrachloroethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%
1,2-Dibromo-3-chloropropane	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%
1,2,3-Trichloropropane	46.0	50.0	92.0%	46.4	50.0	92.8%	0.9%
trans-1,4-Dichloro-2-butene	49.2	50.0	98.4%	48.5	50.0	97.0%	1.4%
1,3,5-Trimethylbenzene	53.0	50.0	106%	50.9	50.0	102%	4.0%
1,2,4-Trimethylbenzene	53.8	50.0	108%	51.8	50.0	104%	3.8%
Hexachlorobutadiene	52.0	50.0	104%	47.8	50.0	95.6%	8.4%
1,2-Dibromoethane	47.6	50.0	95.2%	48.4	50.0	96.8%	1.7%
Bromochloromethane	51.6	50.0	103%	52.2	50.0	104%	1.2%
2,2-Dichloropropane	56.0	50.0	112%	54.3	50.0	109%	3.1%
1,3-Dichloropropane	47.4	50.0	94.8%	47.4	50.0	94.8%	0.0%
Isopropylbenzene	53.1	50.0	106%	50.5	50.0	101%	5.0%
n-Propylbenzene	52.9	50.0	106%	50.2	50.0	100%	5.2%
Bromobenzene	49.0	50.0	98.0%	47.9	50.0	95.8%	2.3%
2-Chlorotoluene	51.4	50.0	103%	49.2	50.0	98.4%	4.4%
4-Chlorotoluene	53.0	50.0	106%	50.9	50.0	102%	4.0%
tert-Butylbenzene	52.8	50.0	106%	49.9	50.0	99.8%	5.6%
sec-Butylbenzene	53.3	50.0	107%	50.2	50.0	100%	6.0%
4-Isopropyltoluene	54.9	50.0	110%	52.0	50.0	104%	5.4%
n-Butylbenzene	56.6 Q	50.0	113%	52.7 Q	50.0	105%	7.1%
1,2,4-Trichlorobenzene	55.3	50.0	111%	54.2	50.0	108%	2.0%
Naphthalene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%
1,2,3-Trichlorobenzene	52.0	50.0	104%	51.4	50.0	103%	1.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	108%
d8-Toluene	101%	101%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	100%

YV50 : 00064

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-081214A	Method Blank	Low	112%	103%	98.6%	101%	0
LCS-081214A	Lab Control	Low	107%	101%	100%	101%	0
LCSD-081214A	Lab Control Dup	Low	108%	101%	101%	100%	0
YV51A	SB4-5	Low	111%	100%	94.9%	104%	0
YV51B	SB4-20	Low	127%	101%	99.8%	103%	0
YV51C	SB14-6	Low	133%	104%	95.7%	99.7%	0
YV51D	SB11-10	Low	127%	103%	102%	103%	0
YV51F	SB12-12	Low	122%	102%	98.2%	103%	0
YV51G	SB13-9	Low	118%	102%	96.3%	103%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16224 to 14-16230

YV50:00065

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
Lab Sample ID: CC0812 Quant Type: ISTD
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	40.86589	50.00000	0.34187	0.100	-18.26821	20.00000	Linear	
2 Chloromethane	0.74269	0.68606	0.68606	0.100	-7.62513	20.00000	Averaged	
3 Vinyl Chloride	0.59799	0.71589	0.71589	0.100	19.71596	20.00000	Averaged	
4 Bromomethane	0.22310	0.34665	0.34665	0.100	55.38144	20.00000	Averaged	<-
5 Chloroethane	0.40499	0.40548	0.40548	0.100	0.12169	20.00000	Averaged	
6 Trichlorofluoromethane	0.67057	0.85593	0.85593	0.100	27.64239	20.00000	Averaged	<-
7 1,1-Dichloroethene	63.01086	50.00000	0.37662	0.100	26.02172	20.00000	Linear	<-
8 Carbon Disulfide	67.27443	50.00000	1.29018	0.010	34.54885	20.00000	Linear	<-
9 112Trichloro122Trifluoroeth	0.48163	0.42336	0.42336	0.010	-12.09892	20.00000	Averaged	
10 Iodomethane	0.47596	0.52759	0.52759	0.010	10.84631	20.00000	Averaged	
11 Bromoethane	0.33782	0.38727	0.38727	0.010	14.63622	20.00000	Averaged	
12 Acrolein	0.11092	0.11888	0.11888	0.000	7.17350	20.00000	Averaged	
13 Methylene Chloride	0.55786	0.53760	0.53760	0.010	-3.63159	20.00000	Averaged	
14 Acetone	342	250	0.20793	0.001	36.66993	20.00000	Quadratic	<-
15 Trans-1,2-Dichloroethene	0.54823	0.60320	0.60320	0.010	10.02678	20.00000	Averaged	
16 Methyl tert butyl ether	1.67439	1.65492	1.65492	0.100	-1.16264	20.00000	Averaged	
17 1,1-Dichloroethane	1.06875	1.13318	1.13318	0.100	6.02874	20.00000	Averaged	
18 Acrylonitrile	0.24758	0.23799	0.23799	0.001	-3.87703	20.00000	Averaged	
19 Vinyl Acetate	1.11971	1.12445	1.12445	0.010	0.42359	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.57605	0.60398	0.60398	0.010	4.84893	20.00000	Averaged	
22 2,2-Dichloropropane	0.82164	0.94514	0.94514	0.010	15.03088	20.00000	Averaged	
23 Bromochloromethane	0.24044	0.24921	0.24921	0.050	3.64724	20.00000	Averaged	
24 Chloroform	0.90267	0.96533	0.96533	0.100	6.94076	20.00000	Averaged	
25 Carbon Tetrachloride	0.33335	0.36205	0.36205	0.100	8.61094	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.59797	0.67717	0.67717	0.100	13.24435	20.00000	Averaged	
26 1,1,1-Trichloroethane	0.81037	0.96796	0.96796	0.100	19.44653	20.00000	Averaged	
28 1,1-Dichloropropene	0.36962	0.38991	0.38991	0.010	5.48981	20.00000	Averaged	
29 2-Butanone	0.07802	0.07905	0.07905	0.001	1.32826	20.00000	Averaged	
30 Benzene	1.11376	1.13108	1.13108	0.100	1.55523	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.65895	0.70581	0.70581	0.010	7.11136	20.00000	Averaged	
33 1,2-Dichloroethane	0.34797	0.34938	0.34938	0.100	0.40620	20.00000	Averaged	
34 Trichloroethene	0.26404	0.27853	0.27853	0.100	5.49067	20.00000	Averaged	
37 Dibromomethane	0.14631	0.14169	0.14169	0.010	-3.15609	20.00000	Averaged	
38 1,2-Dichloropropane	0.28565	0.27298	0.27298	0.100	-4.43471	20.00000	Averaged	
39 Bromodichloromethane	0.34613	0.34339	0.34339	0.100	-0.79224	20.00000	Averaged	

YV50:00056

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
Lab Sample ID: CC0812 Quant Type: ISTD
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.18305	0.17955	0.17955	0.000	-1.90716	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.42292	0.42914	0.42914	0.100	1.47219	20.00000	Averaged
$ 42 d8-Toluene	1.17018	1.17571	1.17571	0.010	0.47227	20.00000	Averaged
43 Toluene	0.70517	0.73280	0.73280	0.100	3.91890	20.00000	Averaged
44 Tetrachloroethene	0.29752	0.32412	0.32412	0.100	8.93850	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.12415	0.12052	0.12052	0.000	-2.92062	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.38489	0.38590	0.38590	0.010	0.26343	20.00000	Averaged
47 1,1,2-Trichloroethane	0.22454	0.21111	0.21111	0.100	-5.98280	20.00000	Averaged
48 Chlorodibromomethane	0.25116	0.24855	0.24855	0.100	-1.04031	20.00000	Averaged
49 1,3-Dichloropropane	0.39901	0.38230	0.38230	0.100	-4.18607	20.00000	Averaged
50 1,2-Dibromoethane	0.23462	0.22116	0.22116	0.010	-5.73913	20.00000	Averaged
51 2-Hexanone	0.20599	0.20615	0.20615	0.010	0.07484	20.00000	Averaged
53 Chlorobenzene	0.74274	0.75654	0.75654	0.300	1.85755	20.00000	Averaged
54 Ethyl Benzene	1.27616	1.36697	1.36697	0.100	7.11611	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.26117	0.26000	0.26000	0.010	-0.44958	20.00000	Averaged
56 m,p-xylene	0.49383	0.53595	0.53595	0.100	8.52837	20.00000	Averaged
57 o-Xylene	0.47591	0.50914	0.50914	0.100	6.98218	20.00000	Averaged
58 Styrene	0.80967	0.86507	0.86507	0.100	6.84167	20.00000	Averaged
59 Bromoform	0.34609	0.33634	0.33634	0.100	-2.81770	20.00000	Averaged
60 Isopropyl Benzene	2.33130	2.56302	2.56302	0.010	9.93961	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.50584	0.49659	0.49659	0.200	-1.82737	20.00000	Averaged
63 Bromobenzene	0.59257	0.59938	0.59938	0.010	1.14775	20.00000	Averaged
64 N-Propyl Benzene	2.60365	2.89821	2.89821	0.010	11.31348	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.57244	0.53527	0.53527	0.300	-6.49310	20.00000	Averaged
66 2-Chloro Toluene	1.58776	1.69258	1.69258	0.010	6.60153	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	1.95196	2.16882	2.16882	0.010	11.10978	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18665	0.17354	0.17354	0.010	-7.02361	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.18281	0.18532	0.18532	0.001	1.37177	20.00000	Averaged
70 4-Chloro Toluene	1.63531	1.79545	1.79545	0.010	9.79233	20.00000	Averaged
71 T-Butyl Benzene	1.70109	1.85518	1.85518	0.010	9.05824	20.00000	Averaged
72 1,2,4-Trimethylbenzene	1.91165	2.14031	2.14031	0.010	11.96130	20.00000	Averaged
73 S-Butyl Benzene	2.54397	2.83225	2.83225	0.010	11.33187	20.00000	Averaged
74 4-Isopropyl Toluene	2.00426	2.31658	2.31658	0.010	15.58280	20.00000	Averaged
75 1,3-Dichlorobenzene	1.09332	1.18496	1.18496	0.100	8.38208	20.00000	Averaged
77 1,4-Dichlorobenzene	1.12418	1.21197	1.21197	0.100	7.80920	20.00000	Averaged

YV50:00067

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
Lab Sample ID: CC0812 Quant Type: ISTD
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
78 N-Butyl Benzene	1.78850	2.16106	2.16106	0.010	20.83083	20.00000	Averaged	<-
$ 79 d4-1,2-Dichlorobenzene	0.95613	0.96830	0.96830	0.010	1.27281	20.00000	Averaged	
80 1,2-Dichlorobenzene	1.07398	1.11252	1.11252	0.100	3.58874	20.00000	Averaged	
81 1,2-Dibromo 3-Chloropropane	0.11645	0.11104	0.11104	0.010	-4.64922	20.00000	Averaged	
82 Hexachloro 1,3-Butadiene	0.48166	0.53008	0.53008	0.010	10.05138	20.00000	Averaged	
83 1,2,4-Trichlorobenzene	0.73617	0.87061	0.87061	0.010	18.26227	20.00000	Averaged	
84 Naphthalene	1.94353	1.96105	1.96105	0.010	0.90169	20.00000	Averaged	
85 1,2,3-Trichlorobenzene	0.73878	0.79367	0.79367	0.010	7.43039	20.00000	Averaged	

YV50:00068

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Matrix: Soil

Date Received: 08/07/14

Data Release Authorized:
Reported: 08/18/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
MB-081314	Method Blank	08/13/14	08/14/14	1.00	Diesel Range	5.0	< 5.0 U
14-16224	HC ID: ---		FID3B	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		66.6%
YV51A	SB4-5	08/13/14	08/14/14	1.00	**Diesel Range**	**6.9**	**65**
14-16224	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**14**	**220**
					o-Terphenyl		58.2%
YV51B	SB4-20	08/13/14	08/14/14	1.00	Diesel Range	6.2	< 6.2 U
14-16225	HC ID: ---		FID3B	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		79.8%
YV51C	SB14-6	08/13/14	08/15/14	5.00	**Diesel Range**	**55**	**74**
14-16226	HC ID: **DRO/MOTOR OIL**		FID3B	2.0	**Motor Oil Range**	**110**	**730**
					o-Terphenyl		80.0%
YV51D	SB11-10	08/13/14	08/15/14	1.00	**Diesel Range**	**6.2**	**9.7**
14-16227	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**30**
					o-Terphenyl		78.1%
YV51F	SB12-12	08/13/14	08/15/14	1.00	Diesel Range	6.5	< 6.5 U
14-16229	HC ID: **MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**13**	**19**
					o-Terphenyl		74.3%
YV51G	SB13-9	08/13/14	08/15/14	1.00	Diesel Range	6.7	< 6.7 U
14-16230	HC ID: **MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**14**	**18**
					o-Terphenyl		72.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YV50:00069

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-081314
LAB CONTROL

Lab Sample ID: LCS-081314
LIMS ID: 14-16224
Matrix: Soil
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Date Extracted: 08/13/14
Date Analyzed: 08/14/14 22:39
Instrument/Analyst: FID3B/VTS

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	111	150	74.0%

TPHD Surrogate Recovery

o-Terphenyl	75.9%

Results reported in mg/kg

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YV51
Matrix: Soil Project: Precision Engineering
Date Received: 08/07/14

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16224-081314MB1	Method Blank	10.0 g	1.00 mL	-	08/13/14
14-16224-081314LCS1	Lab Control	10.0 g	1.00 mL	-	08/13/14
14-16224-YV51A	SB4-5	7.22 g	1.00 mL	D	08/13/14
14-16225-YV51B	SB4-20	8.09 g	1.00 mL	D	08/13/14
14-16226-YV51C	SB14-6	9.07 g	5.00 mL	D	08/13/14
14-16227-YV51D	SB11-10	8.05 g	1.00 mL	D	08/13/14
14-16229-YV51F	SB12-12	7.66 g	1.00 mL	D	08/13/14
14-16230-YV51G	SB13-9	7.43 g	1.00 mL	D	08/13/14

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Client ID	OTER	TOT OUT
081314MBS	66.6%	0
081314LCS	75.9%	0
SB4-5	58.2%	0
SB4-20	79.8%	0
SB14-6	80.0%	0
SB11-10	78.1%	0
SB12-12	74.3%	0
SB13-9	72.8%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

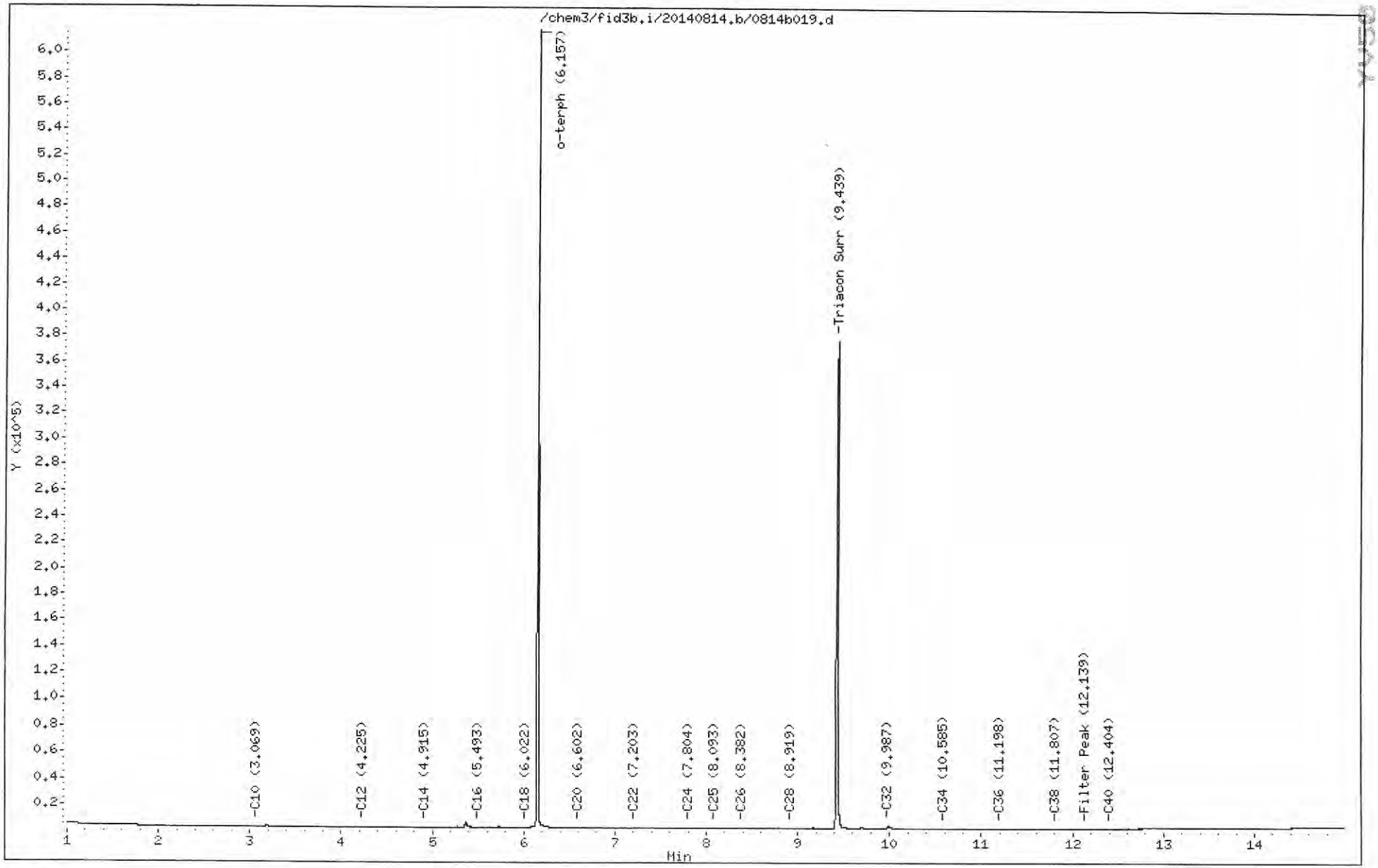
Prep Method: SW3546
Log Number Range: 14-16224 to 14-16230

Data File: /chem3/fid3b.i/20140814.b/0814b019.d
Date : 14-AUG-2014 22:14
Client ID: YV51MBS1
Sample Info: YV51MBS1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

Column phase: RTX-1



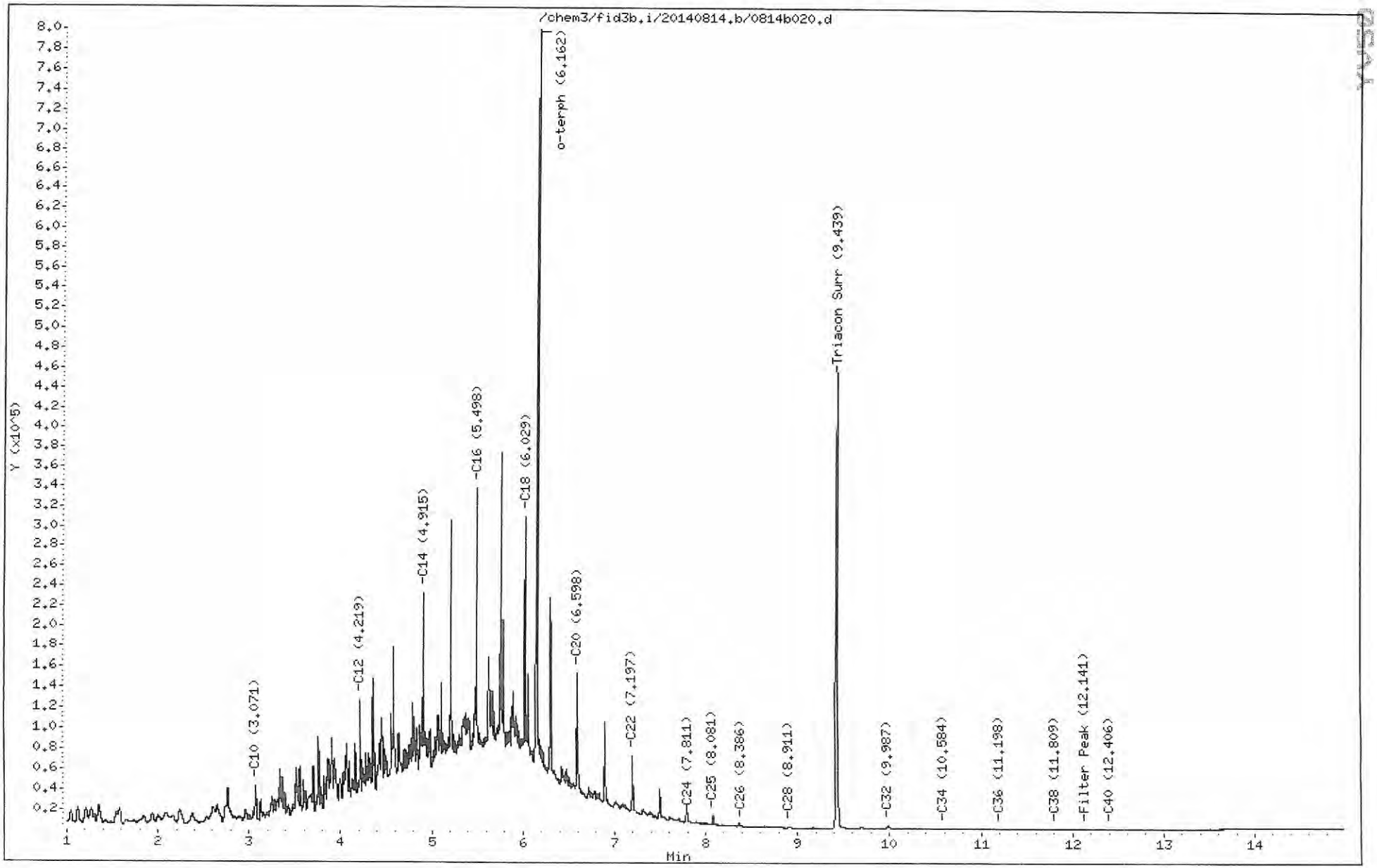
Data File: /chem3/fid3b.i/20140814.b/0814b020.d
Date : 14-AUG-2014 22:39
Client ID: YV51LCSS1
Sample Info: YV51LCSS1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

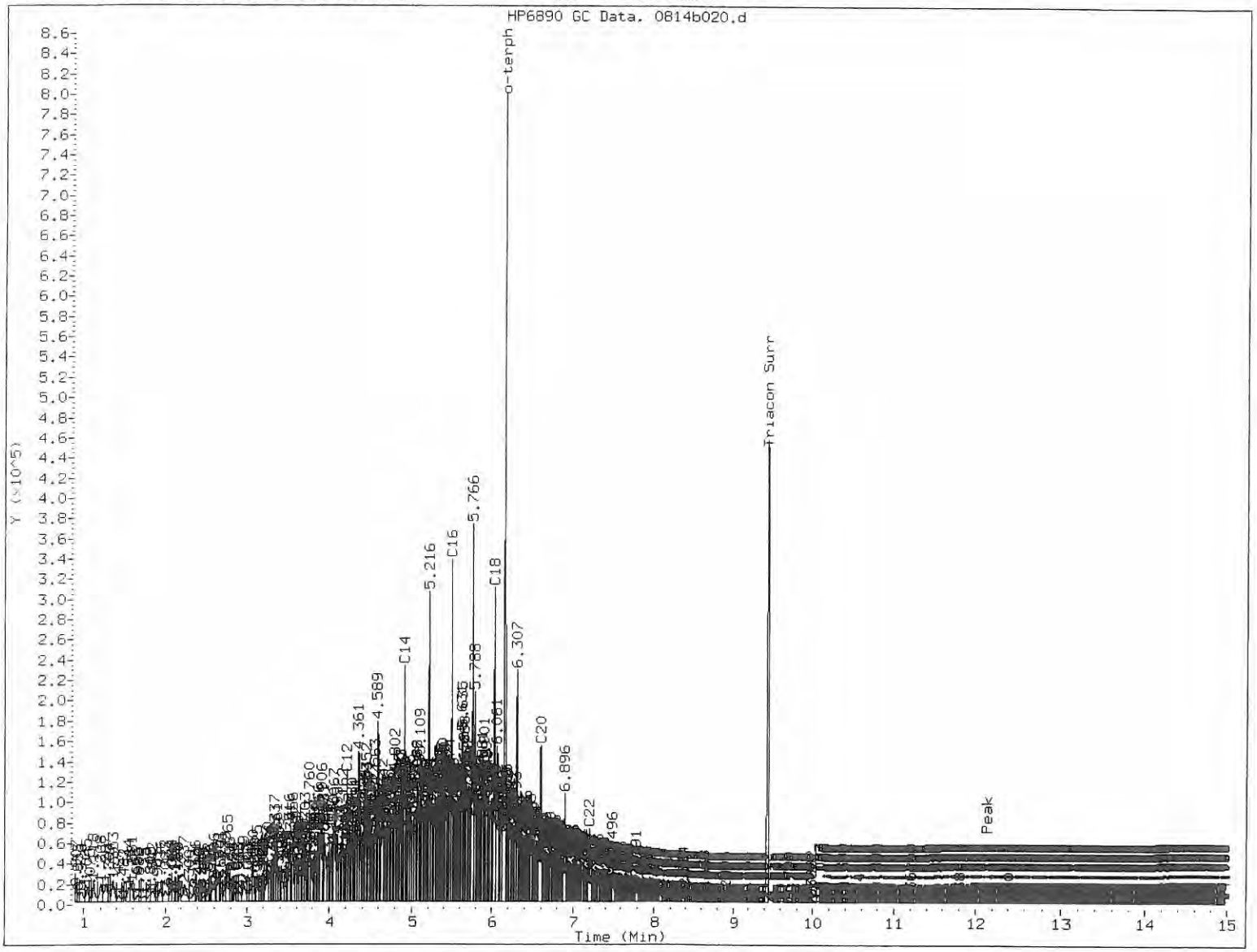
Column phase: RTX-1

8.15.14



YV1550 : 000071

FID:3B-2C/RTX-1 YV51LCSS1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: [signature] Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b021.d
Date : 14-AUG-2014 23:04
Client ID: SB4-5
Sample Info: YV51A

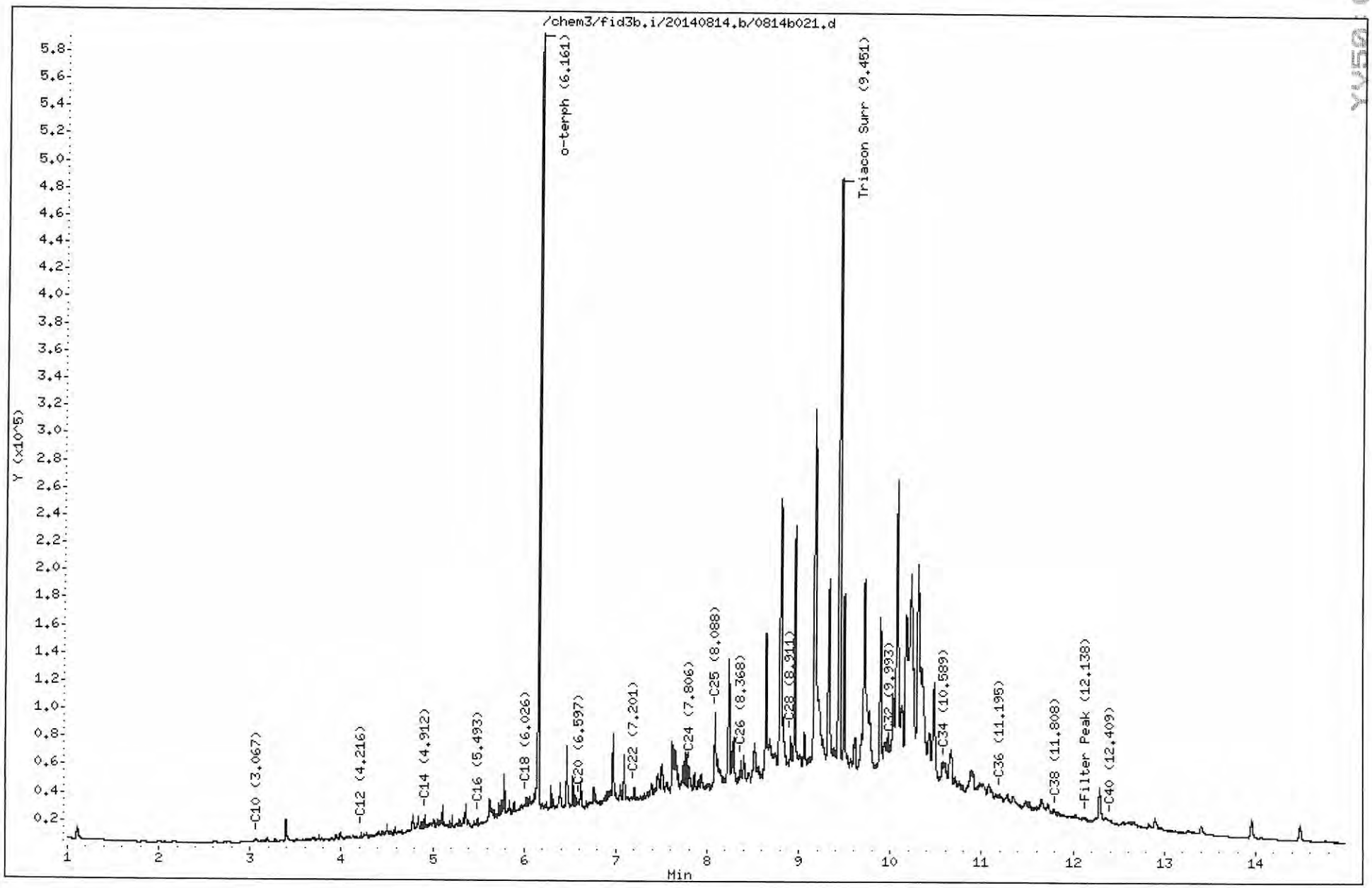
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

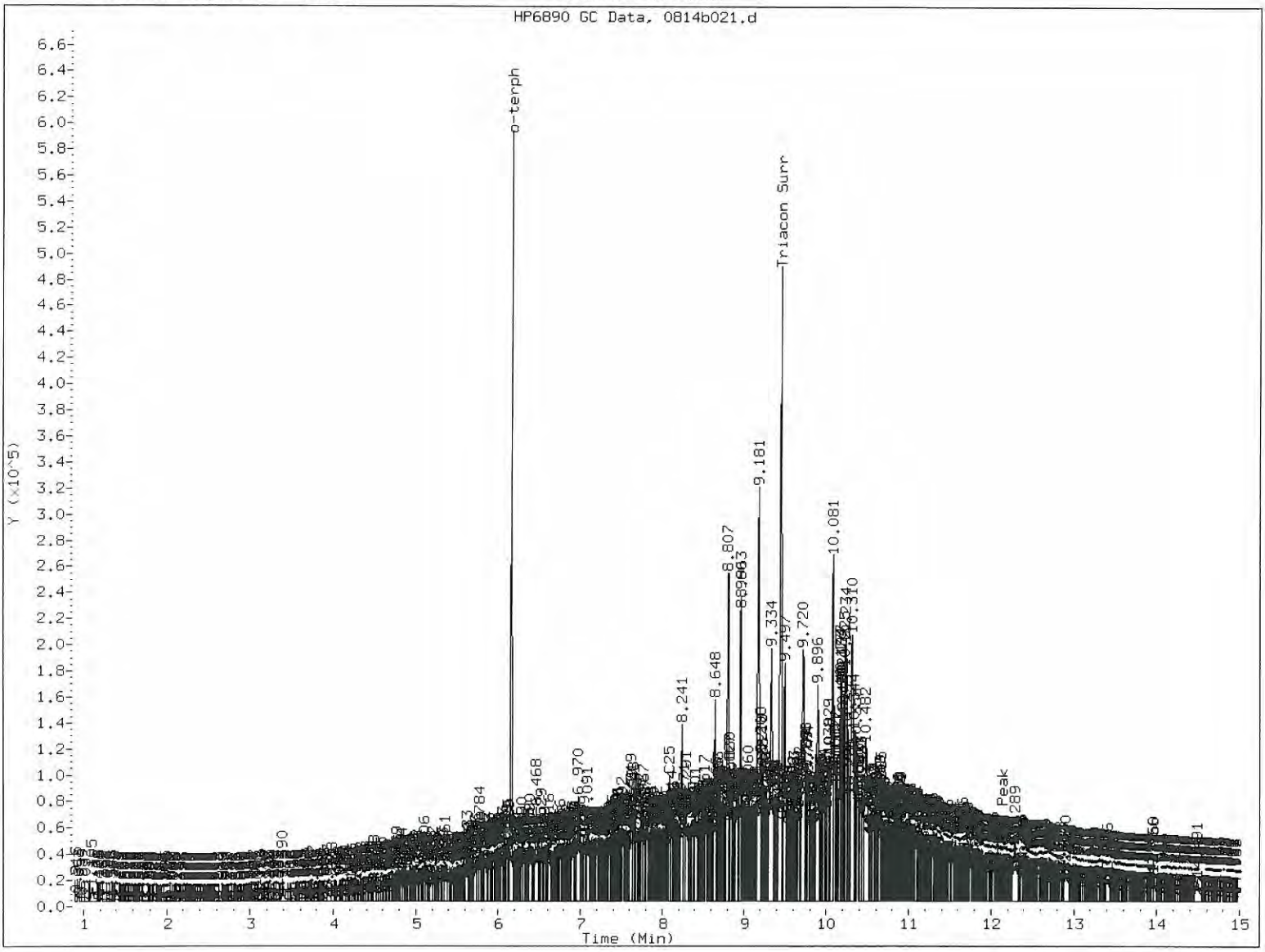
VM 8.15.14

YV51A 050875



FID:3B-2C/RTX-1 YV51A

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: [illegible] Date: 8-15-14

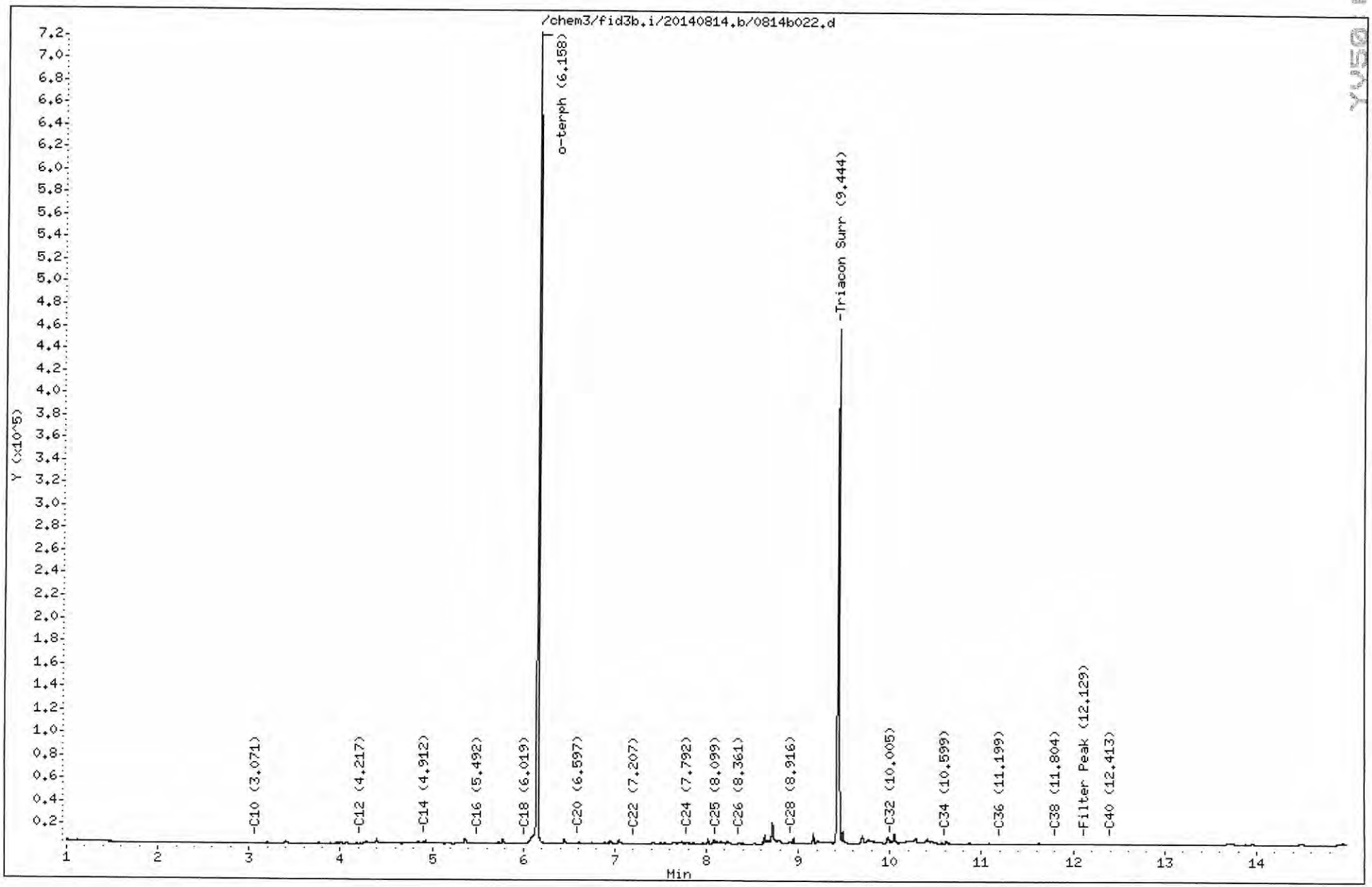
Data File: /chem3/fid3b.i/20140814.b/0814b022.d
Date : 14-AUG-2014 23:29
Client ID: SB4-20
Sample Info: YV51B

Column phase: RTX-1

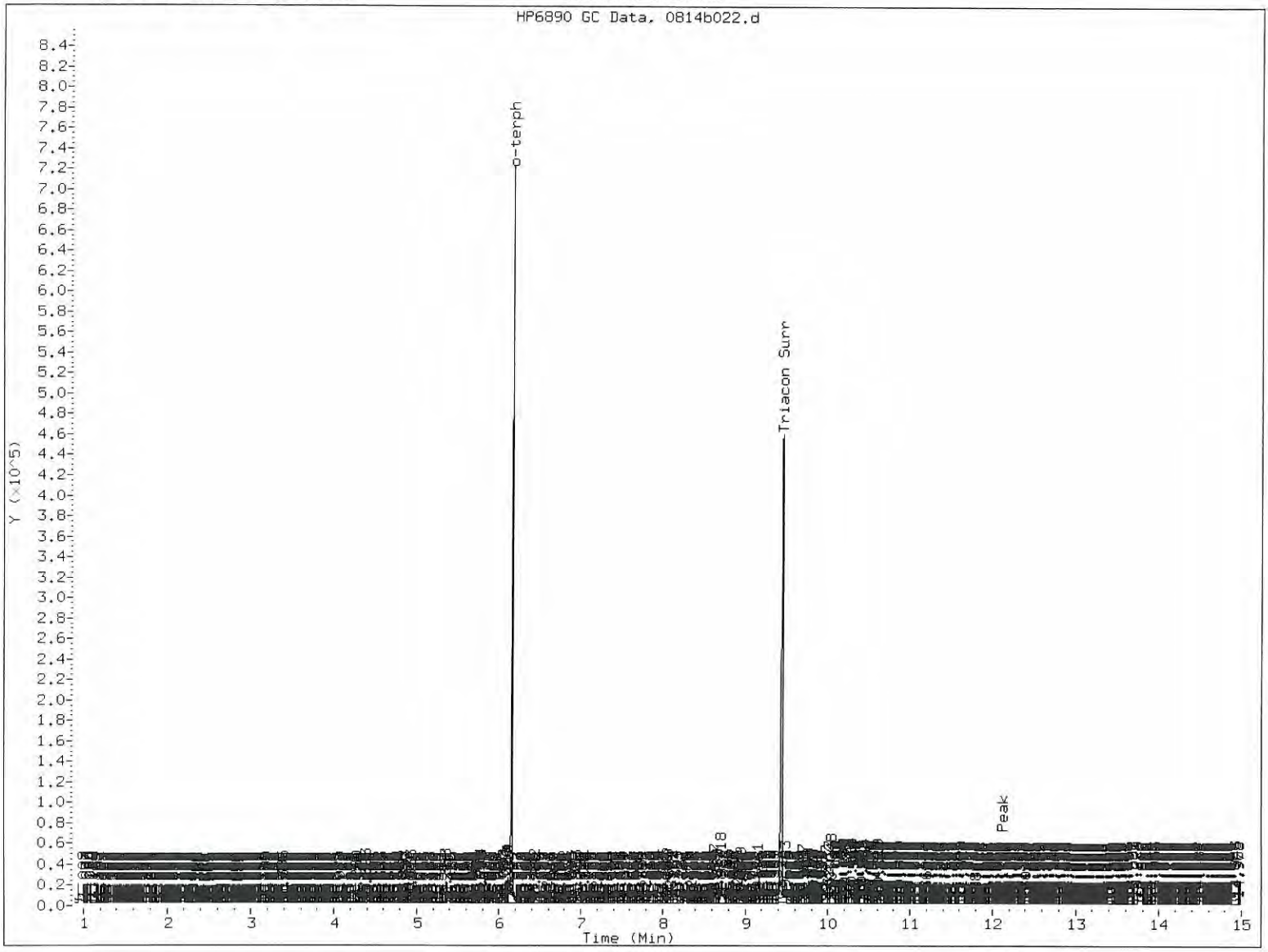
Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

YV51 00073



FID:3B-2C/RTX-1 YV51B FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-17-11

YV50:00075

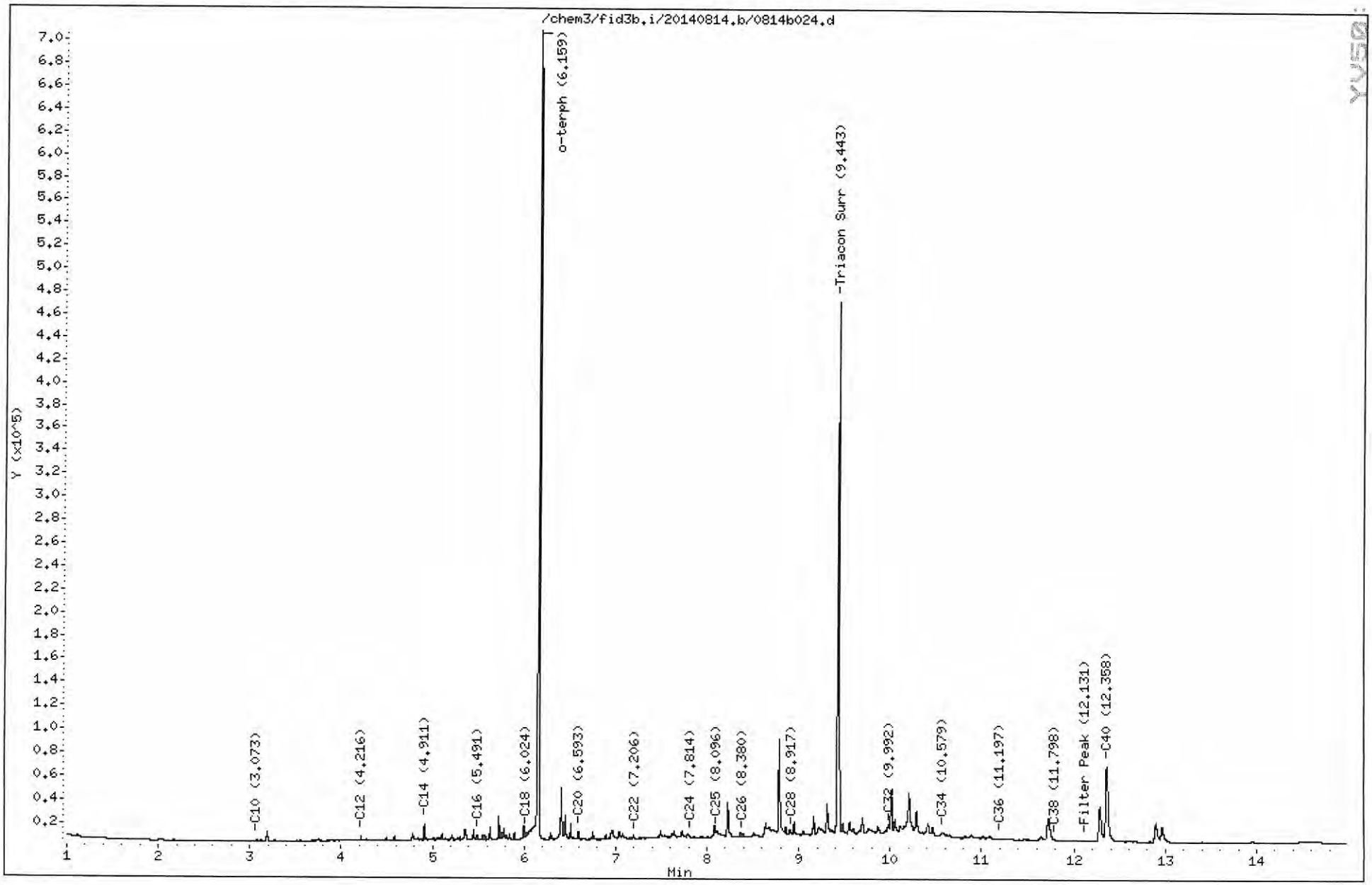
Data File: /chem3/fid3b.i/20140814.b/0814b024.d
Date : 15-AUG-2014 00:19
Client ID: SB11-10
Sample Info: YV51D

Instrument: fid3b.i

Operator: VTS
Column phase: RTX-1
Column diameter: 0.25

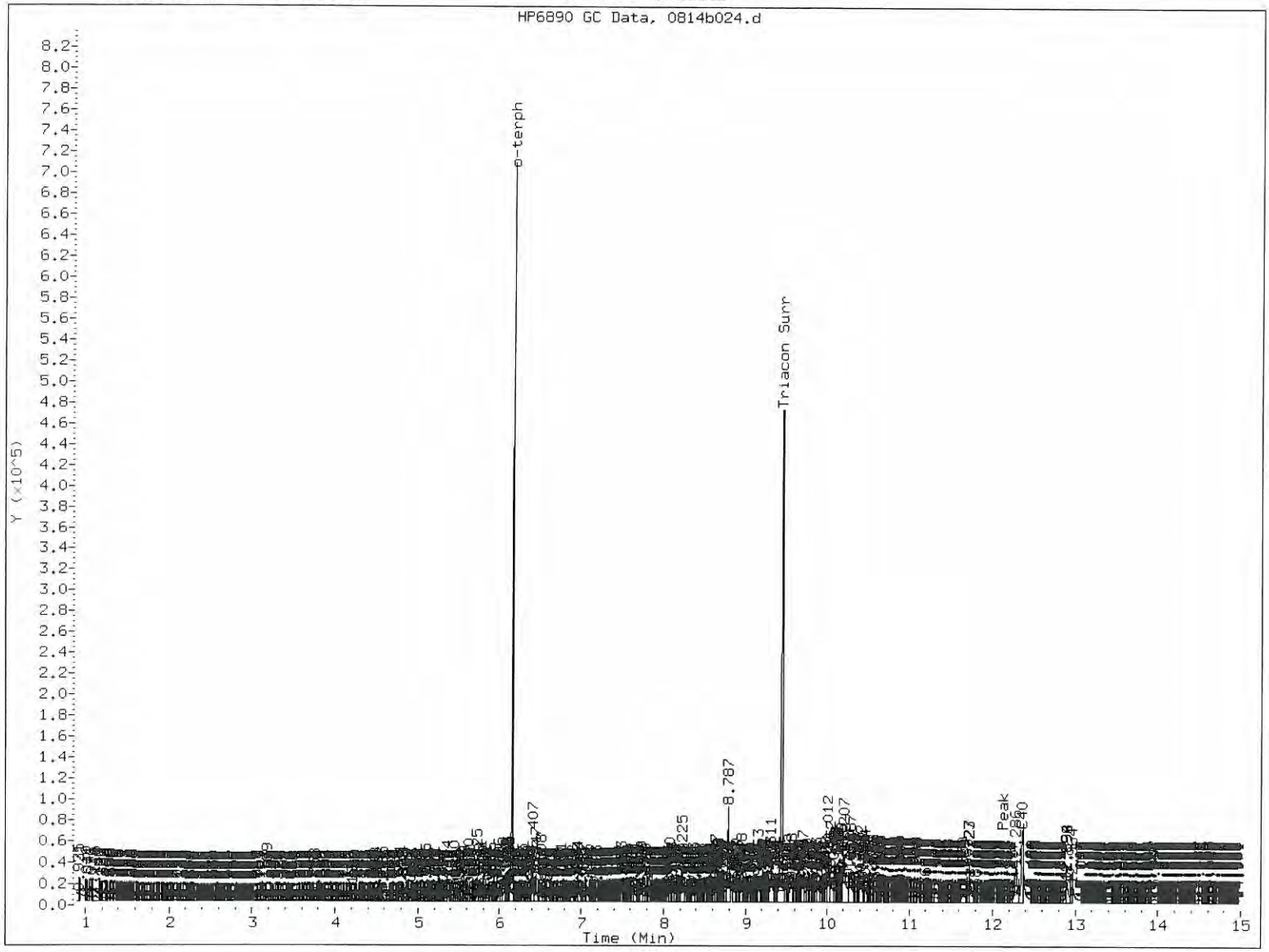
D 8.15.14

YV51D:00939



FID:3B-2C/RTX-1 YV51D

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: VJ Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b025.d
Date : 15-AUG-2014 00:44
Client ID: SB12-12
Sample Info: YV51F

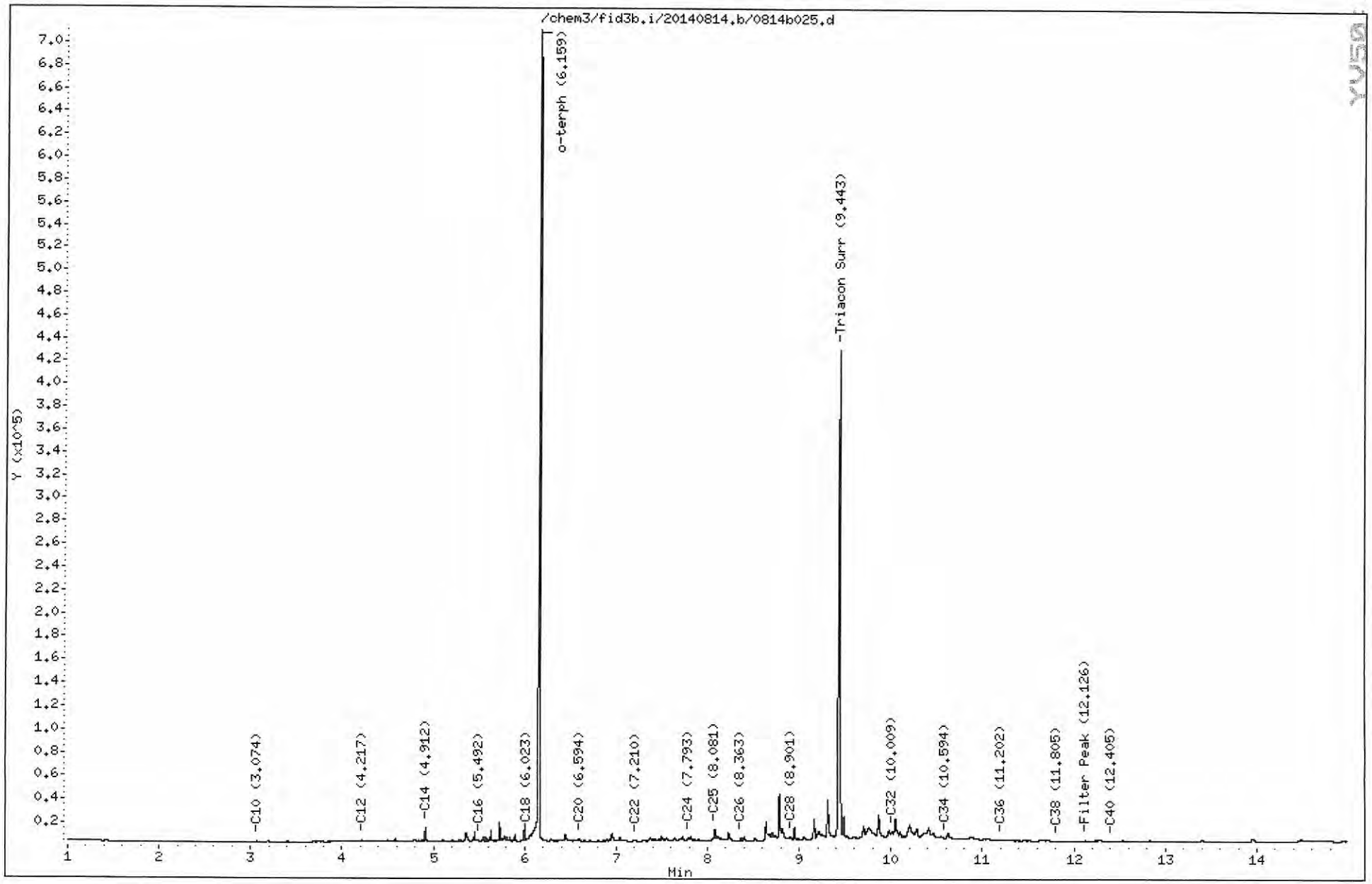
Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

Column phase: RTX-1

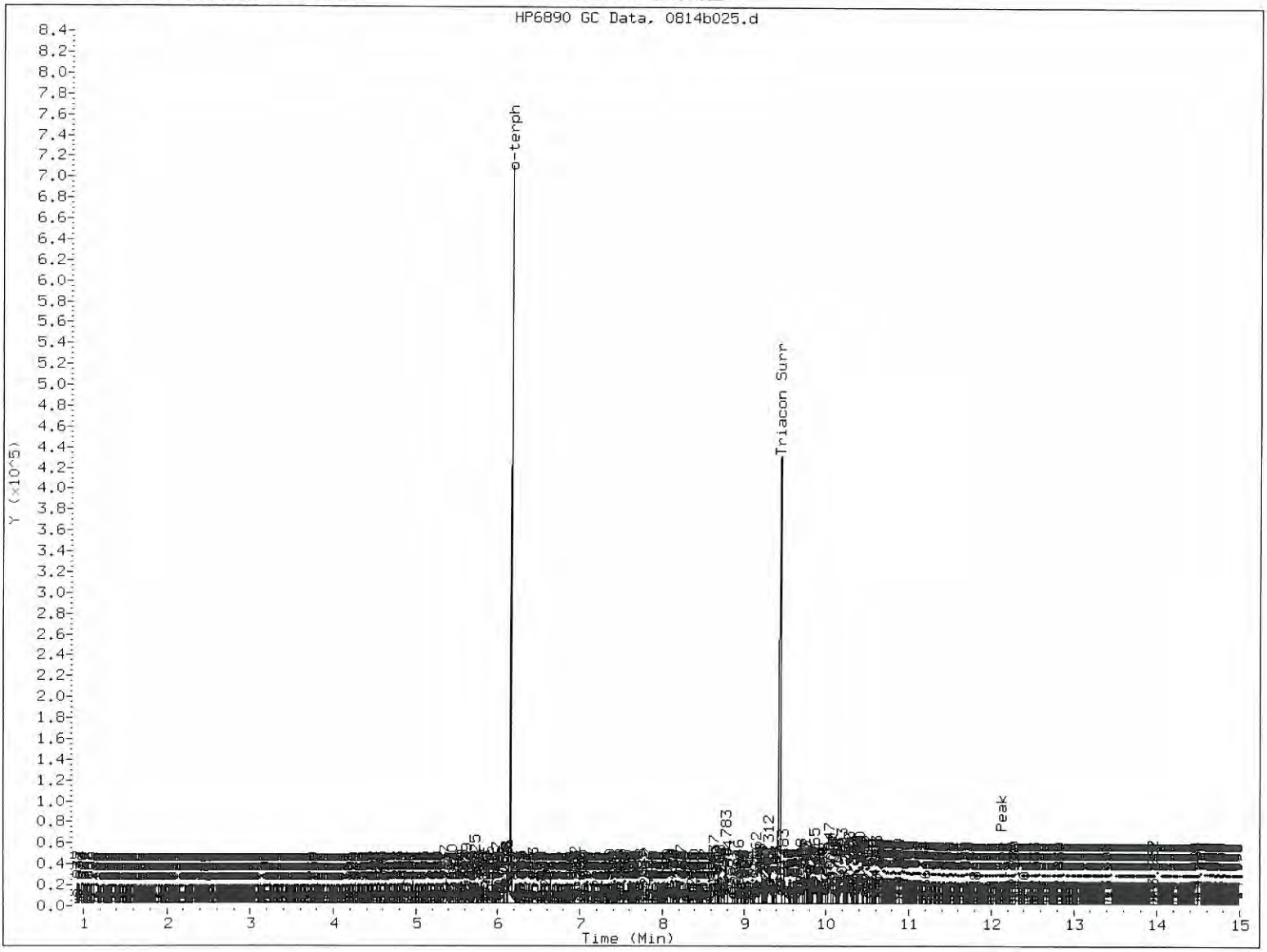
VJ
8-15-14

YV51 00082



FID:3B-2C/RTX-1 YV51F

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: S Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b026.d
Date : 15-AUG-2014 01:09
Client ID: SB13-9
Sample Info: YV51G

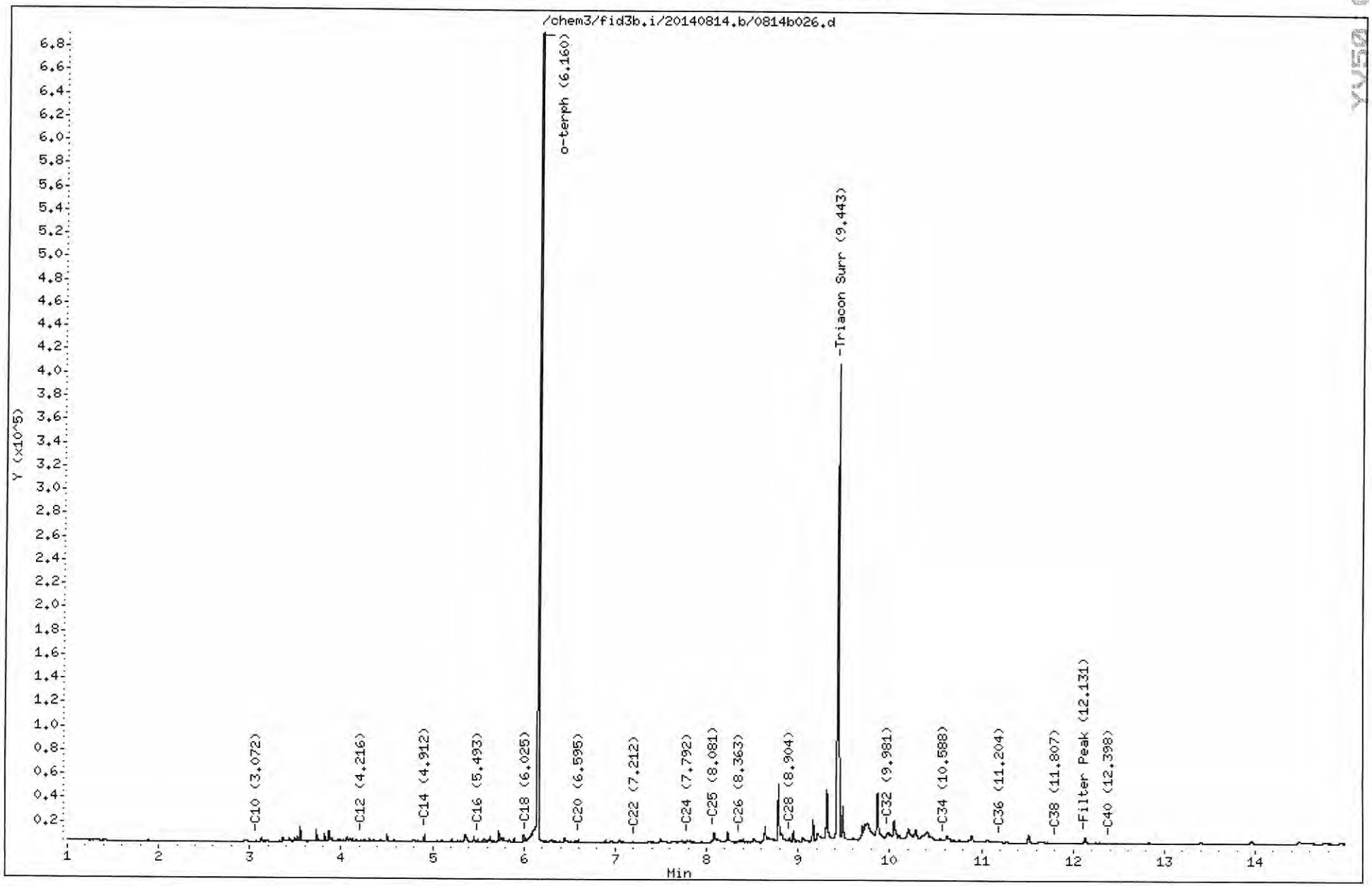
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

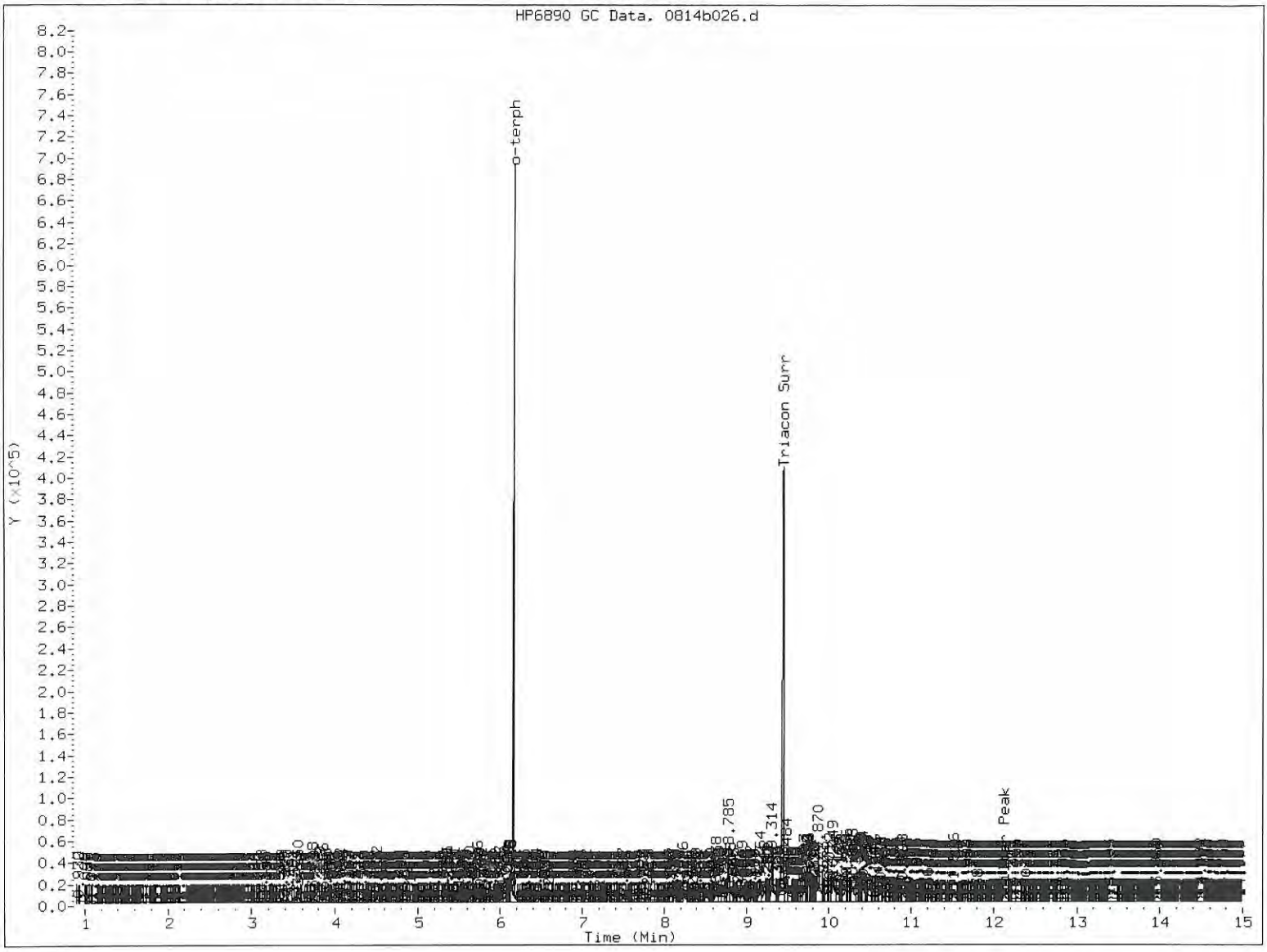
8,15-M

YV51G 082814



FID:3B-2C/RTX-1 YV51G

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: VD Date: 8.15.14

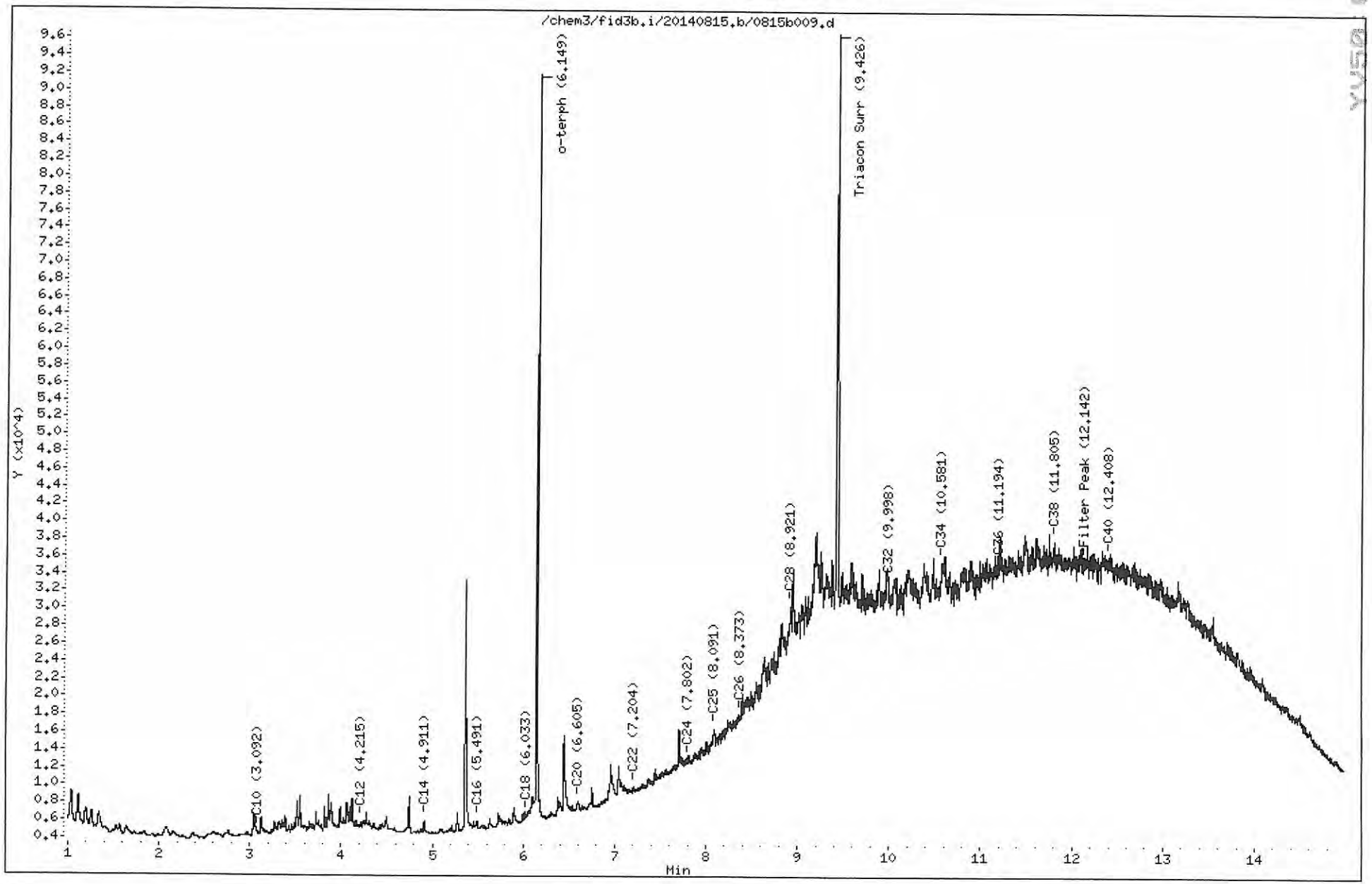
Data File: /chem3/fid3b.i/20140815.b/0815b009.d
Date : 15-AUG-2014 14:59
Client ID: SB14-6
Sample Info: YV51C,2

Column phase: RTX-1

Instrument: fid3b.i

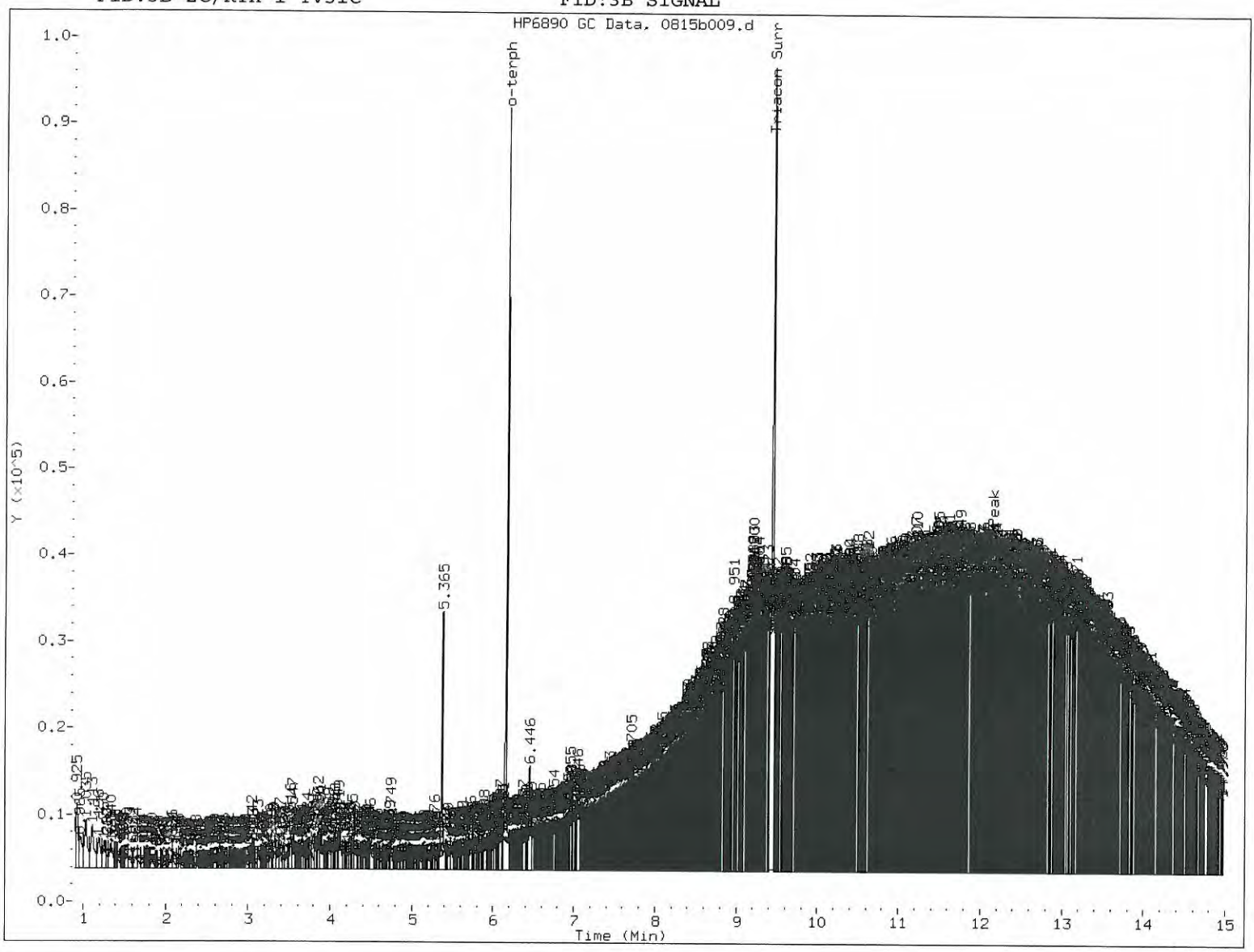
Operator: VTS
Column diameter: 0.25

YV51C 00086



FID:3B-2C/RTX-1 YV51C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8.16.14

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB4-5
ARI ID: 14-16224 YV51A

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.572	< 0.572 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	69.98

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00088

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB4-20
ARI ID: 14-16225 YV51B

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.482	< 0.482 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	81.33

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00089

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB14-6
ARI ID: 14-16226 YV51C

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.425	< 0.425 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	91.52

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50 : 00090

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB11-10
ARI ID: 14-16227 YV51D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.472	< 0.472 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	83.77

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00091

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB11-30
ARI ID: 14-16228 YV51E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.484	< 0.484 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	80.74

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00092

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB12-12
ARI ID: 14-16229 YV51F

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.516	< 0.516 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	76.26

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00093

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB13-9
ARI ID: 14-16230 YV51G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.534	< 0.534 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	73.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV50:00094

METHOD BLANK RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/14/14	mg/kg	< 0.398 U	PREP
Total Solids	08/11/14	Percent	< 0.01 U	ICB

YV50:00095

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/14/14	mg/kg	20.0	19.9	100.5%
Insoluble Hexavalent Chromiu	08/14/14	mg/kg	663	672	98.7%
Soil Hexavalent Chrome					

YV50:00096

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB4-5
SAMPLE

Lab Sample ID: YV51A
LIMS ID: 14-16224
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 76.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	6	**7**	
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**22.7**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	3	**11**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB4-20
SAMPLE

Lab Sample ID: YV51B
LIMS ID: 14-16225
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 80.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	6	**6**	
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**14.9**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00698

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB14-6
SAMPLE

Lab Sample ID: YV51C
LIMS ID: 14-16226
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 90.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.5	**27.6**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	2	**56**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00093

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB11-10
SAMPLE

Lab Sample ID: YV51D
LIMS ID: 14-16227
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 84.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**11.7**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	2	**6**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00100

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB11-30
SAMPLE

Lab Sample ID: YV51E
LIMS ID: 14-16228
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 80.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	6	**6**	
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**20.9**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00101

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB12-12
SAMPLE

Lab Sample ID: YV51F
LIMS ID: 14-16229
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 75.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.7	**17.0**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00102

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB13-9
SAMPLE

Lab Sample ID: YV51G
LIMS ID: 14-16230
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 62.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	8	8	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.8	**16.8**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	8	8	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00103

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: YV51MB
LIMS ID: 14-16230
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV50:00104

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: YV51LCS
LIMS ID: 14-16230
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	213	200	106%	
Chromium	6010C	54.1	50.0	108%	
Lead	6010C	214	200	107%	
Selenium	6010C	211	200	106%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

YV50:00105

Analytical Resources, Incorporated
Analytical Chemists and Consultants

20 August 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YV65

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples, nine soil samples and one trip blank on August 8, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the 8/12/14 VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for 1,1,1,2-tetrachloroethane and 1,2-dibromo-3-chloropropane were slightly low following the analyses of the LCS/LCSD associated the VOC analyses of the water samples. No corrective actions were taken.

The percent recoveries for carbon disulfide and 1,1-dichloroethane were high following the analyses of the LCS/LCSD associated with the VOC analyses of the soil samples. Since carbon disulfide is know to recover poorly and 1,1-dichloroethane was not detected in any sample associated with these LCS/LCSD, no corrective actions were taken.

All soil samples were initially analyzed for NWTPH-Dx on 8/14/14. The percent difference (%D) for motor oil was slightly high for the CCAL that bracketed the analyses of these samples. All samples were re-analyzed on 8/15/14. The %D for motor oil was high for the CCAL that bracketed the re-analyses of these samples. The samples were analyzed a third time on 8/18/14. The %D for motor oil was high for the CCAL that bracketed the third analyses of these samples. It was concluded that the sample matrices were the cause of the high %Ds. No further corrective actions were taken. The results for the 8/15/14 analyses only have been submitted.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample SB6. Hexavalent chromium was not detected following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Faragalli, Kennedy Jenks Consultants
Precision Engineering
YV65
Water/Soil

20 August 2014

An MS was prepared and analyzed for hexavalent chromium in conjunction with sample SB6-16. Hexavalent chromium was not detected following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

A matrix duplicate (MD) was prepared and analyzed for total metals in conjunction with sample SB6. The RPD for chromium was high following the analysis of the MD. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that a lack of sample homogeneity was the cause of the high RPD. No corrective actions were taken.

An MD was prepared and analyzed for total metals in conjunction with sample SB7-19. The RPD for chromium was high following the analysis of the MD. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that a lack of sample homogeneity was the cause of the high RPD. No corrective actions were taken.

An MS was prepared and analyzed for total metals in conjunction with sample SB7-19. The percent recovery for chromium was low following the analysis of the MS. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YV65

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YV65	Turn-around Requested:	Page: 1 of 2	
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400	Date: 8/8	Ice Present? Y
Client Contact: Ty / Session		No. of Coolers: 2	Cooler Temps: 21.9, 21.1
Client Project Name: Precision Engineering			
Client Project #:	Samplers: TS / RL		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	NWTPH-Dx	CL	Tot Metals					Notes/Comments
SB6-16	8/8	0930	Soil	8	X	X	X	X					
SB6		0955	GW	7	X	X	X	X					
SB7-11		1105	Soil	8	X	X	X	X					
SB7-19		1100	Soil	8	X	X	X	X					
SB7		1115	GW	7	X	X	X	X					
SB3-2		1300	Soil	1		X							
SB3-8		1330	Soil	8	X	X	X	X					
SB3 MW		1310	GW	7	X	X	X	X					
SB3D		1320	GW	7	X	X	X	X					
SB1-5		1440	Soil	8	X	X	X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joseph Sunday	Printed Name: A. Vagardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/8 1720 RL	Date & Time: 8/8/14 1720	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

revised 2009

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YV65	Turn-around Requested:	Page: 2 of 2	
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400	Date: 8/8	Ice Present?
Client Contact: Ty / Session		No. of Coolers:	Cooler Temps:
Client Project Name: Poulsbo Engineer			
Client Project #:	Samplers: JS / EL		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
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206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	Analysis Requested: Naphthalene	Analysis Requested: TPH-G	Analysis Requested: TPH-D Acid Ext.	Analysis Requested	Analysis Requested	Analysis Requested	Analysis Requested	Notes/Comments
SB10-7	8/8	1540	Soil	8	X	X	X	X					
SB10		1550	GW	7	X	X	X	X					
SB8-16		1645	Soil	8	X	X	X	X					
~~SB9~~ SB5-11		0810	Soil	8	X	X	X	X					
SB5		0855	GW	7	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Joseph Jenkins	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenkins	Company: ARI	Company:	Company:
	Date & Time: 8/8 1720	Date & Time: 8/8/14 1720	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: KJC

Project Name: _____

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time: 1700 21.8 21.1 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877982

Cooler Accepted by: AV Date: 8/8/14 Time: 1720

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? (YES) ~~NO~~

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? YES (NO)

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... (NA) YES NO

Were all VOC vials free of air bubbles? (NA) YES NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI... (NA) _____

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: CA Date: 8/11/14 Time: 1545

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
SB3-16	SB3-8		

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

YVSS : 00005

PRESERVATION VERIFICATION 08/11/14
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YV65**

Inquiry Number: NONE
Analysis Requested: 08/11/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: CA
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 08/08/14

Project #:
Project: PRECICION ENG
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-16374 **YV65A**	SB6						TOT Fail															
14-16375 **YV65B**	SB7						TOT PASS															
14-16376 **YV65C**	SB3						TOT PASS															
14-16377 **YV65D**	SB3D						TOT PASS															
14-16378 **YV65E**	SB10						TOT PASS															
14-16379 **YV65F**	SB5						TOT Fail															

SDG#: YV65

Checked By CA Date 8/11/14

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YV65
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: PRECISION ENG

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB6	YV65A	14-16374	Water	08/08/14 09:55	08/08/14 17:20
2.	SB7	YV65B	14-16375	Water	08/08/14 11:15	08/08/14 17:20
3.	SB3	YV65C	14-16376	Water	08/08/14 13:10	08/08/14 17:20
4.	SB3D	YV65D	14-16377	Water	08/08/14 13:20	08/08/14 17:20
5.	SB10	YV65E	14-16378	Water	08/08/14 15:50	08/08/14 17:20
6.	SB5	YV65F	14-16379	Water	08/08/14 08:35	08/08/14 17:20
7.	Trip Blank	YV65O	14-16380	Water	08/08/14	08/08/14 17:20
8.	SB7-19	YV65P	14-16381	Soil	08/08/14 11:00	08/08/14 17:20
9.	SB6-16	YV65G	14-16401	Soil	08/08/14 09:30	08/08/14 17:20
10.	SB7-11	YV65H	14-16402	Soil	08/08/14 11:05	08/08/14 17:20
11.	SB3-2	YV65I	14-16403	Soil	08/08/14 11:00	08/08/14 17:20
12.	SB3-8	YV65J	14-16404	Soil	08/08/14 13:30	08/08/14 17:20
13.	SB1-5	YV65K	14-16405	Soil	08/08/14 14:40	08/08/14 17:20
14.	SB10-7	YV65L	14-16406	Soil	08/08/14 15:40	08/08/14 17:20
15.	SB8-16	YV65M	14-16407	Soil	08/08/14 16:45	08/08/14 17:20
16.	SB5-11	YV65N	14-16408	Soil	08/08/14 08:10	08/08/14 17:20

YV65:00007

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YV65 : 00008

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YVGS : 00009

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

YV65:00010

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6**
 SAMPLE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 18:38

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6**
 SAMPLE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Date Analyzed: 08/14/14 18:38

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
d8-Toluene	97.1%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7**
 SAMPLE

Lab Sample ID: YV65B
LIMS ID: 14-16375
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 19:07

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7**
 SAMPLE

Lab Sample ID: YV65B
LIMS ID: 14-16375
Matrix: Water
Date Analyzed: 08/14/14 19:07

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.7%
d8-Toluene	96.4%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3**
 SAMPLE

Lab Sample ID: YV65C
LIMS ID: 14-16376
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 19:36

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV65C
LIMS ID: 14-16376
Matrix: Water
Date Analyzed: 08/14/14 19:36

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	96.9%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3D**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65D
LIMS ID: 14-16377
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 20:05

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3D**
 SAMPLE

Lab Sample ID: YV65D
LIMS ID: 14-16377
Matrix: Water
Date Analyzed: 08/14/14 20:05

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.7%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	99.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65E
LIMS ID: 14-16378
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 20:34

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10**
 SAMPLE

Lab Sample ID: YV65E
LIMS ID: 14-16378
Matrix: Water
Date Analyzed: 08/14/14 20:34

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	98.3%
d4-1,2-Dichlorobenzene	98.1%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65F
LIMS ID: 14-16379
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 21:02

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5**

SAMPLE

Lab Sample ID: YV65F
LIMS ID: 14-16379
Matrix: Water
Date Analyzed: 08/14/14 21:02

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	96.0%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	98.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blank**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65O
LIMS ID: 14-16380
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 18:09

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blank**
 SAMPLE

Lab Sample ID: YV65O
LIMS ID: 14-16380
Matrix: Water
Date Analyzed: 08/14/14 18:09

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	97.0%
Bromofluorobenzene	105%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081414A**
 METHOD BLANK

Lab Sample ID: MB-081414A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 08/14/14 17:43

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081414A**
 METHOD BLANK

Lab Sample ID: MB-081414A QC Report No: YV65-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-16374 Project: PRECICION ENG
Matrix: Water
Date Analyzed: 08/14/14 17:43

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.6%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081414A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/18/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 08/14/14 16:50
LCSD: 08/14/14 17:16

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.7		10.0	107%	9.89		10.0	98.9%	7.9%
Bromomethane	10.7		10.0	107%	9.67		10.0	96.7%	10.1%
Vinyl Chloride	10.8		10.0	108%	10.2		10.0	102%	5.7%
Chloroethane	10.6		10.0	106%	9.71		10.0	97.1%	8.8%
Methylene Chloride	10.6		10.0	106%	9.74		10.0	97.4%	8.5%
Acetone	51.9		50.0	104%	49.6		50.0	99.2%	4.5%
Carbon Disulfide	11.2		10.0	112%	10.2		10.0	102%	9.3%
1,1-Dichloroethene	11.0		10.0	110%	10.3		10.0	103%	6.6%
1,1-Dichloroethane	10.8		10.0	108%	10.6		10.0	106%	1.9%
trans-1,2-Dichloroethene	10.5		10.0	105%	9.97		10.0	99.7%	5.2%
cis-1,2-Dichloroethene	10.7		10.0	107%	10.4		10.0	104%	2.8%
Chloroform	10.5		10.0	105%	10.1		10.0	101%	3.9%
1,2-Dichloroethane	10.3		10.0	103%	10.2		10.0	102%	1.0%
2-Butanone	51.6		50.0	103%	49.6		50.0	99.2%	4.0%
1,1,1-Trichloroethane	11.0		10.0	110%	10.4		10.0	104%	5.6%
Carbon Tetrachloride	10.8		10.0	108%	10.4		10.0	104%	3.8%
Vinyl Acetate	10.7		10.0	107%	11.5		10.0	115%	7.2%
Bromodichloromethane	10.5		10.0	105%	10.4		10.0	104%	1.0%
1,2-Dichloropropane	10.3		10.0	103%	10.2		10.0	102%	1.0%
cis-1,3-Dichloropropene	10.8		10.0	108%	10.5		10.0	105%	2.8%
Trichloroethene	9.93		10.0	99.3%	9.93		10.0	99.3%	0.0%
Dibromochloromethane	10.4		10.0	104%	10.6		10.0	106%	1.9%
1,1,2-Trichloroethane	9.95		10.0	99.5%	9.68		10.0	96.8%	2.8%
Benzene	10.2		10.0	102%	10.1		10.0	101%	1.0%
trans-1,3-Dichloropropene	9.16	Q	10.0	91.6%	8.88	Q	10.0	88.8%	3.1%
2-Chloroethylvinylether	9.77		10.0	97.7%	10.1		10.0	101%	3.3%
Bromoform	7.21	Q	10.0	72.1%	7.47	Q	10.0	74.7%	3.5%
4-Methyl-2-Pentanone (MIBK)	53.3		50.0	107%	51.9		50.0	104%	2.7%
2-Hexanone	52.1		50.0	104%	54.7		50.0	109%	4.9%
Tetrachloroethene	9.97		10.0	99.7%	9.98		10.0	99.8%	0.1%
1,1,2,2-Tetrachloroethane	9.82		10.0	98.2%	10.3		10.0	103%	4.8%
Toluene	10.0		10.0	100%	9.62		10.0	96.2%	3.9%
Chlorobenzene	10.2		10.0	102%	10.0		10.0	100%	2.0%
Ethylbenzene	10.0		10.0	100%	9.99		10.0	99.9%	0.1%
Styrene	10.3		10.0	103%	10.6		10.0	106%	2.9%
Trichlorofluoromethane	11.1		10.0	111%	10.2		10.0	102%	8.5%
1,1,2-Trichloro-1,2,2-trifluoroetha	11.0		10.0	110%	10.1		10.0	101%	8.5%
m,p-Xylene	20.3		20.0	102%	20.3		20.0	102%	0.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081414A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A QC Report No: YV65-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-16374 Project: PRECICION ENG
Matrix: Water

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.1	10.0	101%	10.1	10.0	101%	0.0%
1,2-Dichlorobenzene	9.88	10.0	98.8%	10.0	10.0	100%	1.2%
1,3-Dichlorobenzene	9.62	10.0	96.2%	9.89	10.0	98.9%	2.8%
1,4-Dichlorobenzene	9.74	10.0	97.4%	9.63	10.0	96.3%	1.1%
Acrolein	53.3	50.0	107%	51.9	50.0	104%	2.7%
Iodomethane	10.8	10.0	108%	10.0	10.0	100%	7.7%
Bromoethane	10.9	10.0	109%	10.3	10.0	103%	5.7%
Acrylonitrile	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,1-Dichloropropene	10.0	10.0	100%	10.3	10.0	103%	3.0%
Dibromomethane	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,1,1,2-Tetrachloroethane	7.44 Q	10.0	74.4%	7.60 Q	10.0	76.0%	2.1%
1,2-Dibromo-3-chloropropane	7.34 Q	10.0	73.4%	7.63 Q	10.0	76.3%	3.9%
1,2,3-Trichloropropane	9.51	10.0	95.1%	10.1	10.0	101%	6.0%
trans-1,4-Dichloro-2-butene	10.6	10.0	106%	11.2	10.0	112%	5.5%
1,3,5-Trimethylbenzene	10.1	10.0	101%	10.4	10.0	104%	2.9%
1,2,4-Trimethylbenzene	10.2	10.0	102%	10.4	10.0	104%	1.9%
Hexachlorobutadiene	8.14 Q	10.0	81.4%	8.27 Q	10.0	82.7%	1.6%
1,2-Dibromoethane	10.7	10.0	107%	10.4	10.0	104%	2.8%
Bromochloromethane	10.7	10.0	107%	10.3	10.0	103%	3.8%
2,2-Dichloropropane	9.55 Q	10.0	95.5%	9.16 Q	10.0	91.6%	4.2%
1,3-Dichloropropane	10.5	10.0	105%	10.5	10.0	105%	0.0%
Isopropylbenzene	10.0	10.0	100%	10.3	10.0	103%	3.0%
n-Propylbenzene	9.97	10.0	99.7%	10.4	10.0	104%	4.2%
Bromobenzene	9.56	10.0	95.6%	9.71	10.0	97.1%	1.6%
2-Chlorotoluene	9.75	10.0	97.5%	10.1	10.0	101%	3.5%
4-Chlorotoluene	9.74	10.0	97.4%	9.98	10.0	99.8%	2.4%
tert-Butylbenzene	9.95	10.0	99.5%	10.4	10.0	104%	4.4%
sec-Butylbenzene	10.1	10.0	101%	10.3	10.0	103%	2.0%
4-Isopropyltoluene	10.2	10.0	102%	10.5	10.0	105%	2.9%
n-Butylbenzene	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2,4-Trichlorobenzene	9.70	10.0	97.0%	9.90	10.0	99.0%	2.0%
Naphthalene	9.84	10.0	98.4%	10.2	10.0	102%	3.6%
1,2,3-Trichlorobenzene	9.95	10.0	99.5%	10.1	10.0	101%	1.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	103%	104%
d8-Toluene	101%	99.1%
Bromofluorobenzene	103%	102%
d4-1,2-Dichlorobenzene	99.2%	102%

YV65:00028

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-081414A	Method Blank	10	101%	98.6%	100%	99.6%	0
LCS-081414A	Lab Control	10	103%	101%	103%	99.2%	0
LCSD-081414A	Lab Control Dup	10	104%	99.1%	102%	102%	0
YV65A	SB6	10	98.2%	97.1%	103%	101%	0
YV65B	SB7	10	97.7%	96.4%	100%	99.5%	0
YV65C	SB3	10	104%	96.9%	106%	102%	0
YV65D	SB3D	10	101%	98.7%	103%	99.9%	0
YV65E	SB10	10	102%	100%	98.3%	98.1%	0
YV65F	SB5	10	100%	96.0%	104%	98.2%	0
YV65O	Trip Blank	10	104%	97.0%	105%	102%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-16374 to 14-16380

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
Analysis Type: WATER Init. Cal. Times: 12:43 16:23
Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.97465	0.97097	0.97097	0.010	-0.37703	20.00000	Averaged	
2 Chloromethane	1.24951	1.13151	1.13151	0.100	-9.44395	20.00000	Averaged	
3 Vinyl Chloride	1.24873	1.14468	1.14468	0.100	-8.33186	20.00000	Averaged	
4 Bromomethane	0.61793	0.54320	0.54320	0.100	-12.09339	20.00000	Averaged	
5 Chloroethane	0.68605	0.61318	0.61318	0.010	-10.62189	20.00000	Averaged	
6 Trichlorofluoromethane	1.18117	1.12416	1.12416	0.010	-4.82669	20.00000	Averaged	
7 1,1-Dichloroethene	1.44956	1.34882	1.34882	0.100	-6.94970	20.00000	Averaged	
8 Carbon Disulfide	3.03534	2.79409	2.79409	0.010	-7.94795	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.90367	0.83681	0.83681	0.010	-7.39862	20.00000	Averaged	
10 Iodomethane	1.37491	1.26108	1.26108	0.010	-8.27907	20.00000	Averaged	
11 Bromoethane	0.66176	0.60102	0.60102	0.100	-9.17858	20.00000	Averaged	
12 Acrolein	0.10023	0.09370	0.09370	0.000	-6.51016	20.00000	Averaged	
13 Methylene Chloride	0.92034	0.83101	0.83101	0.010	-9.70618	20.00000	Averaged	
14 Acetone	0.15857	0.14465	0.14465	0.001	-8.77493	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.89381	0.82460	0.82460	0.010	-7.74343	20.00000	Averaged	
16 n-hexane	10.15143	10.00000	0.75916	0.100	1.51426	0.000e+00	Linear	<-
17 Methyl tert butyl ether	1.93526	1.71456	1.71456	0.100	-11.40414	20.00000	Averaged	
18 1,1-Dichloroethane	1.42510	1.37717	1.37717	0.200	-3.36288	20.00000	Averaged	
19 Acrylonitrile	0.19854	0.18532	0.18532	0.001	-6.66062	20.00000	Averaged	
20 Vinyl Acetate	0.28012	0.24605	0.24605	0.010	-12.16058	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.84562	0.81178	0.81178	0.010	-4.00159	20.00000	Averaged	
23 2,2-Dichloropropane	6.09657	10.00000	0.47227	0.010	-39.03434	15.00000	Linear	<-
24 Bromochloromethane	0.34771	0.33627	0.33627	0.050	-3.29026	20.00000	Averaged	
25 Chloroform	1.24112	1.18682	1.18682	0.200	-4.37492	20.00000	Averaged	
26 Carbon Tetrachloride	0.34494	0.29741	0.29741	0.100	-13.77794	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.61491	0.60927	0.60927	0.100	-0.91749	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.02754	0.90501	0.90501	0.100	-11.92452	20.00000	Averaged	
29 2-Butanone	0.18697	0.18543	0.18543	0.001	-0.82819	20.00000	Averaged	
30 1,1-Dichloropropene	0.53409	0.52162	0.52162	0.010	-2.33409	20.00000	Averaged	
31 Benzene	1.53245	1.48498	1.48498	0.500	-3.09784	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.68271	0.67740	0.67740	0.010	-0.77778	20.00000	Averaged	
34 1,2-Dichloroethane	0.44595	0.44446	0.44446	0.100	-0.33429	20.00000	Averaged	
36 Trichloroethene	0.37541	0.36771	0.36771	0.100	-2.05308	20.00000	Averaged	
38 Dibromomethane	0.18650	0.18617	0.18617	0.010	-0.17835	20.00000	Averaged	
39 1,2-Dichloropropane	0.34697	0.34419	0.34419	0.100	-0.80049	20.00000	Averaged	

YV65 : 00030

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
Analysis Type: WATER Init. Cal. Times: 12:43 16:23
Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 Bromodichloromethane	0.35959	0.34781	0.34781	0.100	-3.27505	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.15345	0.14818	0.14818	0.000	-3.43185	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.38121	0.36323	0.36323	0.200	-4.71677	20.00000	Averaged	
$ 43 d8-Toluene	1.25578	1.22774	1.22774	0.010	-2.23318	20.00000	Averaged	
44 Toluene	0.91690	0.87658	0.87658	0.400	-4.39655	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.10070	0.10143	0.10143	0.000	0.71990	20.00000	Averaged	
46 Tetrachloroethene	0.32183	0.32921	0.32921	0.200	2.29252	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	7.25856	10.00000	0.25086	0.010	-27.41445	20.00000	Linear	<-
48 1,1,2-Trichloroethane	0.24190	0.23450	0.23450	0.100	-3.05604	20.00000	Averaged	
49 Chlorodibromomethane	0.17747	0.17851	0.17851	0.100	0.58891	20.00000	Averaged	
50 1,3-Dichloropropane	0.40929	0.44361	0.44361	0.100	8.38410	20.00000	Averaged	
51 1,2-Dibromoethane	0.23881	0.23098	0.23098	0.010	-3.27575	20.00000	Averaged	
52 2-Hexanone	0.16215	0.17435	0.17435	0.010	7.52049	20.00000	Averaged	
54 Chlorobenzene	0.97146	0.97006	0.97006	0.500	-0.14355	20.00000	Averaged	
55 Ethyl Benzene	0.55576	0.55356	0.55356	0.100	-0.39544	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	6.99541	10.00000	0.22121	0.010	-30.04594	20.00000	Linear	<-
57 m,p-xylene	0.67016	0.67473	0.67473	0.300	0.68200	20.00000	Averaged	
58 o-Xylene	0.72115	0.71693	0.71693	0.300	-0.58560	20.00000	Averaged	
59 Styrene	1.11485	1.19210	1.19210	0.300	6.92979	20.00000	Averaged	
60 Bromoform	7.28625	10.00000	0.15657	0.010	-27.13754	20.00000	Linear	<-
61 Isopropyl Benzene	3.15016	3.22702	3.22702	0.010	2.43998	20.00000	Averaged	
$ 62 4-Bromofluorobenzene	0.57117	0.57874	0.57874	0.200	1.32547	20.00000	Averaged	
63 Bromobenzene	0.71921	0.72663	0.72663	0.010	1.03135	20.00000	Averaged	
64 N-Propyl Benzene	3.62349	3.71021	3.71021	0.010	2.39344	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.56302	0.56621	0.56621	0.100	0.56640	20.00000	Averaged	
66 2-Chloro Toluene	2.61417	2.63085	2.63085	0.010	0.63806	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.71323	2.79423	2.79423	0.010	2.98531	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.17341	0.17792	0.17792	0.010	2.60431	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.12347	0.12353	0.12353	0.001	0.04564	20.00000	Averaged	
70 4-Chloro Toluene	2.43201	2.43877	2.43877	0.010	0.27794	20.00000	Averaged	
71 T-Butyl Benzene	2.17882	2.25318	2.25318	0.010	3.41279	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.77179	2.82356	2.82356	0.010	1.86797	20.00000	Averaged	
73 S-Butyl Benzene	3.53351	3.59436	3.59436	0.010	1.72230	20.00000	Averaged	
74 4-Isopropyl Toluene	2.76815	2.85845	2.85845	0.010	3.26203	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.53189	1.49144	1.49144	0.600	-2.64037	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
Analysis Type: WATER Init. Cal. Times: 12:43 16:23
Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
77 1,4-Dichlorobenzene	1.55700	1.50165	1.50165	0.500	-3.55465	20.00000	Averaged	
78 N-Butyl Benzene	2.80003	2.78984	2.78984	0.010	-0.36414	20.00000	Averaged	
$ 79 d4-1,2-Dichlorobenzene	0.91998	0.92584	0.92584	0.010	0.63589	20.00000	Averaged	
80 1,2-Dichlorobenzene	1.41617	1.37232	1.37232	0.400	-3.09664	20.00000	Averaged	
81 1,2-Dibromo 3-Chloropropane	5.83924	10.00000	0.05157	0.010	-41.60762	20.00000	Linear	<-
83 Hexachloro 1,3-Butadiene	0.47195	0.37180	0.37180	0.010	-21.22031	20.00000	Averaged	<-
84 1,2,4-Trichlorobenzene	0.86368	0.84878	0.84878	0.010	-1.72436	20.00000	Averaged	
85 Naphthalene	1.54140	1.55176	1.55176	0.010	0.67228	20.00000	Averaged	
86 1,2,3-Trichlorobenzene	0.65978	0.66284	0.66284	0.010	0.46332	20.00000	Averaged	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-19**
 SAMPLE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 21:11

Sample Amount: 7.87 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 11.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.6	< 0.6	U
74-83-9	Bromomethane	0.6	< 0.6	U
75-01-4	Vinyl Chloride	0.6	< 0.6	U
75-00-3	Chloroethane	0.6	< 0.6	U
75-09-2	**Methylene Chloride**	**1.3**	**2.4**	
67-64-1	**Acetone**	**3.2**	**16**	**Q**
75-15-0	**Carbon Disulfide**	**0.6**	**4.3**	**Q**
75-35-4	1,1-Dichloroethene	0.6	< 0.6	U
75-34-3	1,1-Dichloroethane	0.6	< 0.6	U
156-60-5	trans-1,2-Dichloroethene	0.6	< 0.6	U
156-59-2	cis-1,2-Dichloroethene	0.6	< 0.6	U
67-66-3	Chloroform	0.6	< 0.6	U
107-06-2	1,2-Dichloroethane	0.6	< 0.6	U
78-93-3	2-Butanone	3.2	< 3.2	U
71-55-6	1,1,1-Trichloroethane	0.6	< 0.6	U
56-23-5	Carbon Tetrachloride	0.6	< 0.6	U
108-05-4	Vinyl Acetate	3.2	< 3.2	U
75-27-4	Bromodichloromethane	0.6	< 0.6	U
78-87-5	1,2-Dichloropropane	0.6	< 0.6	U
10061-01-5	cis-1,3-Dichloropropene	0.6	< 0.6	U
79-01-6	Trichloroethene	0.6	< 0.6	U
124-48-1	Dibromochloromethane	0.6	< 0.6	U
79-00-5	1,1,2-Trichloroethane	0.6	< 0.6	U
71-43-2	Benzene	0.6	< 0.6	U
10061-02-6	trans-1,3-Dichloropropene	0.6	< 0.6	U
110-75-8	2-Chloroethylvinylether	3.2	< 3.2	U
75-25-2	Bromoform	0.6	< 0.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.2	< 3.2	U
591-78-6	2-Hexanone	3.2	< 3.2	U
127-18-4	Tetrachloroethene	0.6	< 0.6	U
79-34-5	1,1,2,2-Tetrachloroethane	0.6	< 0.6	U
108-88-3	Toluene	0.6	< 0.6	U
108-90-7	Chlorobenzene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
100-42-5	Styrene	0.6	< 0.6	U
75-69-4	Trichlorofluoromethane	0.6	< 0.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.3	< 1.3	U
179601-23-1	m,p-Xylene	0.6	< 0.6	U
95-47-6	o-Xylene	0.6	< 0.6	U
95-50-1	1,2-Dichlorobenzene	0.6	< 0.6	U
541-73-1	1,3-Dichlorobenzene	0.6	< 0.6	U
106-46-7	1,4-Dichlorobenzene	0.6	< 0.6	U
107-02-8	Acrolein	32	< 32	U
74-88-4	Iodomethane	0.6	< 0.6	U
74-96-4	Bromoethane	1.3	< 1.3	U
107-13-1	Acrylonitrile	3.2	< 3.2	U
563-58-6	1,1-Dichloropropene	0.6	< 0.6	U
74-95-3	Dibromomethane	0.6	< 0.6	U
630-20-6	1,1,1,2-Tetrachloroethane	0.6	< 0.6	U
96-12-8	1,2-Dibromo-3-chloropropane	3.2	< 3.2	U
96-18-4	1,2,3-Trichloropropane	1.3	< 1.3	U
110-57-6	trans-1,4-Dichloro-2-butene	3.2	< 3.2	U
108-67-8	1,3,5-Trimethylbenzene	0.6	< 0.6	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-19**
 SAMPLE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Date Analyzed: 08/12/14 21:11

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.6	< 0.6	U
87-68-3	Hexachlorobutadiene	3.2	< 3.2	U
106-93-4	1,2-Dibromoethane	0.6	< 0.6	U
74-97-5	Bromochloromethane	0.6	< 0.6	U
594-20-7	2,2-Dichloropropane	0.6	< 0.6	U
142-28-9	1,3-Dichloropropane	0.6	< 0.6	U
98-82-8	Isopropylbenzene	0.6	< 0.6	U
103-65-1	n-Propylbenzene	0.6	< 0.6	U
108-86-1	Bromobenzene	0.6	< 0.6	U
95-49-8	2-Chlorotoluene	0.6	< 0.6	U
106-43-4	4-Chlorotoluene	0.6	< 0.6	U
98-06-6	tert-Butylbenzene	0.6	< 0.6	U
135-98-8	sec-Butylbenzene	0.6	< 0.6	U
99-87-6	4-Isopropyltoluene	0.6	< 0.6	U
104-51-8	n-Butylbenzene	0.6	< 0.6	U
120-82-1	1,2,4-Trichlorobenzene	3.2	< 3.2	U
91-20-3	Naphthalene	3.2	< 3.2	U
87-61-6	1,2,3-Trichlorobenzene	3.2	< 3.2	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	136%
d8-Toluene	104%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6-16**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65G
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 18:17

Sample Amount: 3.55 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 32.4%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.8**	**4.8**	
67-64-1	**Acetone**	**7.0**	**27**	**Q**
75-15-0	**Carbon Disulfide**	**1.4**	**2.8**	**Q**
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	7.0	< 7.0	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	7.0	< 7.0	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	7.0	< 7.0	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.0	< 7.0	U
591-78-6	2-Hexanone	7.0	< 7.0	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.8	< 2.8	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	70	< 70	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.8	< 2.8	U
107-13-1	Acrylonitrile	7.0	< 7.0	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	7.0	< 7.0	U
96-18-4	1,2,3-Trichloropropane	2.8	< 2.8	U
110-57-6	trans-1,4-Dichloro-2-butene	7.0	< 7.0	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6-16**
 SAMPLE

Lab Sample ID: YV65G
LIMS ID: 14-16401
Matrix: Soil
Date Analyzed: 08/12/14 18:17

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	7.0	< 7.0	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	7.0	< 7.0	U
91-20-3	Naphthalene	7.0	< 7.0	U
87-61-6	1,2,3-Trichlorobenzene	7.0	< 7.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	103%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65H
LIMS ID: 14-16402
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 18:42

Sample Amount: 3.24 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 27.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	**Methylene Chloride**	**3.1**	**9.4**	
67-64-1	**Acetone**	**7.7**	**61**	**Q**
75-15-0	**Carbon Disulfide**	**1.5**	**9.1**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.7	< 7.7	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.7	< 7.7	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.7	< 7.7	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.7	< 7.7	U
591-78-6	2-Hexanone	7.7	< 7.7	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.1	< 3.1	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	77	< 77	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.1	< 3.1	U
107-13-1	Acrylonitrile	7.7	< 7.7	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.7	< 7.7	U
96-18-4	1,2,3-Trichloropropane	3.1	< 3.1	U
110-57-6	trans-1,4-Dichloro-2-butene	7.7	< 7.7	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-11**
 SAMPLE

Lab Sample ID: YV65H
LIMS ID: 14-16402
Matrix: Soil
Date Analyzed: 08/12/14 18:42

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.7	< 7.7	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.7	< 7.7	U
91-20-3	Naphthalene	7.7	< 7.7	U
87-61-6	1,2,3-Trichlorobenzene	7.7	< 7.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	126%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3-8**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: YV65J
LIMS ID: 14-16404
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:07

Sample Amount: 6.79 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.7	< 0.7	U
74-83-9	Bromomethane	0.7	< 0.7	U
75-01-4	Vinyl Chloride	0.7	< 0.7	U
75-00-3	Chloroethane	0.7	< 0.7	U
75-09-2	**Methylene Chloride**	**1.5**	**2.4**	
67-64-1	**Acetone**	**3.7**	**25**	**Q**
75-15-0	**Carbon Disulfide**	**0.7**	**12**	**Q**
75-35-4	1,1-Dichloroethene	0.7	< 0.7	U
75-34-3	1,1-Dichloroethane	0.7	< 0.7	U
156-60-5	trans-1,2-Dichloroethene	0.7	< 0.7	U
156-59-2	cis-1,2-Dichloroethene	0.7	< 0.7	U
67-66-3	Chloroform	0.7	< 0.7	U
107-06-2	1,2-Dichloroethane	0.7	< 0.7	U
78-93-3	2-Butanone	3.7	< 3.7	U
71-55-6	1,1,1-Trichloroethane	0.7	< 0.7	U
56-23-5	Carbon Tetrachloride	0.7	< 0.7	U
108-05-4	Vinyl Acetate	3.7	< 3.7	U
75-27-4	Bromodichloromethane	0.7	< 0.7	U
78-87-5	1,2-Dichloropropane	0.7	< 0.7	U
10061-01-5	cis-1,3-Dichloropropene	0.7	< 0.7	U
79-01-6	Trichloroethene	0.7	< 0.7	U
124-48-1	Dibromochloromethane	0.7	< 0.7	U
79-00-5	1,1,2-Trichloroethane	0.7	< 0.7	U
71-43-2	Benzene	0.7	< 0.7	U
10061-02-6	trans-1,3-Dichloropropene	0.7	< 0.7	U
110-75-8	2-Chloroethylvinylether	3.7	< 3.7	U
75-25-2	Bromoform	0.7	< 0.7	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.7	< 3.7	U
591-78-6	2-Hexanone	3.7	< 3.7	U
127-18-4	Tetrachloroethene	0.7	< 0.7	U
79-34-5	1,1,2,2-Tetrachloroethane	0.7	< 0.7	U
108-88-3	Toluene	0.7	< 0.7	U
108-90-7	Chlorobenzene	0.7	< 0.7	U
100-41-4	Ethylbenzene	0.7	< 0.7	U
100-42-5	Styrene	0.7	< 0.7	U
75-69-4	Trichlorofluoromethane	0.7	< 0.7	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	< 1.5	U
179601-23-1	m,p-Xylene	0.7	< 0.7	U
95-47-6	o-Xylene	0.7	< 0.7	U
95-50-1	1,2-Dichlorobenzene	0.7	< 0.7	U
541-73-1	1,3-Dichlorobenzene	0.7	< 0.7	U
106-46-7	1,4-Dichlorobenzene	0.7	< 0.7	U
107-02-8	Acrolein	37	< 37	U
74-88-4	Iodomethane	0.7	< 0.7	U
74-96-4	Bromoethane	1.5	< 1.5	U
107-13-1	Acrylonitrile	3.7	< 3.7	U
563-58-6	1,1-Dichloropropene	0.7	< 0.7	U
74-95-3	Dibromomethane	0.7	< 0.7	U
630-20-6	1,1,1,2-Tetrachloroethane	0.7	< 0.7	U
96-12-8	1,2-Dibromo-3-chloropropane	3.7	< 3.7	U
96-18-4	1,2,3-Trichloropropane	1.5	< 1.5	U
110-57-6	trans-1,4-Dichloro-2-butene	3.7	< 3.7	U
108-67-8	1,3,5-Trimethylbenzene	0.7	< 0.7	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3-8**

SAMPLE

Lab Sample ID: YV65J
LIMS ID: 14-16404
Matrix: Soil
Date Analyzed: 08/12/14 19:07

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.7	< 0.7	U
87-68-3	Hexachlorobutadiene	3.7	< 3.7	U
106-93-4	1,2-Dibromoethane	0.7	< 0.7	U
74-97-5	Bromochloromethane	0.7	< 0.7	U
594-20-7	2,2-Dichloropropane	0.7	< 0.7	U
142-28-9	1,3-Dichloropropane	0.7	< 0.7	U
98-82-8	Isopropylbenzene	0.7	< 0.7	U
103-65-1	n-Propylbenzene	0.7	< 0.7	U
108-86-1	Bromobenzene	0.7	< 0.7	U
95-49-8	2-Chlorotoluene	0.7	< 0.7	U
106-43-4	4-Chlorotoluene	0.7	< 0.7	U
98-06-6	tert-Butylbenzene	0.7	< 0.7	U
135-98-8	sec-Butylbenzene	0.7	< 0.7	U
99-87-6	4-Isopropyltoluene	0.7	< 0.7	U
104-51-8	n-Butylbenzene	0.7	< 0.7	U
120-82-1	1,2,4-Trichlorobenzene	3.7	< 3.7	U
91-20-3	Naphthalene	3.7	< 3.7	U
87-61-6	1,2,3-Trichlorobenzene	3.7	< 3.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	131%
d8-Toluene	103%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB1-5**
SAMPLE

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:32

Sample Amount: 5.11 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 10.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	**Acetone**	**4.9**	**15**	**Q**
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.9	< 4.9	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.9	< 4.9	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.9	< 4.9	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.9	< 4.9	U
591-78-6	2-Hexanone	4.9	< 4.9	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	49	< 49	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	4.9	< 4.9	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.9	< 4.9	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	4.9	< 4.9	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB1-5**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Date Analyzed: 08/12/14 19:32

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.9	< 4.9	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.9	< 4.9	U
91-20-3	Naphthalene	4.9	< 4.9	U
87-61-6	1,2,3-Trichlorobenzene	4.9	< 4.9	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	125%
d8-Toluene	105%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10-7**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65L
LIMS ID: 14-16406
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:57

Sample Amount: 4.53 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 9.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	**Methylene Chloride**	**2.2**	**2.6**	
67-64-1	**Acetone**	**5.5**	**17**	**Q**
75-15-0	**Carbon Disulfide**	**1.1**	**1.7**	**Q**
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.5	< 5.5	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.5	< 5.5	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.5	< 5.5	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.5	< 5.5	U
591-78-6	2-Hexanone	5.5	< 5.5	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	55	< 55	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.5	< 5.5	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.5	< 5.5	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.5	< 5.5	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10-7**
 SAMPLE

Lab Sample ID: YV65L
LIMS ID: 14-16406
Matrix: Soil
Date Analyzed: 08/12/14 19:57

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.5	< 5.5	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.5	< 5.5	U
91-20-3	Naphthalene	5.5	< 5.5	U
87-61-6	1,2,3-Trichlorobenzene	5.5	< 5.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	132%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB8-16**
SAMPLE

Lab Sample ID: YV65M
LIMS ID: 14-16407
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 20:22

Sample Amount: 3.28 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 29.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.0	< 3.0	U
67-64-1	**Acetone**	**7.6**	**70**	**Q**
75-15-0	**Carbon Disulfide**	**1.5**	**11**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.6	< 7.6	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.6	< 7.6	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.6	< 7.6	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.6	< 7.6	U
591-78-6	2-Hexanone	7.6	< 7.6	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.0	< 3.0	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	76	< 76	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.0	< 3.0	U
107-13-1	Acrylonitrile	7.6	< 7.6	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.6	< 7.6	U
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0	U
110-57-6	trans-1,4-Dichloro-2-butene	7.6	< 7.6	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB8-16**
 SAMPLE

Lab Sample ID: YV65M
LIMS ID: 14-16407
Matrix: Soil
Date Analyzed: 08/12/14 20:22

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.6	< 7.6	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.6	< 7.6	U
91-20-3	Naphthalene	7.6	< 7.6	U
87-61-6	1,2,3-Trichlorobenzene	7.6	< 7.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5-11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65N
LIMS ID: 14-16408
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 20:47

Sample Amount: 3.65 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 34.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.7**	**4.8**	
67-64-1	**Acetone**	**6.8**	**58**	**Q**
75-15-0	**Carbon Disulfide**	**1.4**	**5.6**	**Q**
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	6.8	< 6.8	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	6.8	< 6.8	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	6.8	< 6.8	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.8	< 6.8	U
591-78-6	2-Hexanone	6.8	< 6.8	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.7	< 2.7	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	68	< 68	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.7	< 2.7	U
107-13-1	Acrylonitrile	6.8	< 6.8	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	6.8	< 6.8	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.8	< 6.8	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5-11**
 SAMPLE

Lab Sample ID: YV65N
LIMS ID: 14-16408
Matrix: Soil
Date Analyzed: 08/12/14 20:47

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	6.8	< 6.8	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	6.8	< 6.8	U
91-20-3	Naphthalene	6.8	< 6.8	U
87-61-6	1,2,3-Trichlorobenzene	6.8	< 6.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	103%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**
METHOD BLANK

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: MB-081214A
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 13:56

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**

METHOD BLANK

Lab Sample ID: MB-081214A
LIMS ID: 14-16401
Matrix: Soil
Date Analyzed: 08/12/14 13:56

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 08/12/14 13:07
LCSD: 08/12/14 13:32

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.6		50.0	87.2%	41.8		50.0	83.6%	4.2%
Bromomethane	76.0	Q	50.0	152%	72.8	Q	50.0	146%	4.3%
Vinyl Chloride	47.7		50.0	95.4%	47.0		50.0	94.0%	1.5%
Chloroethane	53.8		50.0	108%	49.8		50.0	99.6%	7.7%
Methylene Chloride	49.5		50.0	99.0%	47.4		50.0	94.8%	4.3%
Acetone	320	Q	250	128%	318	Q	250	127%	0.6%
Carbon Disulfide	98.5	Q	50.0	197%	85.9	Q	50.0	172%	13.7%
1,1-Dichloroethene	87.2	Q	50.0	174%	76.9	Q	50.0	154%	12.6%
1,1-Dichloroethane	52.6		50.0	105%	51.8		50.0	104%	1.5%
trans-1,2-Dichloroethene	53.4		50.0	107%	51.8		50.0	104%	3.0%
cis-1,2-Dichloroethene	52.0		50.0	104%	51.2		50.0	102%	1.6%
Chloroform	53.1		50.0	106%	52.4		50.0	105%	1.3%
1,2-Dichloroethane	49.6		50.0	99.2%	50.3		50.0	101%	1.4%
2-Butanone	256		250	102%	261		250	104%	1.9%
1,1,1-Trichloroethane	54.4		50.0	109%	52.9		50.0	106%	2.8%
Carbon Tetrachloride	52.4		50.0	105%	51.1		50.0	102%	2.5%
Vinyl Acetate	51.4		50.0	103%	52.4		50.0	105%	1.9%
Bromodichloromethane	49.6		50.0	99.2%	49.7		50.0	99.4%	0.2%
1,2-Dichloropropane	48.2		50.0	96.4%	48.1		50.0	96.2%	0.2%
cis-1,3-Dichloropropene	50.6		50.0	101%	50.6		50.0	101%	0.0%
Trichloroethene	50.8		50.0	102%	50.1		50.0	100%	1.4%
Dibromochloromethane	48.9		50.0	97.8%	49.3		50.0	98.6%	0.8%
1,1,2-Trichloroethane	48.0		50.0	96.0%	48.4		50.0	96.8%	0.8%
Benzene	50.2		50.0	100%	49.7		50.0	99.4%	1.0%
trans-1,3-Dichloropropene	50.5		50.0	101%	51.1		50.0	102%	1.2%
2-Chloroethylvinylether	49.9		50.0	99.8%	51.3		50.0	103%	2.8%
Bromoform	47.9		50.0	95.8%	48.0		50.0	96.0%	0.2%
4-Methyl-2-Pentanone (MIBK)	250		250	100%	259		250	104%	3.5%
2-Hexanone	249		250	99.6%	254		250	102%	2.0%
Tetrachloroethene	51.9		50.0	104%	49.8		50.0	99.6%	4.1%
1,1,2,2-Tetrachloroethane	46.6		50.0	93.2%	46.3		50.0	92.6%	0.6%
Toluene	49.2		50.0	98.4%	50.2		50.0	100%	2.0%
Chlorobenzene	49.8		50.0	99.6%	48.6		50.0	97.2%	2.4%
Ethylbenzene	51.5		50.0	103%	50.1		50.0	100%	2.8%
Styrene	52.5		50.0	105%	51.6		50.0	103%	1.7%
Trichlorofluoromethane	51.0	Q	50.0	102%	49.2	Q	50.0	98.4%	3.6%
1,1,2-Trichloro-1,2,2-trifluoroetha	58.0		50.0	116%	55.2		50.0	110%	4.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A
LIMS ID: 14-16401
Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	105	100	105%	103	100	103%	1.9%
o-Xylene	52.8	50.0	106%	51.7	50.0	103%	2.1%
1,2-Dichlorobenzene	49.4	50.0	98.8%	48.6	50.0	97.2%	1.6%
1,3-Dichlorobenzene	52.0	50.0	104%	50.1	50.0	100%	3.7%
1,4-Dichlorobenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Acrolein	280	250	112%	283	250	113%	1.1%
Iodomethane	62.4	50.0	125%	53.9	50.0	108%	14.6%
Bromoethane	56.0	50.0	112%	53.6	50.0	107%	4.4%
Acrylonitrile	50.0	50.0	100%	51.7	50.0	103%	3.3%
1,1-Dichloropropene	51.0	50.0	102%	49.9	50.0	99.8%	2.2%
Dibromomethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%
1,1,1,2-Tetrachloroethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%
1,2-Dibromo-3-chloropropane	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%
1,2,3-Trichloropropane	46.0	50.0	92.0%	46.4	50.0	92.8%	0.9%
trans-1,4-Dichloro-2-butene	49.2	50.0	98.4%	48.5	50.0	97.0%	1.4%
1,3,5-Trimethylbenzene	53.0	50.0	106%	50.9	50.0	102%	4.0%
1,2,4-Trimethylbenzene	53.8	50.0	108%	51.8	50.0	104%	3.8%
Hexachlorobutadiene	52.0	50.0	104%	47.8	50.0	95.6%	8.4%
1,2-Dibromoethane	47.6	50.0	95.2%	48.4	50.0	96.8%	1.7%
Bromochloromethane	51.6	50.0	103%	52.2	50.0	104%	1.2%
2,2-Dichloropropane	56.0	50.0	112%	54.3	50.0	109%	3.1%
1,3-Dichloropropane	47.4	50.0	94.8%	47.4	50.0	94.8%	0.0%
Isopropylbenzene	53.1	50.0	106%	50.5	50.0	101%	5.0%
n-Propylbenzene	52.9	50.0	106%	50.2	50.0	100%	5.2%
Bromobenzene	49.0	50.0	98.0%	47.9	50.0	95.8%	2.3%
2-Chlorotoluene	51.4	50.0	103%	49.2	50.0	98.4%	4.4%
4-Chlorotoluene	53.0	50.0	106%	50.9	50.0	102%	4.0%
tert-Butylbenzene	52.8	50.0	106%	49.9	50.0	99.8%	5.6%
sec-Butylbenzene	53.3	50.0	107%	50.2	50.0	100%	6.0%
4-Isopropyltoluene	54.9	50.0	110%	52.0	50.0	104%	5.4%
n-Butylbenzene	56.6 Q	50.0	113%	52.7 Q	50.0	105%	7.1%
1,2,4-Trichlorobenzene	55.3	50.0	111%	54.2	50.0	108%	2.0%
Naphthalene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%
1,2,3-Trichlorobenzene	52.0	50.0	104%	51.4	50.0	103%	1.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	108%
d8-Toluene	101%	101%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	100%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
YV65P	SB7-19	Low	136%	104%	102%	106%	0
MB-081214A	Method Blank	Low	112%	103%	98.6%	101%	0
LCS-081214A	Lab Control	Low	107%	101%	100%	101%	0
LCSD-081214A	Lab Control Dup	Low	108%	101%	101%	100%	0
YV65G	SB6-16	Low	117%	103%	99.4%	104%	0
YV65H	SB7-11	Low	126%	102%	98.6%	103%	0
YV65J	SB3-8	Low	131%	103%	100%	104%	0
YV65K	SB1-5	Low	125%	105%	103%	103%	0
YV65L	SB10-7	Low	132%	101%	100%	104%	0
YV65M	SB8-16	Low	120%	102%	98.6%	104%	0
YV65N	SB5-11	Low	122%	103%	97.4%	103%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16381 to 14-16408

YV65:00053

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: cc0812a.d
Analysis Type: SOIL
Lab Sample ID: CC0812
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

Injection Date: 12-AUG-2014 12:42
Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Init. Cal. Times: 15:19 18:13
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	40.86589	50.00000	0.34187	0.100	-18.26821	20.00000	Linear	
2 Chloromethane	0.74269	0.68606	0.68606	0.100	-7.62513	20.00000	Averaged	
3 Vinyl Chloride	0.59799	0.71589	0.71589	0.100	19.71596	20.00000	Averaged	
4 Bromomethane	0.22310	0.34665	0.34665	0.100	55.38144	20.00000	Averaged	<-
5 Chloroethane	0.40499	0.40548	0.40548	0.100	0.12169	20.00000	Averaged	
6 Trichlorofluoromethane	0.67057	0.85593	0.85593	0.100	27.64239	20.00000	Averaged	<-
7 1,1-Dichloroethene	63.01086	50.00000	0.37662	0.100	26.02172	20.00000	Linear	<-
8 Carbon Disulfide	67.27443	50.00000	1.29018	0.010	34.54885	20.00000	Linear	<-
9 112Trichloro122Trifluoroeth	0.48163	0.42336	0.42336	0.010	-12.09892	20.00000	Averaged	
10 Iodomethane	0.47596	0.52759	0.52759	0.010	10.84631	20.00000	Averaged	
11 Bromoethane	0.33782	0.38727	0.38727	0.010	14.63622	20.00000	Averaged	
12 Acrolein	0.11092	0.11888	0.11888	0.000	7.17350	20.00000	Averaged	
13 Methylene Chloride	0.55786	0.53760	0.53760	0.010	-3.63159	20.00000	Averaged	
14 Acetone	342	250	0.20793	0.001	36.66993	20.00000	Quadratic	<-
15 Trans-1,2-Dichloroethene	0.54823	0.60320	0.60320	0.010	10.02678	20.00000	Averaged	
16 Methyl tert butyl ether	1.67439	1.65492	1.65492	0.100	-1.16264	20.00000	Averaged	
17 1,1-Dichloroethane	1.06875	1.13318	1.13318	0.100	6.02874	20.00000	Averaged	
18 Acrylonitrile	0.24758	0.23799	0.23799	0.001	-3.87703	20.00000	Averaged	
19 Vinyl Acetate	1.11971	1.12445	1.12445	0.010	0.42359	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.57605	0.60398	0.60398	0.010	4.84893	20.00000	Averaged	
22 2,2-Dichloropropane	0.82164	0.94514	0.94514	0.010	15.03088	20.00000	Averaged	
23 Bromochloromethane	0.24044	0.24921	0.24921	0.050	3.64724	20.00000	Averaged	
24 Chloroform	0.90267	0.96533	0.96533	0.100	6.94076	20.00000	Averaged	
25 Carbon Tetrachloride	0.33335	0.36205	0.36205	0.100	8.61094	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.59797	0.67717	0.67717	0.100	13.24435	20.00000	Averaged	
26 1,1,1-Trichloroethane	0.81037	0.96796	0.96796	0.100	19.44653	20.00000	Averaged	
28 1,1-Dichloropropene	0.36962	0.38991	0.38991	0.010	5.48981	20.00000	Averaged	
29 2-Butanone	0.07802	0.07905	0.07905	0.001	1.32826	20.00000	Averaged	
30 Benzene	1.11376	1.13108	1.13108	0.100	1.55523	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.65895	0.70581	0.70581	0.010	7.11136	20.00000	Averaged	
33 1,2-Dichloroethane	0.34797	0.34938	0.34938	0.100	0.40620	20.00000	Averaged	
34 Trichloroethene	0.26404	0.27853	0.27853	0.100	5.49067	20.00000	Averaged	
37 Dibromomethane	0.14631	0.14169	0.14169	0.010	-3.15609	20.00000	Averaged	
38 1,2-Dichloropropane	0.28565	0.27298	0.27298	0.100	-4.43471	20.00000	Averaged	
39 Bromodichloromethane	0.34613	0.34339	0.34339	0.100	-0.79224	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: cc0812a.d
Analysis Type: SOIL
Lab Sample ID: CC0812
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

Injection Date: 12-AUG-2014 12:42
Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Init. Cal. Times: 15:19 18:13
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.18305	0.17955	0.17955	0.000	-1.90716	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.42292	0.42914	0.42914	0.100	1.47219	20.00000	Averaged
$ 42 d8-Toluene	1.17018	1.17571	1.17571	0.010	0.47227	20.00000	Averaged
43 Toluene	0.70517	0.73280	0.73280	0.100	3.91890	20.00000	Averaged
44 Tetrachloroethene	0.29752	0.32412	0.32412	0.100	8.93850	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.12415	0.12052	0.12052	0.000	-2.92062	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.38489	0.38590	0.38590	0.010	0.26343	20.00000	Averaged
47 1,1,2-Trichloroethane	0.22454	0.21111	0.21111	0.100	-5.98280	20.00000	Averaged
48 Chlorodibromomethane	0.25116	0.24855	0.24855	0.100	-1.04031	20.00000	Averaged
49 1,3-Dichloropropane	0.39901	0.38230	0.38230	0.100	-4.18607	20.00000	Averaged
50 1,2-Dibromoethane	0.23462	0.22116	0.22116	0.010	-5.73913	20.00000	Averaged
51 2-Hexanone	0.20599	0.20615	0.20615	0.010	0.07484	20.00000	Averaged
53 Chlorobenzene	0.74274	0.75654	0.75654	0.300	1.85755	20.00000	Averaged
54 Ethyl Benzene	1.27616	1.36697	1.36697	0.100	7.11611	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.26117	0.26000	0.26000	0.010	-0.44958	20.00000	Averaged
56 m,p-xylene	0.49383	0.53595	0.53595	0.100	8.52837	20.00000	Averaged
57 o-Xylene	0.47591	0.50914	0.50914	0.100	6.98218	20.00000	Averaged
58 Styrene	0.80967	0.86507	0.86507	0.100	6.84167	20.00000	Averaged
59 Bromoform	0.34609	0.33634	0.33634	0.100	-2.81770	20.00000	Averaged
60 Isopropyl Benzene	2.33130	2.56302	2.56302	0.010	9.93961	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.50584	0.49659	0.49659	0.200	-1.82737	20.00000	Averaged
63 Bromobenzene	0.59257	0.59938	0.59938	0.010	1.14775	20.00000	Averaged
64 N-Propyl Benzene	2.60365	2.89821	2.89821	0.010	11.31348	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.57244	0.53527	0.53527	0.300	-6.49310	20.00000	Averaged
66 2-Chloro Toluene	1.58776	1.69258	1.69258	0.010	6.60153	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	1.95196	2.16882	2.16882	0.010	11.10978	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18665	0.17354	0.17354	0.010	-7.02361	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.18281	0.18532	0.18532	0.001	1.37177	20.00000	Averaged
70 4-Chloro Toluene	1.63531	1.79545	1.79545	0.010	9.79233	20.00000	Averaged
71 T-Butyl Benzene	1.70109	1.85518	1.85518	0.010	9.05824	20.00000	Averaged
72 1,2,4-Trimethylbenzene	1.91165	2.14031	2.14031	0.010	11.96130	20.00000	Averaged
73 S-Butyl Benzene	2.54397	2.83225	2.83225	0.010	11.33187	20.00000	Averaged
74 4-Isopropyl Toluene	2.00426	2.31658	2.31658	0.010	15.58280	20.00000	Averaged
75 1,3-Dichlorobenzene	1.09332	1.18496	1.18496	0.100	8.38208	20.00000	Averaged
77 1,4-Dichlorobenzene	1.12418	1.21197	1.21197	0.100	7.80920	20.00000	Averaged

YV65:00055

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: cc0812a.d
Analysis Type: SOIL
Lab Sample ID: CC0812
Method: /chem1/nt5.i/12AUG14.b/V0051314S.m

Injection Date: 12-AUG-2014 12:42
Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Init. Cal. Times: 15:19 18:13
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
78 N-Butyl Benzene	1.78850	2.16106	2.16106	0.010	20.83083	20.00000	Averaged	<-
$ 79 d4-1,2-Dichlorobenzene	0.95613	0.96830	0.96830	0.010	1.27281	20.00000	Averaged	
80 1,2-Dichlorobenzene	1.07398	1.11252	1.11252	0.100	3.58874	20.00000	Averaged	
81 1,2-Dibromo 3-Chloropropane	0.11645	0.11104	0.11104	0.010	-4.64922	20.00000	Averaged	
82 Hexachloro 1,3-Butadiene	0.48166	0.53008	0.53008	0.010	10.05138	20.00000	Averaged	
83 1,2,4-Trichlorobenzene	0.73617	0.87061	0.87061	0.010	18.26227	20.00000	Averaged	
84 Naphthalene	1.94353	1.96105	1.96105	0.010	0.90169	20.00000	Averaged	
85 1,2,3-Trichlorobenzene	0.73878	0.79367	0.79367	0.010	7.43039	20.00000	Averaged	

YV65:00056

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Matrix: Soil

Date Received: 08/08/14

Data Release Authorized: MW
Reported: 08/20/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
YV65P	SB7-19	08/13/14	08/15/14	1.00	Diesel Range	5.9	< 5.9 U
14-16381	HC ID: ---		FID3B	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		86.3%
YV65G	SB6-16	08/13/14	08/15/14	1.00	**Diesel Range**	**7.3**	**15**
14-16401	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**14**	**49**
					o-Terphenyl		61.3%
YV65H	SB7-11	08/13/14	08/15/14	5.00	**Diesel Range**	**36**	**38**
14-16402	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**72**	**440**
					o-Terphenyl		81.7%
YV65I	SB3-2	08/13/14	08/15/14	1.00	**Diesel Range**	**310**	**10,000**
14-16403	HC ID: **DIESEL/MOTOR OIL**		FID3B	50	**Motor Oil Range**	**630**	**12,000**
					o-Terphenyl		D
YV65J	SB3-8	08/13/14	08/15/14	1.00	Diesel Range	5.8	< 5.8 U
14-16404	HC ID: **MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**14**
					o-Terphenyl		73.1%
MB-081314	Method Blank	08/13/14	08/14/14	1.00	Diesel Range	5.0	< 5.0 U
14-16405	HC ID: ---		FID3B	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		66.6%
YV65K	SB1-5	08/13/14	08/15/14	1.00	**Diesel Range**	**5.6**	**7.5**
14-16405	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**11**	**62**
					o-Terphenyl		81.6%
YV65L	SB10-7	08/13/14	08/15/14	1.00	Diesel Range	5.6	< 5.6 U
14-16406	HC ID: ---		FID3B	1.0	Motor Oil Range	11	< 11 U
					o-Terphenyl		83.0%
YV65M	SB8-16	08/13/14	08/15/14	5.00	**Diesel Range**	**70**	**74**
14-16407	HC ID: **DRO/MOTOR OIL**		FID3B	2.0	**Motor Oil Range**	**140**	**560**
					o-Terphenyl		94.9%
YV65N	SB5-11	08/13/14	08/15/14	5.00	**Diesel Range**	**170**	**420**
14-16408	HC ID: **DRO/MOTOR OIL**		FID3B	5.0	**Motor Oil Range**	**350**	**1,900**
					o-Terphenyl		113%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YV65 : 00057

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Client ID	OTER	TOT OUT
SB7-19	86.3%	0
SB6-16	61.3%	0
SB7-11	81.7%	0
SB3-2	D	0
SB3-8	73.1%	0
081314MBS	66.6%	0
081314LCS	75.9%	0
SB1-5	81.6%	0
SB1-5 MS	71.8%	0
SB1-5 MSD	60.1%	0
SB10-7	83.0%	0
SB8-16	94.9%	0
SB5-11	113%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 14-16381 to 14-16408

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: SB1-5
MS/MSD

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Date Extracted MS/MSD: 08/13/14

Date Analyzed MS: 08/15/14 04:54
MSD: 08/15/14 05:19
Instrument/Analyst MS: FID3B/JGR
MSD: FID3B/JGR

Sample Amount MS: 8.97 g-dry-wt
MSD: 8.98 g-dry-wt
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Percent Moisture: 10.4%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	7.5	132	167	74.6%	104	167	57.8%	23.7%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	71.8%	60.1%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-081314
LAB CONTROL

Lab Sample ID: LCS-081314
LIMS ID: 14-16405
Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Date Extracted: 08/13/14
Date Analyzed: 08/14/14 22:39
Instrument/Analyst: FID3B/VTS

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	111	150	74.0%

TPHD Surrogate Recovery

o-Terphenyl	75.9%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YV65
Matrix: Soil Project: Precision ENG
Date Received: 08/08/14

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16381-YV65P	SB7-19	8.45 g	1.00 mL	D	08/13/14
14-16401-YV65G	SB6-16	6.88 g	1.00 mL	D	08/13/14
14-16402-YV65H	SB7-11	6.95 g	5.00 mL	D	08/13/14
14-16403-YV65I	SB3-2	7.95 g	1.00 mL	D	08/13/14
14-16404-YV65J	SB3-8	8.65 g	1.00 mL	D	08/13/14
14-16405-081314MB1	Method Blank	10.0 g	1.00 mL	-	08/13/14
14-16405-081314LCS1	Lab Control	10.0 g	1.00 mL	-	08/13/14
14-16405-YV65K	SB1-5	8.97 g	1.00 mL	D	08/13/14
14-16405-YV65KMS	SB1-5	8.97 g	1.00 mL	D	08/13/14
14-16405-YV65KMSD	SB1-5	8.98 g	1.00 mL	D	08/13/14
14-16406-YV65L	SB10-7	8.98 g	1.00 mL	D	08/13/14
14-16407-YV65M	SB8-16	7.14 g	5.00 mL	D	08/13/14
14-16408-YV65N	SB5-11	7.22 g	5.00 mL	D	08/13/14

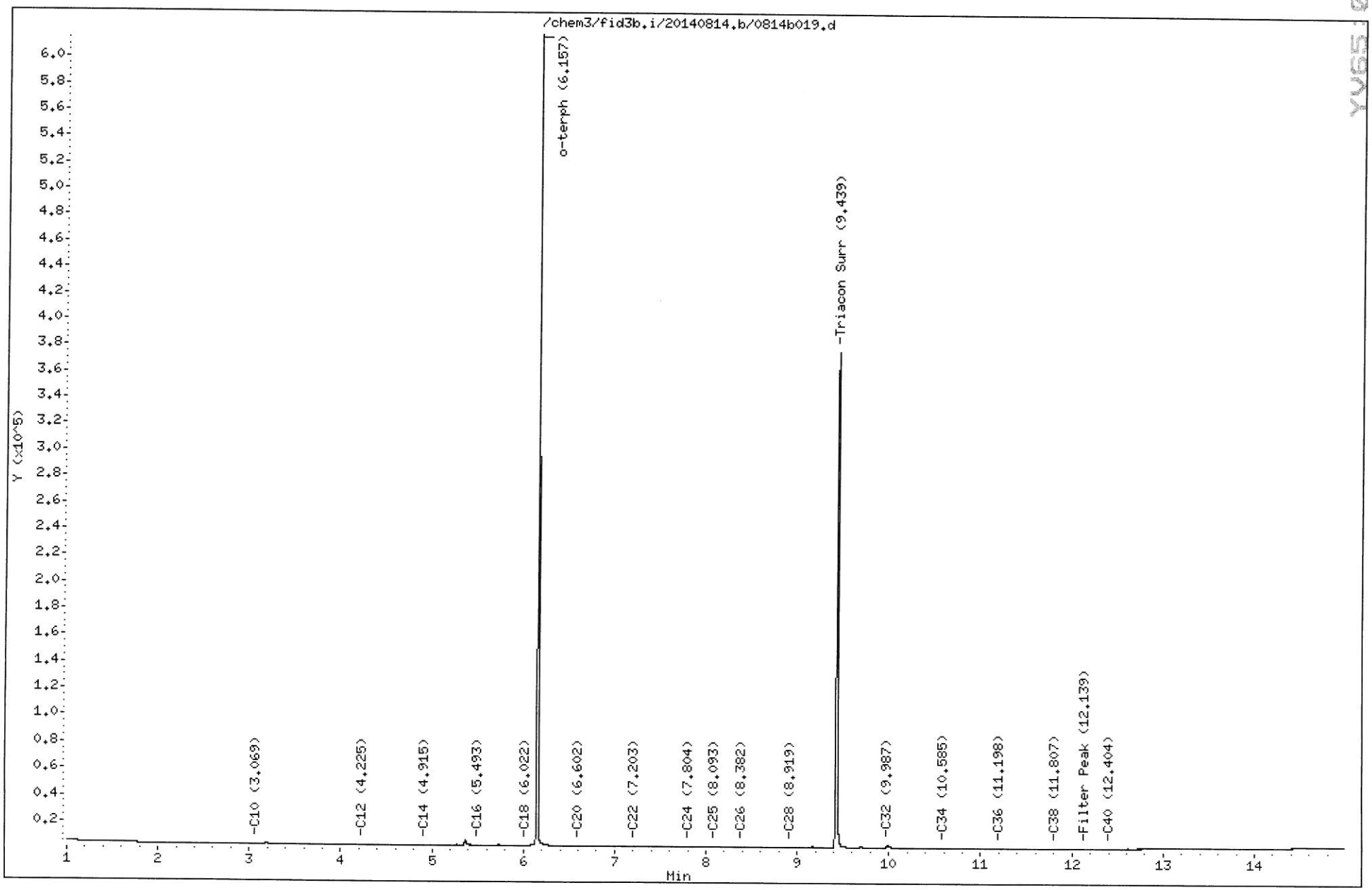
Basis: D=Dry Weight W=As Received

Data File: /chem3/fid3b.i/20140814.b/0814b019.d
Date : 14-AUG-2014 22:14
Client ID: YV51MBS1
Sample Info: YV51MBS1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

Column phase: RTX-1



YV51 00062

Data File: /chem3/fid3b.i/20140814.b/0814b020.d
Date : 14-AUG-2014 22:39
Client ID: YV51LCSS1
Sample Info: YV51LCSS1

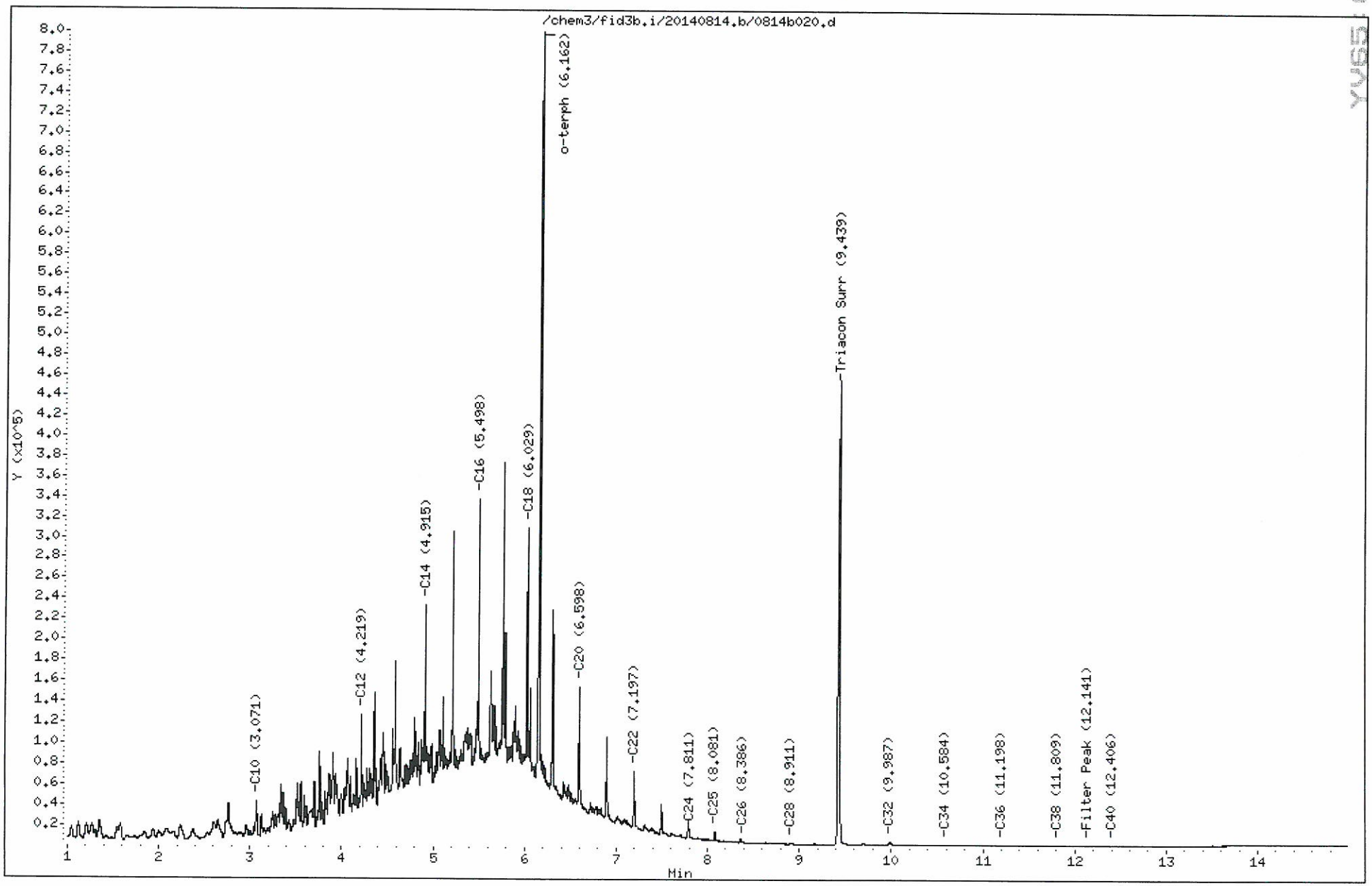
Column phase: RTX-1

Instrument: fid3b.i

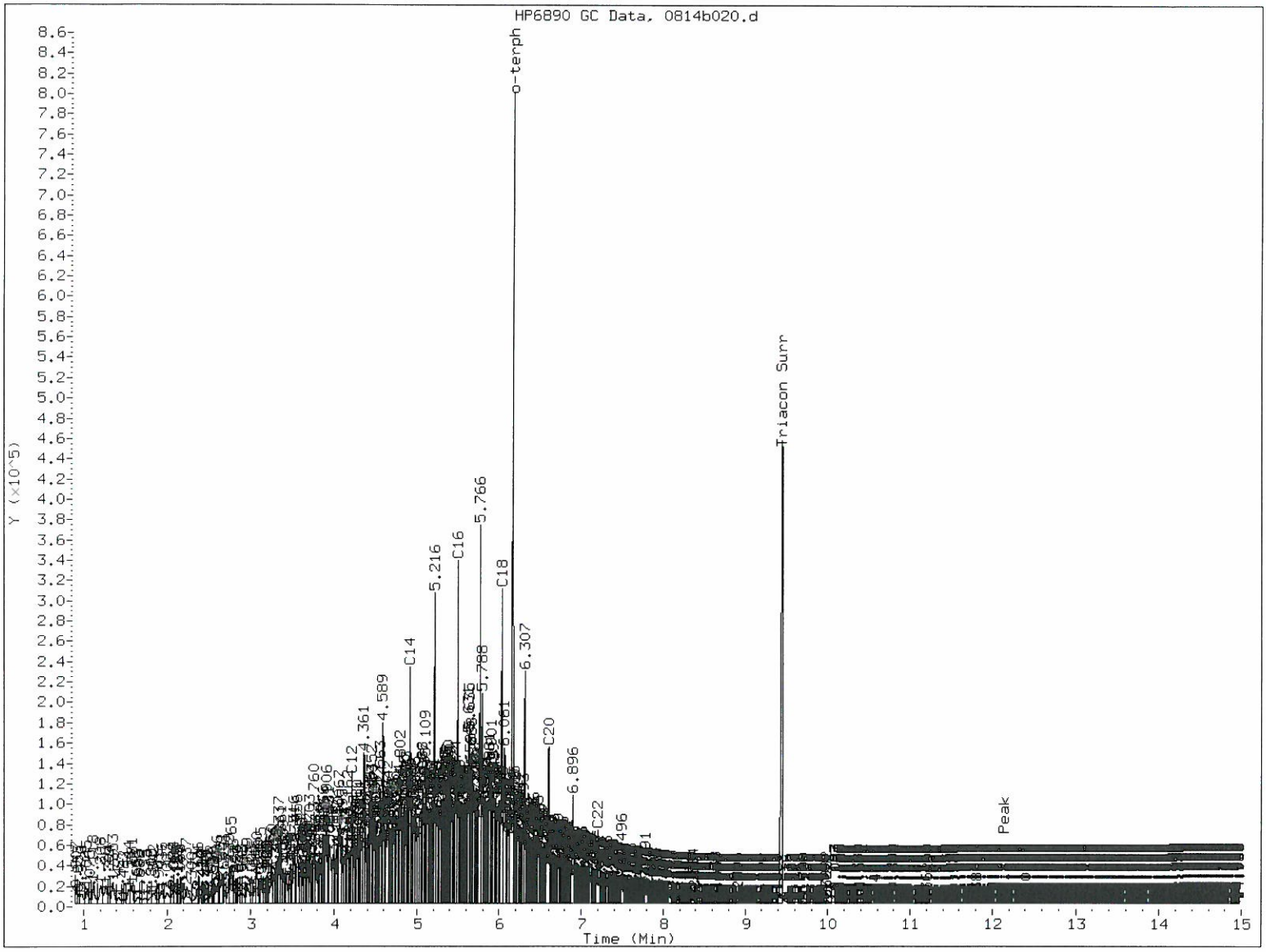
Operator: VTS
Column diameter: 0.25

YV 8.15.14

YV51 0063



FID:3B-2C/RTX-1 YV51LCSS1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: Y Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b029.d

Date : 15-AUG-2014 02:24

Client ID: SB7-19

Sample Info: YV65P

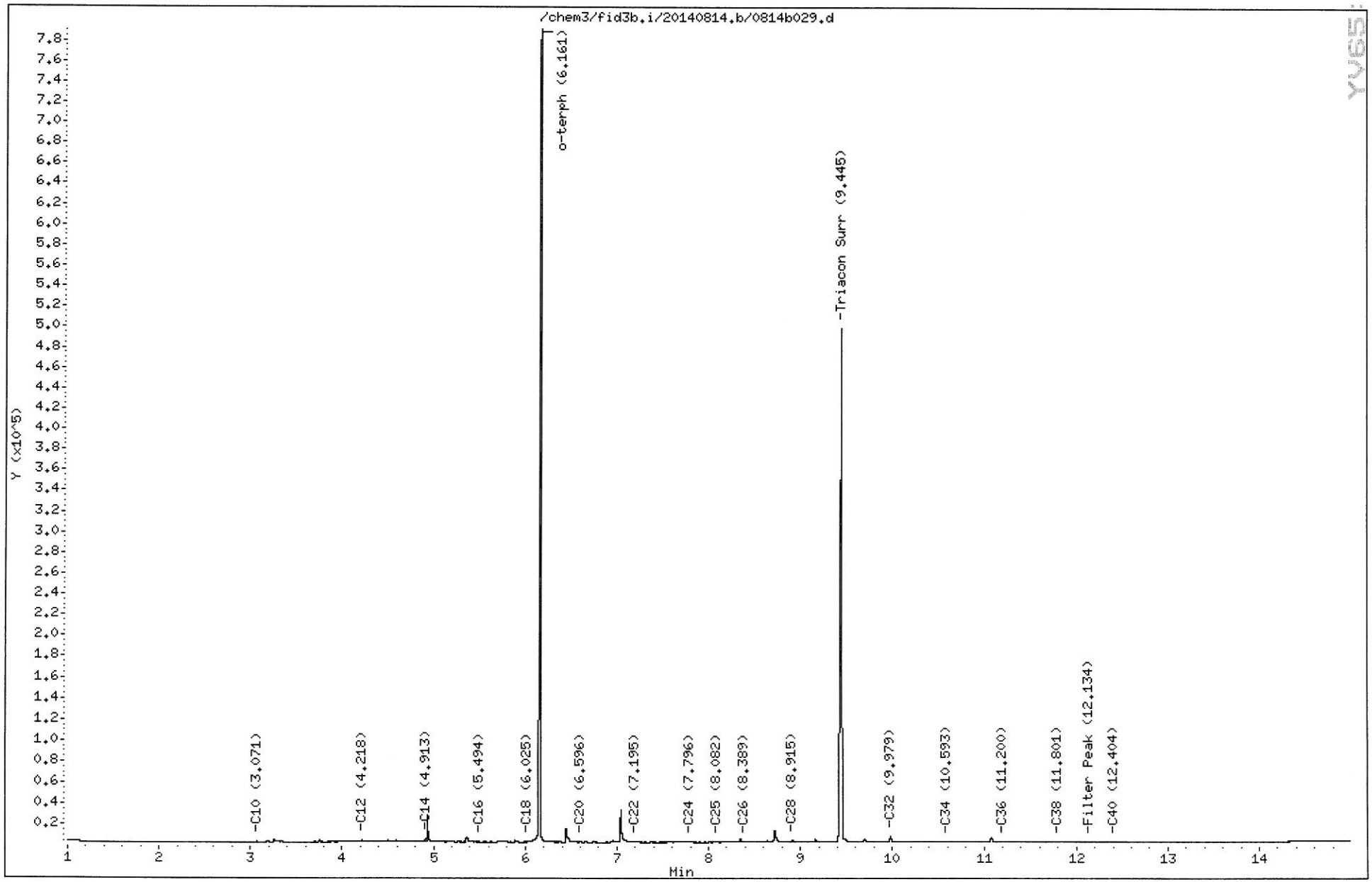
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

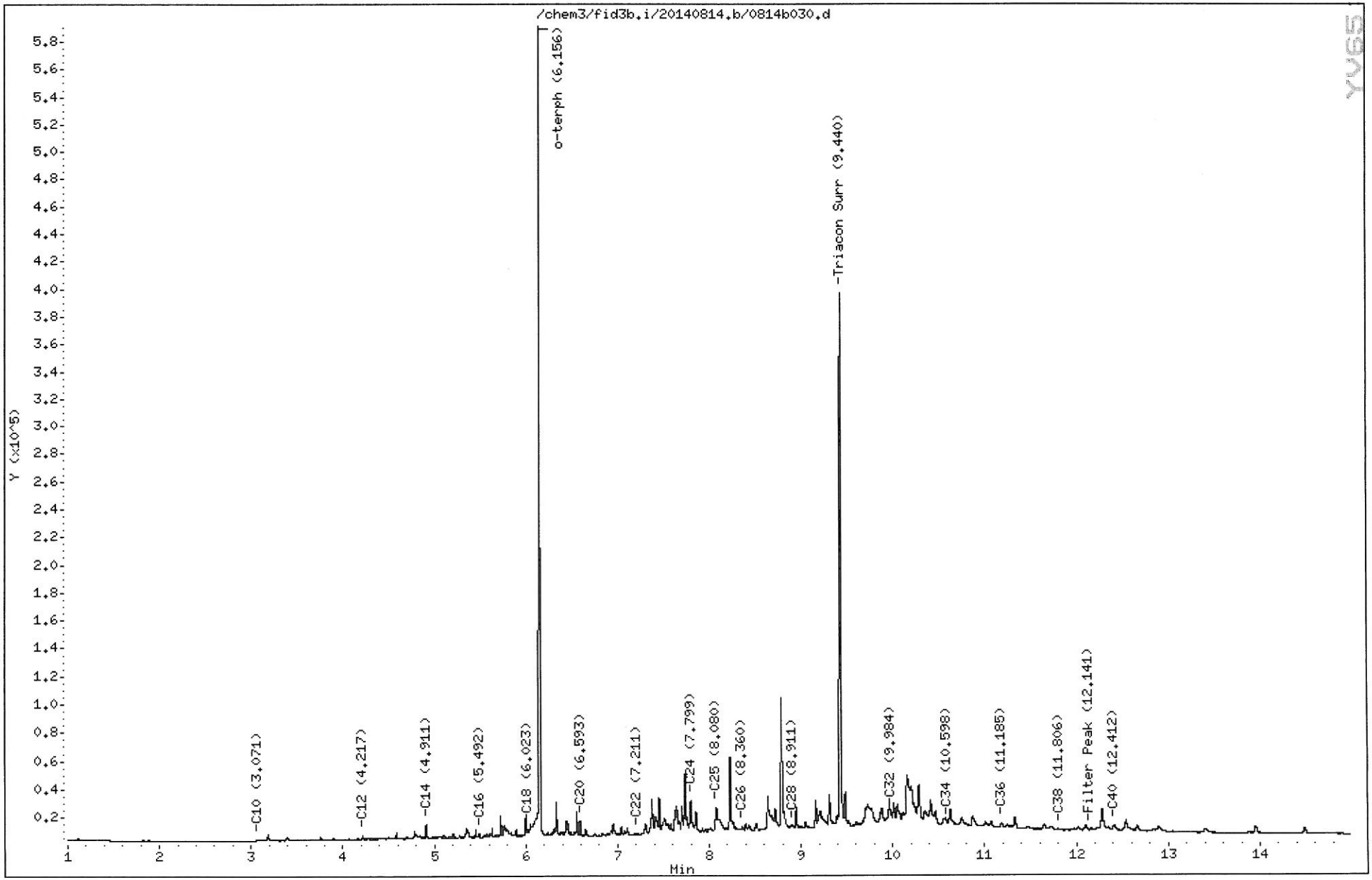
YV65 00065



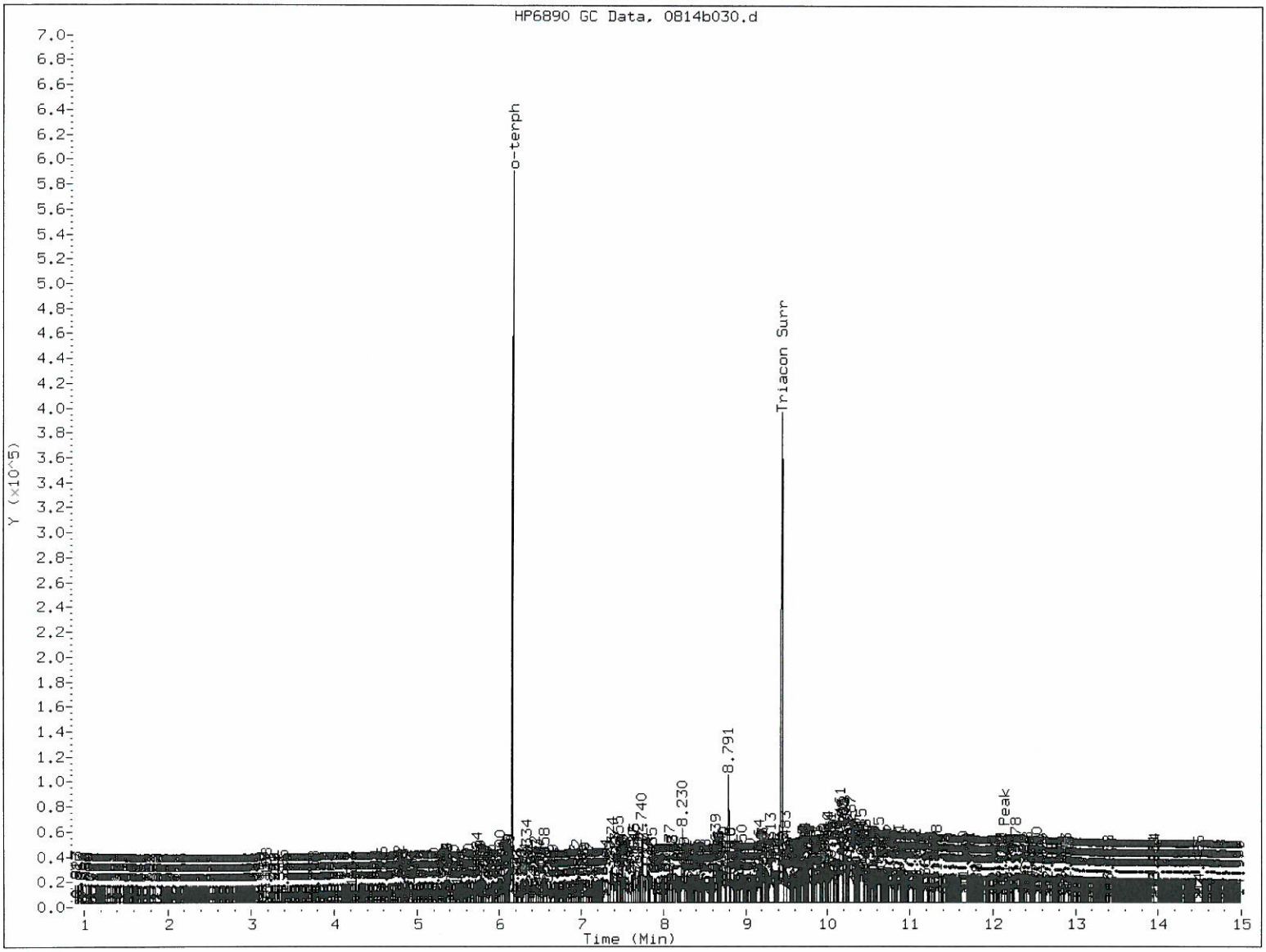
Data File: /chem3/fid3b.i/20140814.b/0814b030.d
Date : 15-AUG-2014 02:49
Client ID: SB6-16
Sample Info: YV65G

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

Column phase: RTX-1



FID:3B-2C/RTX-1 YV65G FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 08/20/14

Data File: /chem3/fid3b.i/20140814.b/0814b031.d

Date : 15-AUG-2014 03:14

Client ID: SB7-11

Sample Info: YV65H

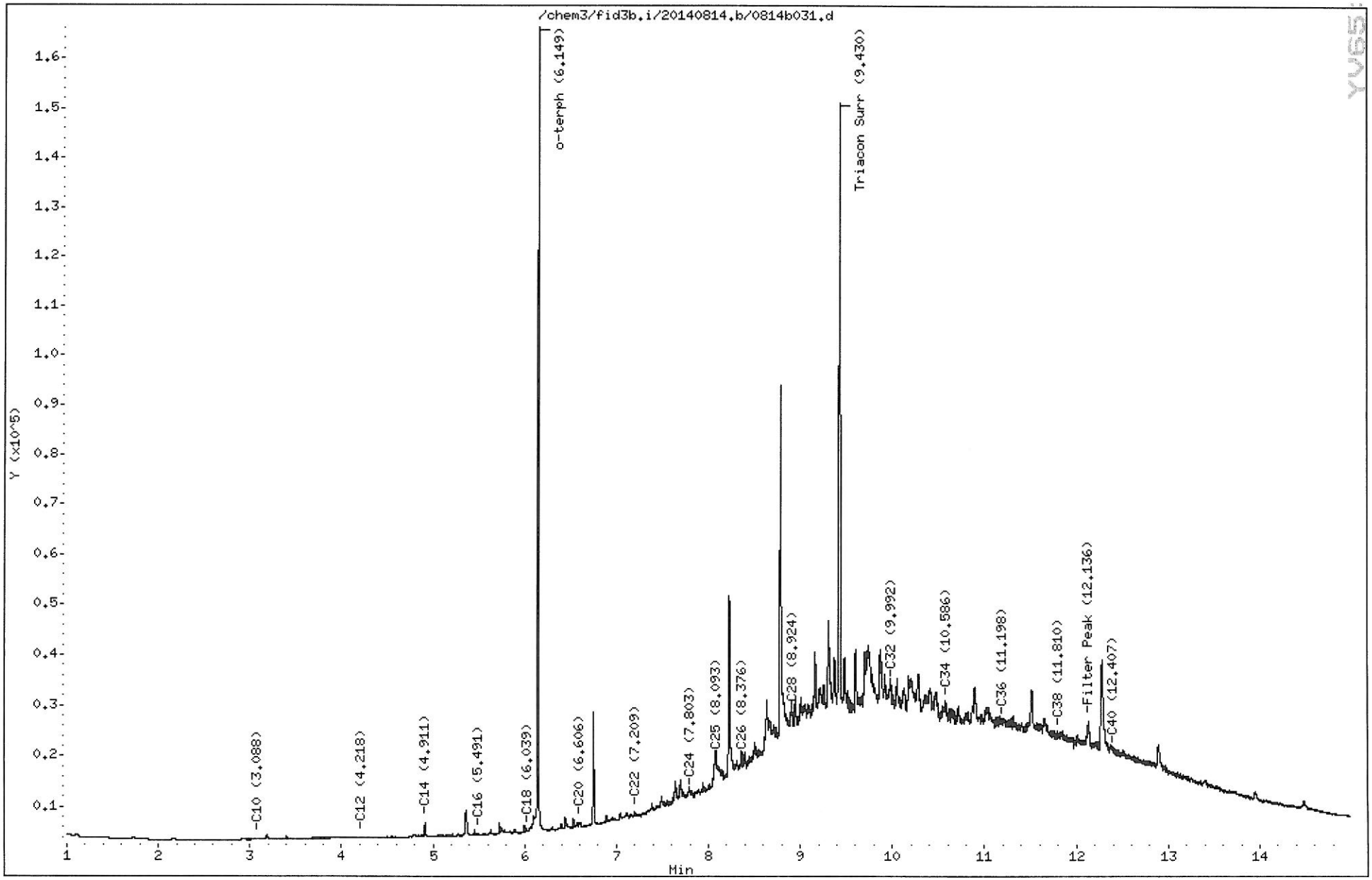
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

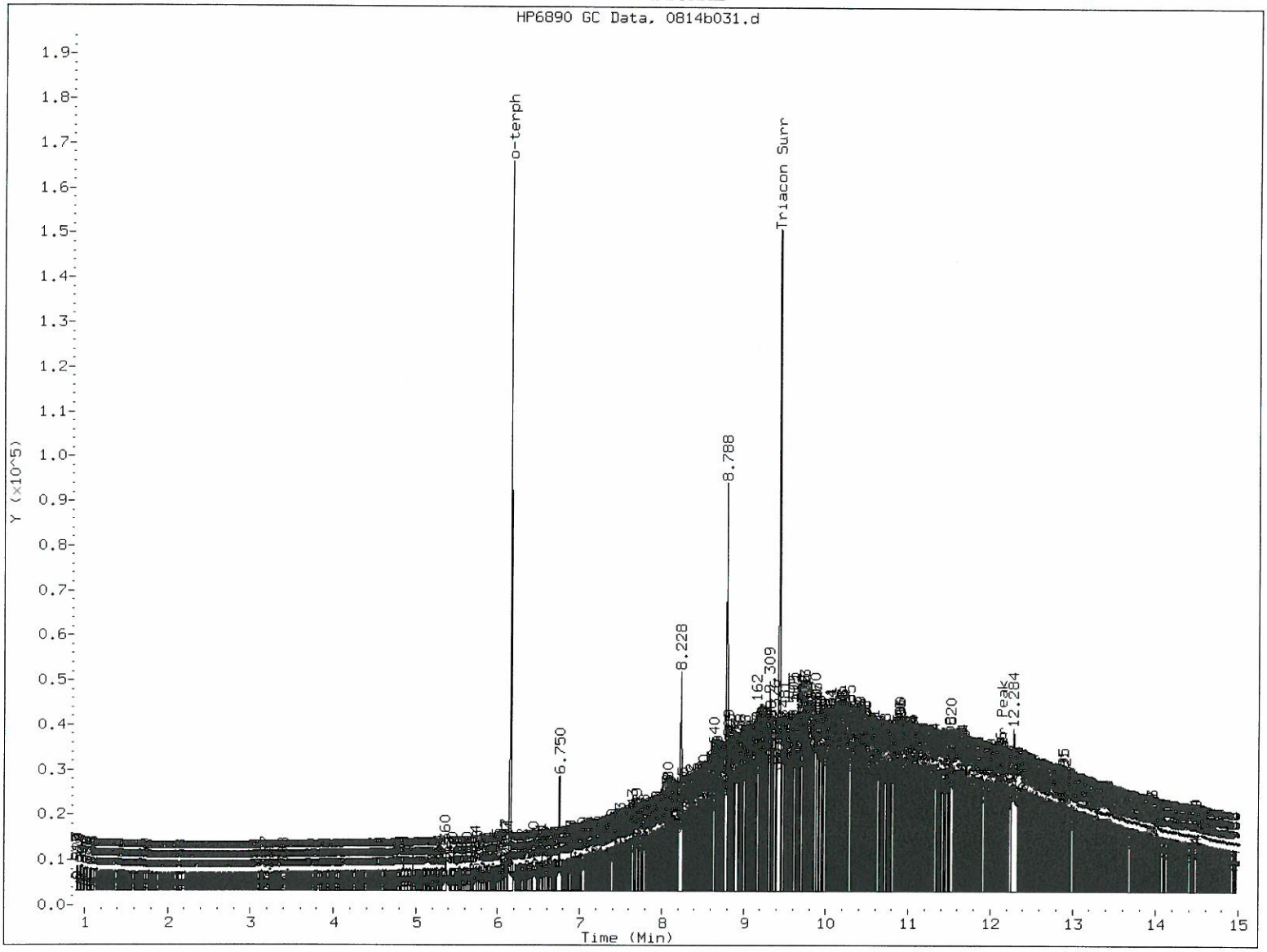
Column diameter: 0.25

YV65H 00058



FID:3B-2C/RTX-1 YV65H

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 08/20/14

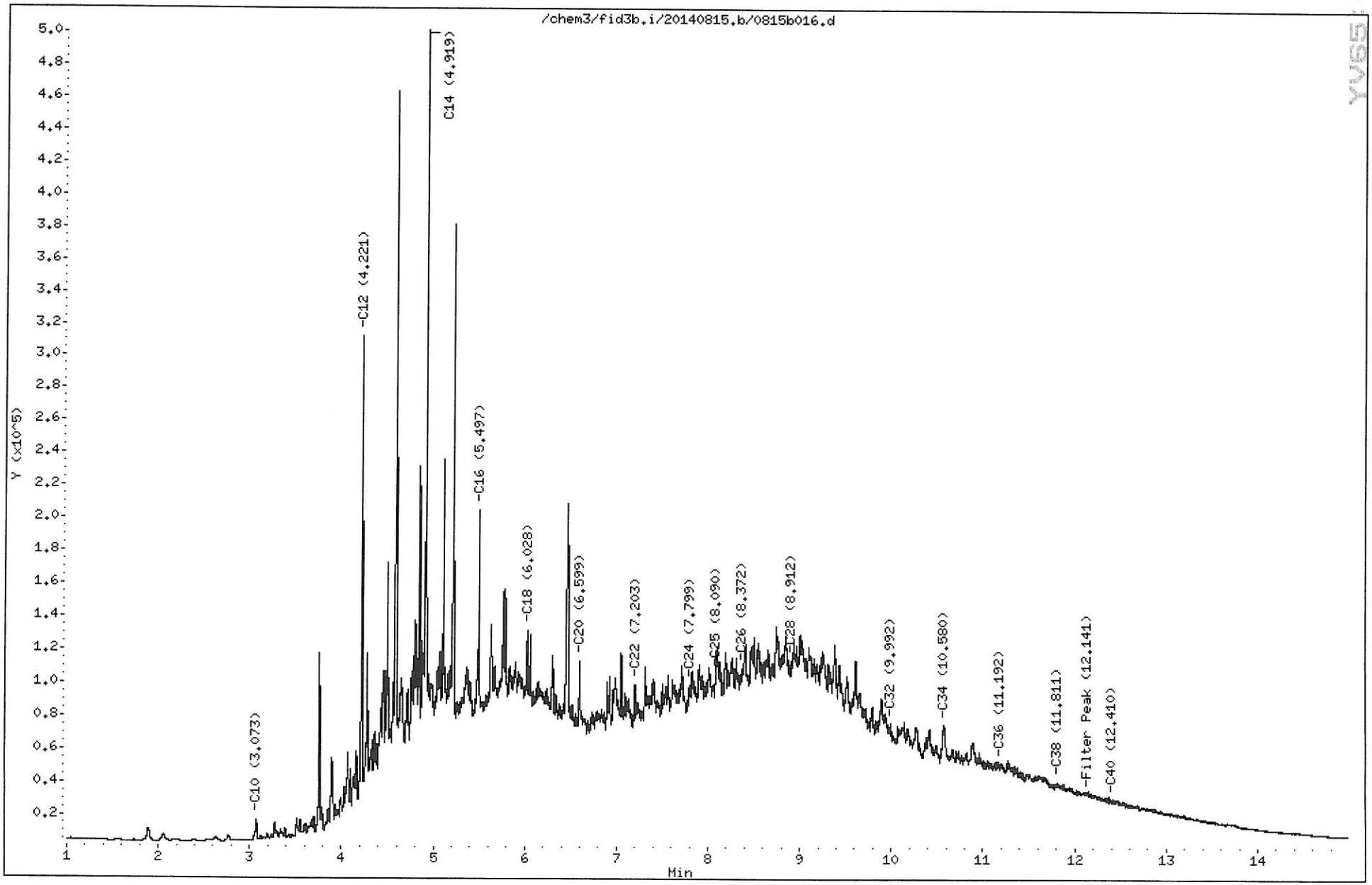
Data File: /chem3/fid3b.i/20140815.b/0815b016.d
Date : 15-AUG-2014 17:58
Client ID: SB3-2
Sample Info: YV65I,50

Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

YV65I 00070



Data File: /chem3/fid3b.i/20140814.b/0814b033.d

Date : 15-AUG-2014 04:04

Client ID: SB3-8

Sample Info: YV65J

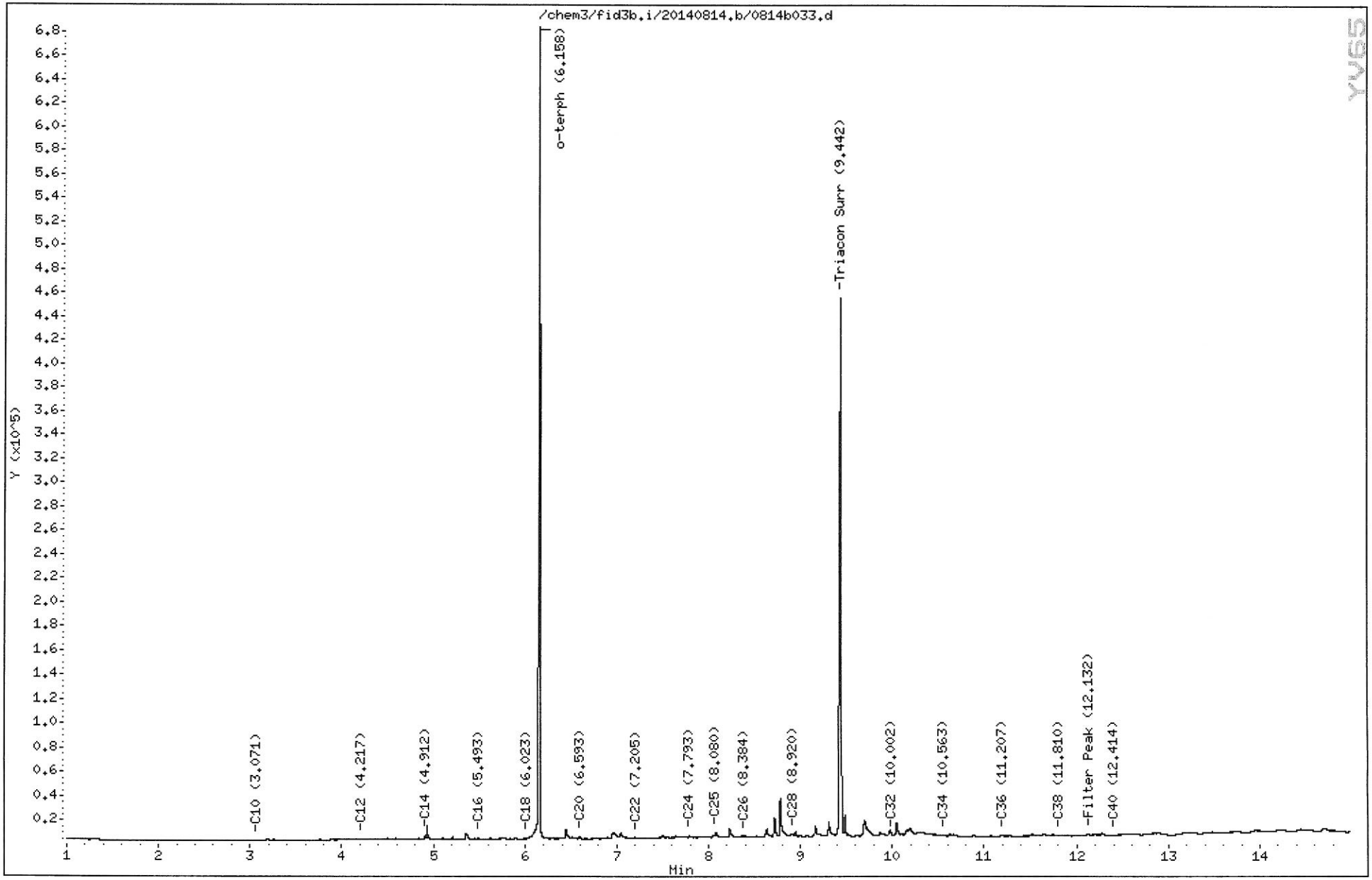
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

YV65 00071



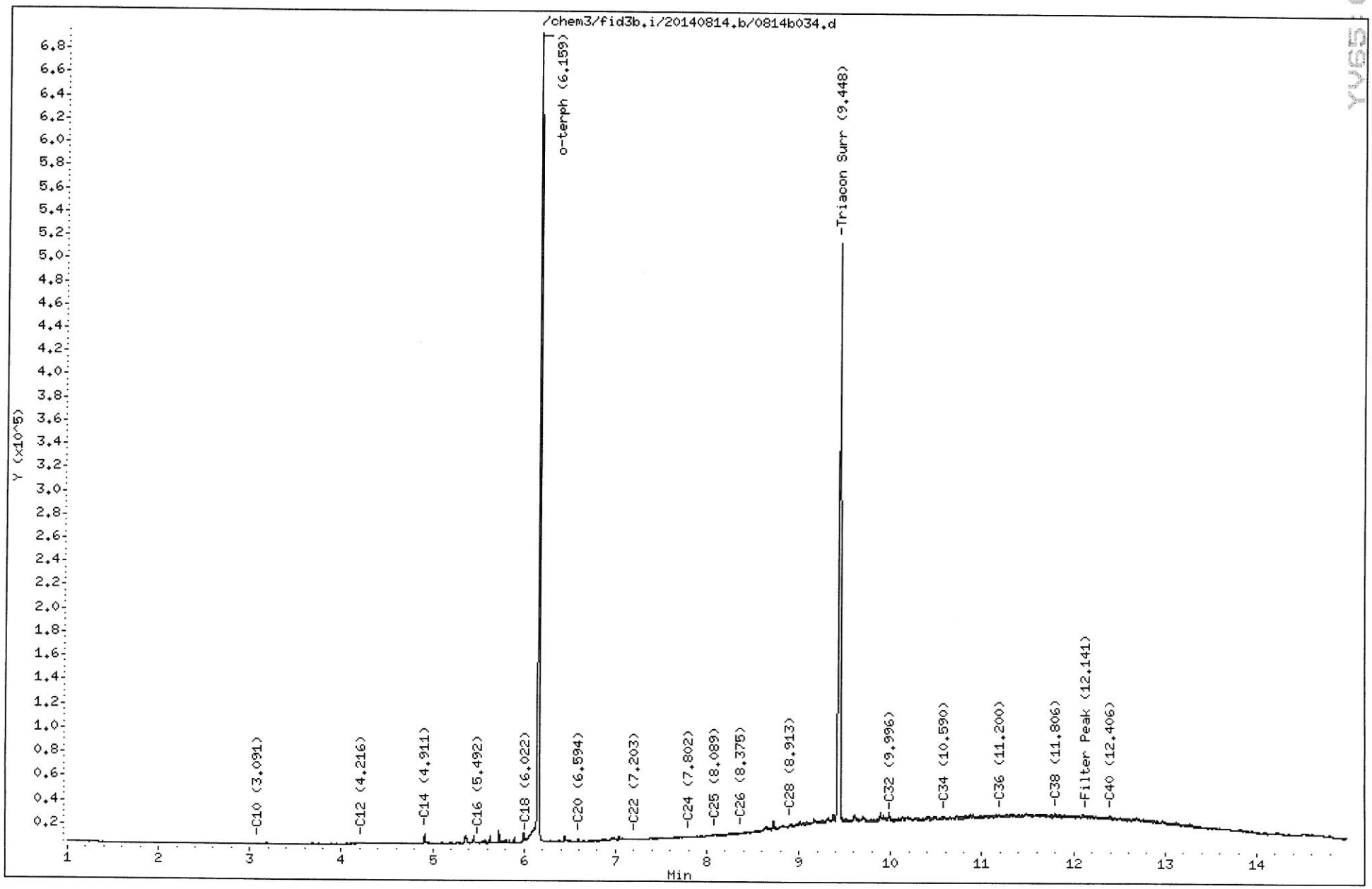
Data File: /chem3/fid3b.i/20140814.b/0814b034.d
Date : 15-AUG-2014 04:29
Client ID: SB1-5
Sample Info: YV65K

Column phase: RTX-1

Instrument: fid3b.i

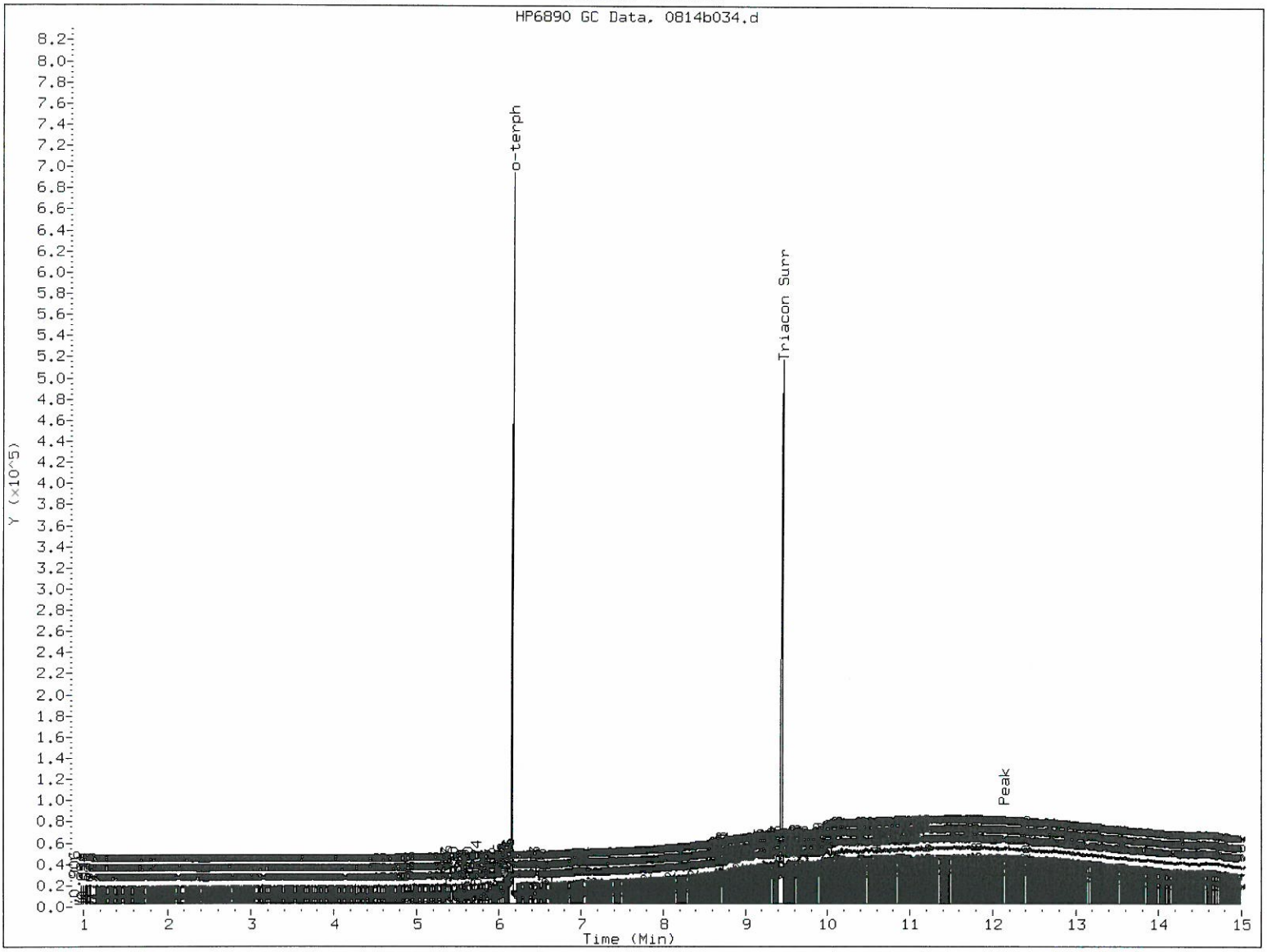
Operator: VTS
Column diameter: 0.25

YV65 00072



FID:3B-2C/RTX-1 YV65K

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 08/20/14

Data File: /chem3/fid3b.i/20140814.b/0814b039.d

Date : 15-AUG-2014 06:33

Client ID: SB10-7

Sample Info: YV65L

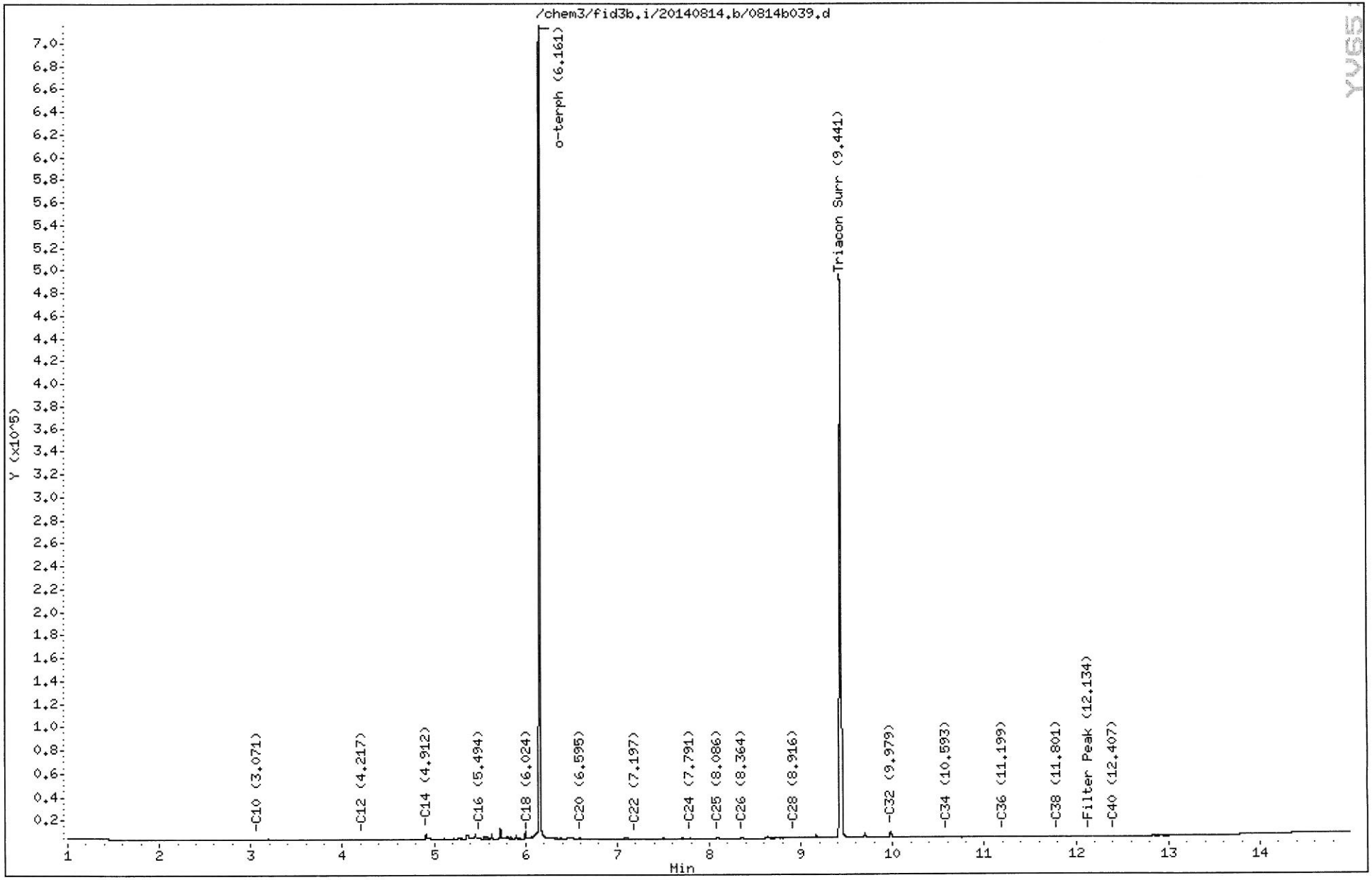
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

YV65 09071



Data File: /chem3/fid3b.i/20140815.b/0815b021.d

Date : 15-AUG-2014 20:05

Client ID: SB8-16

Sample Info: YV65M,2

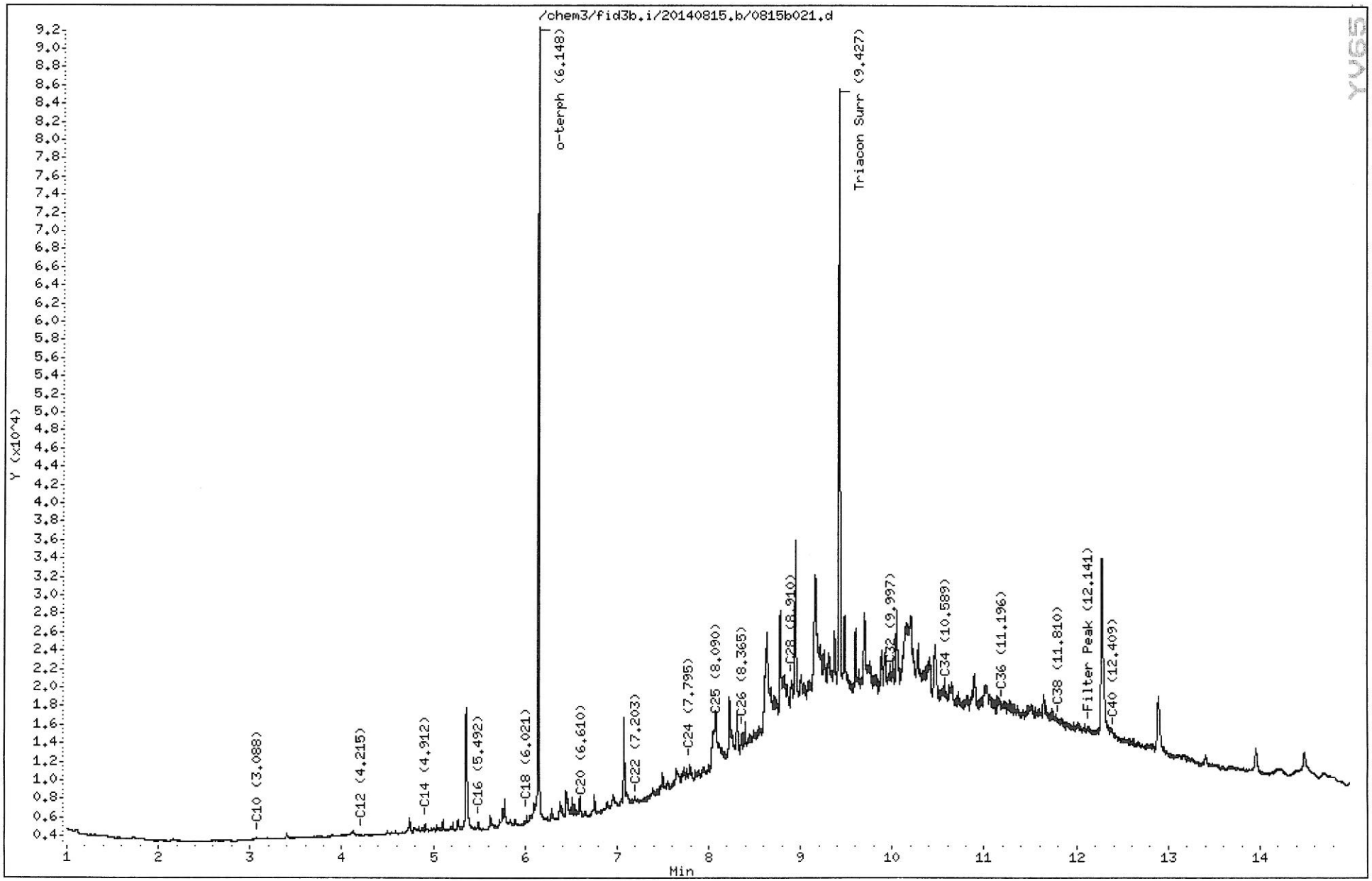
Column phase: RTX-1

Instrument: fid3b.i

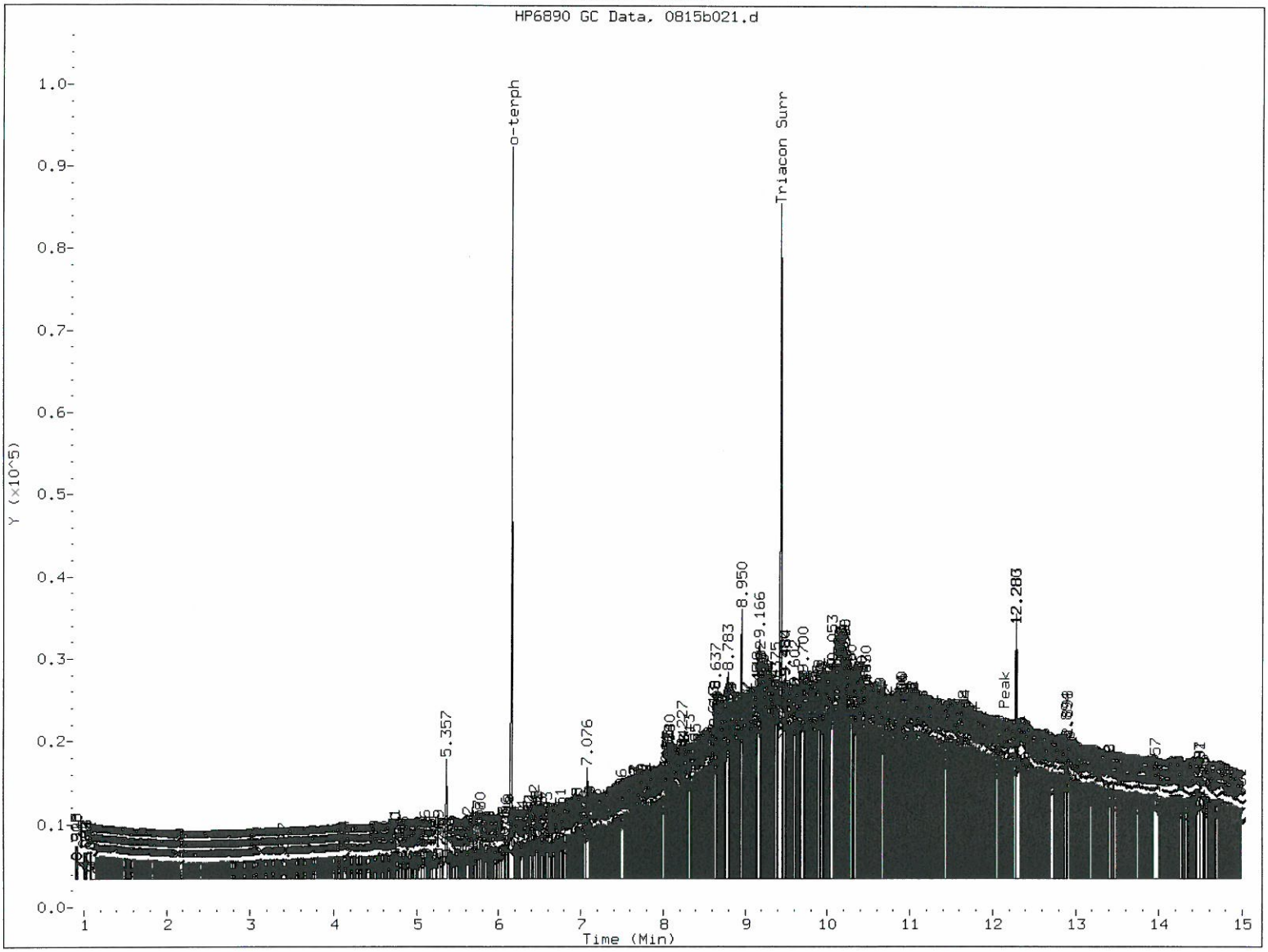
Operator: VTS

Column diameter: 0.25

YV65M 007-15



FID:3B-2C/RTX-1 YV65M FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 03/20/14

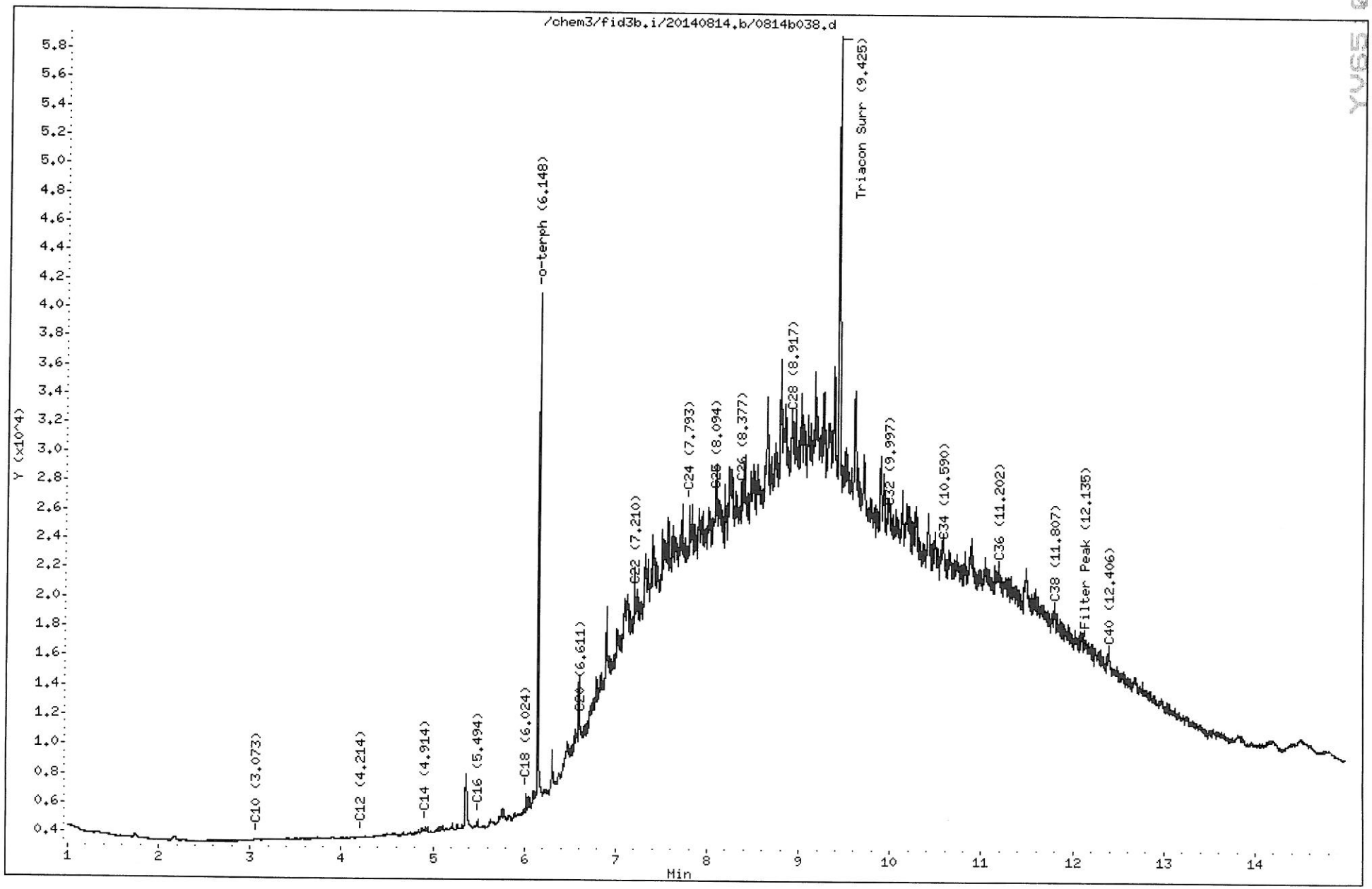
Data File: /chem3/fid3b.i/20140814.b/0814b038.d
Date : 15-AUG-2014 06:09
Client ID: SB5-11
Sample Info: YV65N,5

Column phase: RTX-1

Instrument: fid3b.i

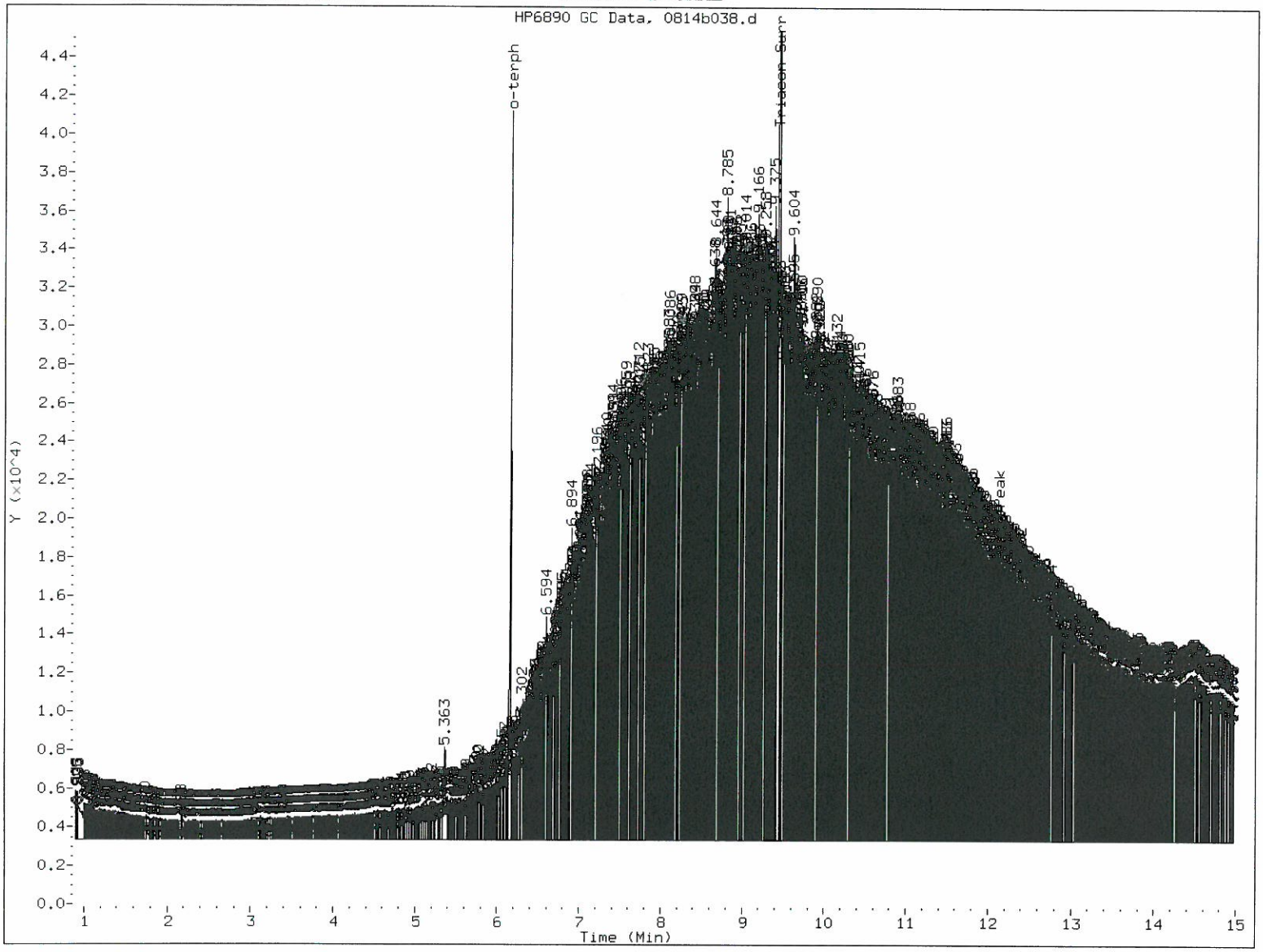
Operator: VTS
Column diameter: 0.25

YV65 00077



FID:3B-2C/RTX-1 YV65N

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 08/20/14

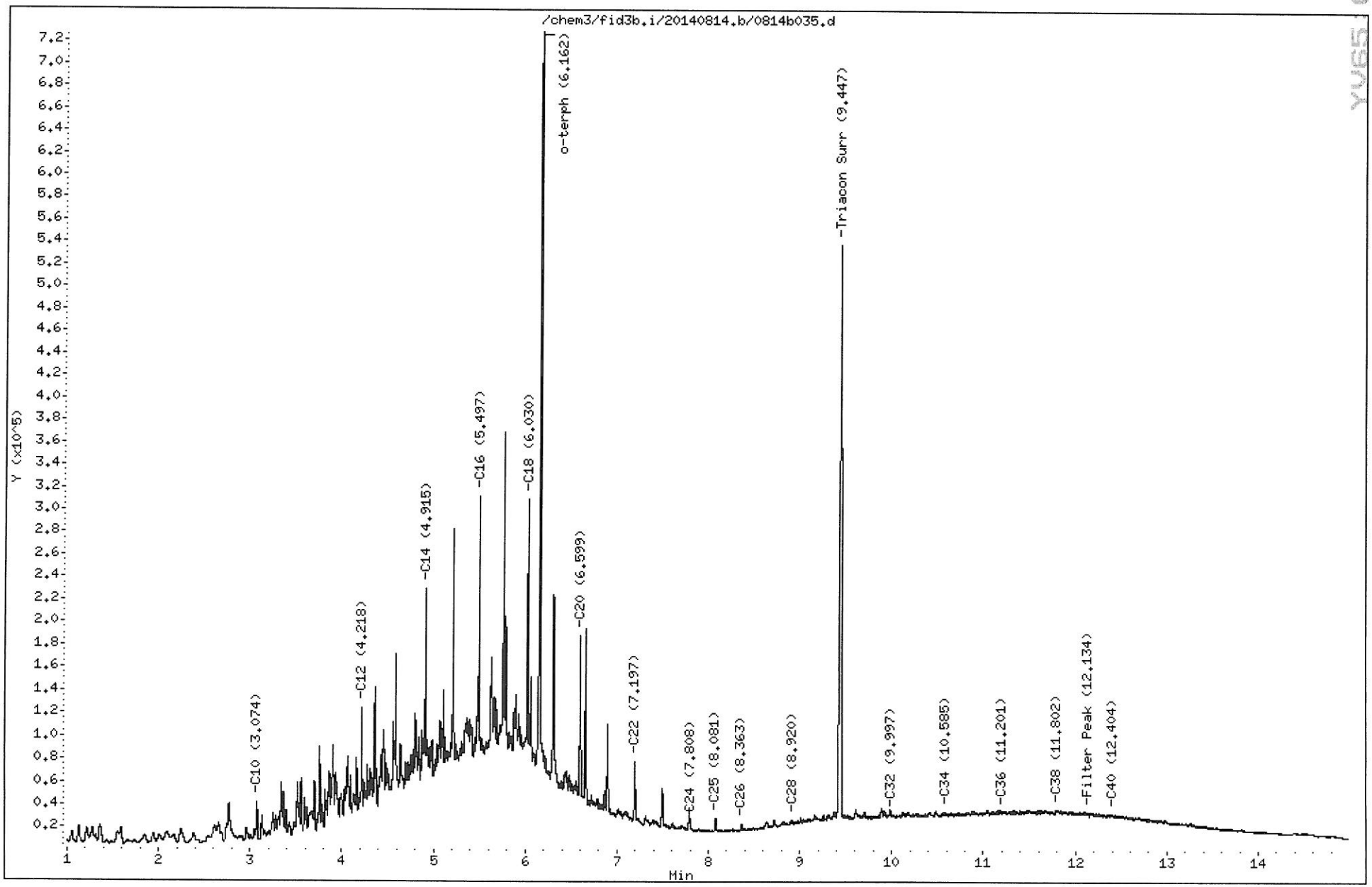
Data File: /chem3/fid3b.i/20140814.b/0814b035.d
Date : 15-AUG-2014 04:54
Client ID: SB1-5 MS
Sample Info: YV65KMS

Column phase: RTX-1

Instrument: fid3b.i

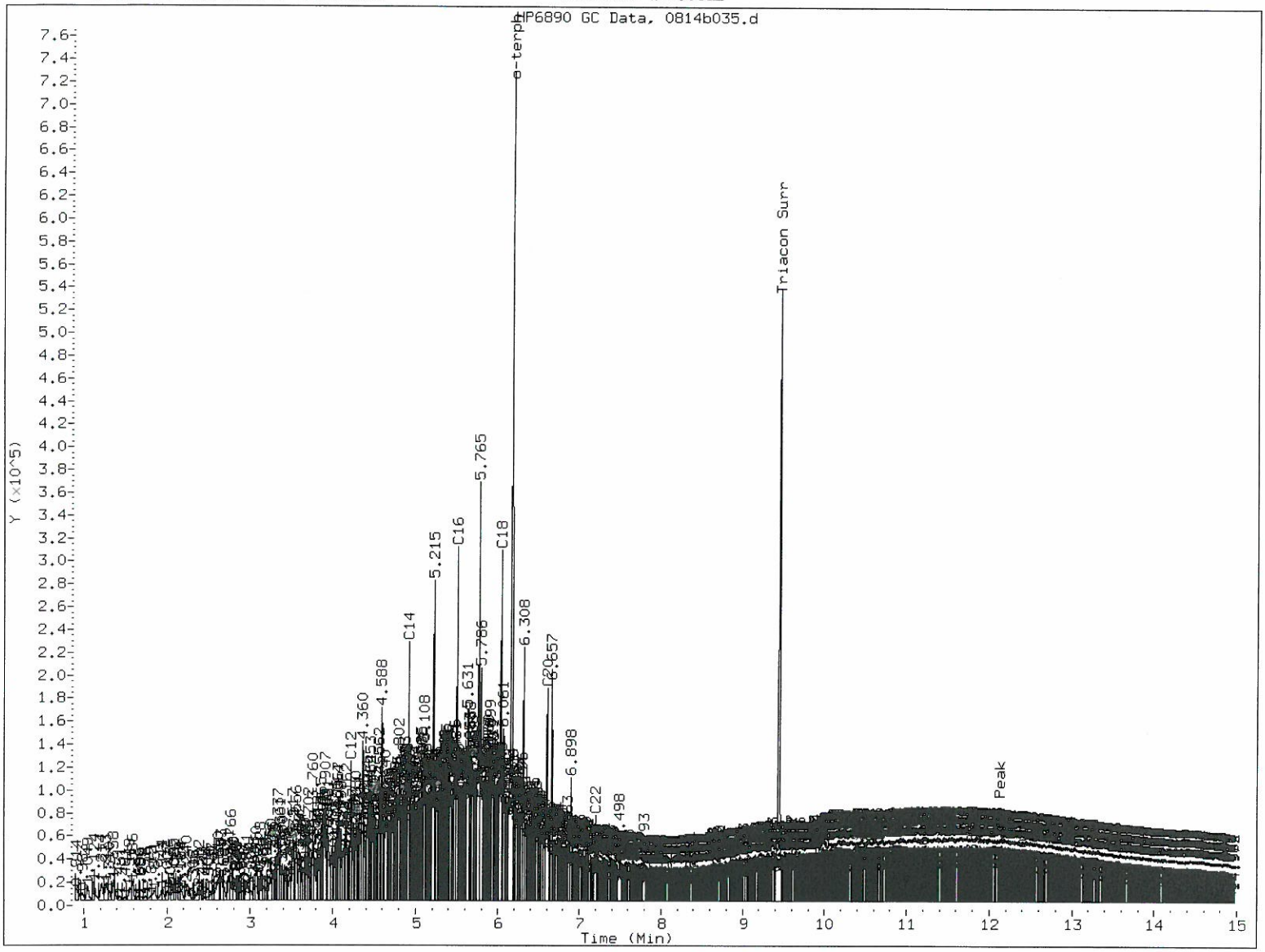
Operator: VTS
Column diameter: 0.25

C0000 YV65KMS



FID:3B-2C/RTX-1 YV65KMS

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 08/20/14

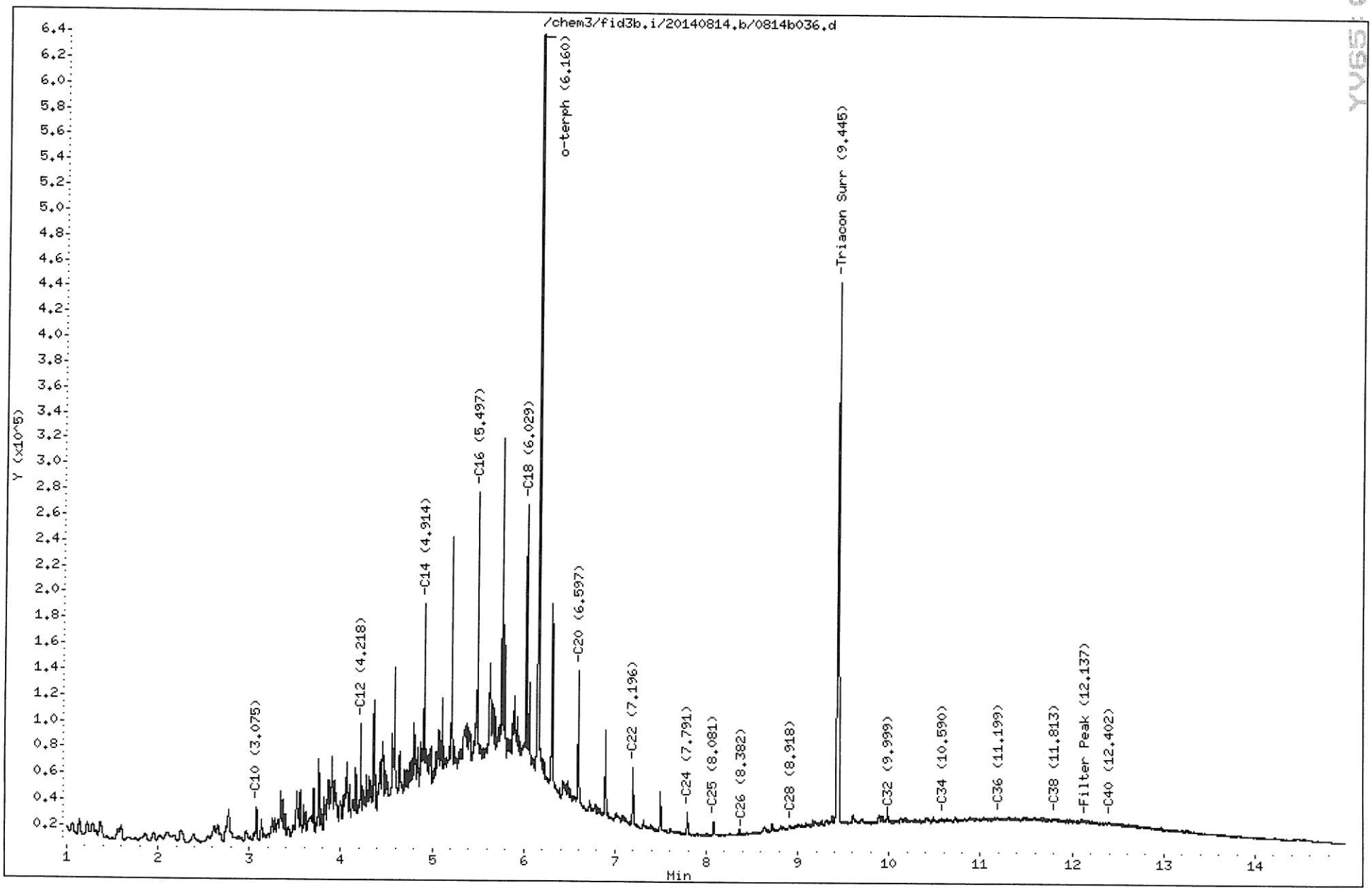
Data File: /chem3/fid3b.i/20140814.b/0814b036.d
Date : 15-AUG-2014 05:19
Client ID: SB1-5 MSD
Sample Info: YV65KMSD

Column phase: RTX-1

Instrument: fid3b.i

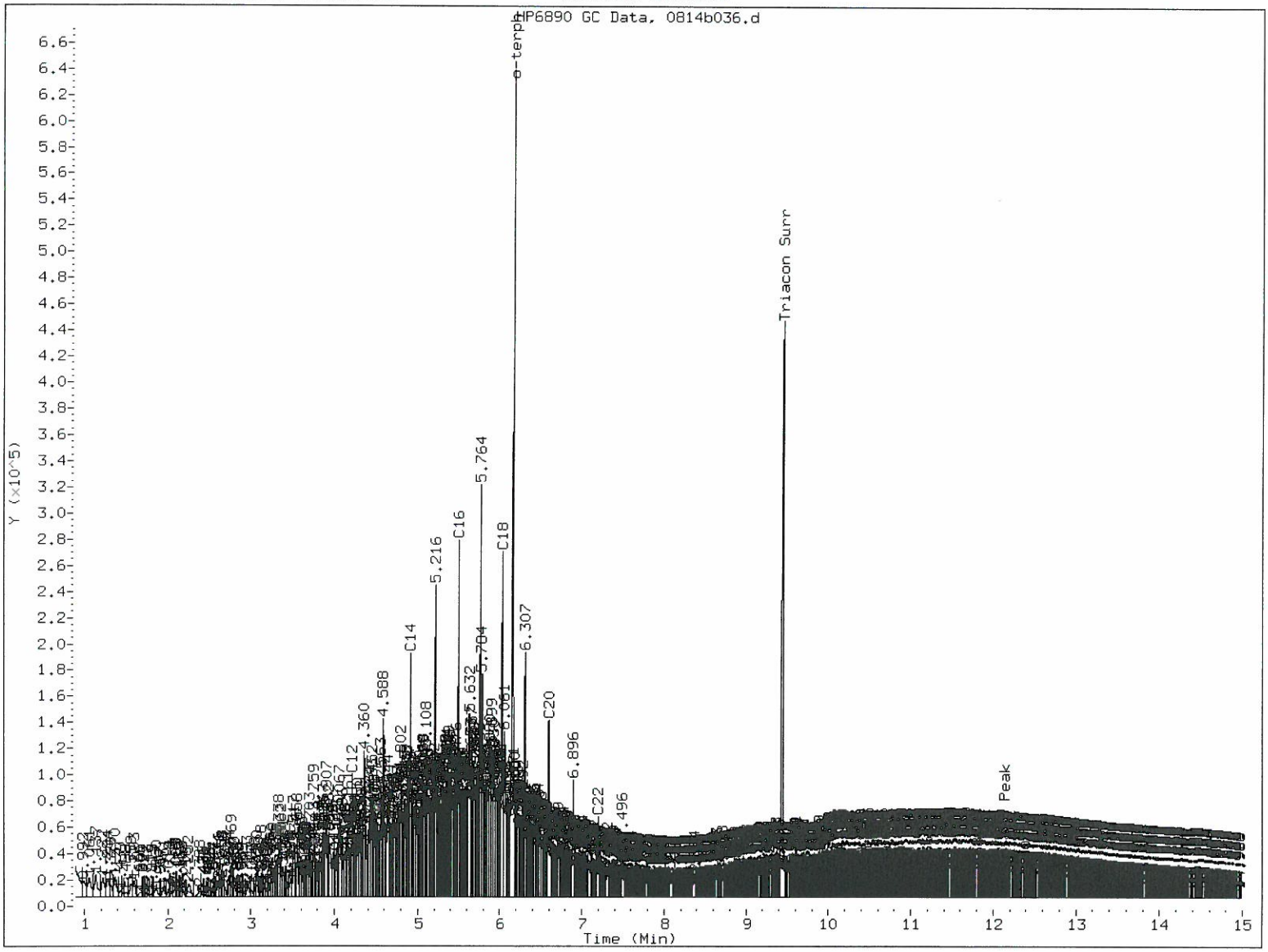
Operator: VTS
Column diameter: 0.25

YV65 0081



FID:3B-2C/RTX-1 YV65KMSD

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 03/20/14

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: YV65-Kennedy Jenks Consultants,
Project: PRECICION ENG

Matrix: Water

Date Received: 08/08/14

Data Release Authorized:
Reported: 08/19/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-081414	Method Blank	08/14/14	08/16/14	1.00	Diesel Range	0.10	< 0.10 U
14-16374	HC ID: ---		FID3B	1.0	MOTOR OIL Range	0.20	< 0.20 U
					o-Terphenyl		105%
YV65A	SB6	08/14/14	08/16/14	1.00	**Diesel Range**	**0.10**	**0.38**
14-16374	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**MOTOR OIL Range**	**0.20**	**0.29**
					o-Terphenyl		59.0%
YV65B	SB7	08/14/14	08/16/14	1.00	**Diesel Range**	**0.10**	**0.20**
14-16375	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.22**
					o-Terphenyl		56.4%
YV65C	SB3	08/14/14	08/16/14	1.00	**Diesel Range**	**0.10**	**0.45**
14-16376	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**MOTOR OIL Range**	**0.20**	**0.30**
					o-Terphenyl		51.6%
YV65D	SB3D	08/14/14	08/16/14	1.00	**Diesel Range**	**0.10**	**0.54**
14-16377	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.32**
					o-Terphenyl		78.8%
YV65E	SB10	08/14/14	08/16/14	1.00	Diesel Range	0.10	< 0.10 U
14-16378	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		95.9%
YV65F	SB5	08/14/14	08/16/14	1.00	**Diesel Range**	**0.10**	**0.50**
14-16379	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.53**
					o-Terphenyl		45.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YV65:00082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-081414
LCS/LCSD

Lab Sample ID: LCS-081414
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 08/14/14

Date Analyzed LCS: 08/16/14 15:48
LCSD: 08/16/14 16:14
Instrument/Analyst LCS: FID3B/VTS
LCSD: FID3B/VTS

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.63	3.00	87.7%	2.66	3.00	88.7%	1.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.5%	91.5%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YV65
Matrix: Water
Project: PRECICION ENG
Date Received: 08/08/14

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-16374-081414MB1	Method Blank	500 mL	1.00 mL	08/14/14
14-16374-081414LCS1	Lab Control	500 mL	1.00 mL	08/14/14
14-16374-081414LCSD1	Lab Control Dup	500 mL	1.00 mL	08/14/14
14-16374-YV65A	SB6	500 mL	1.00 mL	08/14/14
14-16375-YV65B	SB7	500 mL	1.00 mL	08/14/14
14-16376-YV65C	SB3	500 mL	1.00 mL	08/14/14
14-16377-YV65D	SB3D	500 mL	1.00 mL	08/14/14
14-16378-YV65E	SB10	500 mL	1.00 mL	08/14/14
14-16379-YV65F	SB5	500 mL	1.00 mL	08/14/14

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Client ID	OTER	TOT OUT
MB-081414	105%	0
LCS-081414	93.5%	0
LCSD-081414	91.5%	0
SB6	59.0%	0
SB7	56.4%	0
SB3	51.6%	0
SB3D	78.8%	0
SB10	95.9%	0
SB5	45.0%*	1

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-16374 to 14-16379

FORM-II TPHD

YV65:00085

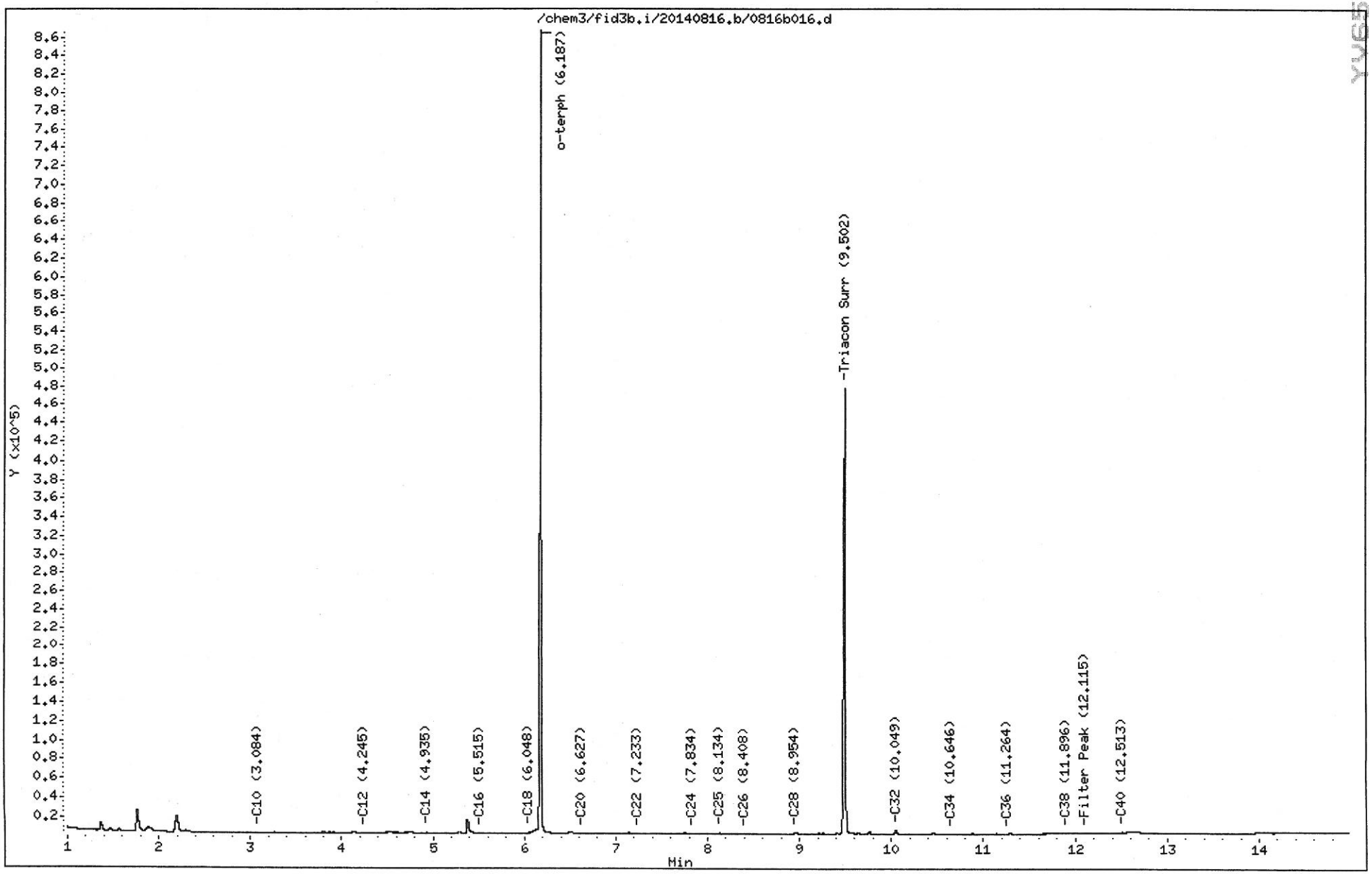
Data File: /chem3/fid3b.i/20140816.b/0816b016.d
Date : 16-AUG-2014 15:22
Client ID: YV50MBW1
Sample Info: YV50MBW1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

Column phase: RTX-1

YV65:00086



Data File: /chem3/fid3b.i/20140816.b/0816b017.d
Date : 16-AUG-2014 15:48
Client ID: YV50LCSW1
Sample Info: YV50LCSW1

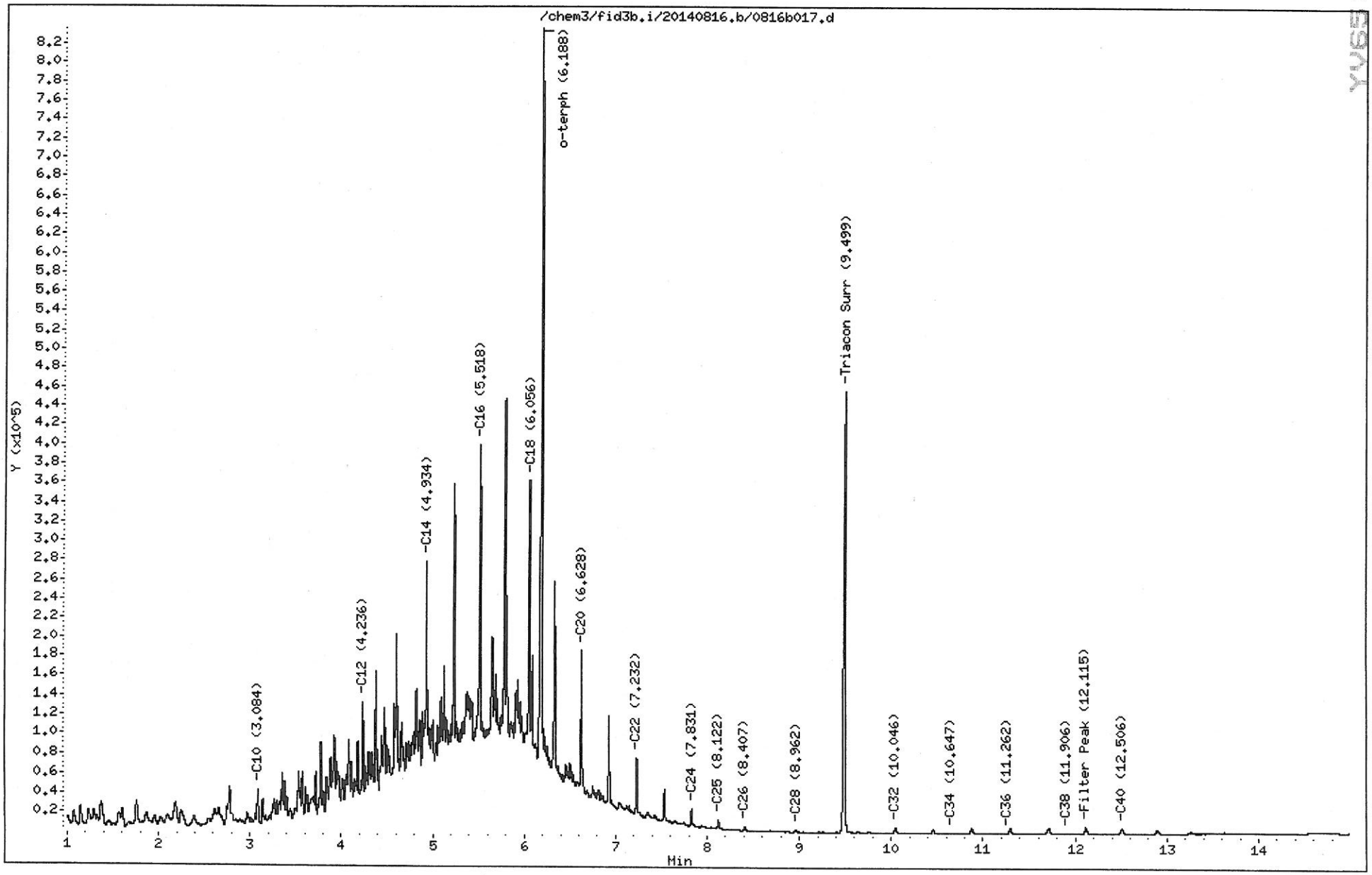
Column phase: RTX-1

Instrument: fid3b.i

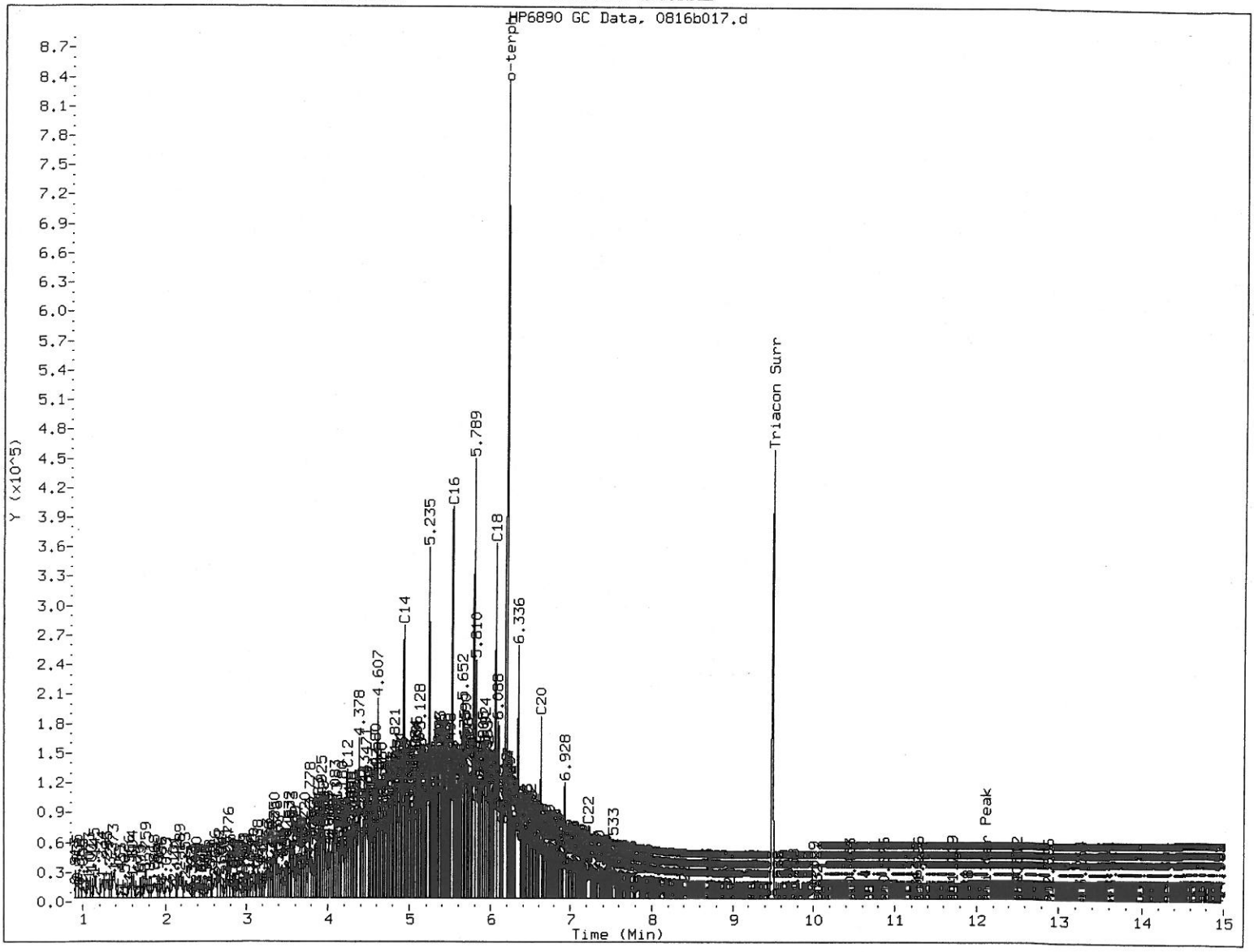
Operator: VTS
Column diameter: 0.25

8.19.14

YV50:66687



FID:3B-2C/RTX-1 YV50LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8.19.24

Data File: /chem3/fid3b.i/20140816.b/0816b018.d
Date : 16-AUG-2014 16:14
Client ID: YV50LCSDW1
Sample Info: YV50LCSDW1

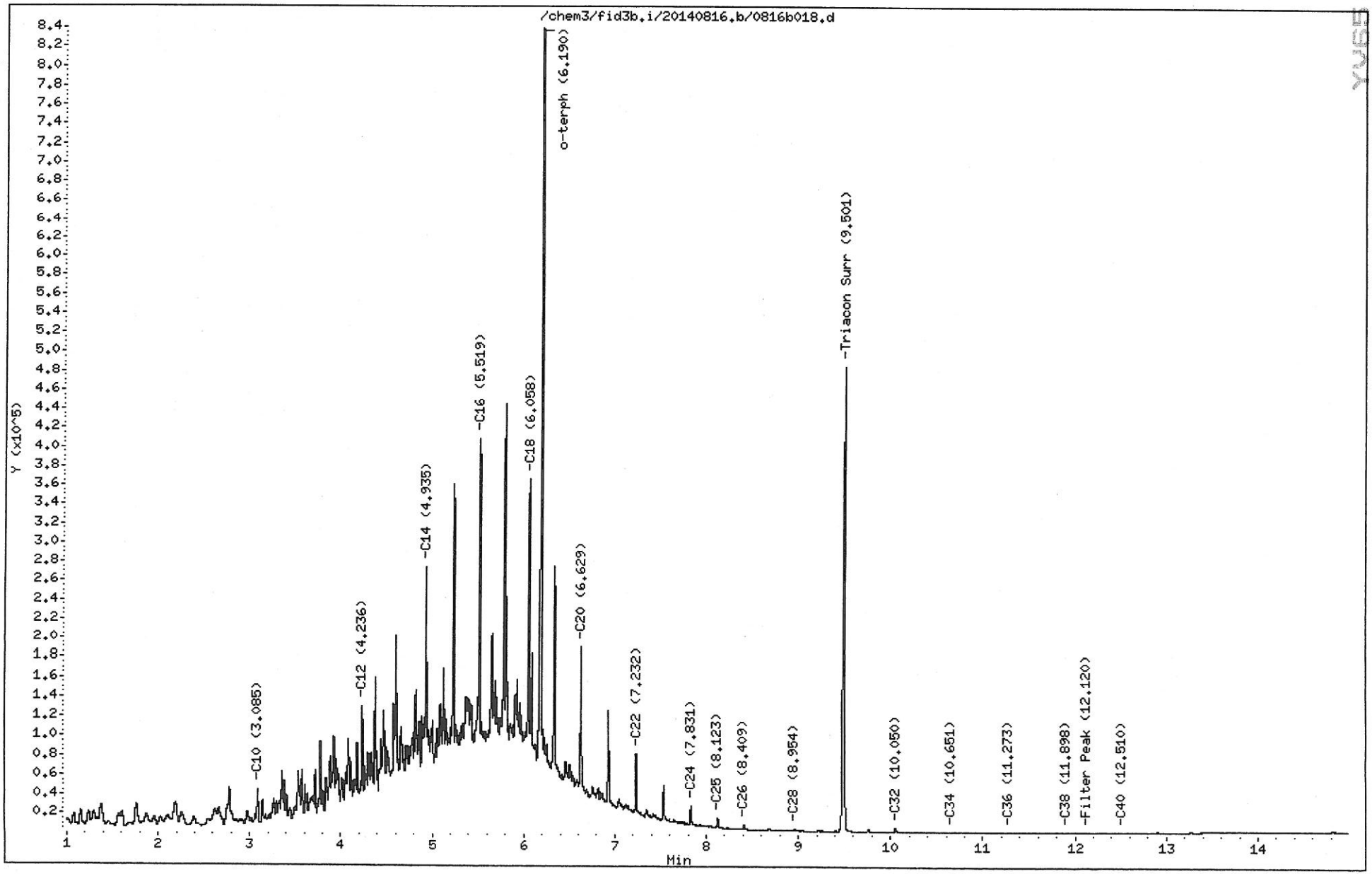
Column phase: RTX-1

Instrument: fid3b.i

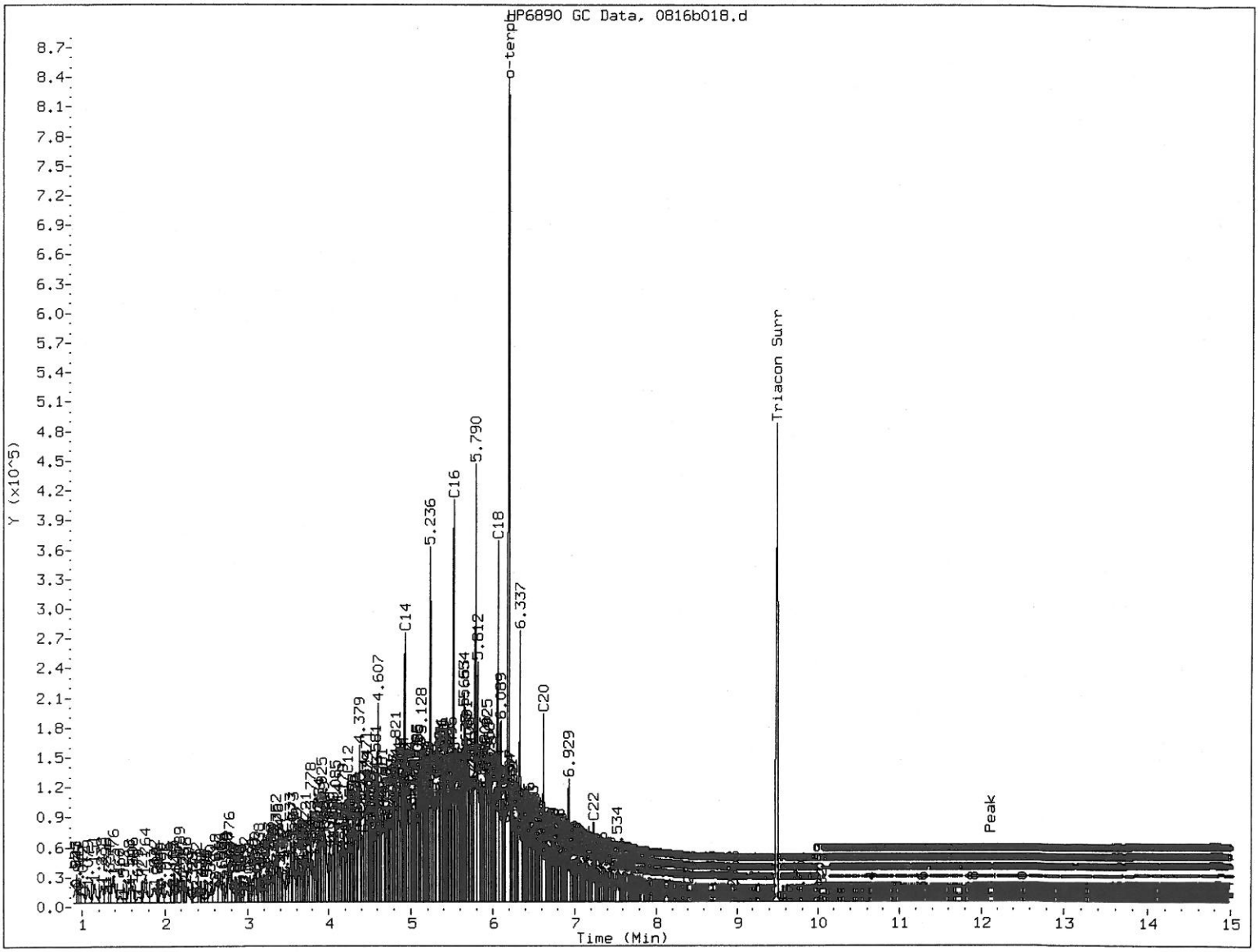
Operator: VTS
Column diameter: 0.25

8/12/14

YV5B : 00089



FID:3B-2C/RTX-1 YV50LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-19-24

Data File: /chem3/fid3b.i/20140816.b/0816b021.d
Date : 16-AUG-2014 17:33
Client ID: SB6
Sample Info: YV65A

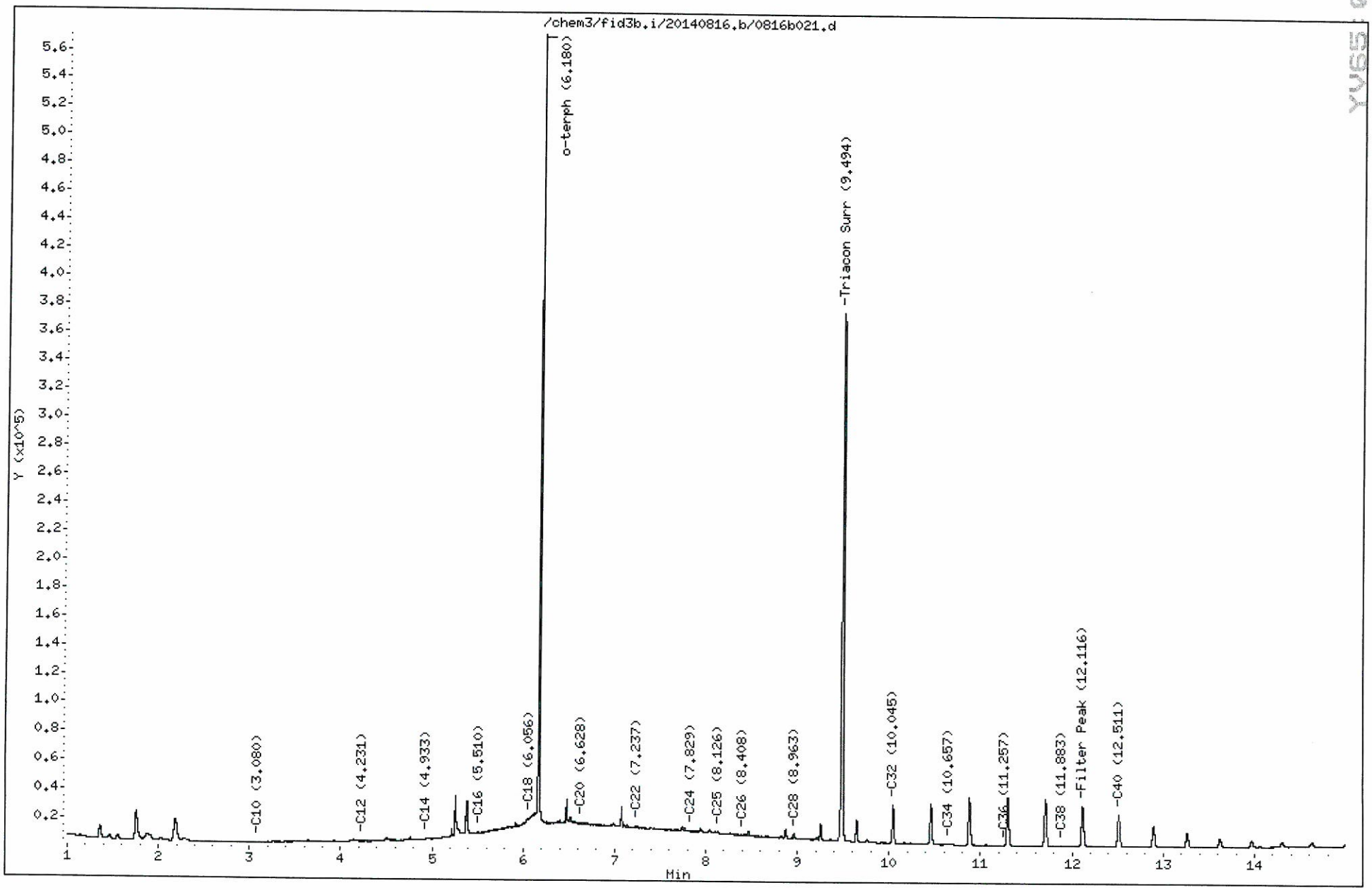
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

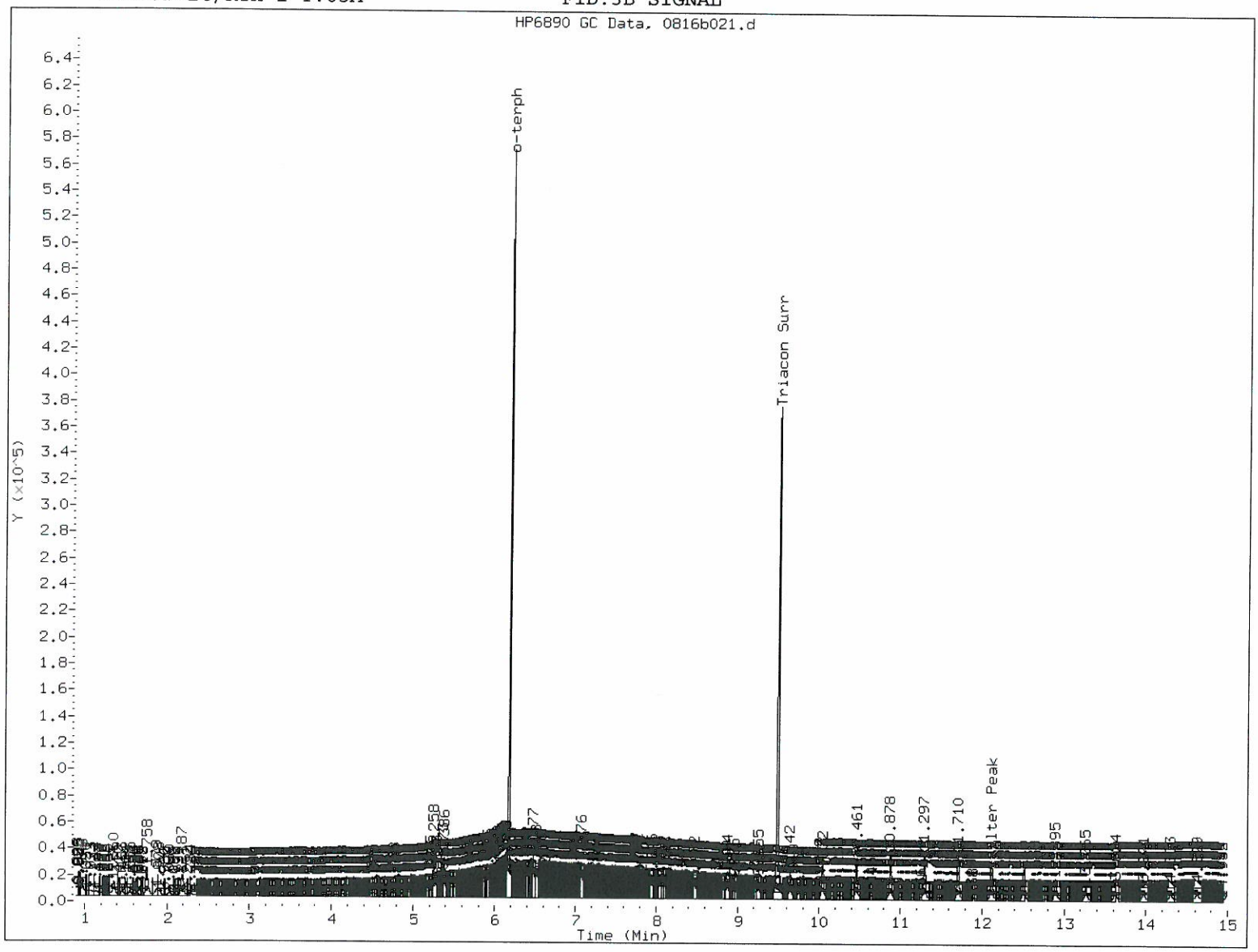
ID 8.19.14

YV65 0816b021



FID:3B-2C/RTX-1 YV65A

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-19-04

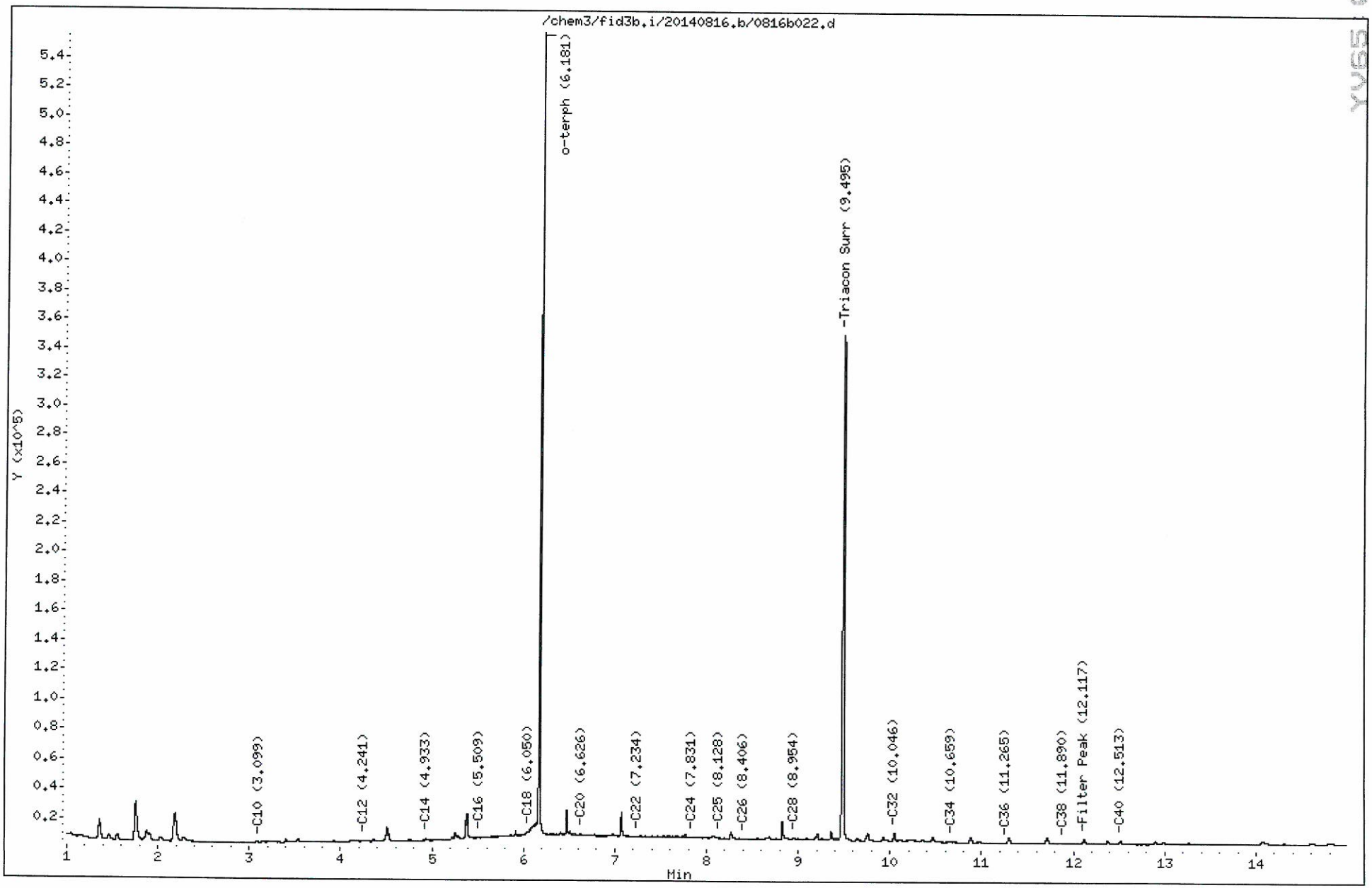
Data File: /chem3/fid3b.i/20140816.b/0816b022.d
Date : 16-AUG-2014 17:59
Client ID: SB7
Sample Info: YV65B

Column phase: RTX-1

Instrument: fid3b.i

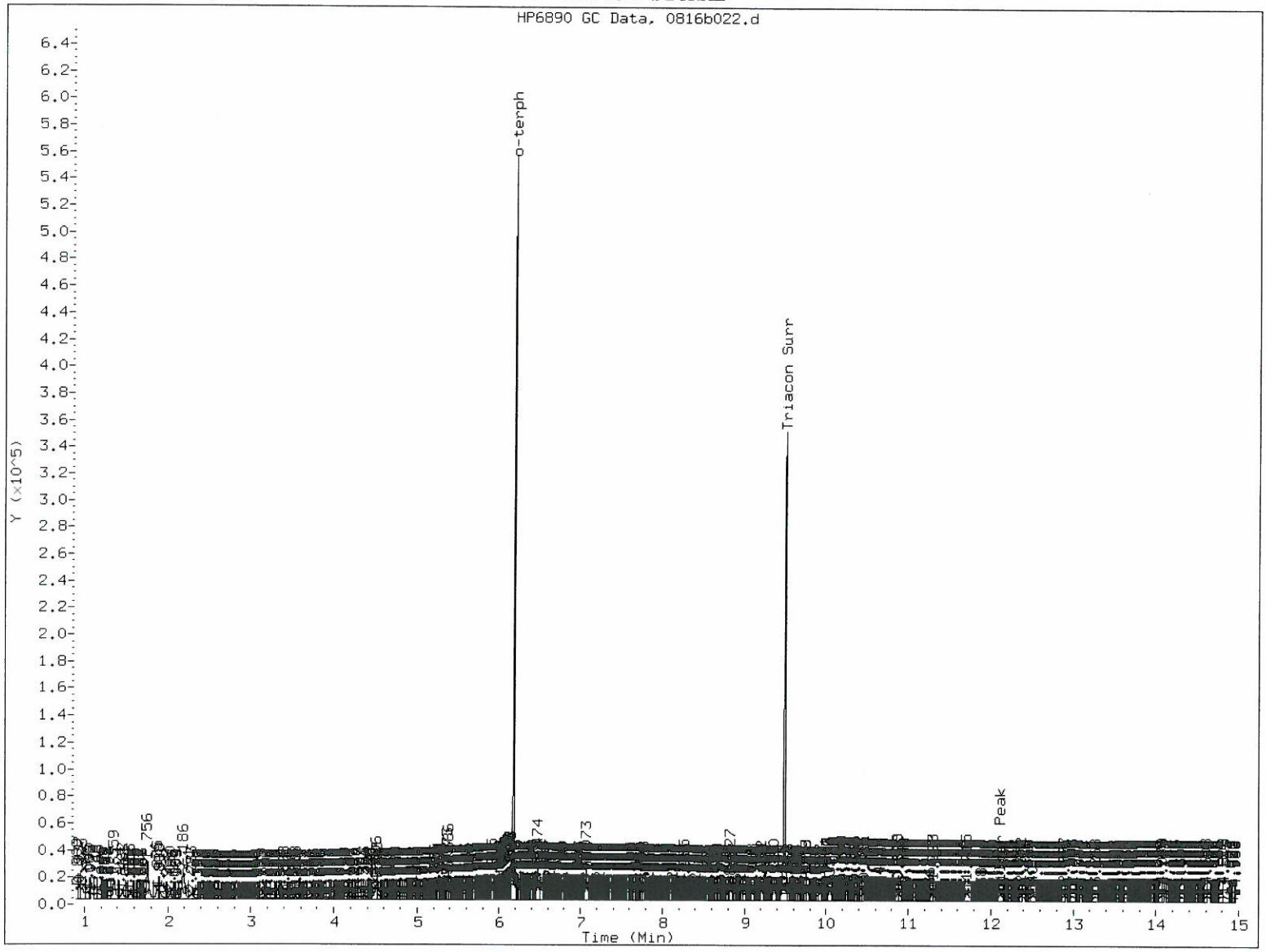
Operator: VTS
Column diameter: 0.25

YV65 00093



FID:3B-2C/RTX-1 YV65B

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: G Date: 8-19-4

Data File: /chem3/fid3b.i/20140816.b/0816b023.d
Date : 16-AUG-2014 18:25
Client ID: SB3
Sample Info: YV65C

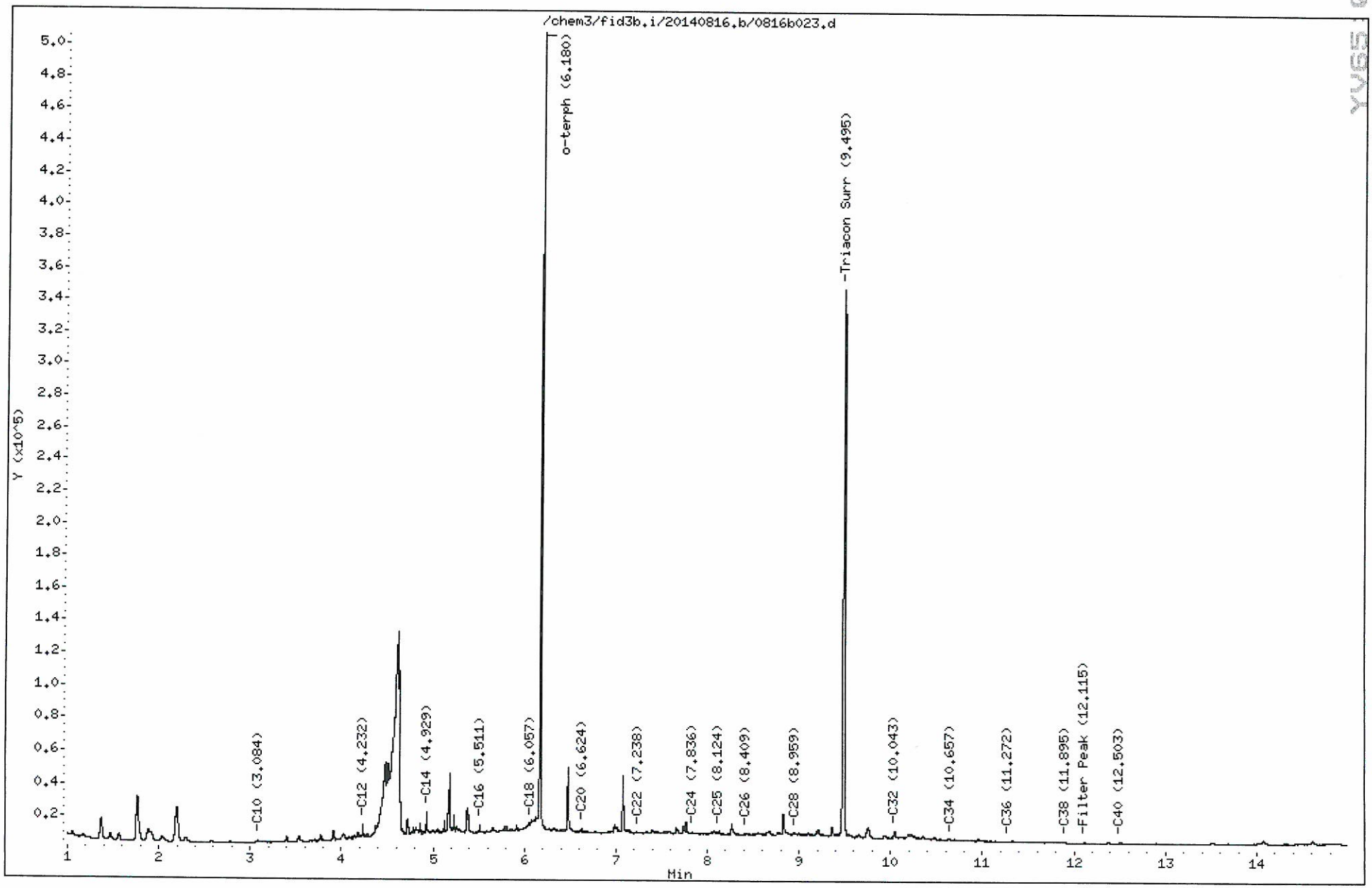
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

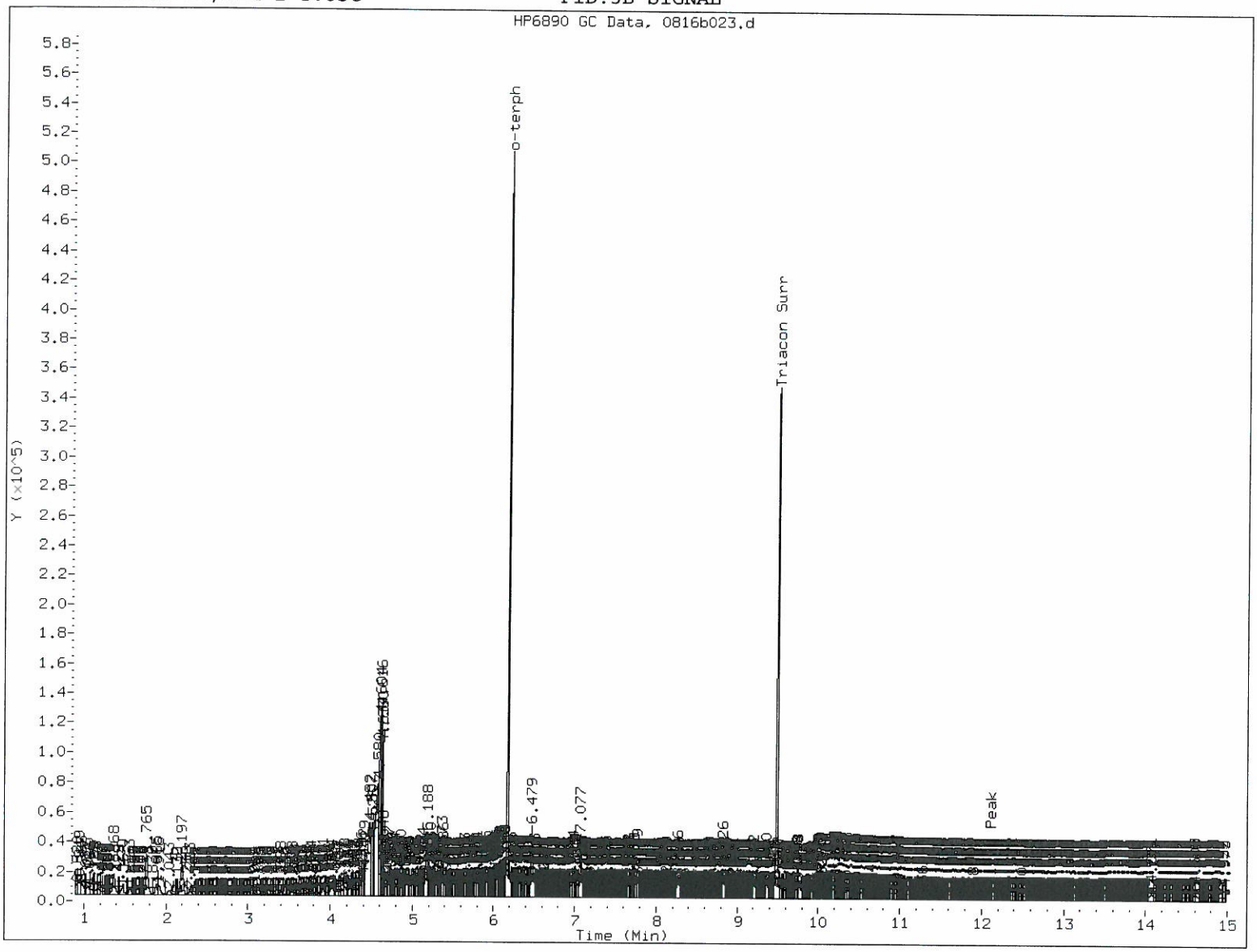
8.19.14

YV65 00055



FID:3B-2C/RTX-1 YV65C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-19-14

Data File: /chem3/fid3b.i/20140816.b/0816b024.d
Date : 16-AUG-2014 18:51
Client ID: SB3D
Sample Info: YV65D

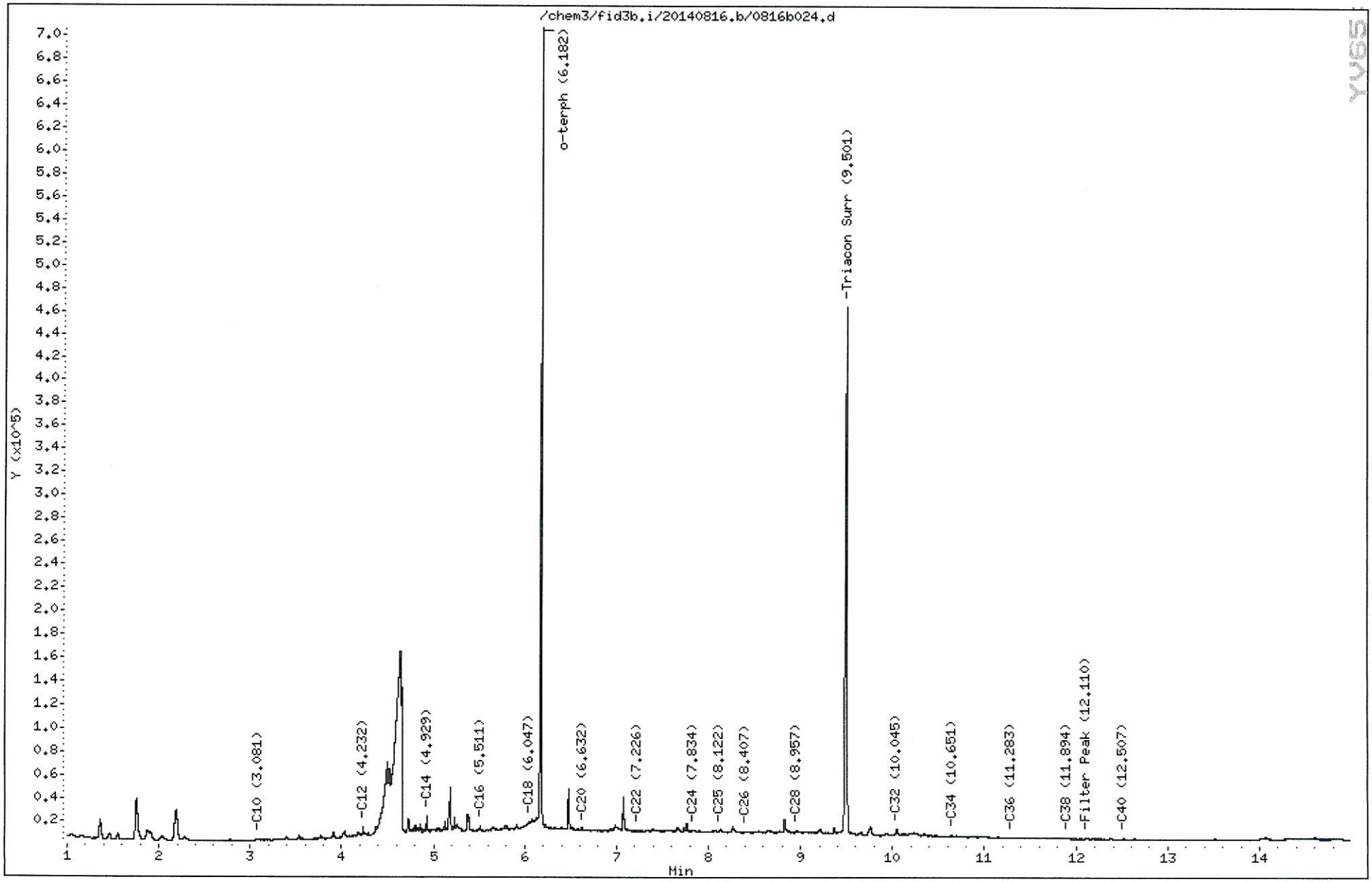
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

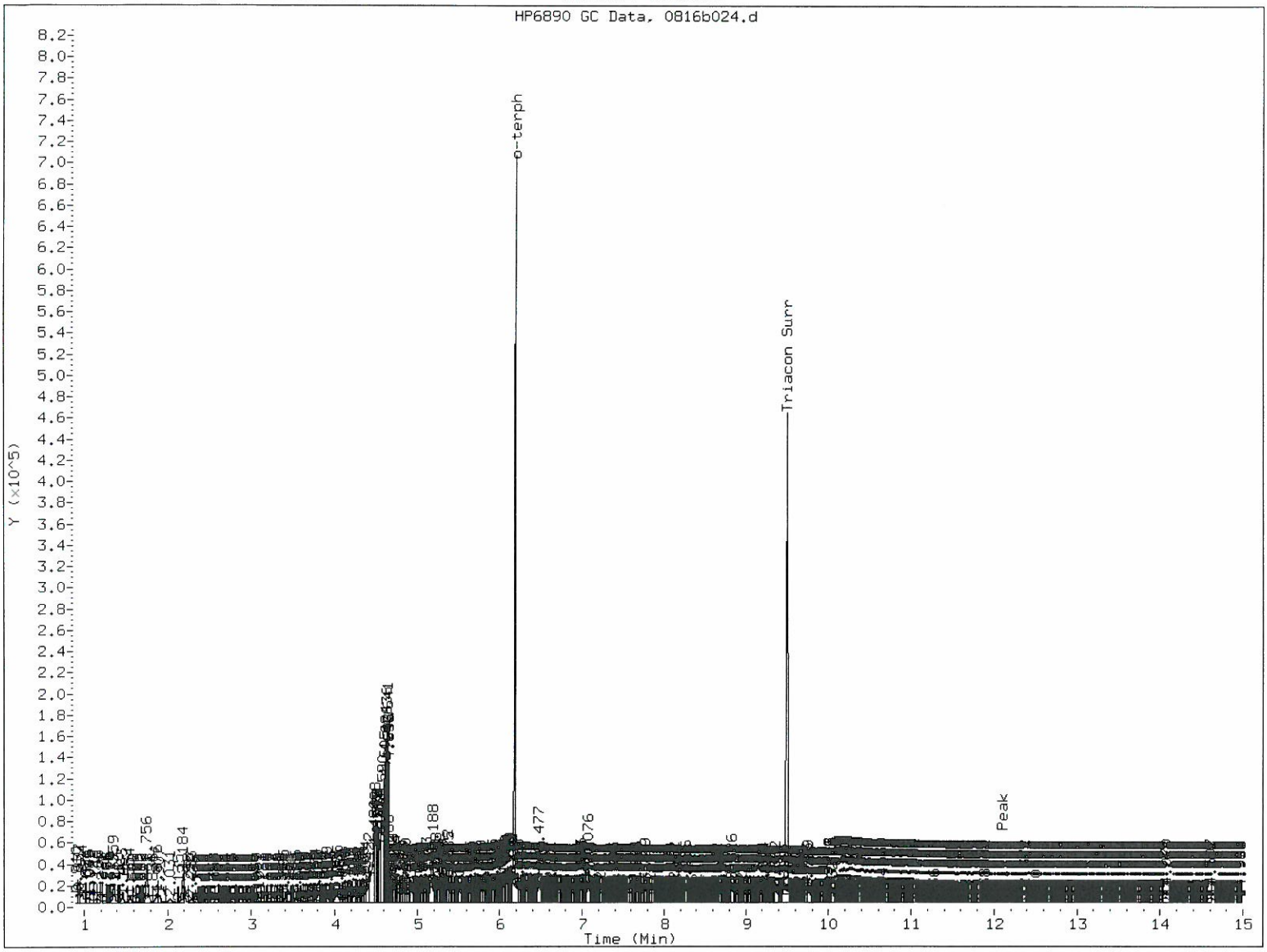
8.19.11

YV65 00097



FID:3B-2C/RTX-1 YV65D

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 8-19-4

Data File: /chem3/fid3b.i/20140816.b/0816b025.d
Date : 16-AUG-2014 19:16
Client ID: SB10
Sample Info: YV65E

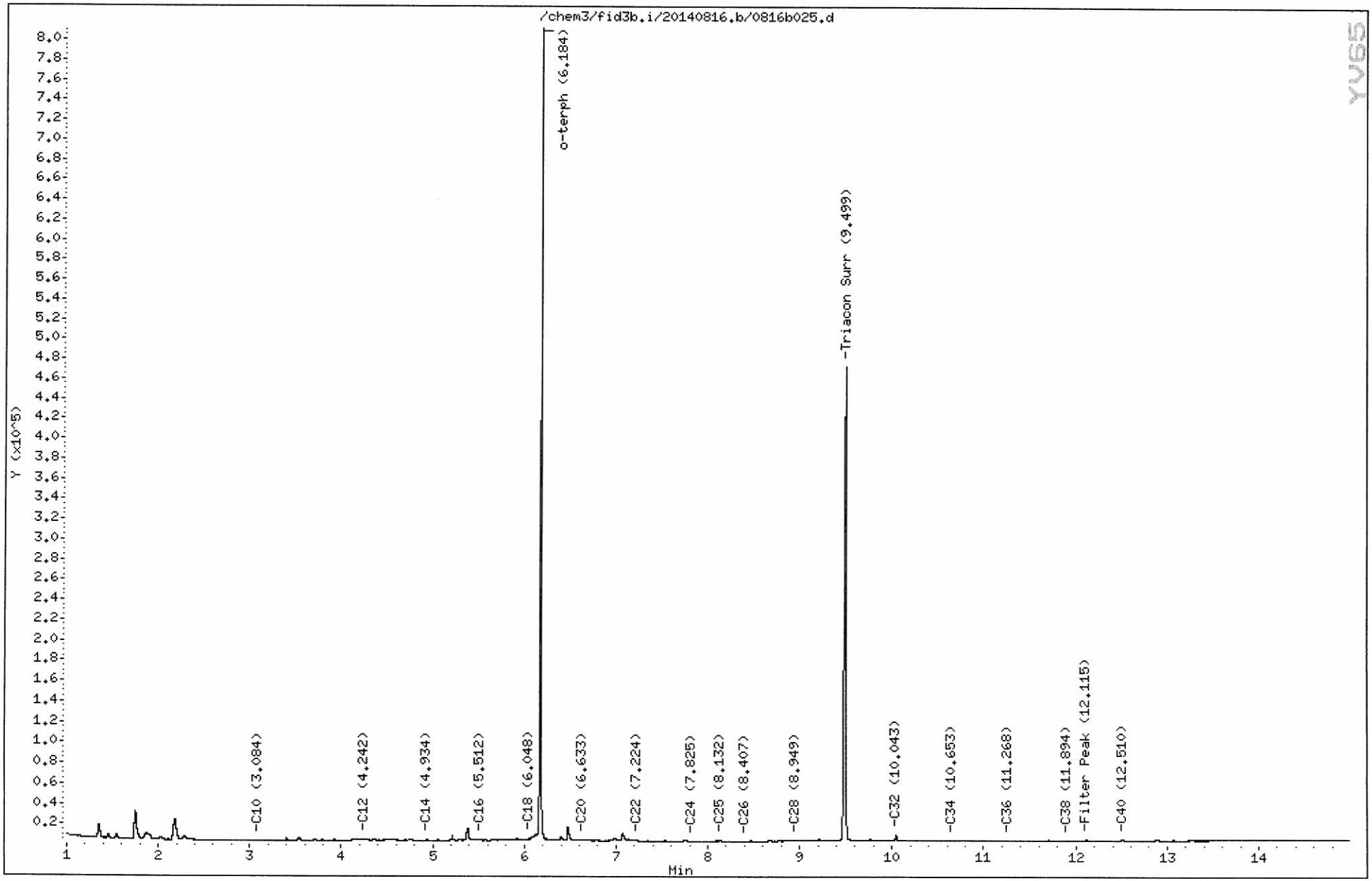
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

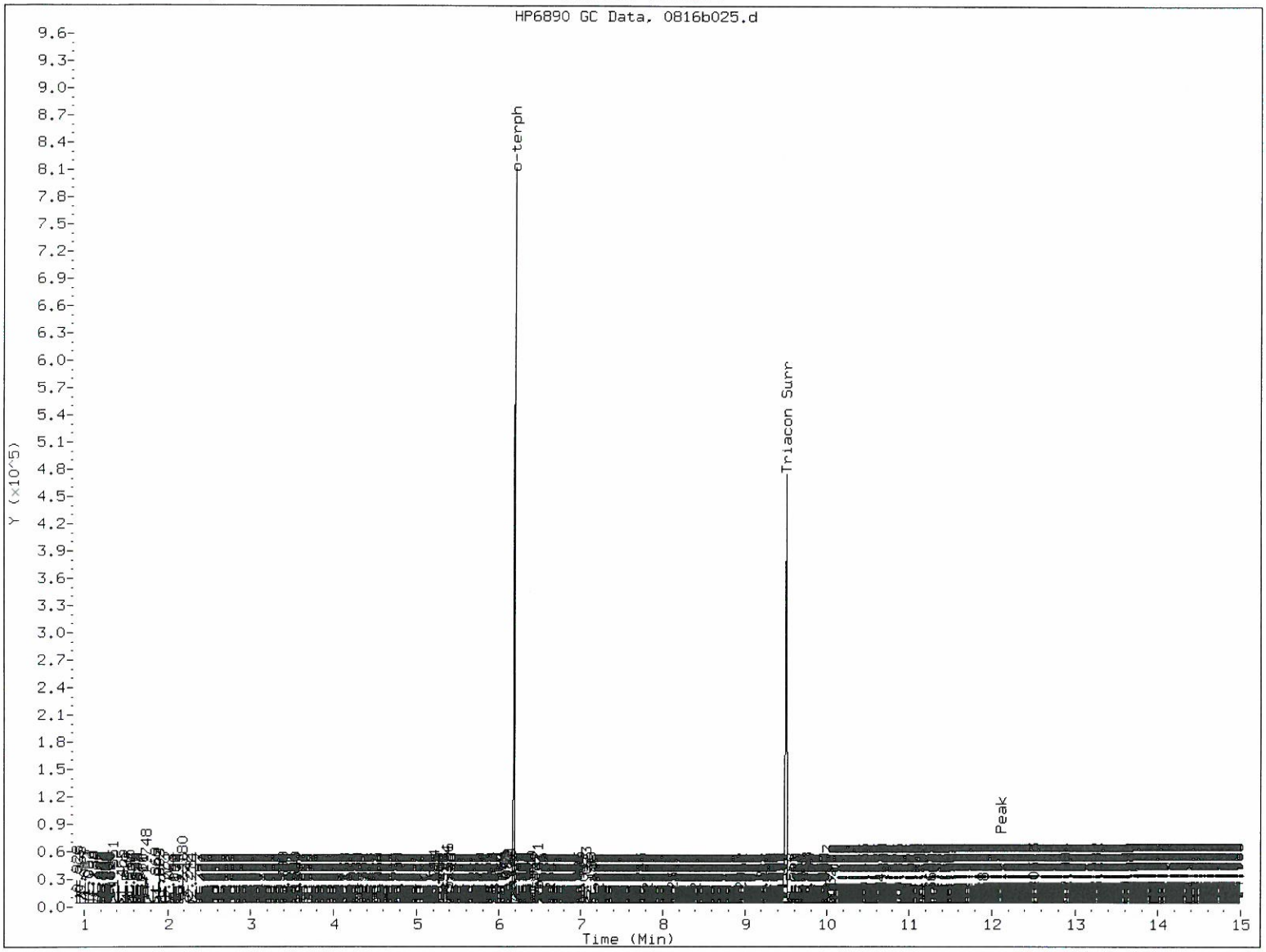
8-19-14

YV65 9999



FID:3B-2C/RTX-1 YV65E

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: Y Date: 8-19-4

Data File: /chem3/fid3b.i/20140816.b/0816b026.d
Date : 16-AUG-2014 19:42
Client ID: SB5
Sample Info: YV65F

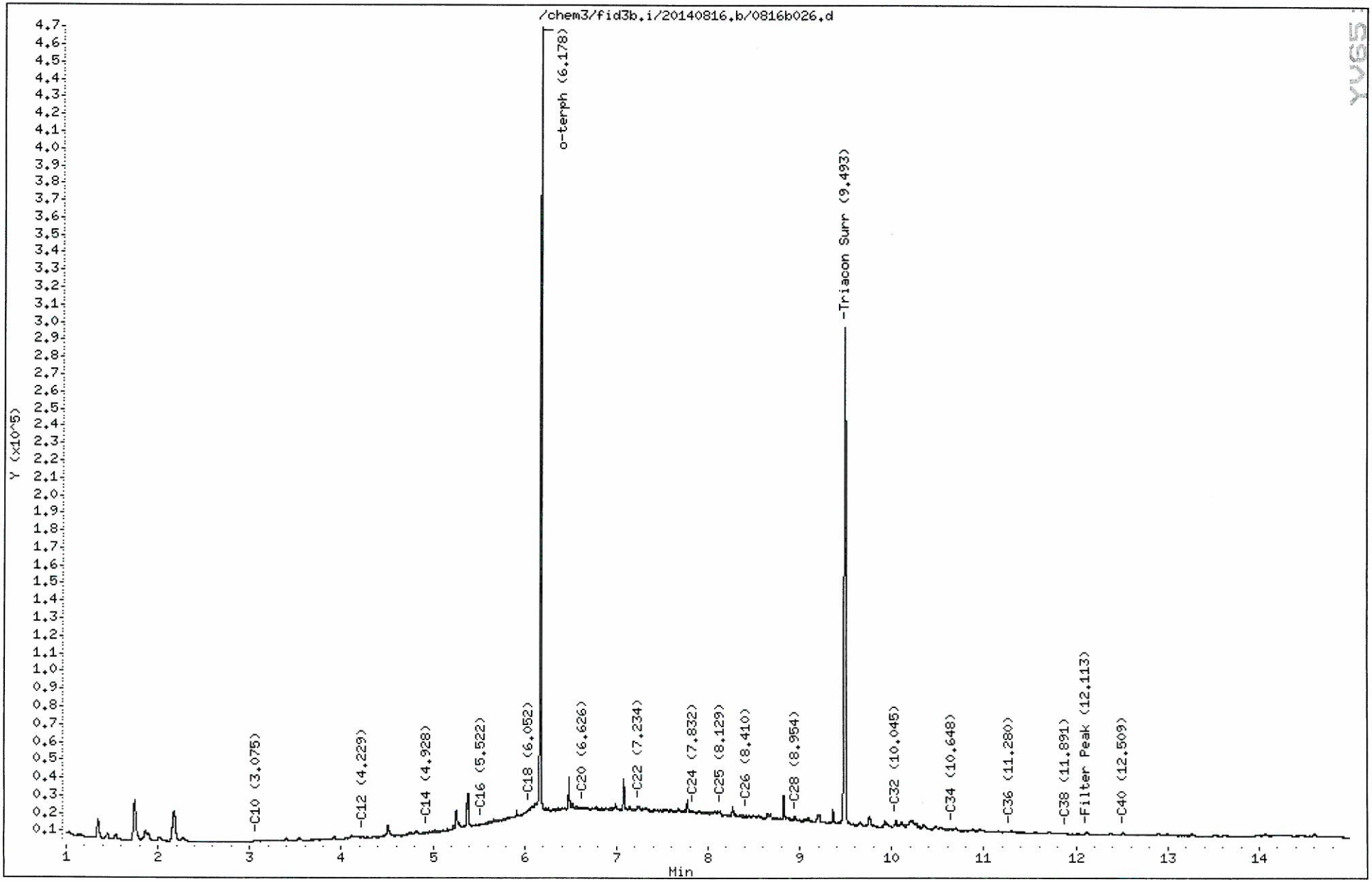
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS
Column diameter: 0.25

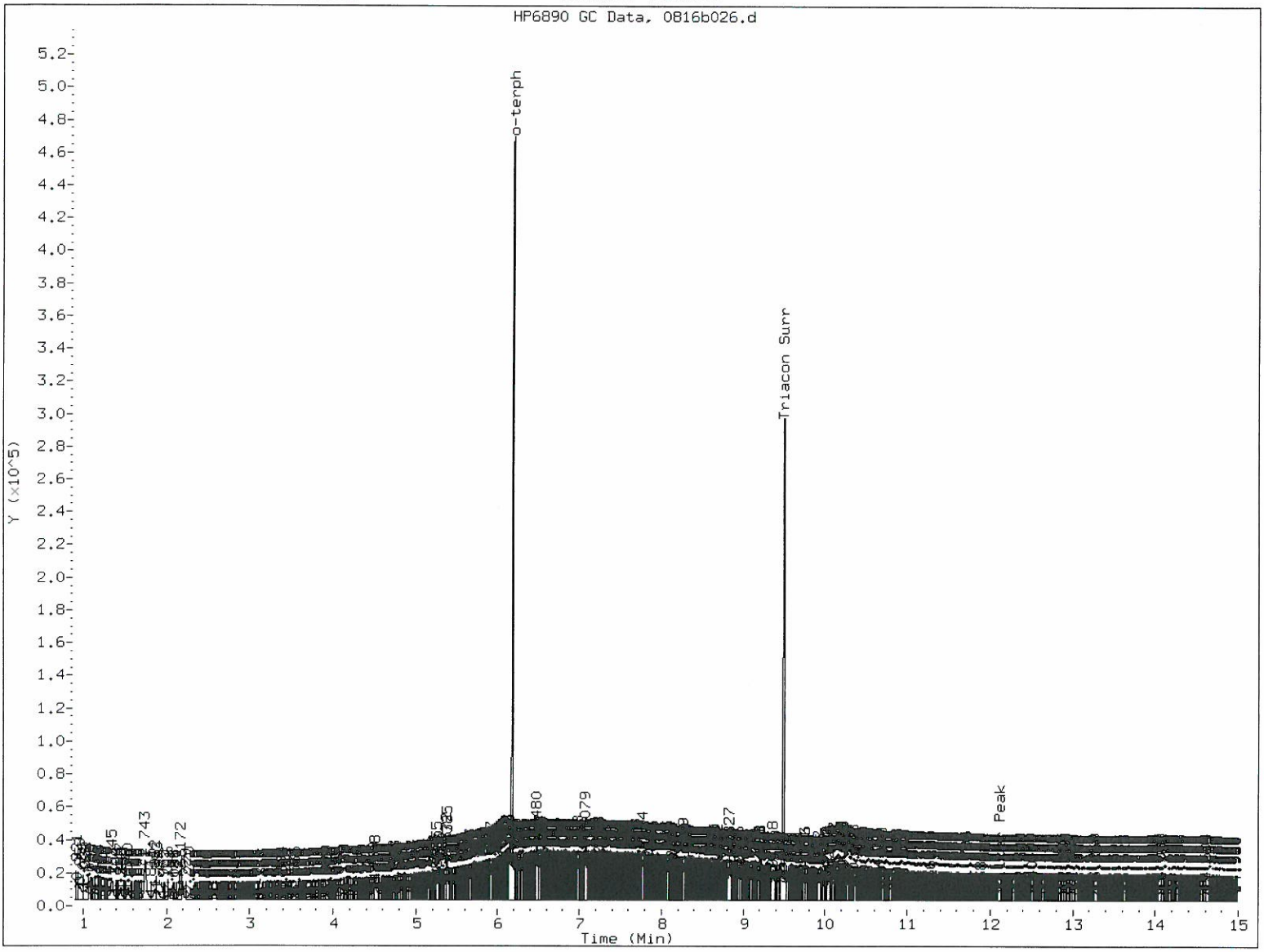
V
8.19.14

YV65 091101



FID:3B-2C/RTX-1 YV65F

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: Y Date: 8.19.14

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB6
ARI ID: 14-16374 YV65A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00103

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7
ARI ID: 14-16375 YV65B

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00104

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3
ARI ID: 14-16376 YV65C

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00105

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3D
ARI ID: 14-16377 YV65D

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00106

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB10
ARI ID: 14-16378 YV65E

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00107

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB5
ARI ID: 14-16379 YV65F

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

YV65:00108

METHOD BLANK RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010 U	

YV65:00109

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	SM3500Cr-B	08/08/14	mg/L	0.640	0.630	101.6%

YV65:00110

REPLICATE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YV65A Client ID: SB6						
Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010	< 0.010	NA

YV65:00111

MS/MSD RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/20/14

Project: PRECICION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YV65A Client ID: SB6							
Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010	< 0.010 U	0.063	0.0%

YV65:00112

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7-19
ARI ID: 14-16381 YV65P

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.462	< 0.462 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	85.53

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB6-16
ARI ID: 14-16401 YV65G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.571	< 0.571 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	70.04

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7-11
ARI ID: 14-16402 YV65H

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.554	< 0.554 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	70.26

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00115

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3-8
ARI ID: 14-16404 YV65J

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.452	< 0.452 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	87.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00116

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB1-5
ARI ID: 14-16405 YV65K

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.440	< 0.440 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	89.92

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00117

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB10-7
ARI ID: 14-16406 YV65L

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.445	< 0.445 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	88.57

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00118

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB8-16
ARI ID: 14-16407 YV65M

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.544	< 0.544 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	72.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00119

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB5-11
ARI ID: 14-16408 YV65N

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.552	< 0.552 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	71.28

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YV65:00120

METHOD BLANK RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/14/14	mg/kg	< 0.398 U	PREP
Total Solids	08/12/14	Percent	< 0.01 U	ICB

YV65:00121

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/14/14	mg/kg	20.0	19.9	100.5%
Insoluble Hexavalent Chromiu	08/14/14	mg/kg	663	672	98.7%
Soil Hexavalent Chrome					

YV65:00122

REPLICATE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YV65P Client ID: SB7-19					
Total Solids	08/12/14	Percent	85.53	87.87 84.91	1.8%
ARI ID: YV65G Client ID: SB6-16					
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	< 0.569	NA

YV65:00123

MS/MSD RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YV65G Client ID: SB6-16						
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	< 0.567 U	28.3	NA
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	492	1,010	48.5%

YV65:00124

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB6
SAMPLE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.091**	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YV65:00125

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB6
DUPLICATE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.091	0.071	24.7%	+/- 20%	*
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

YV65:00126

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB6
MATRIX SPIKE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.27	2.00	114%	
Chromium	6010C	0.091	0.577	0.500	97.2%	
Lead	6010C	0.02 U	2.04	2.00	102%	
Selenium	6010C	0.05 U	2.22	2.00	111%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB7
SAMPLE

Lab Sample ID: YV65B
LIMS ID: 14-16375
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.1	**0.1**	
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.01	**0.34**	
3010A	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.04	**0.07**	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.1	0.1	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB3
SAMPLE

Lab Sample ID: YV65C
LIMS ID: 14-16376
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.05	**0.06**	
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.418**	
3010A	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.08**	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB3D
SAMPLE

Lab Sample ID: YV65D
LIMS ID: 14-16377
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.05	**0.06**	
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.265**	
3010A	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.02	**0.12**	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB10
SAMPLE

Lab Sample ID: YV65E
LIMS ID: 14-16378
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.005	**0.331**	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB5
SAMPLE

Lab Sample ID: YV65F
LIMS ID: 14-16379
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	**7440-38-2**	**Arsenic**	0.2	**0.3**	
3010A	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.02	**0.57**	
3010A	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	0.1	**0.1**	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.2	0.2	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB7-19
SAMPLE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 87.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**24.8**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV65:00133

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB7-19
DUPLICATE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	6 U	6 U	0.0%	+/- 6	L
Chromium	6010C	24.8	30.6	20.9%	+/- 20%	*
Lead	6010C	2 U	2 U	0.0%	+/- 2	L
Selenium	6010C	6 U	6 U	0.0%	+/- 6	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB7-19
MATRIX SPIKE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	6 U	237	225	105%	
Chromium	6010C	24.8	303	56.2	495%	N
Lead	6010C	2 U	238	225	106%	
Selenium	6010C	6 U	233	225	104%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB6-16
SAMPLE

Lab Sample ID: YV65G
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 72.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.7	**10.0**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB7-11
SAMPLE

Lab Sample ID: YV65H
LIMS ID: 14-16402
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 69.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.7	**17.7**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	3	**4**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV65:00137

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB3-8
SAMPLE

Lab Sample ID: YV65J
LIMS ID: 14-16404
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 85.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.6	**67.3**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV65:00138

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB1-5
SAMPLE

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 90.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.5	**48.7**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YV65:00139

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB10-7
SAMPLE

Lab Sample ID: YV65L
LIMS ID: 14-16406
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 86.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.5	**30.3**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	2	**2**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB8-16
SAMPLE

Lab Sample ID: YV65M
LIMS ID: 14-16407
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 68.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.7	**23.7**	
3050B	08/13/14	6010C	08/15/14	**7439-92-1**	**Lead**	3	**7**	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB5-11
SAMPLE

Lab Sample ID: YV65N
LIMS ID: 14-16408
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Percent Total Solids: 70.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	**7440-47-3**	**Chromium**	0.7	**15.7**	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: YV65MB
LIMS ID: 14-16379
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YV65:00143

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: YV65LCS
LIMS ID: 14-16379
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.11	2.00	106%	
Chromium	6010C	0.536	0.500	107%	
Lead	6010C	2.11	2.00	106%	
Selenium	6010C	2.08	2.00	104%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

YV65:00144

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YV65MB
LIMS ID: 14-16408
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YV65LCS
LIMS ID: 14-16408
Matrix: Soil
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	215	200	108%	
Chromium	6010C	55.0	50.0	110%	
Lead	6010C	217	200	108%	
Selenium	6010C	213	200	106%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

YV65:00146

SAMPLES RECEIVED SUMMARY 08/14/14

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YV65**

Logged by: CA
Cooler Temp.(Deg.C): 21.8,21.1

Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Validatable Data Pkg: No
Special Instructions:

Project Manager: Mark 206-695-6210
VTSR: 08/08/14
Data Due: 08/25/14
Proj ID: PRECICION ENG

SDG No:
Analytical Protocol: In-house
Deliverables:

16 Sample(s)

ARI ID	Client ID	Matrix Condition	Sampling Date/Time	TOT MET	CONV	NWTPHD +Other	SW8260C VOA	BOTTLES ON HOLD
14-16374-YV65A	SB6	Water	08/08/14 09:55	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								
14-16375-YV65B	SB7	Water	08/08/14 11:15	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								
14-16376-YV65C	SB3	Water	08/08/14 13:10	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								
14-16377-YV65D	SB3D	Water	08/08/14 13:20	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								
14-16378-YV65E	SB10	Water	08/08/14 15:50	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								
14-16379-YV65F	SB5	Water	08/08/14 08:35	X	X	X	X	
Total Metals:**ICP**-As,Cr,Pb,Se Conv: Hex Chrome								

SAMPLES RECEIVED SUMMARY 08/14/14

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YV65**

Logged by: CA
Cooler Temp.(Deg.C): 21.8,21.1

Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Validatable Data Pkg: No
Special Instructions:

Project Manager: Mark 206-695-6210
VTSR: 08/08/14
Data Due: 08/25/14
Proj ID: PRECISION ENG

SDG No:
Analytical Protocol: In-house
Deliverables:

16 Sample(s)

ARI ID	Client ID	Matrix Condition	Sampling Date/Time	TOT MET	CONV	NWTPHD +Other	SW8260C VOA	BOTTLES ON HOLD
14-16380-YV65O	Trip Blank	Water	08/08/14				X	
14-16381-YV65P	SB7-19	Soil	08/08/14 11:00	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16401-YV65G	SB6-16	Soil	08/08/14 09:30	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16402-YV65H	SB7-11	Soil	08/08/14 11:05	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16403-YV65I	SB3-2	Soil	08/08/14 13:00			X		
14-16404-YV65J	SB3-8	Soil	08/08/14 13:30	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16405-YV65K	SB1-5	Soil	08/08/14 14:40	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								

SAMPLES RECEIVED SUMMARY 08/14/14

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **YV65**

Logged by: CA
Cooler Temp.(Deg.C): 21.8,21.1

Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Validatable Data Pkg: No
Special Instructions:

Project Manager: Mark 206-695-6210
VTSR: 08/08/14
Data Due: 08/25/14
Proj ID: PRECISION ENG

SDG No:
Analytical Protocol: In-house
Deliverables:

16 Sample(s)

ARI ID	Client ID	Matrix Condition	Sampling Date/Time	TOT MET	CONV	NWTPHD +Other	SW8260C VOA	BOTTLES ON HOLD
14-16406-YV65L	SB10-7	Soil	08/08/14 15:40	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16407-YV65M	SB8-16	Soil	08/08/14 16:45	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								
14-16408-YV65N	SB5-11	Soil	08/08/14 08:10	X	X	X	X	
Total Metals:ICP-As,Cr,Pb,Se Conv: Soil Cr 6+,TOT_SOLIDS								

Please verify the information shown here. If there are questions or discrepancies, contact your ARI Project Manager designated above.

Unless other arrangements for storage/archiving samples are made for this project, volatile samples not consumed will be disposed of **09/07/14**. All other sample aliquots will be disposed no earlier than **11/20/14**.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YV65	Turn-around Requested:
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400
Client Contact: Ty / Session	
Client Project Name: Precision Engineering	
Client Project #:	Samplers: TS / RL

Page: 1 of 2	
Date: 8/8	Ice Present? Y
No. of Coolers: 2	Cooler Temps: 21.8, 21.1

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	NWTPH-Dx	cPAHs	TOT Metals					Notes/Comments
SB6-16	8/8	0930	Soil	8	X	X	X	X					
SB6		0955	GW	7	X	X	X	X					
SB7-11		1105	Soil	8	X	X	X	X					
SB7-19		1100	Soil	8	X	X	X	X					
SB7		1115	GW	7	X	X	X	X					
SB3-2		1300	Soil	1		X							
SB3-8		1330	Soil	8	X	X	X	X					
SB3MS		1310	GW	7	X	X	X	X					
SB3D		1320	GW	7	X	X	X	X					
SB1-5		1440	Soil	8	X	X	X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joseph Sunday	Printed Name: A. Vagardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/8 17:00	Date & Time: 8/8/14 1720	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YV65
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: PRECISION ENG

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB6	YV65A	14-16374	Water	08/08/14 09:55	08/08/14 17:20
2.	SB7	YV65B	14-16375	Water	08/08/14 11:15	08/08/14 17:20
3.	SB3	YV65C	14-16376	Water	08/08/14 13:10	08/08/14 17:20
4.	SB3D	YV65D	14-16377	Water	08/08/14 13:20	08/08/14 17:20
5.	SB10	YV65E	14-16378	Water	08/08/14 15:50	08/08/14 17:20
6.	SB5	YV65F	14-16379	Water	08/08/14 08:35	08/08/14 17:20
7.	Trip Blank	YV65O	14-16380	Water	08/08/14	08/08/14 17:20
8.	SB7-19	YV65P	14-16381	Soil	08/08/14 11:00	08/08/14 17:20
9.	SB6-16	YV65G	14-16401	Soil	08/08/14 09:30	08/08/14 17:20
10.	SB7-11	YV65H	14-16402	Soil	08/08/14 11:05	08/08/14 17:20
11.	SB3-2	YV65I	14-16403	Soil	08/08/14 11:00	08/08/14 17:20
12.	SB3-8	YV65J	14-16404	Soil	08/08/14 13:30	08/08/14 17:20
13.	SB1-5	YV65K	14-16405	Soil	08/08/14 14:40	08/08/14 17:20
14.	SB10-7	YV65L	14-16406	Soil	08/08/14 15:40	08/08/14 17:20
15.	SB8-16	YV65M	14-16407	Soil	08/08/14 16:45	08/08/14 17:20
16.	SB5-11	YV65N	14-16408	Soil	08/08/14 08:10	08/08/14 17:20

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YV65	Turn-around Requested:	Page: 2 of 2	
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400	Date: 8/8	Ice Present?
Client Contact: Ty / Session		No. of Coolers:	Cooler Temps:
Client Project Name: Precision Camera			
Client Project #:	Samplers: JS / BL		

Analytical Resources, Incorporated
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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs	NWTPH-Dx	Cond	Total Metals					Notes/Comments
SB10-7	8/8	1540	Soil	8	X	X	X	X					
SB10		1550	GW	7	X	X	X	X					
SB8-16		1645	Soil	8	X	X	X	X					
SB5-11		0810	Soil	8	X	X	X	X					
SB5		0855	GW	7	X	X	X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joseph Jenks	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/8 1720	Date & Time: 8/8/14 1720	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: KJC

Project Name: _____

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 21.8 21.1 ___ ___ ___ ___

Time: 1700

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877987

Cooler Accepted by: AV Date: 8/8/14 Time: 1720

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? (YES) ~~NO~~

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? YES (NO)

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... (NA) YES NO

Were all VOC vials free of air bubbles? (NA) YES NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI... (NA) _____

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: CA Date: 8/11/14 Time: 1545

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
SB3-16	SB3-8		

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
○ ○ ○	○ ○ ○	○ ○ ○

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-19**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 21:11

Sample Amount: 7.87 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 11.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.6	< 0.6	U
74-83-9	Bromomethane	0.6	< 0.6	U
75-01-4	Vinyl Chloride	0.6	< 0.6	U
75-00-3	Chloroethane	0.6	< 0.6	U
75-09-2	**Methylene Chloride**	**1.3**	**2.4**	
67-64-1	**Acetone**	**3.2**	**16**	**Q**
75-15-0	**Carbon Disulfide**	**0.6**	**4.3**	**Q**
75-35-4	1,1-Dichloroethene	0.6	< 0.6	U
75-34-3	1,1-Dichloroethane	0.6	< 0.6	U
156-60-5	trans-1,2-Dichloroethene	0.6	< 0.6	U
156-59-2	cis-1,2-Dichloroethene	0.6	< 0.6	U
67-66-3	Chloroform	0.6	< 0.6	U
107-06-2	1,2-Dichloroethane	0.6	< 0.6	U
78-93-3	2-Butanone	3.2	< 3.2	U
71-55-6	1,1,1-Trichloroethane	0.6	< 0.6	U
56-23-5	Carbon Tetrachloride	0.6	< 0.6	U
108-05-4	Vinyl Acetate	3.2	< 3.2	U
75-27-4	Bromodichloromethane	0.6	< 0.6	U
78-87-5	1,2-Dichloropropane	0.6	< 0.6	U
10061-01-5	cis-1,3-Dichloropropene	0.6	< 0.6	U
79-01-6	Trichloroethene	0.6	< 0.6	U
124-48-1	Dibromochloromethane	0.6	< 0.6	U
79-00-5	1,1,2-Trichloroethane	0.6	< 0.6	U
71-43-2	Benzene	0.6	< 0.6	U
10061-02-6	trans-1,3-Dichloropropene	0.6	< 0.6	U
110-75-8	2-Chloroethylvinylether	3.2	< 3.2	U
75-25-2	Bromoform	0.6	< 0.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.2	< 3.2	U
591-78-6	2-Hexanone	3.2	< 3.2	U
127-18-4	Tetrachloroethene	0.6	< 0.6	U
79-34-5	1,1,2,2-Tetrachloroethane	0.6	< 0.6	U
108-88-3	Toluene	0.6	< 0.6	U
108-90-7	Chlorobenzene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
100-42-5	Styrene	0.6	< 0.6	U
75-69-4	Trichlorofluoromethane	0.6	< 0.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.3	< 1.3	U
179601-23-1	m,p-Xylene	0.6	< 0.6	U
95-47-6	o-Xylene	0.6	< 0.6	U
95-50-1	1,2-Dichlorobenzene	0.6	< 0.6	U
541-73-1	1,3-Dichlorobenzene	0.6	< 0.6	U
106-46-7	1,4-Dichlorobenzene	0.6	< 0.6	U
107-02-8	Acrolein	32	< 32	U
74-88-4	Iodomethane	0.6	< 0.6	U
74-96-4	Bromoethane	1.3	< 1.3	U
107-13-1	Acrylonitrile	3.2	< 3.2	U
563-58-6	1,1-Dichloropropene	0.6	< 0.6	U
74-95-3	Dibromomethane	0.6	< 0.6	U
630-20-6	1,1,1,2-Tetrachloroethane	0.6	< 0.6	U
96-12-8	1,2-Dibromo-3-chloropropane	3.2	< 3.2	U
96-18-4	1,2,3-Trichloropropane	1.3	< 1.3	U
110-57-6	trans-1,4-Dichloro-2-butene	3.2	< 3.2	U
108-67-8	1,3,5-Trimethylbenzene	0.6	< 0.6	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-19**
 SAMPLE

Lab Sample ID: YV65P
LIMS ID: 14-16381
Matrix: Soil
Date Analyzed: 08/12/14 21:11

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.6	< 0.6	U
87-68-3	Hexachlorobutadiene	3.2	< 3.2	U
106-93-4	1,2-Dibromoethane	0.6	< 0.6	U
74-97-5	Bromochloromethane	0.6	< 0.6	U
594-20-7	2,2-Dichloropropane	0.6	< 0.6	U
142-28-9	1,3-Dichloropropane	0.6	< 0.6	U
98-82-8	Isopropylbenzene	0.6	< 0.6	U
103-65-1	n-Propylbenzene	0.6	< 0.6	U
108-86-1	Bromobenzene	0.6	< 0.6	U
95-49-8	2-Chlorotoluene	0.6	< 0.6	U
106-43-4	4-Chlorotoluene	0.6	< 0.6	U
98-06-6	tert-Butylbenzene	0.6	< 0.6	U
135-98-8	sec-Butylbenzene	0.6	< 0.6	U
99-87-6	4-Isopropyltoluene	0.6	< 0.6	U
104-51-8	n-Butylbenzene	0.6	< 0.6	U
120-82-1	1,2,4-Trichlorobenzene	3.2	< 3.2	U
91-20-3	Naphthalene	3.2	< 3.2	U
87-61-6	1,2,3-Trichlorobenzene	3.2	< 3.2	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	136%
d8-Toluene	104%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6-16**
 SAMPLE

Lab Sample ID: YV65G
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 18:17

Sample Amount: 3.55 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 32.4%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.8**	**4.8**	
67-64-1	**Acetone**	**7.0**	**27**	**Q**
75-15-0	**Carbon Disulfide**	**1.4**	**2.8**	**Q**
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	7.0	< 7.0	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	7.0	< 7.0	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	7.0	< 7.0	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.0	< 7.0	U
591-78-6	2-Hexanone	7.0	< 7.0	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.8	< 2.8	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	70	< 70	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.8	< 2.8	U
107-13-1	Acrylonitrile	7.0	< 7.0	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	7.0	< 7.0	U
96-18-4	1,2,3-Trichloropropane	2.8	< 2.8	U
110-57-6	trans-1,4-Dichloro-2-butene	7.0	< 7.0	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB6-16**
 SAMPLE

Lab Sample ID: YV65G
LIMS ID: 14-16401
Matrix: Soil
Date Analyzed: 08/12/14 18:17

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	7.0	< 7.0	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	7.0	< 7.0	U
91-20-3	Naphthalene	7.0	< 7.0	U
87-61-6	1,2,3-Trichlorobenzene	7.0	< 7.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	103%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65H
LIMS ID: 14-16402
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 18:42

Sample Amount: 3.24 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 27.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	**Methylene Chloride**	**3.1**	**9.4**	
67-64-1	**Acetone**	**7.7**	**61**	**Q**
75-15-0	**Carbon Disulfide**	**1.5**	**9.1**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.7	< 7.7	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.7	< 7.7	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.7	< 7.7	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.7	< 7.7	U
591-78-6	2-Hexanone	7.7	< 7.7	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.1	< 3.1	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	77	< 77	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.1	< 3.1	U
107-13-1	Acrylonitrile	7.7	< 7.7	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.7	< 7.7	U
96-18-4	1,2,3-Trichloropropane	3.1	< 3.1	U
110-57-6	trans-1,4-Dichloro-2-butene	7.7	< 7.7	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB7-11**
 SAMPLE

Lab Sample ID: YV65H
LIMS ID: 14-16402
Matrix: Soil
Date Analyzed: 08/12/14 18:42

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.7	< 7.7	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.7	< 7.7	U
91-20-3	Naphthalene	7.7	< 7.7	U
87-61-6	1,2,3-Trichlorobenzene	7.7	< 7.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	126%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3-8**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65J
LIMS ID: 14-16404
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:07

Sample Amount: 6.79 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.7	< 0.7	U
74-83-9	Bromomethane	0.7	< 0.7	U
75-01-4	Vinyl Chloride	0.7	< 0.7	U
75-00-3	Chloroethane	0.7	< 0.7	U
75-09-2	**Methylene Chloride**	**1.5**	**2.4**	
67-64-1	**Acetone**	**3.7**	**25**	**Q**
75-15-0	**Carbon Disulfide**	**0.7**	**12**	**Q**
75-35-4	1,1-Dichloroethene	0.7	< 0.7	U
75-34-3	1,1-Dichloroethane	0.7	< 0.7	U
156-60-5	trans-1,2-Dichloroethene	0.7	< 0.7	U
156-59-2	cis-1,2-Dichloroethene	0.7	< 0.7	U
67-66-3	Chloroform	0.7	< 0.7	U
107-06-2	1,2-Dichloroethane	0.7	< 0.7	U
78-93-3	2-Butanone	3.7	< 3.7	U
71-55-6	1,1,1-Trichloroethane	0.7	< 0.7	U
56-23-5	Carbon Tetrachloride	0.7	< 0.7	U
108-05-4	Vinyl Acetate	3.7	< 3.7	U
75-27-4	Bromodichloromethane	0.7	< 0.7	U
78-87-5	1,2-Dichloropropane	0.7	< 0.7	U
10061-01-5	cis-1,3-Dichloropropene	0.7	< 0.7	U
79-01-6	Trichloroethene	0.7	< 0.7	U
124-48-1	Dibromochloromethane	0.7	< 0.7	U
79-00-5	1,1,2-Trichloroethane	0.7	< 0.7	U
71-43-2	Benzene	0.7	< 0.7	U
10061-02-6	trans-1,3-Dichloropropene	0.7	< 0.7	U
110-75-8	2-Chloroethylvinylether	3.7	< 3.7	U
75-25-2	Bromoform	0.7	< 0.7	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.7	< 3.7	U
591-78-6	2-Hexanone	3.7	< 3.7	U
127-18-4	Tetrachloroethene	0.7	< 0.7	U
79-34-5	1,1,2,2-Tetrachloroethane	0.7	< 0.7	U
108-88-3	Toluene	0.7	< 0.7	U
108-90-7	Chlorobenzene	0.7	< 0.7	U
100-41-4	Ethylbenzene	0.7	< 0.7	U
100-42-5	Styrene	0.7	< 0.7	U
75-69-4	Trichlorofluoromethane	0.7	< 0.7	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	< 1.5	U
179601-23-1	m,p-Xylene	0.7	< 0.7	U
95-47-6	o-Xylene	0.7	< 0.7	U
95-50-1	1,2-Dichlorobenzene	0.7	< 0.7	U
541-73-1	1,3-Dichlorobenzene	0.7	< 0.7	U
106-46-7	1,4-Dichlorobenzene	0.7	< 0.7	U
107-02-8	Acrolein	37	< 37	U
74-88-4	Iodomethane	0.7	< 0.7	U
74-96-4	Bromoethane	1.5	< 1.5	U
107-13-1	Acrylonitrile	3.7	< 3.7	U
563-58-6	1,1-Dichloropropene	0.7	< 0.7	U
74-95-3	Dibromomethane	0.7	< 0.7	U
630-20-6	1,1,1,2-Tetrachloroethane	0.7	< 0.7	U
96-12-8	1,2-Dibromo-3-chloropropane	3.7	< 3.7	U
96-18-4	1,2,3-Trichloropropane	1.5	< 1.5	U
110-57-6	trans-1,4-Dichloro-2-butene	3.7	< 3.7	U
108-67-8	1,3,5-Trimethylbenzene	0.7	< 0.7	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB3-8**
 SAMPLE

Lab Sample ID: YV65J
LIMS ID: 14-16404
Matrix: Soil
Date Analyzed: 08/12/14 19:07

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.7	< 0.7	U
87-68-3	Hexachlorobutadiene	3.7	< 3.7	U
106-93-4	1,2-Dibromoethane	0.7	< 0.7	U
74-97-5	Bromochloromethane	0.7	< 0.7	U
594-20-7	2,2-Dichloropropane	0.7	< 0.7	U
142-28-9	1,3-Dichloropropane	0.7	< 0.7	U
98-82-8	Isopropylbenzene	0.7	< 0.7	U
103-65-1	n-Propylbenzene	0.7	< 0.7	U
108-86-1	Bromobenzene	0.7	< 0.7	U
95-49-8	2-Chlorotoluene	0.7	< 0.7	U
106-43-4	4-Chlorotoluene	0.7	< 0.7	U
98-06-6	tert-Butylbenzene	0.7	< 0.7	U
135-98-8	sec-Butylbenzene	0.7	< 0.7	U
99-87-6	4-Isopropyltoluene	0.7	< 0.7	U
104-51-8	n-Butylbenzene	0.7	< 0.7	U
120-82-1	1,2,4-Trichlorobenzene	3.7	< 3.7	U
91-20-3	Naphthalene	3.7	< 3.7	U
87-61-6	1,2,3-Trichlorobenzene	3.7	< 3.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	131%
d8-Toluene	103%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB1-5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:32

Sample Amount: 5.11 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 10.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	**Acetone**	**4.9**	**15**	**Q**
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.9	< 4.9	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.9	< 4.9	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.9	< 4.9	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.9	< 4.9	U
591-78-6	2-Hexanone	4.9	< 4.9	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	49	< 49	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	4.9	< 4.9	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.9	< 4.9	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	4.9	< 4.9	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB1-5**
 SAMPLE

Lab Sample ID: YV65K
LIMS ID: 14-16405
Matrix: Soil
Date Analyzed: 08/12/14 19:32

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.9	< 4.9	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.9	< 4.9	U
91-20-3	Naphthalene	4.9	< 4.9	U
87-61-6	1,2,3-Trichlorobenzene	4.9	< 4.9	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	125%
d8-Toluene	105%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10-7**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65L
LIMS ID: 14-16406
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 19:57

Sample Amount: 4.53 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 9.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	**Methylene Chloride**	**2.2**	**2.6**	
67-64-1	**Acetone**	**5.5**	**17**	**Q**
75-15-0	**Carbon Disulfide**	**1.1**	**1.7**	**Q**
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.5	< 5.5	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.5	< 5.5	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.5	< 5.5	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.5	< 5.5	U
591-78-6	2-Hexanone	5.5	< 5.5	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	55	< 55	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.5	< 5.5	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.5	< 5.5	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.5	< 5.5	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB10-7**
 SAMPLE

Lab Sample ID: YV65L
LIMS ID: 14-16406
Matrix: Soil
Date Analyzed: 08/12/14 19:57

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.5	< 5.5	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.5	< 5.5	U
91-20-3	Naphthalene	5.5	< 5.5	U
87-61-6	1,2,3-Trichlorobenzene	5.5	< 5.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	132%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB8-16**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65M
LIMS ID: 14-16407
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 20:22

Sample Amount: 3.28 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 29.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.0	< 3.0	U
67-64-1	**Acetone**	**7.6**	**70**	**Q**
75-15-0	**Carbon Disulfide**	**1.5**	**11**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.6	< 7.6	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.6	< 7.6	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.6	< 7.6	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.6	< 7.6	U
591-78-6	2-Hexanone	7.6	< 7.6	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.0	< 3.0	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	76	< 76	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.0	< 3.0	U
107-13-1	Acrylonitrile	7.6	< 7.6	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.6	< 7.6	U
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0	U
110-57-6	trans-1,4-Dichloro-2-butene	7.6	< 7.6	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB8-16**
 SAMPLE

Lab Sample ID: YV65M
LIMS ID: 14-16407
Matrix: Soil
Date Analyzed: 08/12/14 20:22

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.6	< 7.6	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.6	< 7.6	U
91-20-3	Naphthalene	7.6	< 7.6	U
87-61-6	1,2,3-Trichlorobenzene	7.6	< 7.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5-11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YV65N
LIMS ID: 14-16408
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 20:47

Sample Amount: 3.65 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 34.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.7**	**4.8**	
67-64-1	**Acetone**	**6.8**	**58**	**Q**
75-15-0	**Carbon Disulfide**	**1.4**	**5.6**	**Q**
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	6.8	< 6.8	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	6.8	< 6.8	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	6.8	< 6.8	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.8	< 6.8	U
591-78-6	2-Hexanone	6.8	< 6.8	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.7	< 2.7	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	68	< 68	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.7	< 2.7	U
107-13-1	Acrylonitrile	6.8	< 6.8	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	6.8	< 6.8	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.8	< 6.8	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB5-11**
 SAMPLE

Lab Sample ID: YV65N
LIMS ID: 14-16408
Matrix: Soil
Date Analyzed: 08/12/14 20:47

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	6.8	< 6.8	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	6.8	< 6.8	U
91-20-3	Naphthalene	6.8	< 6.8	U
87-61-6	1,2,3-Trichlorobenzene	6.8	< 6.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	103%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**
 METHOD BLANK

Lab Sample ID: MB-081214A
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 08/12/14 13:56

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-081214A**
 METHOD BLANK

Lab Sample ID: MB-081214A
LIMS ID: 14-16401
Matrix: Soil
Date Analyzed: 08/12/14 13:56

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A
LIMS ID: 14-16401
Matrix: Soil
Data Release Authorized:
Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 08/12/14 13:07
LCSD: 08/12/14 13:32

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.6	50.0	87.2%	41.8	50.0	83.6%	4.2%
Bromomethane	76.0 Q	50.0	152%	72.8 Q	50.0	146%	4.3%
Vinyl Chloride	47.7	50.0	95.4%	47.0	50.0	94.0%	1.5%
Chloroethane	53.8	50.0	108%	49.8	50.0	99.6%	7.7%
Methylene Chloride	49.5	50.0	99.0%	47.4	50.0	94.8%	4.3%
Acetone	320 Q	250	128%	318 Q	250	127%	0.6%
Carbon Disulfide	98.5 Q	50.0	197%	85.9 Q	50.0	172%	13.7%
1,1-Dichloroethene	87.2 Q	50.0	174%	76.9 Q	50.0	154%	12.6%
1,1-Dichloroethane	52.6	50.0	105%	51.8	50.0	104%	1.5%
trans-1,2-Dichloroethene	53.4	50.0	107%	51.8	50.0	104%	3.0%
cis-1,2-Dichloroethene	52.0	50.0	104%	51.2	50.0	102%	1.6%
Chloroform	53.1	50.0	106%	52.4	50.0	105%	1.3%
1,2-Dichloroethane	49.6	50.0	99.2%	50.3	50.0	101%	1.4%
2-Butanone	256	250	102%	261	250	104%	1.9%
1,1,1-Trichloroethane	54.4	50.0	109%	52.9	50.0	106%	2.8%
Carbon Tetrachloride	52.4	50.0	105%	51.1	50.0	102%	2.5%
Vinyl Acetate	51.4	50.0	103%	52.4	50.0	105%	1.9%
Bromodichloromethane	49.6	50.0	99.2%	49.7	50.0	99.4%	0.2%
1,2-Dichloropropane	48.2	50.0	96.4%	48.1	50.0	96.2%	0.2%
cis-1,3-Dichloropropene	50.6	50.0	101%	50.6	50.0	101%	0.0%
Trichloroethene	50.8	50.0	102%	50.1	50.0	100%	1.4%
Dibromochloromethane	48.9	50.0	97.8%	49.3	50.0	98.6%	0.8%
1,1,2-Trichloroethane	48.0	50.0	96.0%	48.4	50.0	96.8%	0.8%
Benzene	50.2	50.0	100%	49.7	50.0	99.4%	1.0%
trans-1,3-Dichloropropene	50.5	50.0	101%	51.1	50.0	102%	1.2%
2-Chloroethylvinylether	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Bromoform	47.9	50.0	95.8%	48.0	50.0	96.0%	0.2%
4-Methyl-2-Pentanone (MIBK)	250	250	100%	259	250	104%	3.5%
2-Hexanone	249	250	99.6%	254	250	102%	2.0%
Tetrachloroethene	51.9	50.0	104%	49.8	50.0	99.6%	4.1%
1,1,2,2-Tetrachloroethane	46.6	50.0	93.2%	46.3	50.0	92.6%	0.6%
Toluene	49.2	50.0	98.4%	50.2	50.0	100%	2.0%
Chlorobenzene	49.8	50.0	99.6%	48.6	50.0	97.2%	2.4%
Ethylbenzene	51.5	50.0	103%	50.1	50.0	100%	2.8%
Styrene	52.5	50.0	105%	51.6	50.0	103%	1.7%
Trichlorofluoromethane	51.0 Q	50.0	102%	49.2 Q	50.0	98.4%	3.6%
1,1,2-Trichloro-1,2,2-trifluoroetha	58.0	50.0	116%	55.2	50.0	110%	4.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-081214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A QC Report No: YV65-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-16401 Project: PRECISION ENG
Matrix: Soil

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	105	100	105%	103	100	103%	1.9%
o-Xylene	52.8	50.0	106%	51.7	50.0	103%	2.1%
1,2-Dichlorobenzene	49.4	50.0	98.8%	48.6	50.0	97.2%	1.6%
1,3-Dichlorobenzene	52.0	50.0	104%	50.1	50.0	100%	3.7%
1,4-Dichlorobenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Acrolein	280	250	112%	283	250	113%	1.1%
Iodomethane	62.4	50.0	125%	53.9	50.0	108%	14.6%
Bromoethane	56.0	50.0	112%	53.6	50.0	107%	4.4%
Acrylonitrile	50.0	50.0	100%	51.7	50.0	103%	3.3%
1,1-Dichloropropene	51.0	50.0	102%	49.9	50.0	99.8%	2.2%
Dibromomethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%
1,1,1,2-Tetrachloroethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%
1,2-Dibromo-3-chloropropane	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%
1,2,3-Trichloropropane	46.0	50.0	92.0%	46.4	50.0	92.8%	0.9%
trans-1,4-Dichloro-2-butene	49.2	50.0	98.4%	48.5	50.0	97.0%	1.4%
1,3,5-Trimethylbenzene	53.0	50.0	106%	50.9	50.0	102%	4.0%
1,2,4-Trimethylbenzene	53.8	50.0	108%	51.8	50.0	104%	3.8%
Hexachlorobutadiene	52.0	50.0	104%	47.8	50.0	95.6%	8.4%
1,2-Dibromoethane	47.6	50.0	95.2%	48.4	50.0	96.8%	1.7%
Bromochloromethane	51.6	50.0	103%	52.2	50.0	104%	1.2%
2,2-Dichloropropane	56.0	50.0	112%	54.3	50.0	109%	3.1%
1,3-Dichloropropane	47.4	50.0	94.8%	47.4	50.0	94.8%	0.0%
Isopropylbenzene	53.1	50.0	106%	50.5	50.0	101%	5.0%
n-Propylbenzene	52.9	50.0	106%	50.2	50.0	100%	5.2%
Bromobenzene	49.0	50.0	98.0%	47.9	50.0	95.8%	2.3%
2-Chlorotoluene	51.4	50.0	103%	49.2	50.0	98.4%	4.4%
4-Chlorotoluene	53.0	50.0	106%	50.9	50.0	102%	4.0%
tert-Butylbenzene	52.8	50.0	106%	49.9	50.0	99.8%	5.6%
sec-Butylbenzene	53.3	50.0	107%	50.2	50.0	100%	6.0%
4-Isopropyltoluene	54.9	50.0	110%	52.0	50.0	104%	5.4%
n-Butylbenzene	56.6 Q	50.0	113%	52.7 Q	50.0	105%	7.1%
1,2,4-Trichlorobenzene	55.3	50.0	111%	54.2	50.0	108%	2.0%
Naphthalene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%
1,2,3-Trichlorobenzene	52.0	50.0	104%	51.4	50.0	103%	1.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	108%
d8-Toluene	101%	101%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	100%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
YV65P	SB7-19	Low	136%	104%	102%	106%	0
MB-081214A	Method Blank	Low	112%	103%	98.6%	101%	0
LCS-081214A	Lab Control	Low	107%	101%	100%	101%	0
LCSD-081214A	Lab Control Dup	Low	108%	101%	101%	100%	0
YV65G	SB6-16	Low	117%	103%	99.4%	104%	0
YV65H	SB7-11	Low	126%	102%	98.6%	103%	0
YV65J	SB3-8	Low	131%	103%	100%	104%	0
YV65K	SB1-5	Low	125%	105%	103%	103%	0
YV65L	SB10-7	Low	132%	101%	100%	104%	0
YV65M	SB8-16	Low	120%	102%	98.6%	104%	0
YV65N	SB5-11	Low	122%	103%	97.4%	103%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16381 to 14-16408

Analytical Resources, Incorporated
Analytical Chemists and Consultants

2 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YW77

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five soil samples on August 18, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YW77

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: W77	Turn-around Requested:
ARI Client Company: Kennedy/Jenks	Phone: 206·753·3425
Client Contact: Jessica Faragalli	
Client Project Name: Precision Engineering	
Client Project #: 13916024*00	Samplers: DKM

Page: 1	of 1
Date:	Ice Present? Y
No. of Coolers: 1	Cooler Temps: 0.9

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Hex Chrome	Metals As,Cr,Pb,Se	VOCs	NWTPH-Dx					Notes/Comments
MW9-18-19	8/16/14	0845	Soil	6	X	X	X	X					
MW9-32.5-33.5	8/16/14	0940	Soil	6	X	X	X	X					
MW9-38-39	8/16/14	1020	Soil	6	X	X	X	X					
MW11-18-19	8/16/14	1535	Soil	6	X	X	X	X					
MW100	8/16/14	1600	Soil	5	X	X	X						

Comments/Special Instructions	Relinquished by (Signature)	Printed Name	Company	Date & Time	Received by (Signature)	Printed Name	Company	Date & Time	Relinquished by (Signature)	Printed Name	Company	Date & Time	Received by (Signature)	Printed Name	Company	Date & Time
Per QAPP		Dean Malte	Kennedy/Jenks	8/16/14	J Faragalli	Jessica Faragalli	Kennedy/Jenks	8/16/14 1600	J Faragalli	Jessica Faragalli	Kennedy/Jenks	8/18/14 740		A. Vogardson	ARI	8/18/14 740

V:\1\1\COC02

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

Project Name: Precision Engineering

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: YW77

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry)
Time: 740 0.9

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by AV Date: 8/18/14 Time: 740

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies (Foam Block) Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

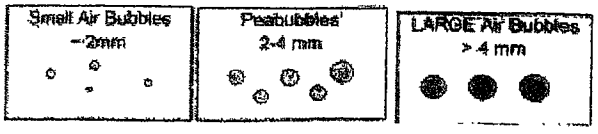
Samples Logged by: AV Date: 8/18/14 Time: 850

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YW77
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW9-18-19	YW77A	14-16946	Soil	08/16/14 08:45	08/18/14 07:40
2.	MW9-32.5-33.5	YW77B	14-16947	Soil	08/16/14 09:40	08/18/14 07:40
3.	MW9-38-39	YW77C	14-16948	Soil	08/16/14 10:20	08/18/14 07:40
4.	MW11-18-19	YW77D	14-16949	Soil	08/16/14 15:35	08/18/14 07:40
5.	MW100	YW77E	14-16950	Soil	08/16/14 16:00	08/18/14 07:40

YW77 000004

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YYTT : 00005

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YYYY 00005

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

YYYY.MMDD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082214A**
Page 1 of 2 **METHOD BLANK**

Lab Sample ID: MB-082214A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 11:12

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**2.0**	**2.5**	
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082214A**
 METHOD BLANK

Lab Sample ID: MB-082214A
LIMS ID: 14-16946
Matrix: Soil
Date Analyzed: 08/22/14 11:12

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.3%
d8-Toluene	100%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	98.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-18-19**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YW77A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized: YW
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 15:13

Sample Amount: 4.87 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 20.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**2.1**	**5.1**	**B**
67-64-1	**Acetone**	**5.1**	**28**	
75-15-0	**Carbon Disulfide**	**1.0**	**1.8**	**Q**
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.1	< 5.1	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.1	< 5.1	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.1	< 5.1	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.1	< 5.1	U
591-78-6	2-Hexanone	5.1	< 5.1	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.1	< 2.1	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	51	< 51	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.1	< 2.1	U
107-13-1	Acrylonitrile	5.1	< 5.1	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.1	< 5.1	U
96-18-4	1,2,3-Trichloropropane	2.1	< 2.1	U
110-57-6	trans-1,4-Dichloro-2-butene	5.1	< 5.1	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-18-19**
 SAMPLE

Lab Sample ID: YW77A
LIMS ID: 14-16946
Matrix: Soil
Date Analyzed: 08/22/14 15:13

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.1	< 5.1	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.1	< 5.1	U
91-20-3	Naphthalene	5.1	< 5.1	U
87-61-6	1,2,3-Trichlorobenzene	5.1	< 5.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	103%

YW77:00011

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-32.5-33.5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YW77B
LIMS ID: 14-16947
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 15:38

Sample Amount: 5.36 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 11.2%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.9	< 0.9	U
74-83-9	Bromomethane	0.9	< 0.9	U
75-01-4	Vinyl Chloride	0.9	< 0.9	U
75-00-3	Chloroethane	0.9	< 0.9	U
75-09-2	**Methylene Chloride**	**1.9**	**5.5**	**B**
67-64-1	**Acetone**	**4.7**	**8.6**	
75-15-0	Carbon Disulfide	0.9	< 0.9	U
75-35-4	1,1-Dichloroethene	0.9	< 0.9	U
75-34-3	1,1-Dichloroethane	0.9	< 0.9	U
156-60-5	trans-1,2-Dichloroethene	0.9	< 0.9	U
156-59-2	cis-1,2-Dichloroethene	0.9	< 0.9	U
67-66-3	Chloroform	0.9	< 0.9	U
107-06-2	1,2-Dichloroethane	0.9	< 0.9	U
78-93-3	2-Butanone	4.7	< 4.7	U
71-55-6	1,1,1-Trichloroethane	0.9	< 0.9	U
56-23-5	Carbon Tetrachloride	0.9	< 0.9	U
108-05-4	Vinyl Acetate	4.7	< 4.7	U
75-27-4	Bromodichloromethane	0.9	< 0.9	U
78-87-5	1,2-Dichloropropane	0.9	< 0.9	U
10061-01-5	cis-1,3-Dichloropropene	0.9	< 0.9	U
79-01-6	Trichloroethene	0.9	< 0.9	U
124-48-1	Dibromochloromethane	0.9	< 0.9	U
79-00-5	1,1,2-Trichloroethane	0.9	< 0.9	U
71-43-2	Benzene	0.9	< 0.9	U
10061-02-6	trans-1,3-Dichloropropene	0.9	< 0.9	U
110-75-8	2-Chloroethylvinylether	4.7	< 4.7	U
75-25-2	Bromoform	0.9	< 0.9	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.7	< 4.7	U
591-78-6	2-Hexanone	4.7	< 4.7	U
127-18-4	Tetrachloroethene	0.9	< 0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
108-90-7	Chlorobenzene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
100-42-5	Styrene	0.9	< 0.9	U
75-69-4	Trichlorofluoromethane	0.9	< 0.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U
95-50-1	1,2-Dichlorobenzene	0.9	< 0.9	U
541-73-1	1,3-Dichlorobenzene	0.9	< 0.9	U
106-46-7	1,4-Dichlorobenzene	0.9	< 0.9	U
107-02-8	Acrolein	47	< 47	U
74-88-4	Iodomethane	0.9	< 0.9	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.7	< 4.7	U
563-58-6	1,1-Dichloropropene	0.9	< 0.9	U
74-95-3	Dibromomethane	0.9	< 0.9	U
630-20-6	1,1,1,2-Tetrachloroethane	0.9	< 0.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.7	< 4.7	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.7	< 4.7	U
108-67-8	1,3,5-Trimethylbenzene	0.9	< 0.9	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-32.5-33.5**
 SAMPLE

Lab Sample ID: YW77B
LIMS ID: 14-16947
Matrix: Soil
Date Analyzed: 08/22/14 15:38

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.9	< 0.9	U
87-68-3	Hexachlorobutadiene	4.7	< 4.7	U
106-93-4	1,2-Dibromoethane	0.9	< 0.9	U
74-97-5	Bromochloromethane	0.9	< 0.9	U
594-20-7	2,2-Dichloropropane	0.9	< 0.9	U
142-28-9	1,3-Dichloropropane	0.9	< 0.9	U
98-82-8	Isopropylbenzene	0.9	< 0.9	U
103-65-1	n-Propylbenzene	0.9	< 0.9	U
108-86-1	Bromobenzene	0.9	< 0.9	U
95-49-8	2-Chlorotoluene	0.9	< 0.9	U
106-43-4	4-Chlorotoluene	0.9	< 0.9	U
98-06-6	tert-Butylbenzene	0.9	< 0.9	U
135-98-8	sec-Butylbenzene	0.9	< 0.9	U
99-87-6	4-Isopropyltoluene	0.9	< 0.9	U
104-51-8	n-Butylbenzene	0.9	< 0.9	U
120-82-1	1,2,4-Trichlorobenzene	4.7	< 4.7	U
91-20-3	Naphthalene	4.7	< 4.7	U
87-61-6	1,2,3-Trichlorobenzene	4.7	< 4.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	104%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	103%

YW77:00013

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-38-39**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YW77C
LIMS ID: 14-16948
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 16:04

Sample Amount: 5.20 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	**Chloromethane**	**1.0**	**1.5**	
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**1.9**	**5.5**	**B**
67-64-1	**Acetone**	**4.8**	**16**	
75-15-0	**Carbon Disulfide**	**1.0**	**1.6**	**Q**
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.8	< 4.8	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.8	< 4.8	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.8	< 4.8	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.8	< 4.8	U
591-78-6	2-Hexanone	4.8	< 4.8	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	48	< 48	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.8	< 4.8	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.8	< 4.8	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.8	< 4.8	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9-38-39**
 SAMPLE

Lab Sample ID: YW77C
LIMS ID: 14-16948
Matrix: Soil
Date Analyzed: 08/22/14 16:04

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.8	< 4.8	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.8	< 4.8	U
91-20-3	Naphthalene	4.8	< 4.8	U
87-61-6	1,2,3-Trichlorobenzene	4.8	< 4.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	103%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW11-18-19**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YW77D
LIMS ID: 14-16949
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 16:29

Sample Amount: 5.66 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 12.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.9	< 0.9	U
74-83-9	Bromomethane	0.9	< 0.9	U
75-01-4	Vinyl Chloride	0.9	< 0.9	U
75-00-3	Chloroethane	0.9	< 0.9	U
75-09-2	**Methylene Chloride**	**1.8**	**5.0**	**B**
67-64-1	**Acetone**	**4.4**	**13**	
75-15-0	**Carbon Disulfide**	**0.9**	**1.0**	**Q**
75-35-4	1,1-Dichloroethene	0.9	< 0.9	U
75-34-3	1,1-Dichloroethane	0.9	< 0.9	U
156-60-5	trans-1,2-Dichloroethene	0.9	< 0.9	U
156-59-2	cis-1,2-Dichloroethene	0.9	< 0.9	U
67-66-3	Chloroform	0.9	< 0.9	U
107-06-2	1,2-Dichloroethane	0.9	< 0.9	U
78-93-3	2-Butanone	4.4	< 4.4	U
71-55-6	1,1,1-Trichloroethane	0.9	< 0.9	U
56-23-5	Carbon Tetrachloride	0.9	< 0.9	U
108-05-4	Vinyl Acetate	4.4	< 4.4	U
75-27-4	Bromodichloromethane	0.9	< 0.9	U
78-87-5	1,2-Dichloropropane	0.9	< 0.9	U
10061-01-5	cis-1,3-Dichloropropene	0.9	< 0.9	U
79-01-6	Trichloroethene	0.9	< 0.9	U
124-48-1	Dibromochloromethane	0.9	< 0.9	U
79-00-5	1,1,2-Trichloroethane	0.9	< 0.9	U
71-43-2	Benzene	0.9	< 0.9	U
10061-02-6	trans-1,3-Dichloropropene	0.9	< 0.9	U
110-75-8	2-Chloroethylvinylether	4.4	< 4.4	U
75-25-2	Bromoform	0.9	< 0.9	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.4	< 4.4	U
591-78-6	2-Hexanone	4.4	< 4.4	U
127-18-4	Tetrachloroethene	0.9	< 0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
108-90-7	Chlorobenzene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
100-42-5	Styrene	0.9	< 0.9	U
75-69-4	Trichlorofluoromethane	0.9	< 0.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.8	< 1.8	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U
95-50-1	1,2-Dichlorobenzene	0.9	< 0.9	U
541-73-1	1,3-Dichlorobenzene	0.9	< 0.9	U
106-46-7	1,4-Dichlorobenzene	0.9	< 0.9	U
107-02-8	Acrolein	44	< 44	U
74-88-4	Iodomethane	0.9	< 0.9	U
74-96-4	Bromoethane	1.8	< 1.8	U
107-13-1	Acrylonitrile	4.4	< 4.4	U
563-58-6	1,1-Dichloropropene	0.9	< 0.9	U
74-95-3	Dibromomethane	0.9	< 0.9	U
630-20-6	1,1,1,2-Tetrachloroethane	0.9	< 0.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.4	< 4.4	U
96-18-4	1,2,3-Trichloropropane	1.8	< 1.8	U
110-57-6	trans-1,4-Dichloro-2-butene	4.4	< 4.4	U
108-67-8	1,3,5-Trimethylbenzene	0.9	< 0.9	U

Lab Sample ID: YW77D
LIMS ID: 14-16949
Matrix: Soil
Date Analyzed: 08/22/14 16:29

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.9	< 0.9	U
87-68-3	Hexachlorobutadiene	4.4	< 4.4	U
106-93-4	1,2-Dibromoethane	0.9	< 0.9	U
74-97-5	Bromochloromethane	0.9	< 0.9	U
594-20-7	2,2-Dichloropropane	0.9	< 0.9	U
142-28-9	1,3-Dichloropropane	0.9	< 0.9	U
98-82-8	Isopropylbenzene	0.9	< 0.9	U
103-65-1	n-Propylbenzene	0.9	< 0.9	U
108-86-1	Bromobenzene	0.9	< 0.9	U
95-49-8	2-Chlorotoluene	0.9	< 0.9	U
106-43-4	4-Chlorotoluene	0.9	< 0.9	U
98-06-6	tert-Butylbenzene	0.9	< 0.9	U
135-98-8	sec-Butylbenzene	0.9	< 0.9	U
99-87-6	4-Isopropyltoluene	0.9	< 0.9	U
104-51-8	n-Butylbenzene	0.9	< 0.9	U
120-82-1	1,2,4-Trichlorobenzene	4.4	< 4.4	U
91-20-3	Naphthalene	4.4	< 4.4	U
87-61-6	1,2,3-Trichlorobenzene	4.4	< 4.4	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	104%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW100**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YW77E
LIMS ID: 14-16950
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 16:54

Sample Amount: 4.69 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 12.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	**Chloromethane**	**1.1**	**1.8**	
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	**Methylene Chloride**	**2.1**	**4.1**	**B**
67-64-1	**Acetone**	**5.3**	**16**	
75-15-0	Carbon Disulfide	1.1	< 1.1	U
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.3	< 5.3	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.3	< 5.3	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.3	< 5.3	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.3	< 5.3	U
591-78-6	2-Hexanone	5.3	< 5.3	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.1	< 2.1	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	53	< 53	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.1	< 2.1	U
107-13-1	Acrylonitrile	5.3	< 5.3	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.3	< 5.3	U
96-18-4	1,2,3-Trichloropropane	2.1	< 2.1	U
110-57-6	trans-1,4-Dichloro-2-butene	5.3	< 5.3	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW100**
 SAMPLE

Lab Sample ID: YW77E
LIMS ID: 14-16950
Matrix: Soil
Date Analyzed: 08/22/14 16:54

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.3	< 5.3	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.3	< 5.3	U
91-20-3	Naphthalene	5.3	< 5.3	U
87-61-6	1,2,3-Trichlorobenzene	5.3	< 5.3	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	104%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082214A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT15/PKC
LCSD: NT15/PKC
Date Analyzed LCS: 08/22/14 10:22
LCSD: 08/22/14 10:47

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	42.4	50.0	84.8%	42.8	50.0	85.6%	0.9%
Bromomethane	40.3	50.0	80.6%	41.2	50.0	82.4%	2.2%
Vinyl Chloride	48.7	50.0	97.4%	48.6	50.0	97.2%	0.2%
Chloroethane	44.8	50.0	89.6%	48.8	50.0	97.6%	8.5%
Methylene Chloride	47.4 B	50.0	94.8%	48.6 B	50.0	97.2%	2.5%
Acetone	284	250	114%	268	250	107%	5.8%
Carbon Disulfide	53.8 Q	50.0	108%	51.9 Q	50.0	104%	3.6%
1,1-Dichloroethene	50.8 Q	50.0	102%	51.6 Q	50.0	103%	1.6%
1,1-Dichloroethane	47.5	50.0	95.0%	49.4	50.0	98.8%	3.9%
trans-1,2-Dichloroethene	48.1	50.0	96.2%	49.2	50.0	98.4%	2.3%
cis-1,2-Dichloroethene	47.2	50.0	94.4%	49.5	50.0	99.0%	4.8%
Chloroform	47.0	50.0	94.0%	48.5	50.0	97.0%	3.1%
1,2-Dichloroethane	47.3	50.0	94.6%	48.9	50.0	97.8%	3.3%
2-Butanone	302	250	121%	294	250	118%	2.7%
1,1,1-Trichloroethane	49.0	50.0	98.0%	50.7	50.0	101%	3.4%
Carbon Tetrachloride	40.3	50.0	80.6%	40.6	50.0	81.2%	0.7%
Vinyl Acetate	51.3	50.0	103%	56.3	50.0	113%	9.3%
Bromodichloromethane	50.2	50.0	100%	51.0	50.0	102%	1.6%
1,2-Dichloropropane	47.3	50.0	94.6%	49.0	50.0	98.0%	3.5%
cis-1,3-Dichloropropene	49.4	50.0	98.8%	50.8	50.0	102%	2.8%
Trichloroethene	50.8	50.0	102%	52.2	50.0	104%	2.7%
Dibromochloromethane	45.5	50.0	91.0%	45.7	50.0	91.4%	0.4%
1,1,2-Trichloroethane	46.4	50.0	92.8%	48.1	50.0	96.2%	3.6%
Benzene	47.8	50.0	95.6%	49.2	50.0	98.4%	2.9%
trans-1,3-Dichloropropene	51.6	50.0	103%	52.5	50.0	105%	1.7%
2-Chloroethylvinylether	57.6 Q	50.0	115%	59.9 Q	50.0	120%	3.9%
Bromoform	44.2	50.0	88.4%	42.9	50.0	85.8%	3.0%
4-Methyl-2-Pentanone (MIBK)	286	250	114%	286	250	114%	0.0%
2-Hexanone	296	250	118%	288	250	115%	2.7%
Tetrachloroethene	47.9	50.0	95.8%	48.8	50.0	97.6%	1.9%
1,1,2,2-Tetrachloroethane	53.5	50.0	107%	53.5	50.0	107%	0.0%
Toluene	46.8	50.0	93.6%	48.0	50.0	96.0%	2.5%
Chlorobenzene	47.4	50.0	94.8%	48.4	50.0	96.8%	2.1%
Ethylbenzene	48.7	50.0	97.4%	49.2	50.0	98.4%	1.0%
Styrene	49.2	50.0	98.4%	50.1	50.0	100%	1.8%
Trichlorofluoromethane	43.4	50.0	86.8%	44.2	50.0	88.4%	1.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	51.9 Q	50.0	104%	52.5 Q	50.0	105%	1.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082214A
LIMS ID: 14-16946
Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	103	100	103%	104	100	104%	1.0%
o-Xylene	47.8	50.0	95.6%	49.0	50.0	98.0%	2.5%
1,2-Dichlorobenzene	47.0	50.0	94.0%	47.6	50.0	95.2%	1.3%
1,3-Dichlorobenzene	46.5	50.0	93.0%	47.0	50.0	94.0%	1.1%
1,4-Dichlorobenzene	46.2	50.0	92.4%	46.7	50.0	93.4%	1.1%
Acrolein	306	250	122%	298	250	119%	2.6%
Iodomethane	51.0 Q	50.0	102%	53.2 Q	50.0	106%	4.2%
Bromoethane	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Acrylonitrile	59.4	50.0	119%	62.6	50.0	125%	5.2%
1,1-Dichloropropene	46.6	50.0	93.2%	47.4	50.0	94.8%	1.7%
Dibromomethane	50.8	50.0	102%	52.6	50.0	105%	3.5%
1,1,1,2-Tetrachloroethane	50.9	50.0	102%	51.3	50.0	103%	0.8%
1,2-Dibromo-3-chloropropane	63.2	50.0	126%	61.1	50.0	122%	3.4%
1,2,3-Trichloropropane	56.5	50.0	113%	56.1	50.0	112%	0.7%
trans-1,4-Dichloro-2-butene	60.2	50.0	120%	58.6	50.0	117%	2.7%
1,3,5-Trimethylbenzene	51.0	50.0	102%	51.2	50.0	102%	0.4%
1,2,4-Trimethylbenzene	49.1	50.0	98.2%	49.3	50.0	98.6%	0.4%
Hexachlorobutadiene	45.5	50.0	91.0%	46.3	50.0	92.6%	1.7%
1,2-Dibromoethane	49.6	50.0	99.2%	50.6	50.0	101%	2.0%
Bromochloromethane	47.7	50.0	95.4%	50.1	50.0	100%	4.9%
2,2-Dichloropropane	51.4	50.0	103%	52.4	50.0	105%	1.9%
1,3-Dichloropropane	49.3	50.0	98.6%	50.4	50.0	101%	2.2%
Isopropylbenzene	50.8	50.0	102%	51.3	50.0	103%	1.0%
n-Propylbenzene	49.9	50.0	99.8%	49.9	50.0	99.8%	0.0%
Bromobenzene	47.3	50.0	94.6%	48.4	50.0	96.8%	2.3%
2-Chlorotoluene	48.6	50.0	97.2%	49.3	50.0	98.6%	1.4%
4-Chlorotoluene	48.4	50.0	96.8%	48.5	50.0	97.0%	0.2%
tert-Butylbenzene	50.0	50.0	100%	50.5	50.0	101%	1.0%
sec-Butylbenzene	50.2	50.0	100%	50.3	50.0	101%	0.2%
4-Isopropyltoluene	49.9	50.0	99.8%	50.3	50.0	101%	0.8%
n-Butylbenzene	48.0	50.0	96.0%	47.8	50.0	95.6%	0.4%
1,2,4-Trichlorobenzene	44.5	50.0	89.0%	44.5	50.0	89.0%	0.0%
Naphthalene	46.8	50.0	93.6%	46.9	50.0	93.8%	0.2%
1,2,3-Trichlorobenzene	45.9	50.0	91.8%	46.7	50.0	93.4%	1.7%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.7%	96.3%
d8-Toluene	100%	98.5%
Bromofluorobenzene	98.0%	98.6%
d4-1,2-Dichlorobenzene	99.6%	100%

YY77 000021

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-082214A	Method Blank	Low	96.3%	100%	103%	98.2%	0
LCS-082214A	Lab Control	Low	96.7%	100%	98.0%	99.6%	0
LCSD-082214A	Lab Control Dup	Low	96.3%	98.5%	98.6%	100%	0
YW77A	MW9-18-19	Low	112%	103%	106%	103%	0
YW77B	MW9-32.5-33.5	Low	117%	104%	106%	103%	0
YW77C	MW9-38-39	Low	119%	103%	107%	103%	0
YW77D	MW11-18-19	Low	119%	104%	109%	102%	0
YW77E	MW100	Low	116%	104%	106%	102%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16946 to 14-16950

YY77.00027

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
Lab Sample ID: CC0822 Quant Type: ISTD
Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.40295	0.44467	0.44467	0.100	10.35403	20.00000	Averaged	
2 Chloromethane	0.70096	0.61596	0.61596	0.100	-12.12590	20.00000	Averaged	
3 Vinyl Chloride	0.67265	0.70857	0.70857	0.100	5.34058	20.00000	Averaged	
4 Bromomethane	0.42045	0.38282	0.38282	0.100	-8.94944	20.00000	Averaged	
5 Chloroethane	0.21092	0.24491	0.24491	0.100	16.11785	20.00000	Averaged	
6 Trichlorofluoromethane	55.90559	50.00000	0.30220	0.100	11.81119	20.00000	Linear	
7 1,1-Dichloroethene	0.49682	0.62143	0.62143	0.100	25.08104	20.00000	Averaged	<-
8 Carbon Disulfide	1.77477	2.27733	2.27733	0.010	28.31635	20.00000	Averaged	<-
9 112Trichloro122Trifluoroeth	0.50963	0.61716	0.61716	0.010	21.10151	20.00000	Averaged	<-
10 Iodomethane	0.46021	0.67645	0.67645	0.010	46.98770	20.00000	Averaged	<-
11 Bromoethane	0.37024	0.43746	0.43746	0.010	18.15803	20.00000	Averaged	
12 Acrolein	0.10195	0.11320	0.11320	0.000	11.03165	20.00000	Averaged	
13 Methylene Chloride	52.84382	50.00000	0.66212	0.010	5.68764	20.00000	Linear	
14 Acetone	0.16634	0.16771	0.16771	0.001	0.82197	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.60459	0.66369	0.66369	0.010	9.77644	20.00000	Averaged	
16 Methyl tert butyl ether	1.72211	1.84518	1.84518	0.100	7.14666	20.00000	Averaged	
17 1,1-Dichloroethane	1.01517	1.08582	1.08582	0.100	6.96012	20.00000	Averaged	
18 Acrylonitrile	0.20560	0.22115	0.22115	0.001	7.56396	20.00000	Averaged	
19 Vinyl Acetate	0.48471	0.52499	0.52499	0.010	8.30875	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.59671	0.63430	0.63430	0.010	6.29854	20.00000	Averaged	
22 2,2-Dichloropropane	0.74597	0.88561	0.88561	0.010	18.72028	20.00000	Averaged	
23 Bromochloromethane	0.24635	0.26080	0.26080	0.050	5.86968	20.00000	Averaged	
24 Chloroform	0.92828	0.98070	0.98070	0.100	5.64668	20.00000	Averaged	
25 Carbon Tetrachloride	48.06420	50.00000	0.37985	0.100	-3.87160	20.00000	Linear	
$ 27 Dibromofluoromethane	0.46457	0.47005	0.47005	0.100	1.18007	20.00000	Averaged	
26 1,1,1-Trichloroethane	0.78494	0.87374	0.87374	0.100	11.31301	20.00000	Averaged	
28 1,1-Dichloropropene	0.48348	0.53991	0.53991	0.010	11.67144	20.00000	Averaged	
29 2-Butanone	0.08448	0.08828	0.08828	0.001	4.49601	20.00000	Averaged	
30 Benzene	1.40154	1.46817	1.46817	0.100	4.75351	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.59827	0.59712	0.59712	0.010	-0.19068	20.00000	Averaged	
33 1,2-Dichloroethane	0.40077	0.40449	0.40449	0.100	0.92854	20.00000	Averaged	
34 Trichloroethene	0.33751	0.37633	0.37633	0.100	11.50061	20.00000	Averaged	
37 Dibromomethane	0.17717	0.17153	0.17153	0.010	-3.18019	20.00000	Averaged	
38 1,2-Dichloropropane	0.33656	0.34896	0.34896	0.100	3.68590	20.00000	Averaged	
39 Bromodichloromethane	0.37227	0.41144	0.41144	0.100	10.52185	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
Lab Sample ID: CC0822 Quant Type: ISTD
Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 2-Chloroethyl Vinyl Ether	0.12209	0.15273	0.15273	0.000	25.10378	20.00000	Averaged	<-
41 Cis 1,3-dichloropropene	0.50394	0.55163	0.55163	0.100	9.46247	20.00000	Averaged	
$ 42 d8-Toluene	1.18747	1.19632	1.19632	0.010	0.74560	20.00000	Averaged	
43 Toluene	0.90462	0.93526	0.93526	0.100	3.38728	20.00000	Averaged	
44 Tetrachloroethene	0.34845	0.37056	0.37056	0.100	6.34436	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.14074	0.14756	0.14756	0.000	4.84054	20.00000	Averaged	
46 Trans 1,3-Dichloropropene	0.44349	0.50713	0.50713	0.010	14.35127	20.00000	Averaged	
47 1,1,2-Trichloroethane	0.27063	0.29255	0.29255	0.100	8.10228	20.00000	Averaged	
48 Chlorodibromomethane	49.00084	50.00000	0.30546	0.100	-1.99833	20.00000	Linear	
49 1,3-Dichloropropane	0.54226	0.55909	0.55909	0.100	3.10330	20.00000	Averaged	
50 1,2-Dibromoethane	0.25482	0.25883	0.25883	0.010	1.57400	20.00000	Averaged	
51 2-Hexanone	0.26447	0.26992	0.26992	0.010	2.06242	20.00000	Averaged	
53 Chlorobenzene	1.04099	1.08005	1.08005	0.300	3.75261	20.00000	Averaged	
54 Ethyl Benzene	1.87127	1.99974	1.99974	0.100	6.86505	20.00000	Averaged	
55 1,1,1,2-Tetrachloroethane	0.29144	0.32973	0.32973	0.010	13.13895	20.00000	Averaged	
56 m,p-xylene	0.68546	0.79114	0.79114	0.100	15.41842	20.00000	Averaged	
57 o-Xylene	0.67901	0.71914	0.71914	0.100	5.90985	20.00000	Averaged	
58 Styrene	1.13823	1.22896	1.22896	0.100	7.97092	20.00000	Averaged	
59 Bromoform	45.42035	50.00000	0.39780	0.100	-9.15930	20.00000	Linear	
60 Isopropyl Benzene	3.55422	3.94355	3.94355	0.010	10.95411	20.00000	Averaged	
$ 62 4-Bromofluorobenzene	0.50339	0.49644	0.49644	0.200	-1.37988	20.00000	Averaged	
63 Bromobenzene	0.78493	0.79630	0.79630	0.010	1.44847	20.00000	Averaged	
64 N-Propyl Benzene	4.27052	4.66014	4.66014	0.010	9.12355	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.82358	0.85521	0.85521	0.300	3.84143	20.00000	Averaged	
66 2-Chloro Toluene	2.57944	2.75205	2.75205	0.010	6.69193	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	3.00133	3.34188	3.34188	0.010	11.34672	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.24527	0.26196	0.26196	0.010	6.80474	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.23162	0.27443	0.27443	0.001	18.48179	20.00000	Averaged	
70 4-Chloro Toluene	2.70587	2.85868	2.85868	0.010	5.64741	20.00000	Averaged	
71 T-Butyl Benzene	2.56236	2.75792	2.75792	0.010	7.63187	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	3.00467	3.23191	3.23191	0.010	7.56290	20.00000	Averaged	
73 S-Butyl Benzene	3.95999	4.33009	4.33009	0.010	9.34599	20.00000	Averaged	
74 4-Isopropyl Toluene	3.18914	3.50865	3.50865	0.010	10.01865	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.60296	1.62305	1.62305	0.100	1.25317	20.00000	Averaged	
77 1,4-Dichlorobenzene	1.71069	1.71990	1.71990	0.100	0.53849	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
Lab Sample ID: CC0822 Quant Type: ISTD
Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	3.25530	3.43250	3.43250	0.010	5.44332	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.93632	0.93298	0.93298	0.010	-0.35723	20.00000	Averaged
80 1,2-Dichlorobenzene	1.56806	1.58473	1.58473	0.100	1.06333	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.15285	0.16960	0.16960	0.010	10.95963	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.53425	0.49291	0.49291	0.010	-7.73891	20.00000	Averaged
83 1,2,4-Trichlorobenzene	1.11635	1.06732	1.06732	0.010	-4.39191	20.00000	Averaged
84 Naphthalene	3.13004	2.81125	2.81125	0.010	-10.18476	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.98269	0.93384	0.93384	0.010	-4.97103	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Matrix: Soil

Date Received: 08/18/14

Data Release Authorized:
Reported: 08/27/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
MB-082014	Method Blank	08/20/14	08/26/14	1.00	Diesel Range	5.0	< 5.0 U
14-16946	HC ID: ---		FID3B	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		104%
YW77A	MW9-18-19	08/20/14	08/26/14	1.00	Diesel Range	6.2	< 6.2 U
14-16946	HC ID: **RRO**		FID3B	1.0	**Motor Oil Range**	**12**	**14**
					o-Terphenyl		91.6%
YW77B	MW9-32.5-33.5	08/20/14	08/26/14	1.00	Diesel Range	5.7	< 5.7 U
14-16947	HC ID: ---		FID3B	1.0	Motor Oil Range	11	< 11 U
					o-Terphenyl		108%
YW77C	MW9-38-39	08/20/14	08/26/14	1.00	**Diesel Range**	**6.0**	**9.3**
14-16948	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**12**	**14**
					o-Terphenyl		105%
YW77D	MW11-18-19	08/20/14	08/26/14	1.00	**Diesel Range**	**5.7**	**6.2**
14-16949	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	11	< 11 U
					o-Terphenyl		95.3%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YW77:00025

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-082014
LAB CONTROL

Lab Sample ID: LCS-082014
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Date Extracted: 08/20/14
Date Analyzed: 08/26/14 05:15
Instrument/Analyst: FID3B/JLW

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	133	150	88.7%

TPHD Surrogate Recovery

o-Terphenyl	100%

Results reported in mg/kg

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YW77
Matrix: Soil Project: Precision Engineering
Date Received: 08/18/14 1396024*00

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16946-082014MB1	Method Blank	10.0 g	1.00 mL	-	08/20/14
14-16946-082014LCS1	Lab Control	10.0 g	1.00 mL	-	08/20/14
14-16946-YW77A	MW9-18-19	8.05 g	1.00 mL	D	08/20/14
14-16947-YW77B	MW9-32.5-33.5	8.80 g	1.00 mL	D	08/20/14
14-16948-YW77C	MW9-38-39	8.36 g	1.00 mL	D	08/20/14
14-16949-YW77D	MW11-18-19	8.78 g	1.00 mL	D	08/20/14

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client ID	OTER	TOT OUT
082014MBS	104%	0
082014LCS	100%	0
MW9-18-19	91.6%	0
MW9-32.5-33.5	108%	0
MW9-38-39	105%	0
MW11-18-19	95.3%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 14-16946 to 14-16949

FORM-II TPHD

YY77.00025

Data File: /chem3/fid3b.i/20140825.b/0825b037.d

Date : 26-AUG-2014 04:50

Client ID: YW77MBS1

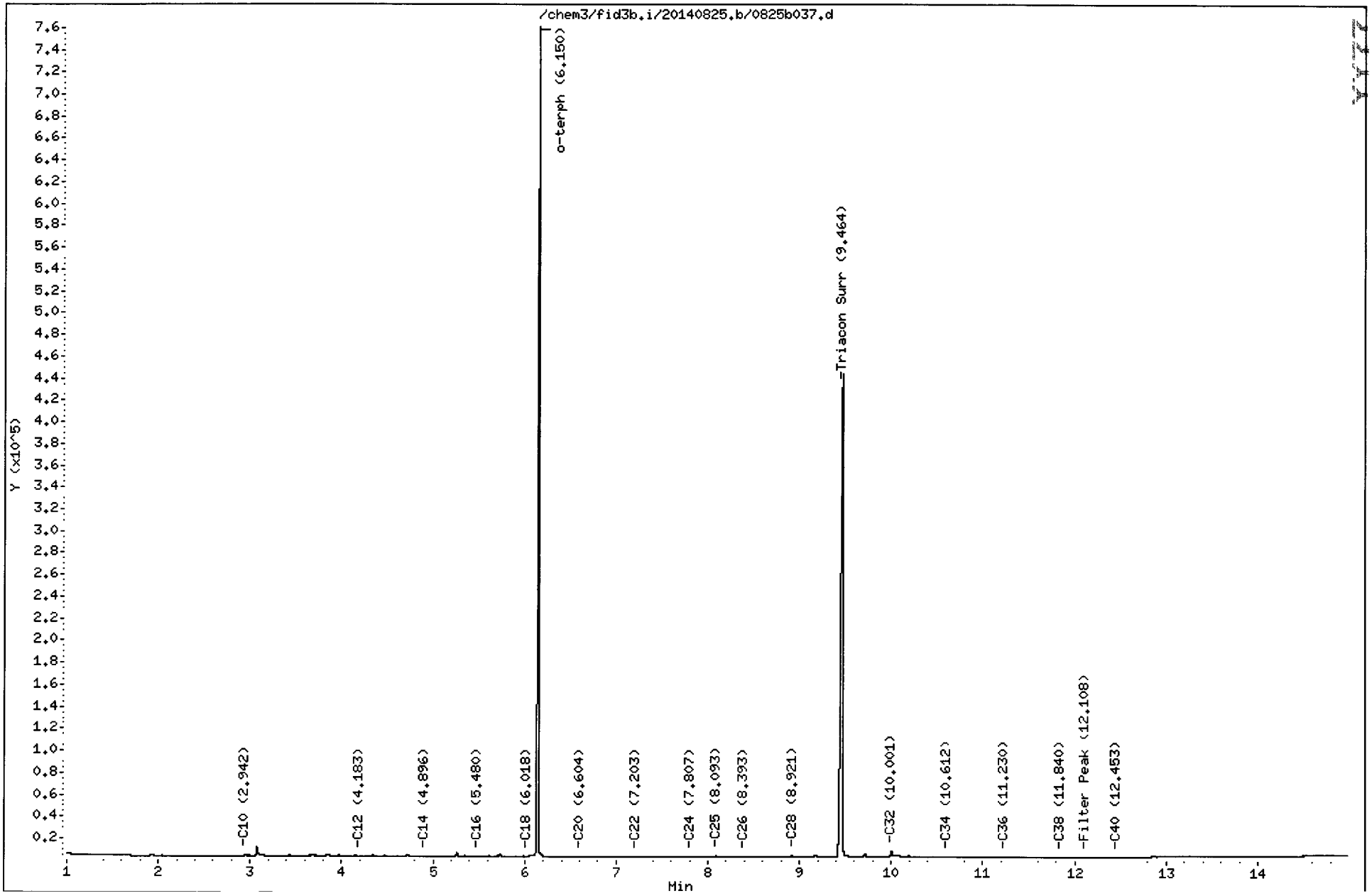
Sample Info: YW77MBS1

Instrument: fid3b.i

Operator: JR

Column phase: RTX-1

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140825.b/0825b038.d

Date : 26-AUG-2014 05:15

Client ID: YW77LCSS1

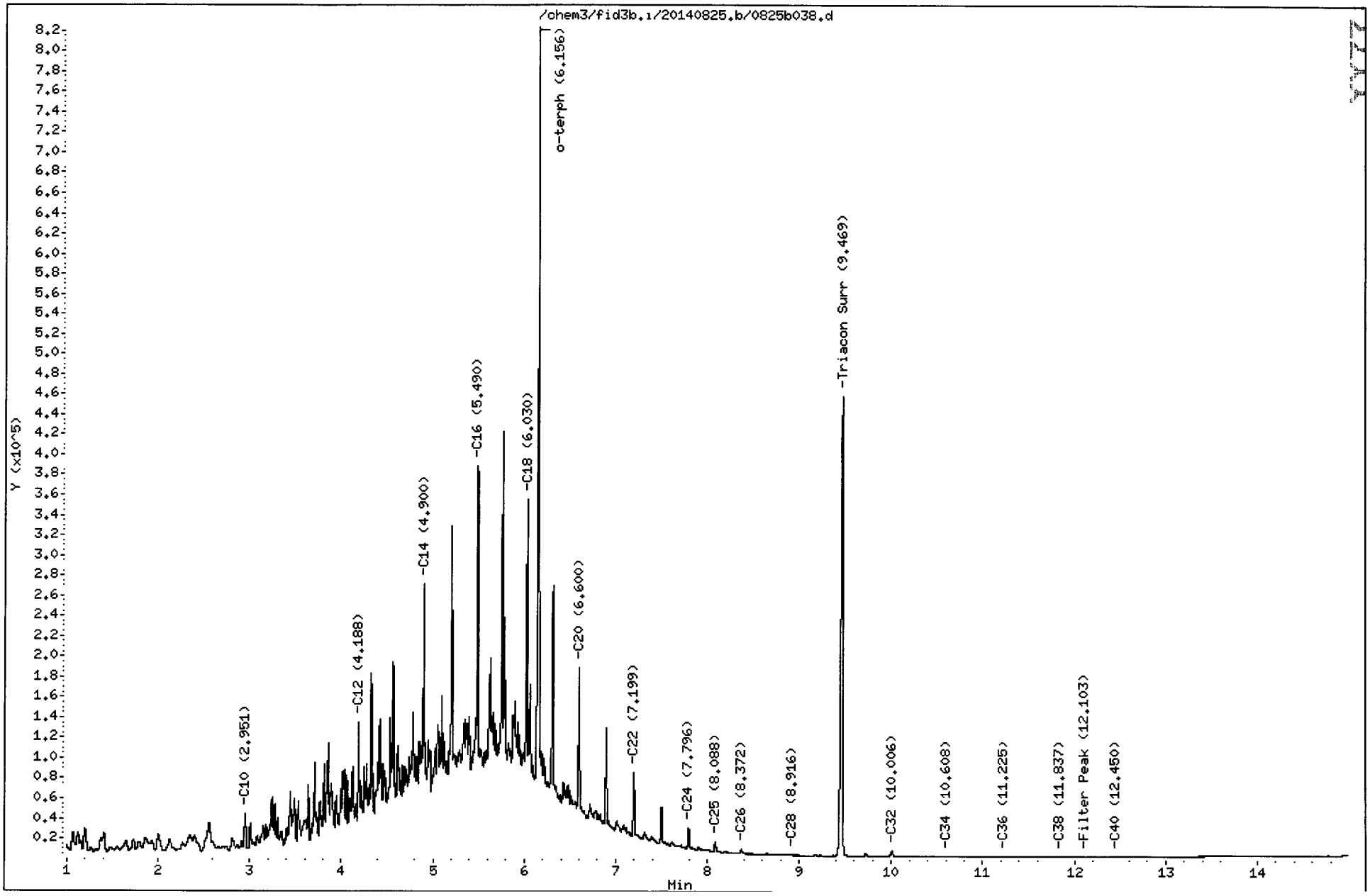
Sample Info: YW77LCSS1

Column phase: RTX-1

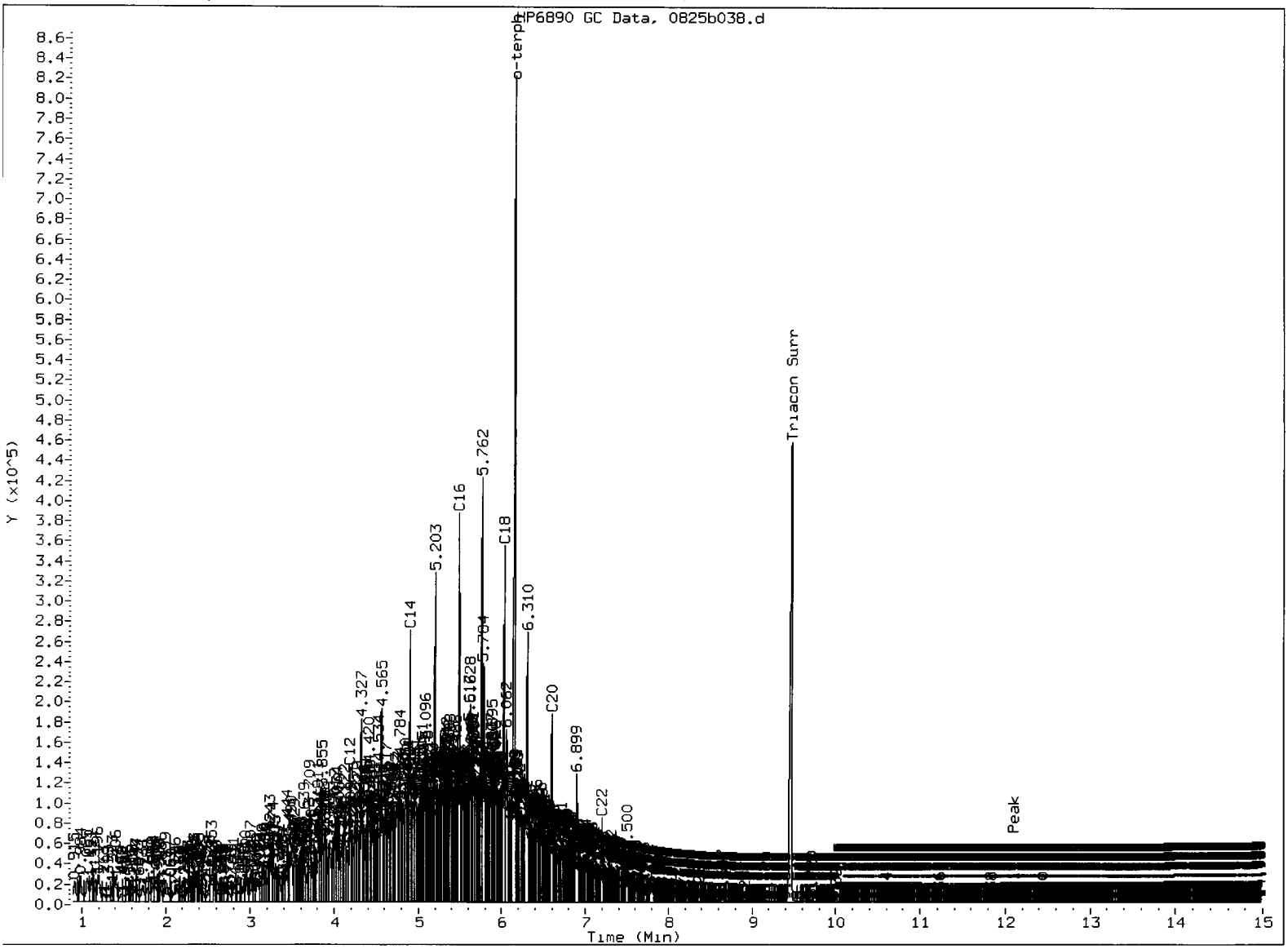
Instrument: fid3b.1

Operator: JR

Column diameter: 0.25



FID:3B-2C/RTX-1 YW77LCSS1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JD Date: 8/26/14

Data File: /chem3/fid3b.i/20140825.b/0825b039.d

Date : 26-AUG-2014 05:40

Client ID: MW9-18-19

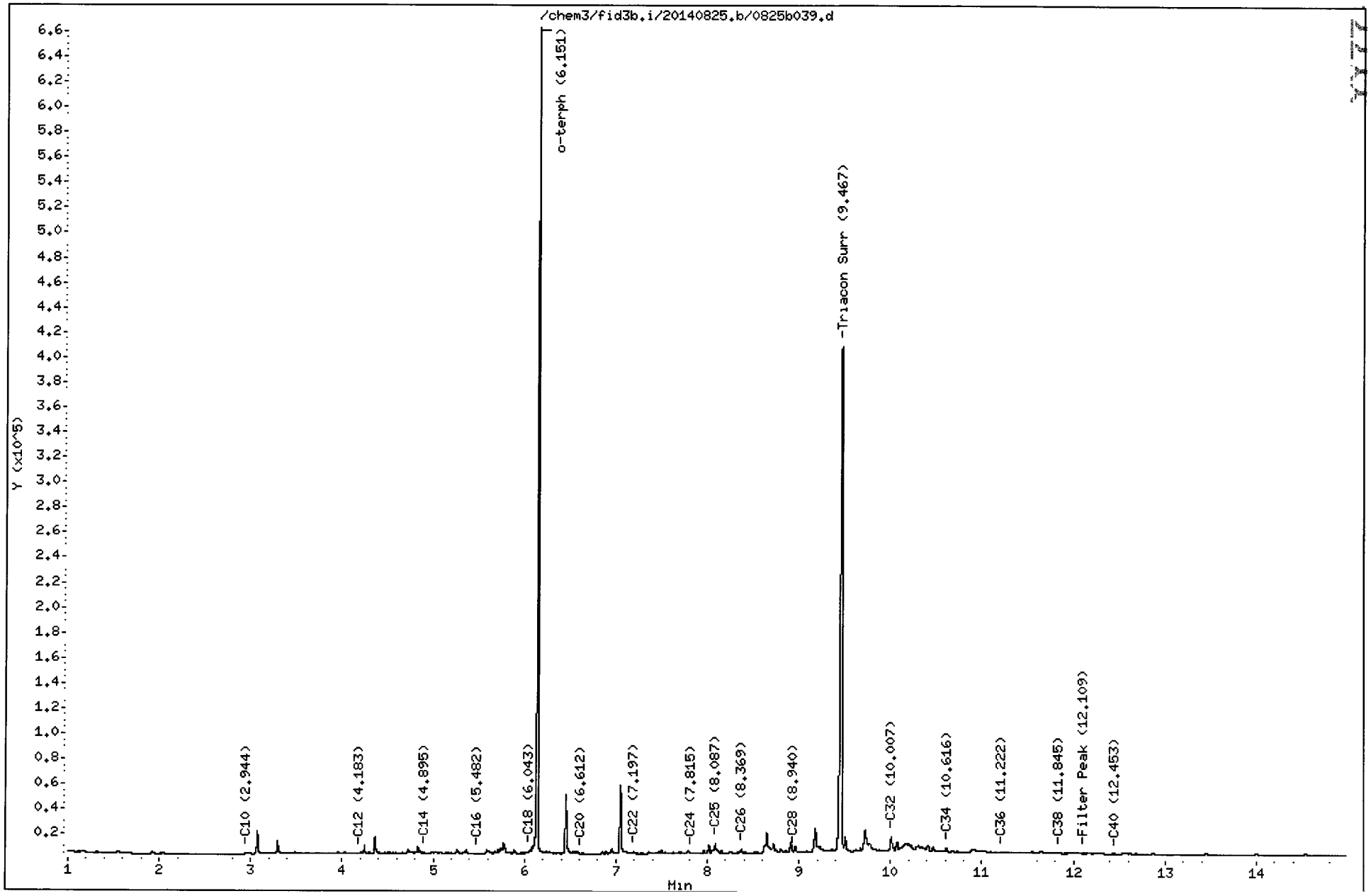
Sample Info: YW77A

Column phase: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140825.b/0825b040.d

Date : 26-AUG-2014 06:05

Client ID: MW9-32.5-33.5

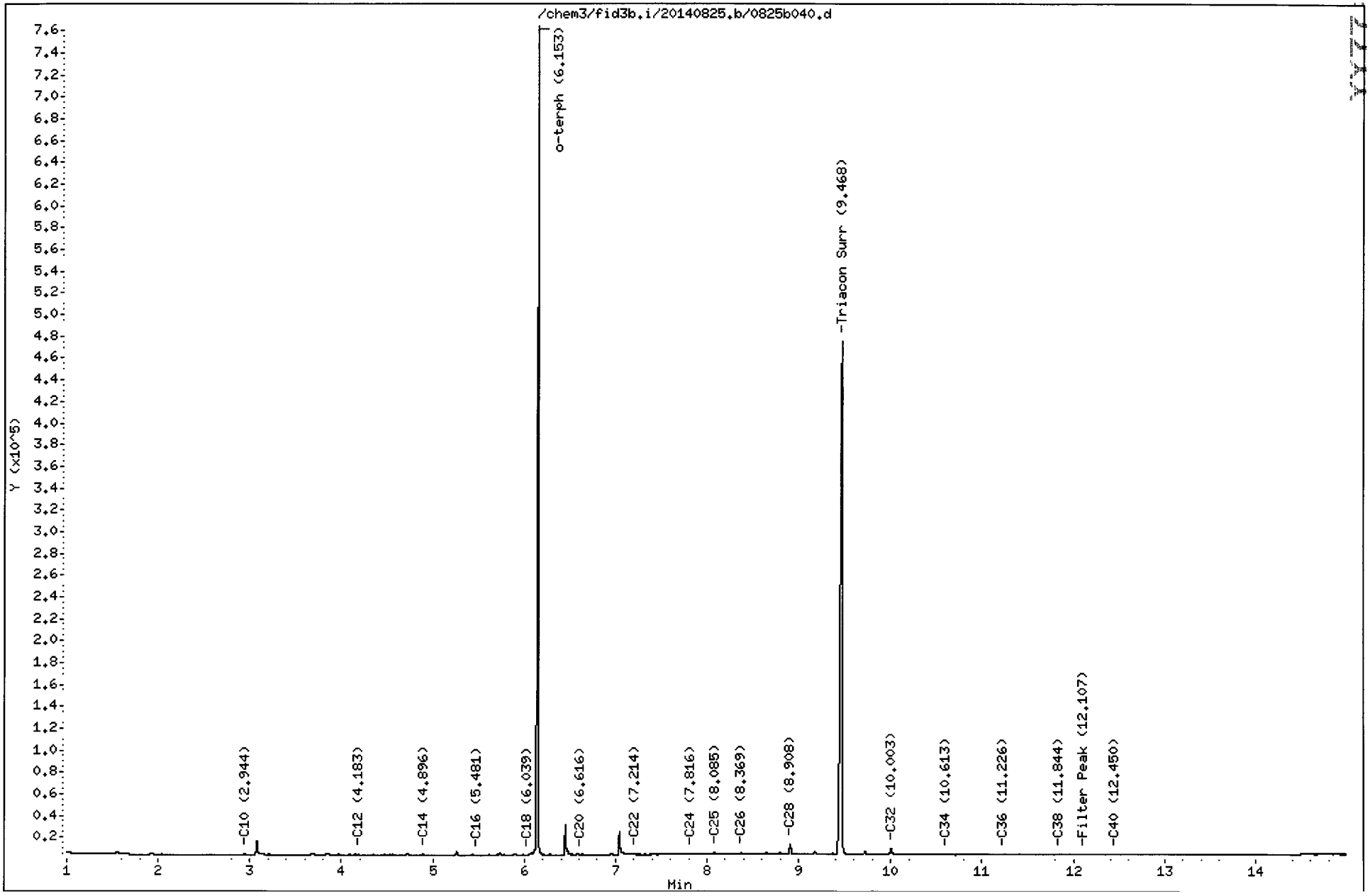
Sample Info: YW77B

Column phase: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140825.b/0825b043.d

Date : 26-AUG-2014 07:20

Client ID: MW9-38-39

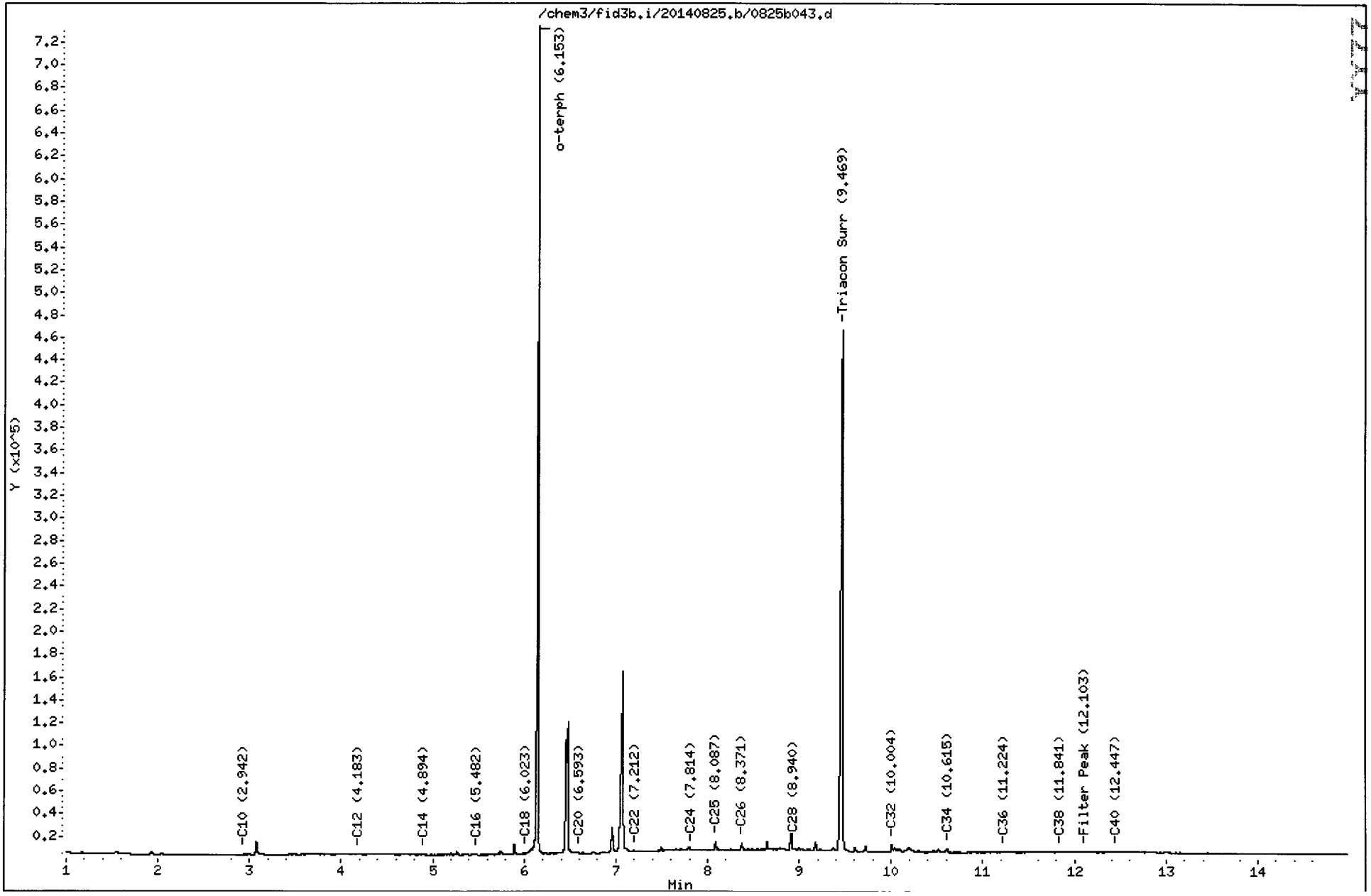
Sample Info: YW77C

Column phase: RTX-1

Instrument: fid3b.i

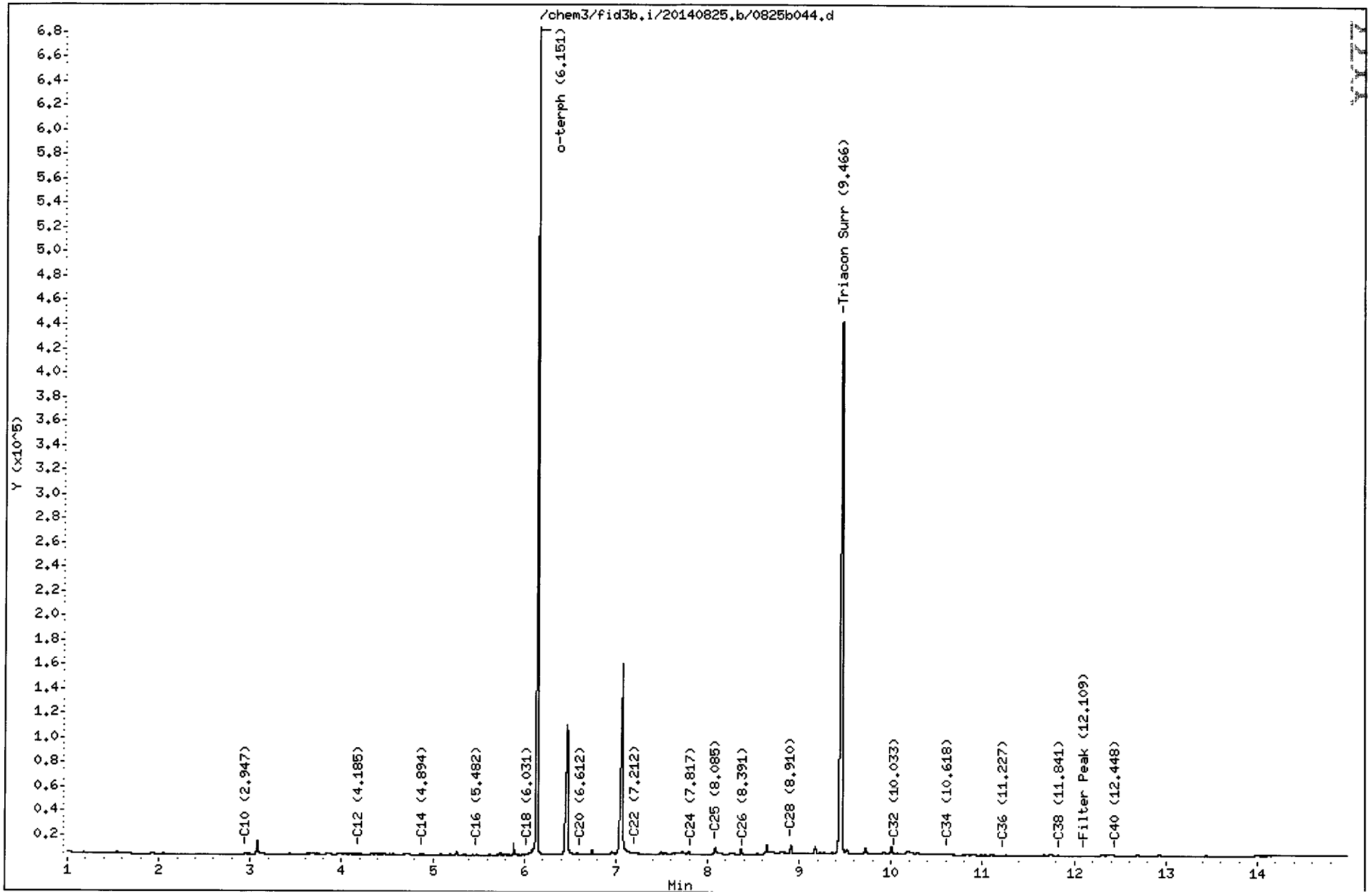
Operator: JR

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140825.b/0825b044.d
Date : 26-AUG-2014 07:45
Client ID: MW11-18-19
Sample Info: YW77D

Instrument: fid3b.i
Operator: JR
Column phase: RTX-1
Column diameter: 0.25



SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-18-19
ARI ID: 14-16946 YW77A

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.492	< 0.492 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	80.59

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YW77.00037

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-32.5-33.5
ARI ID: 14-16947 YW77B

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.448	< 0.448 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	87.95

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YW77 00036

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-38-39
ARI ID: 14-16948 YW77C

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.471	< 0.471 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	83.34

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YW77.00039

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW11-18-19
ARI ID: 14-16949 YW77D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.455	< 0.455 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	87.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YW77.00040

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW100
ARI ID: 14-16950 YW77E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.448	< 0.448 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	86.52

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

YW77.00041

METHOD BLANK RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/18/14	mg/kg	< 0.398 U	PREP
Total Solids	08/18/14	Percent	< 0.01 U	ICB

YYTT.00042

STANDARD REFERENCE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/18/14	mg/kg	19.4	19.9	97.5%
Insoluble Hexavalent Chromiu	08/18/14	mg/kg	431	455	94.7%
Soil Hexavalent Chrome					

YY77 00043

REPLICATE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YW77A Client ID: MW9-18-19					
Total Solids	08/18/14	Percent	80.59	80.62	0.0%

YW77.00044

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW9-18-19
SAMPLE

Lab Sample ID: YW77A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 80.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	**7440-38-2**	**Arsenic**	10	**10**	
3050B	08/20/14	6010C	08/26/14	**7440-47-3**	**Chromium**	1	**19**	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	6	6	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	10	10	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW9-32.5-33.5
SAMPLE

Lab Sample ID: YW77B
LIMS ID: 14-16947
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 88.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.5	**17.8**	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

YW77.00045

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW9-38-39
SAMPLE

Lab Sample ID: YW77C
LIMS ID: 14-16948
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 85.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.5	**32.3**	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW11-18-19
SAMPLE

Lab Sample ID: YW77D
LIMS ID: 14-16949
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 87.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	6	6	U
3050B	08/20/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.6	**38.0**	
3050B	08/20/14	6010C	08/26/14	**7439-92-1**	**Lead**	2	**2**	
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW100
SAMPLE

Lab Sample ID: YW77E
LIMS ID: 14-16950
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 88.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.5	**37.8**	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: YW77MB
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YW77LCS
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	210	200	105%	
Chromium	6010C	52.7	50.0	105%	
Lead	6010C	205	200	102%	
Selenium	6010C	208	200	104%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

2 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YX24

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples on August 18, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YX24

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 14X24	Turn-around Requested:
ARI Client Company: Kennedy/Jenks	Phone: 206.753.3425
Client Contact: Jessica Faragalli	
Client Project Name: Precision Engineering	
Client Project #: 1396024*00	Samplers:

Page: 1 of 1	
Date: 8/20/14	Ice Present? yes
No. of Coolers: 1	Cooler Temps: 5.9

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Hex Chrome	Metals As,Cr,Pb,Se	VOCs	NWTPH-Dx					Notes/Comments
MW1	8/20/14	1510	groundw.	7	X	X	X	X					
MW2	"	1720	"	"	X	X	X	X					
MW4	"	1300	"	"	X	X	X	X					
MW4-1	"	1305	"	"	X	X	X	X					
MW7	"	1100	"	"	X	X	X	X					
MW8	"	1705	"	"	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
Per QAPP	Printed Name: Raymond Lopez	Printed Name: Chris Atwell	Printed Name:	Printed Name:
	Company: Kennedy Jenks	Company: ARI	Company:	Company:
	Date & Time: 8/20/14 1750	Date & Time: 8/20/14 1750	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

20080 · 1224

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client. Kennedy/Jenks

Project Name Precision Engineering

COC No(s). _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YX24

Tracking No. _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry)

Time: 1750 5.9

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877552

Cooler Accepted by: CA Date: 8/20/14 Time: 1750

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA (YES) NO

Were all bottles sealed in individual plastic bags? (YES) NO

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA (YES) NO

Were all VOC vials free of air bubbles? NA YES (NO)

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI..... (NA) _____

Was Sample Split by ARI : (NA) YES Date/Time:_____ Equipment._____ Split by:_____

Samples Logged by: AV Date: 8/21/14 Time: 845

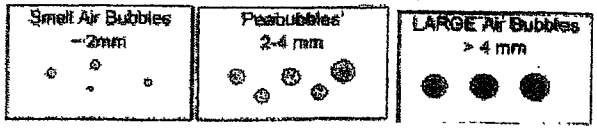
*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

MW1- 1pb MW2= 2lg MW4= 2sm MW7= 2sm MW8= 3pb

By: AV Date: 8/21/14



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

YX24 . 00003

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YX24
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW1	YX24A	14-17143	Water	08/20/14 15:10	08/20/14 17:50
2.	MW2	YX24B	14-17144	Water	08/20/14 17:20	08/20/14 17:50
3.	MW4	YX24C	14-17145	Water	08/20/14 13:00	08/20/14 17:50
4.	MW4-1	YX24D	14-17146	Water	08/20/14 13:05	08/20/14 17:50
5.	MW7	YX24E	14-17147	Water	08/20/14 11:00	08/20/14 17:50
6.	MW8	YX24F	14-17148	Water	08/20/14 17:05	08/20/14 17:50

YX24 : 00004

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YX24 . 00005

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YX24 . 00006

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW1**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 17:04

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	**Bromoform**	**1.0**	**1.5**	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW1**
 SAMPLE

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Date Analyzed: 08/23/14 17:04

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	96.2%
Bromofluorobenzene	93.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW2**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX24B
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 17:34

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW2**
 SAMPLE

Lab Sample ID: YX24B
LIMS ID: 14-17144
Matrix: Water
Date Analyzed: 08/23/14 17:34

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	94.4%
Bromofluorobenzene	98.1%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW4**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX24C
LIMS ID: 14-17145
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 18:01

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW4**
 SAMPLE

Lab Sample ID: YX24C
LIMS ID: 14-17145
Matrix: Water
Date Analyzed: 08/23/14 18:01

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	93.2%
Bromofluorobenzene	90.3%
d4-1,2-Dichlorobenzene	99.7%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW4-1**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX24D
LIMS ID: 14-17146
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 18:29

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: YX24D
LIMS ID: 14-17146
Matrix: Water
Date Analyzed: 08/23/14 18:29

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	98.5%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	99.3%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW7**
 SAMPLE

Lab Sample ID: YX24E
LIMS ID: 14-17147
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 18:59

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW7**
 SAMPLE

Lab Sample ID: YX24E
LIMS ID: 14-17147
Matrix: Water
Date Analyzed: 08/23/14 18:59

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	92.8%
Bromofluorobenzene	94.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW8**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX24F
LIMS ID: 14-17148
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 19:29

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW8**
 SAMPLE

Lab Sample ID: YX24F
LIMS ID: 14-17148
Matrix: Water
Date Analyzed: 08/23/14 19:29

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	95.8%
Bromofluorobenzene	93.7%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082314A**
 METHOD BLANK

Lab Sample ID: MB-082314A
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/LH
Date Analyzed: 08/23/14 11:20

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

Lab Sample ID: MB-082314A
LIMS ID: 14-17144
Matrix: Water
Date Analyzed: 08/23/14 11:20

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	**Hexachlorobutadiene**	**0.50**	**0.70**	
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	96.2%
Bromofluorobenzene	94.4%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082314A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082314A
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized:
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/LH
LCSD: NT3/LH
Date Analyzed LCS: 08/23/14 10:24
LCSD: 08/23/14 10:52

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	8.15	10.0	81.5%	8.38	10.0	83.8%	2.8%
Bromomethane	8.14	10.0	81.4%	8.72	10.0	87.2%	6.9%
Vinyl Chloride	8.35	10.0	83.5%	8.54	10.0	85.4%	2.2%
Chloroethane	8.54	10.0	85.4%	8.25	10.0	82.5%	3.5%
Methylene Chloride	9.05	10.0	90.5%	9.37	10.0	93.7%	3.5%
Acetone	42.7	50.0	85.4%	43.6	50.0	87.2%	2.1%
Carbon Disulfide	8.69	10.0	86.9%	8.89	10.0	88.9%	2.3%
1,1-Dichloroethene	8.48	10.0	84.8%	8.97	10.0	89.7%	5.6%
1,1-Dichloroethane	8.90	10.0	89.0%	8.83	10.0	88.3%	0.8%
trans-1,2-Dichloroethene	8.75	10.0	87.5%	8.93	10.0	89.3%	2.0%
cis-1,2-Dichloroethene	8.59	10.0	85.9%	8.79	10.0	87.9%	2.3%
Chloroform	9.17	10.0	91.7%	9.25	10.0	92.5%	0.9%
1,2-Dichloroethane	9.36	10.0	93.6%	9.52	10.0	95.2%	1.7%
2-Butanone	43.6	50.0	87.2%	45.2	50.0	90.4%	3.6%
1,1,1-Trichloroethane	9.57	10.0	95.7%	9.63	10.0	96.3%	0.6%
Carbon Tetrachloride	9.81	10.0	98.1%	9.88	10.0	98.8%	0.7%
Vinyl Acetate	8.11	10.0	81.1%	8.43	10.0	84.3%	3.9%
Bromodichloromethane	9.31	10.0	93.1%	9.58	10.0	95.8%	2.9%
1,2-Dichloropropane	8.14	10.0	81.4%	8.43	10.0	84.3%	3.5%
cis-1,3-Dichloropropene	9.07	10.0	90.7%	9.07	10.0	90.7%	0.0%
Trichloroethene	8.61	10.0	86.1%	8.85	10.0	88.5%	2.7%
Dibromochloromethane	9.62	10.0	96.2%	10.0	10.0	100%	3.9%
1,1,2-Trichloroethane	8.58	10.0	85.8%	8.55	10.0	85.5%	0.4%
Benzene	9.03	10.0	90.3%	8.95	10.0	89.5%	0.9%
trans-1,3-Dichloropropene	8.77	10.0	87.7%	9.48	10.0	94.8%	7.8%
2-Chloroethylvinylether	9.01	10.0	90.1%	9.17	10.0	91.7%	1.8%
Bromoform	10.3	10.0	103%	10.4	10.0	104%	1.0%
4-Methyl-2-Pentanone (MIBK)	44.7	50.0	89.4%	45.9	50.0	91.8%	2.6%
2-Hexanone	48.0	50.0	96.0%	48.9	50.0	97.8%	1.9%
Tetrachloroethene	8.58	10.0	85.8%	9.28	10.0	92.8%	7.8%
1,1,2,2-Tetrachloroethane	9.51	10.0	95.1%	9.15	10.0	91.5%	3.9%
Toluene	9.16	10.0	91.6%	9.40	10.0	94.0%	2.6%
Chlorobenzene	9.71	10.0	97.1%	9.87	10.0	98.7%	1.6%
Ethylbenzene	9.82	10.0	98.2%	10.1	10.0	101%	2.8%
Styrene	9.87	10.0	98.7%	10.1	10.0	101%	2.3%
Trichlorofluoromethane	11.1	10.0	111%	9.68	10.0	96.8%	13.7%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.65	10.0	96.5%	9.65	10.0	96.5%	0.0%
m,p-Xylene	19.8	20.0	99.0%	20.5	20.0	102%	3.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082314A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082314A QC Report No: YX24-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-17144 Project: Precision Engineering
Matrix: Water 1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.66	10.0	96.6%	10.0	10.0	100%	3.5%
1,2-Dichlorobenzene	9.33	10.0	93.3%	9.15	10.0	91.5%	1.9%
1,3-Dichlorobenzene	9.20	10.0	92.0%	9.06	10.0	90.6%	1.5%
1,4-Dichlorobenzene	8.96	10.0	89.6%	8.86	10.0	88.6%	1.1%
Acrolein	40.7	50.0	81.4%	44.2	50.0	88.4%	8.2%
Iodomethane	8.76	10.0	87.6%	8.34	10.0	83.4%	4.9%
Bromoethane	8.65	10.0	86.5%	9.03	10.0	90.3%	4.3%
Acrylonitrile	9.13	10.0	91.3%	8.82	10.0	88.2%	3.5%
1,1-Dichloropropene	8.79	10.0	87.9%	9.01	10.0	90.1%	2.5%
Dibromomethane	9.81	10.0	98.1%	9.94	10.0	99.4%	1.3%
1,1,1,2-Tetrachloroethane	9.93	10.0	99.3%	10.7	10.0	107%	7.5%
1,2-Dibromo-3-chloropropane	9.71	10.0	97.1%	10.1	10.0	101%	3.9%
1,2,3-Trichloropropane	9.89	10.0	98.9%	9.35	10.0	93.5%	5.6%
trans-1,4-Dichloro-2-butene	9.08	10.0	90.8%	8.94	10.0	89.4%	1.6%
1,3,5-Trimethylbenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
1,2,4-Trimethylbenzene	10.3	10.0	103%	10.4	10.0	104%	1.0%
Hexachlorobutadiene	10.2 B	10.0	102%	9.79 B	10.0	97.9%	4.1%
1,2-Dibromoethane	8.69	10.0	86.9%	8.43	10.0	84.3%	3.0%
Bromochloromethane	9.38	10.0	93.8%	10.1	10.0	101%	7.4%
2,2-Dichloropropane	9.77	10.0	97.7%	9.91	10.0	99.1%	1.4%
1,3-Dichloropropane	9.39	10.0	93.9%	9.57	10.0	95.7%	1.9%
Isopropylbenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
n-Propylbenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Bromobenzene	9.84	10.0	98.4%	9.68	10.0	96.8%	1.6%
2-Chlorotoluene	11.2	10.0	112%	11.1	10.0	111%	0.9%
4-Chlorotoluene	10.2	10.0	102%	10.1	10.0	101%	1.0%
tert-Butylbenzene	9.52	10.0	95.2%	9.53	10.0	95.3%	0.1%
sec-Butylbenzene	10.2	10.0	102%	9.98	10.0	99.8%	2.2%
4-Isopropyltoluene	9.52	10.0	95.2%	9.66	10.0	96.6%	1.5%
n-Butylbenzene	9.76	10.0	97.6%	9.97	10.0	99.7%	2.1%
1,2,4-Trichlorobenzene	8.94	10.0	89.4%	8.37	10.0	83.7%	6.6%
Naphthalene	9.78	10.0	97.8%	8.89	10.0	88.9%	9.5%
1,2,3-Trichlorobenzene	8.79	10.0	87.9%	8.05	10.0	80.5%	8.8%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	105%	103%
d8-Toluene	93.3%	95.0%
Bromofluorobenzene	96.5%	95.1%
d4-1,2-Dichlorobenzene	96.0%	99.9%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
YX24A	MW1	10	108%	96.2%	93.9%	102%	0
MB-082314A	Method Blank	10	110%	96.2%	94.4%	102%	0
LCS-082314A	Lab Control	10	105%	93.3%	96.5%	96.0%	0
LCSD-082314A	Lab Control Dup	10	103%	95.0%	95.1%	99.9%	0
YX24B	MW2	10	107%	94.4%	98.1%	103%	0
YX24C	MW4	10	110%	93.2%	90.3%	99.7%	0
YX24D	MW4-1	10	110%	98.5%	90.8%	99.3%	0
YX24E	MW7	10	109%	92.8%	94.7%	103%	0
YX24F	MW8	10	113%	95.8%	93.7%	102%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-17143 to 14-17148

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YX24-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024*00

Matrix: Water

Date Received: 08/20/14

Data Release Authorized:
Reported: 09/02/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-082514	Method Blank	08/25/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17143	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		61.6%
YX24A	MW1	08/25/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17143	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		77.7%
YX24B	MW2	08/25/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.49**
14-17144	HC ID: **DIESEL/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.49**
					o-Terphenyl		59.7%
YX24C	MW4	08/25/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17145	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		75.6%
YX24D	MW4-1	08/25/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17146	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		64.8%
YX24E	MW7	08/25/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.14**
14-17147	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		68.2%
YX24F	MW8	08/25/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.44**
14-17148	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.38**
					o-Terphenyl		62.6%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

YX24 : 00025

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client ID	OTER	TOT OUT
MB-082514	61.6%	0
LCS-082514	71.2%	0
LCSD-082514	70.2%	0
MW1	77.7%	0
MW2	59.7%	0
MW4	75.6%	0
MW4-1	64.8%	0
MW7	68.2%	0
MW8	62.6%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-17143 to 14-17148

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-082514
LCS/LCSD

Lab Sample ID: LCS-082514
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 09/02/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 08/25/14

Date Analyzed LCS: 08/29/14 14:15
LCSD: 08/29/14 14:40
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.22	3.00	74.0%	2.20	3.00	73.3%	0.9%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	71.2%	70.2%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/20/14

ARI Job: YX24
Project: Precision Engineering
1396024*00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-17143-082514MB1	Method Blank	500 mL	1.00 mL	08/25/14
14-17143-082514LCS1	Lab Control	500 mL	1.00 mL	08/25/14
14-17143-082514LCSD1	Lab Control Dup	500 mL	1.00 mL	08/25/14
14-17143-YX24A	MW1	500 mL	1.00 mL	08/25/14
14-17144-YX24B	MW2	500 mL	1.00 mL	08/25/14
14-17145-YX24C	MW4	500 mL	1.00 mL	08/25/14
14-17146-YX24D	MW4-1	500 mL	1.00 mL	08/25/14
14-17147-YX24E	MW7	500 mL	1.00 mL	08/25/14
14-17148-YX24F	MW8	500 mL	1.00 mL	08/25/14

Data File: /chem3/fid3b.i/20140829.b/08290007.d

Date : 29-AUG-2014 13:50

Client ID: YX24MBW1

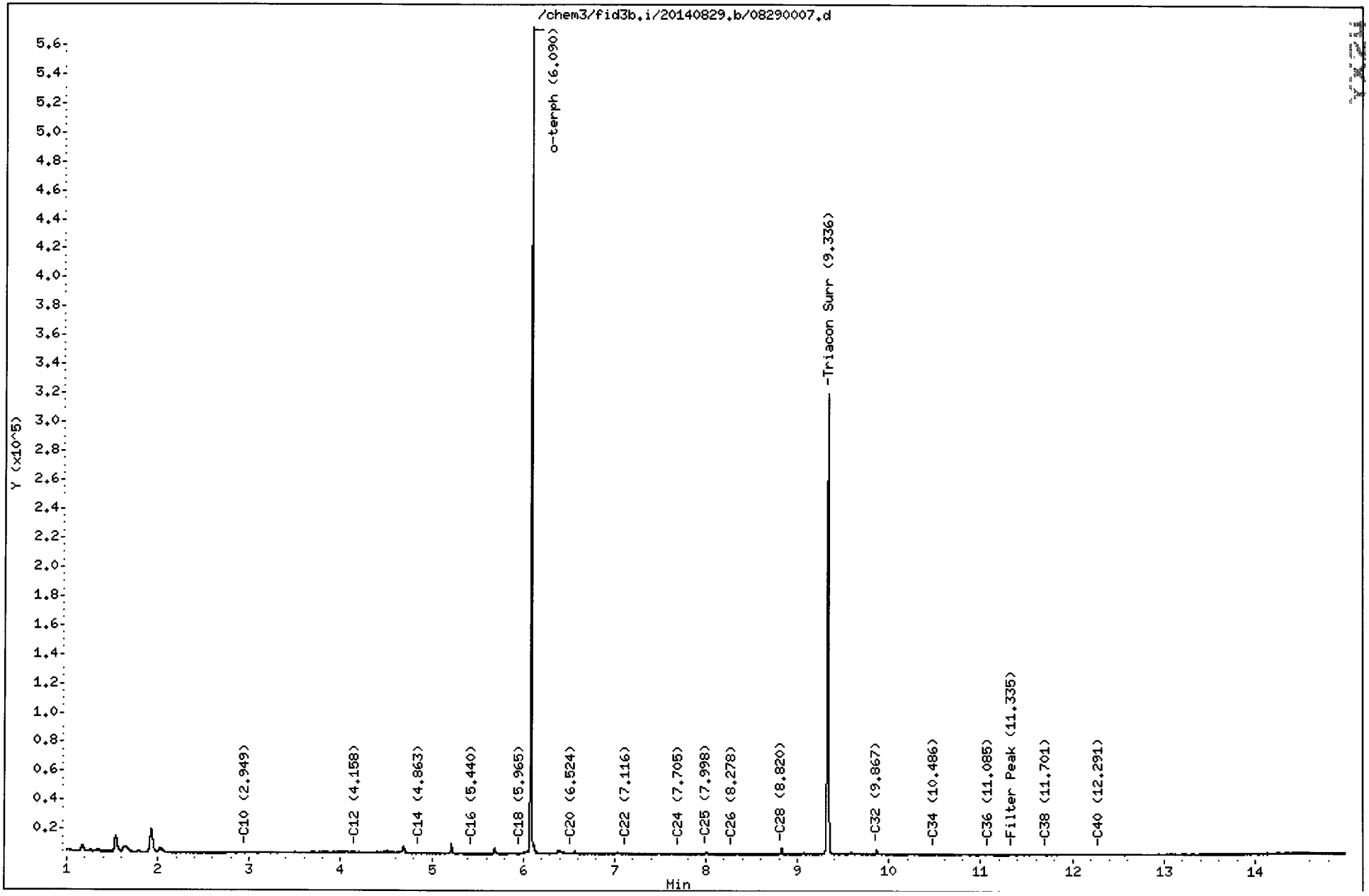
Sample Info: YX24MBW1

Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140829.b/08290008.d

Date : 29-AUG-2014 14:15

Client ID: YX24LCSW1

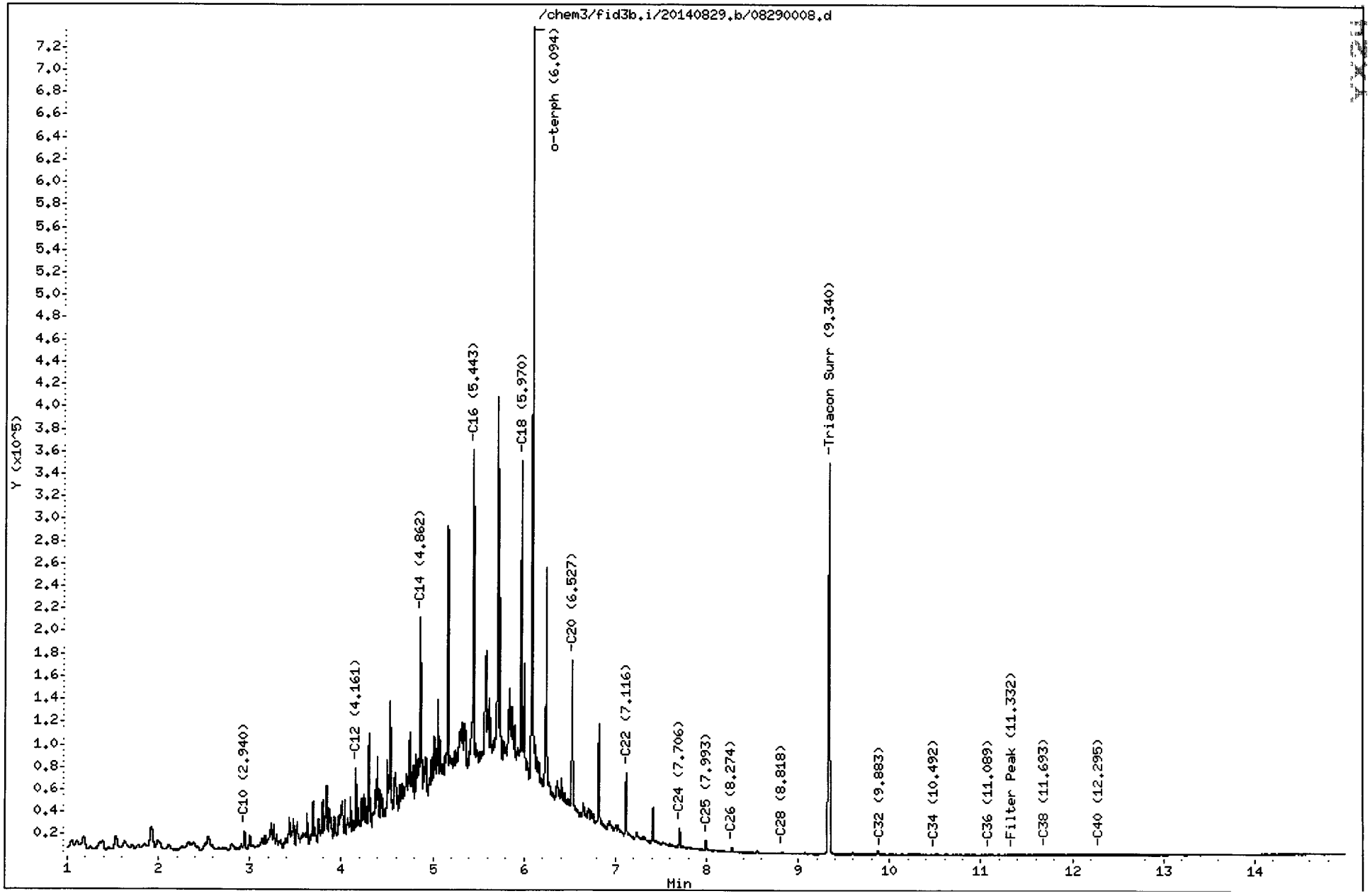
Sample Info: YX24LCSW1

Instrument: fid3b.i

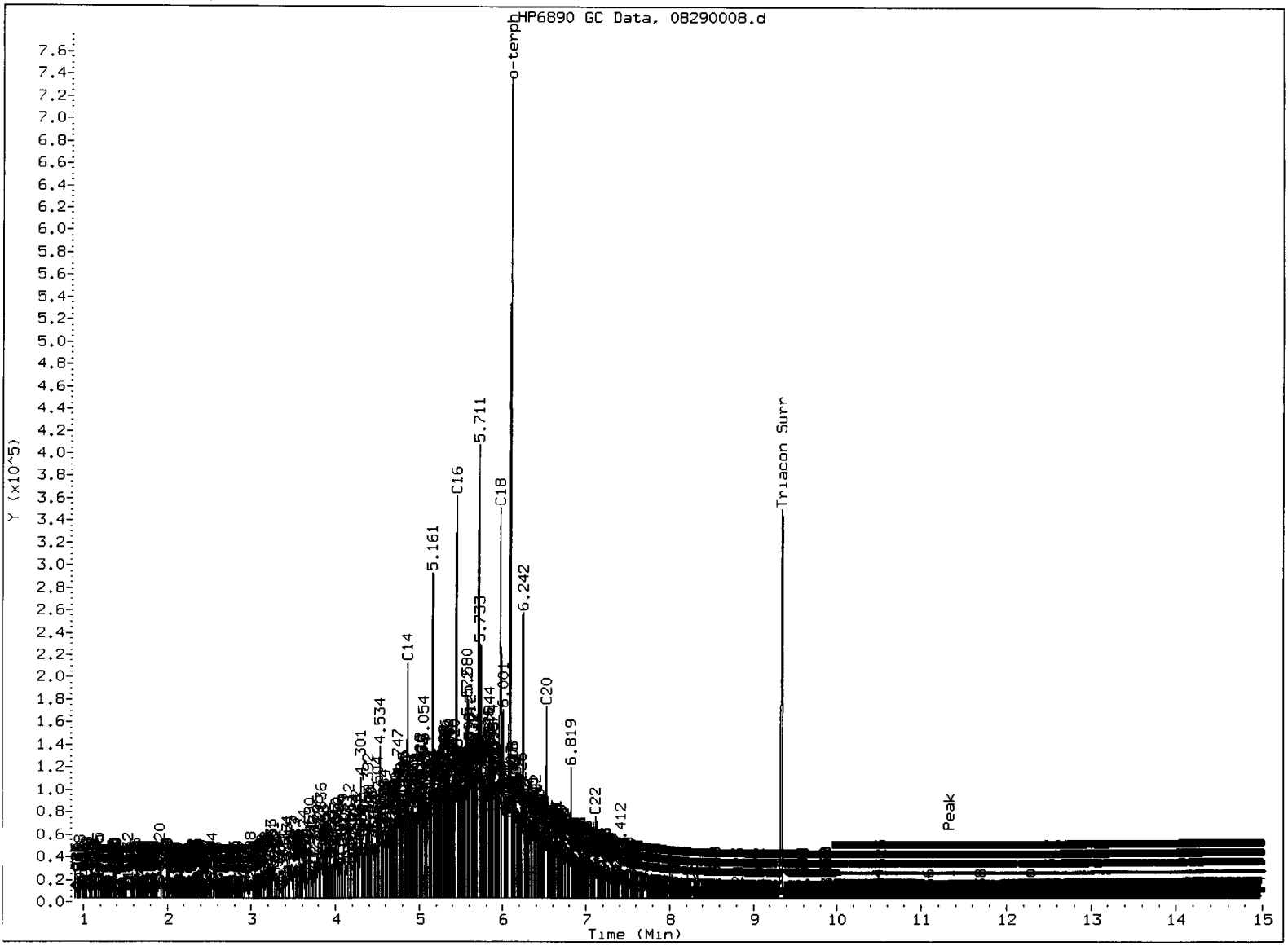
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290009.d

Date : 29-AUG-2014 14:40

Client ID: YX24LCSDW1

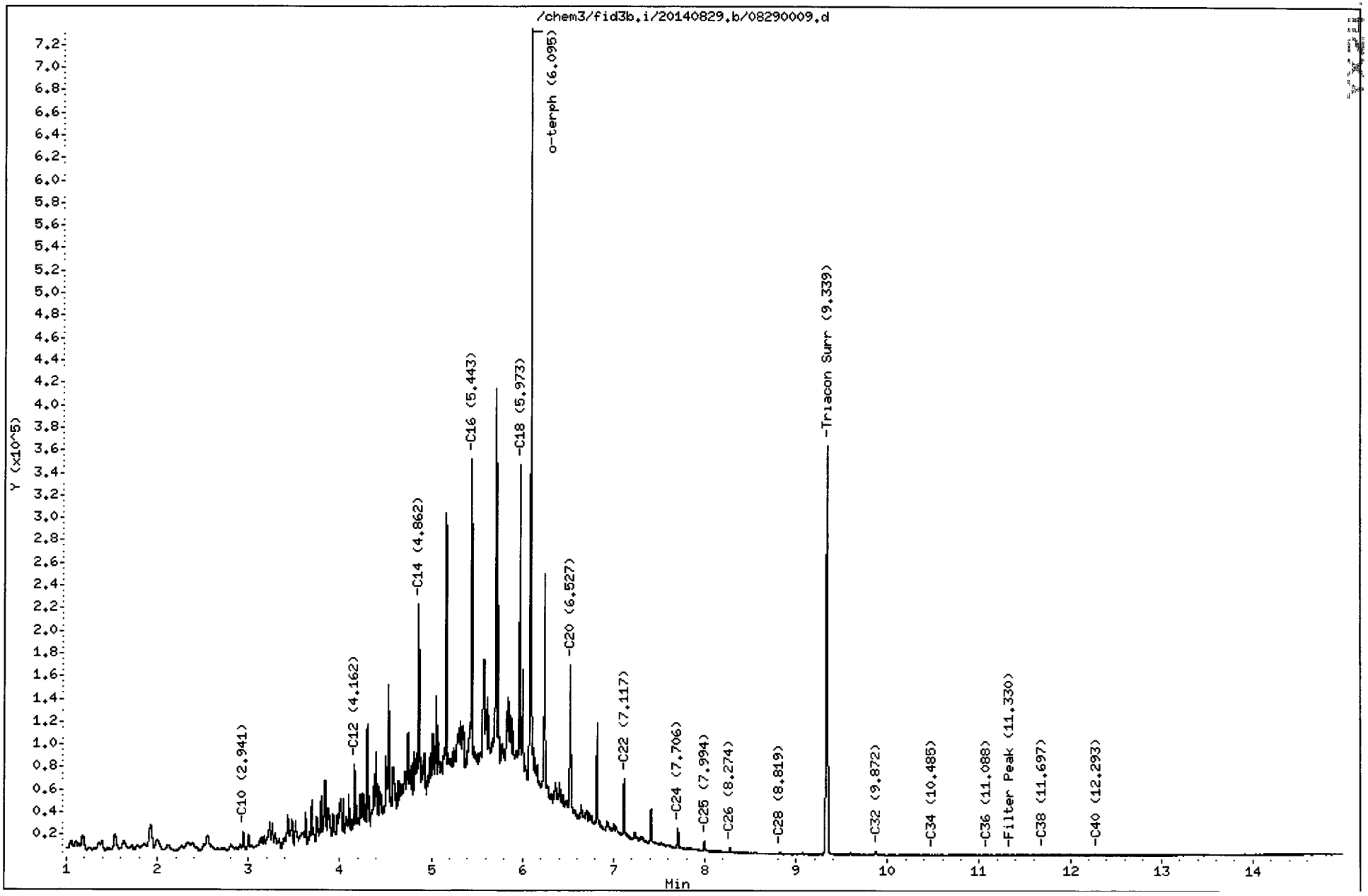
Sample Info: YX24LCSDW1

Column phase: RTX-1

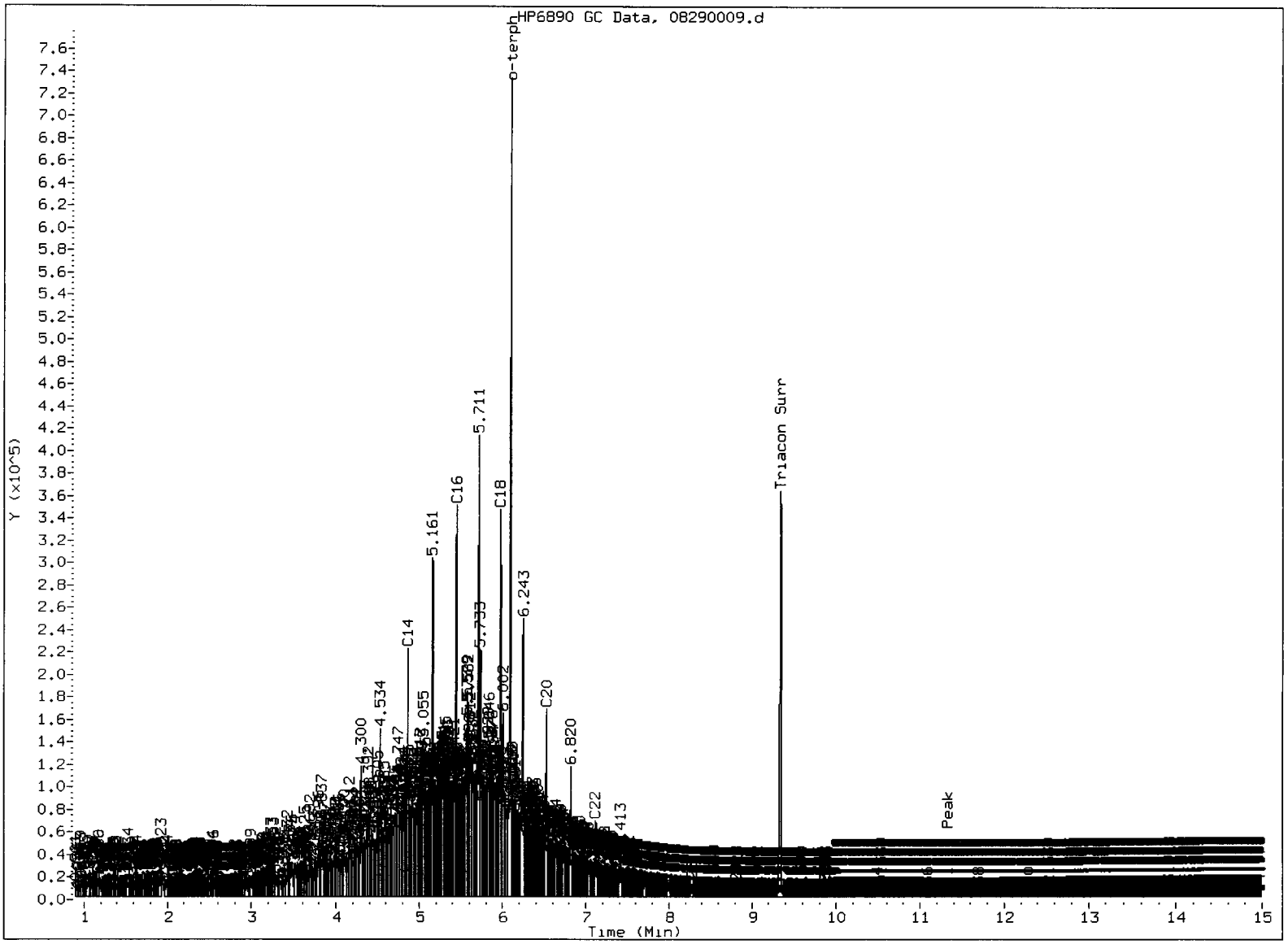
Instrument: fid3b.i

Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5). Skimmed surrogate

Analyst: JW Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290010.d

Date : 29-AUG-2014 15:06

Client ID: MW1

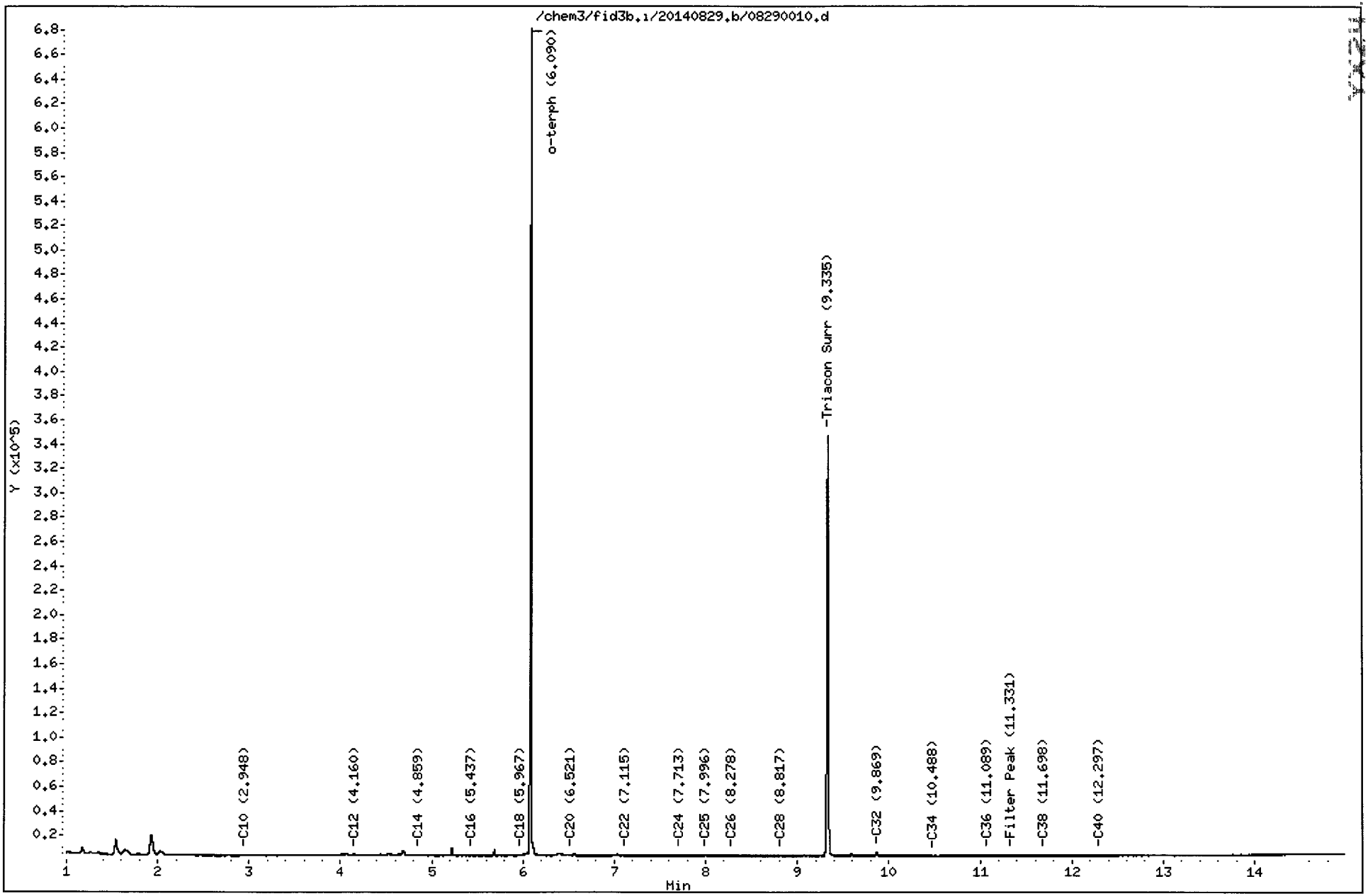
Sample Info: YX24A

Column phase: RTX-1

Instrument: fid3b.i

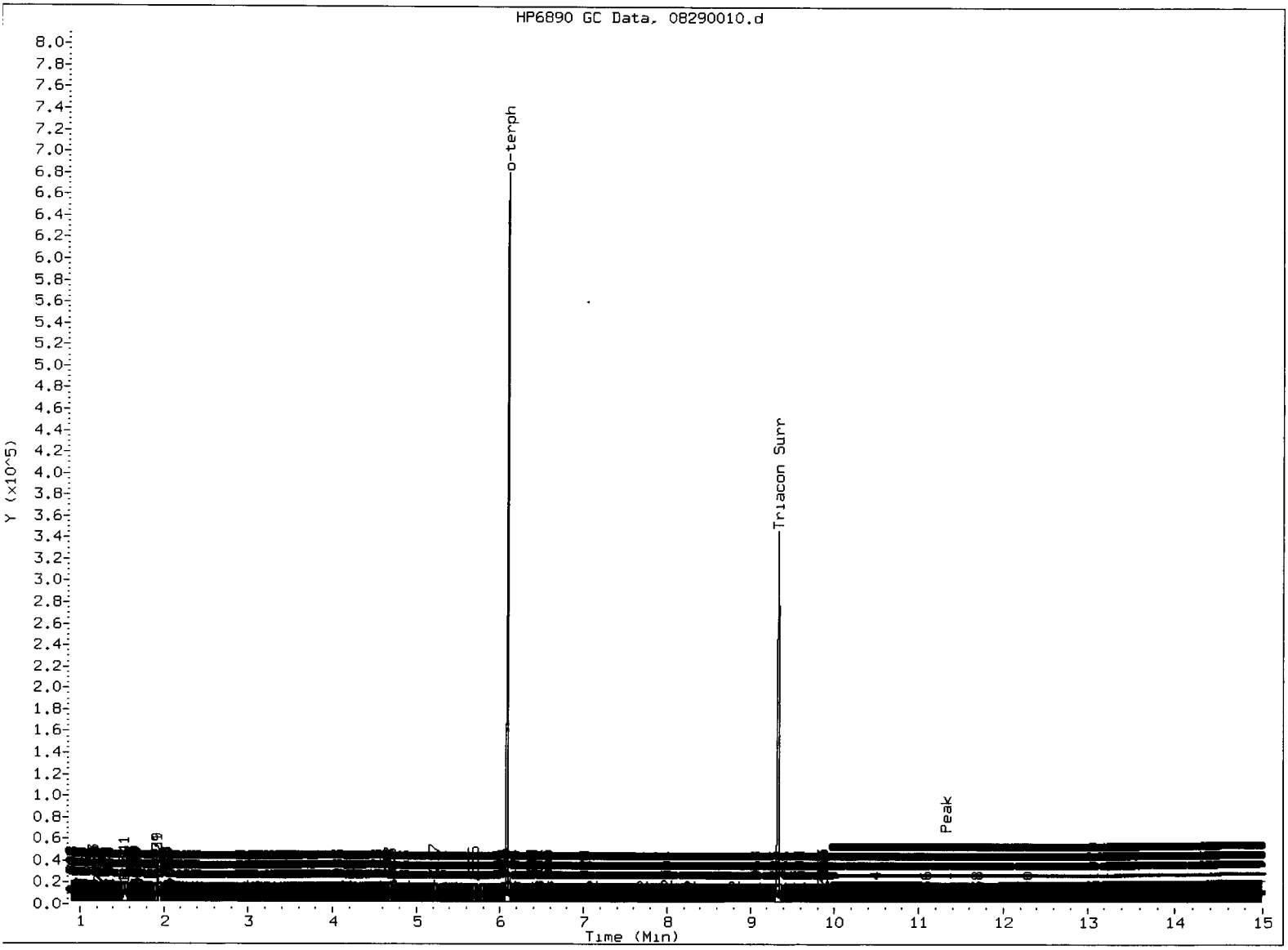
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24A

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: FW Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290011.d

Date : 29-AUG-2014 15:31

Client ID: MW2

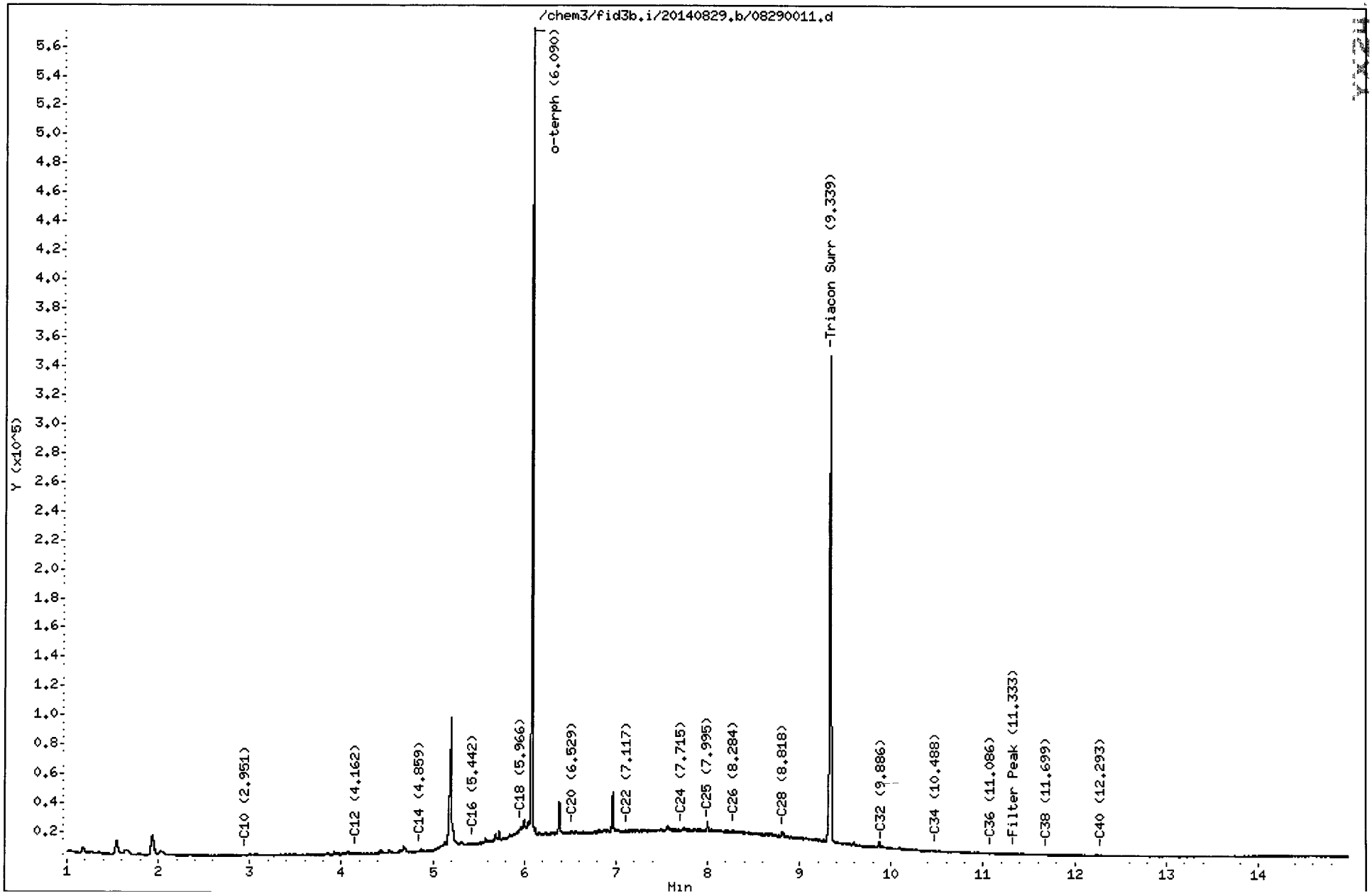
Sample Info: YX24B

Column phase: RTX-1

Instrument: fid3b.i

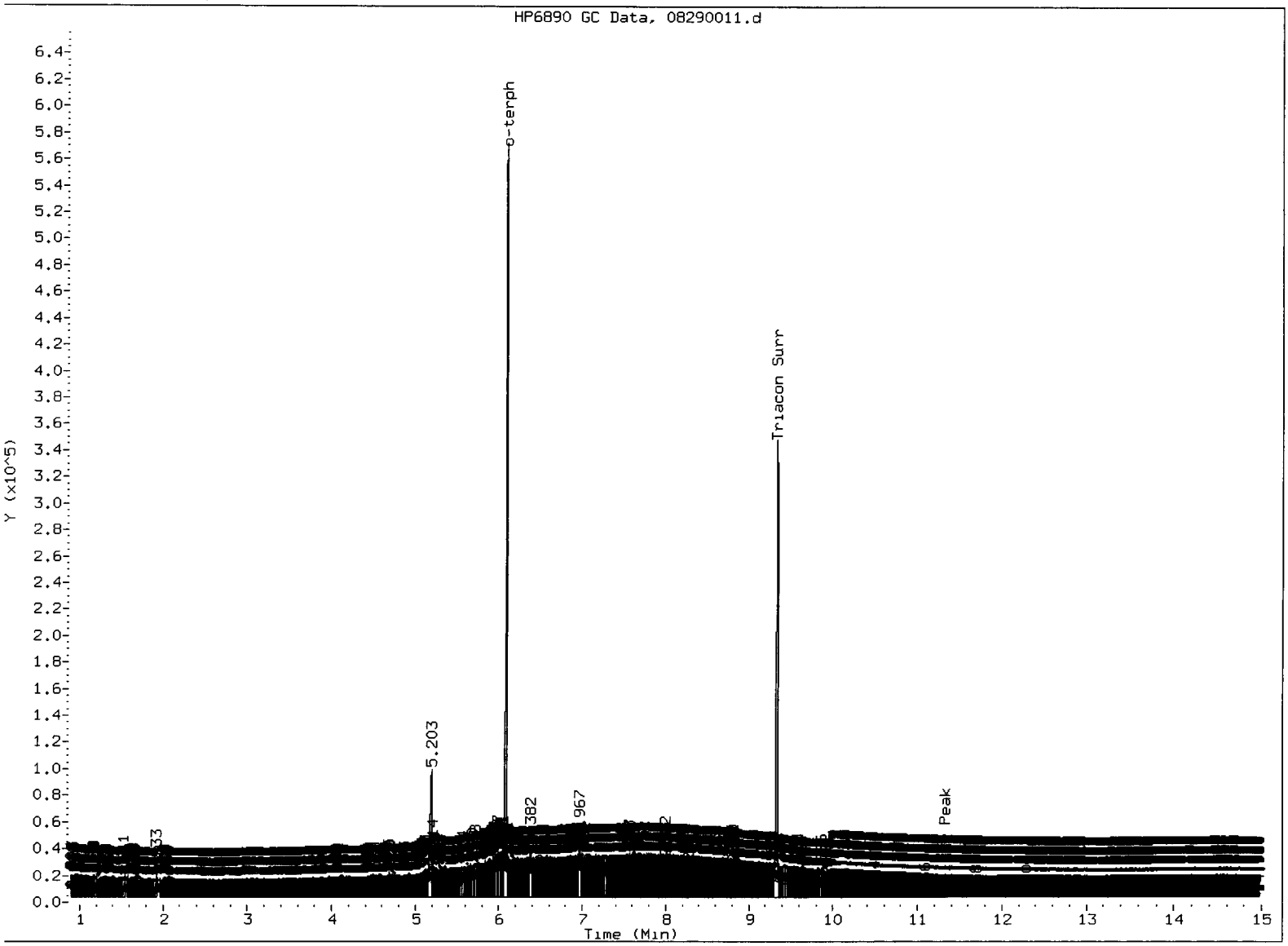
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24B

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW

Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290012.d

Date : 29-AUG-2014 15:57

Client ID: MW4

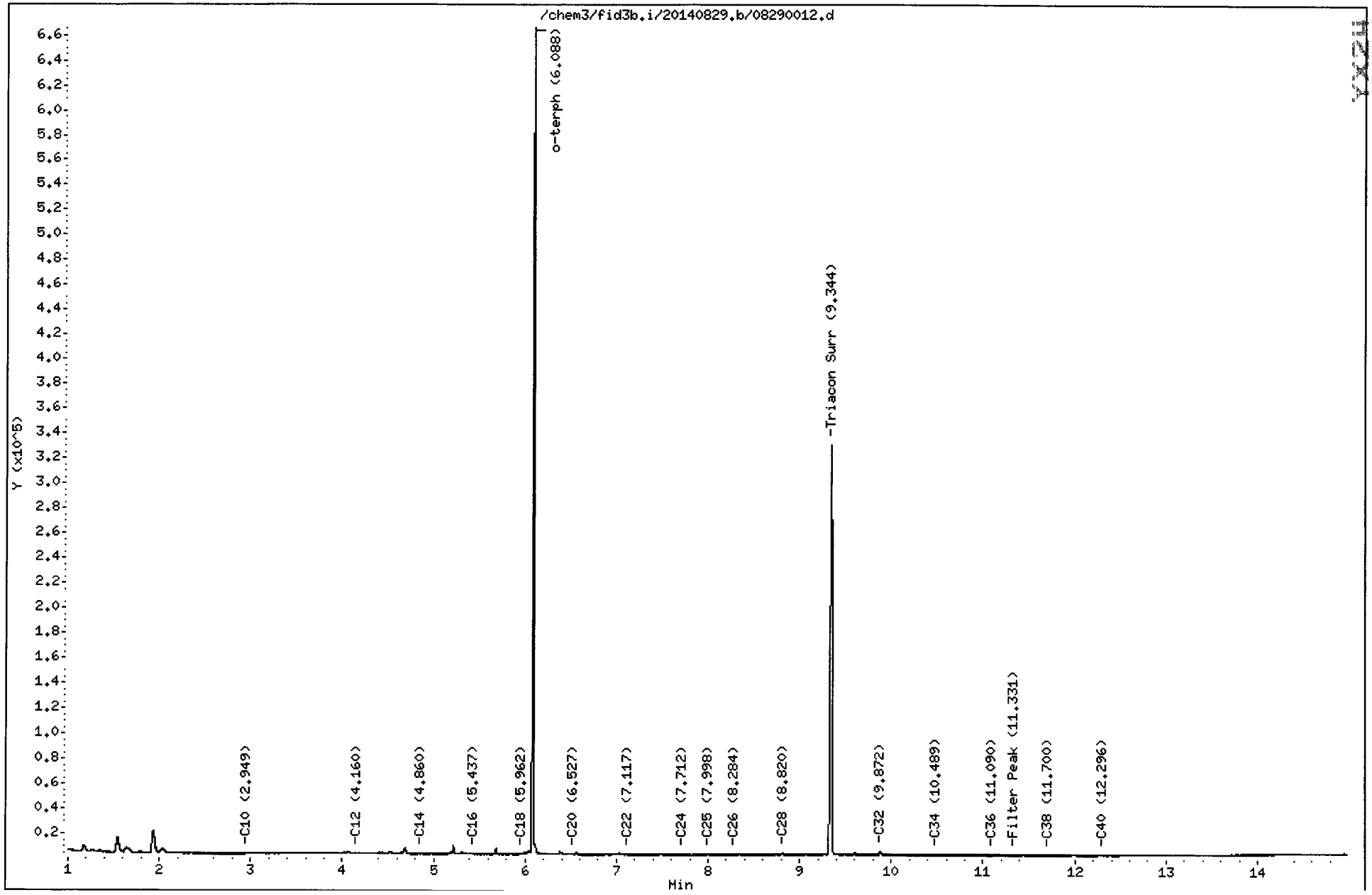
Sample Info: YX24C

Column phase: RTX-1

Instrument: fid3b.i

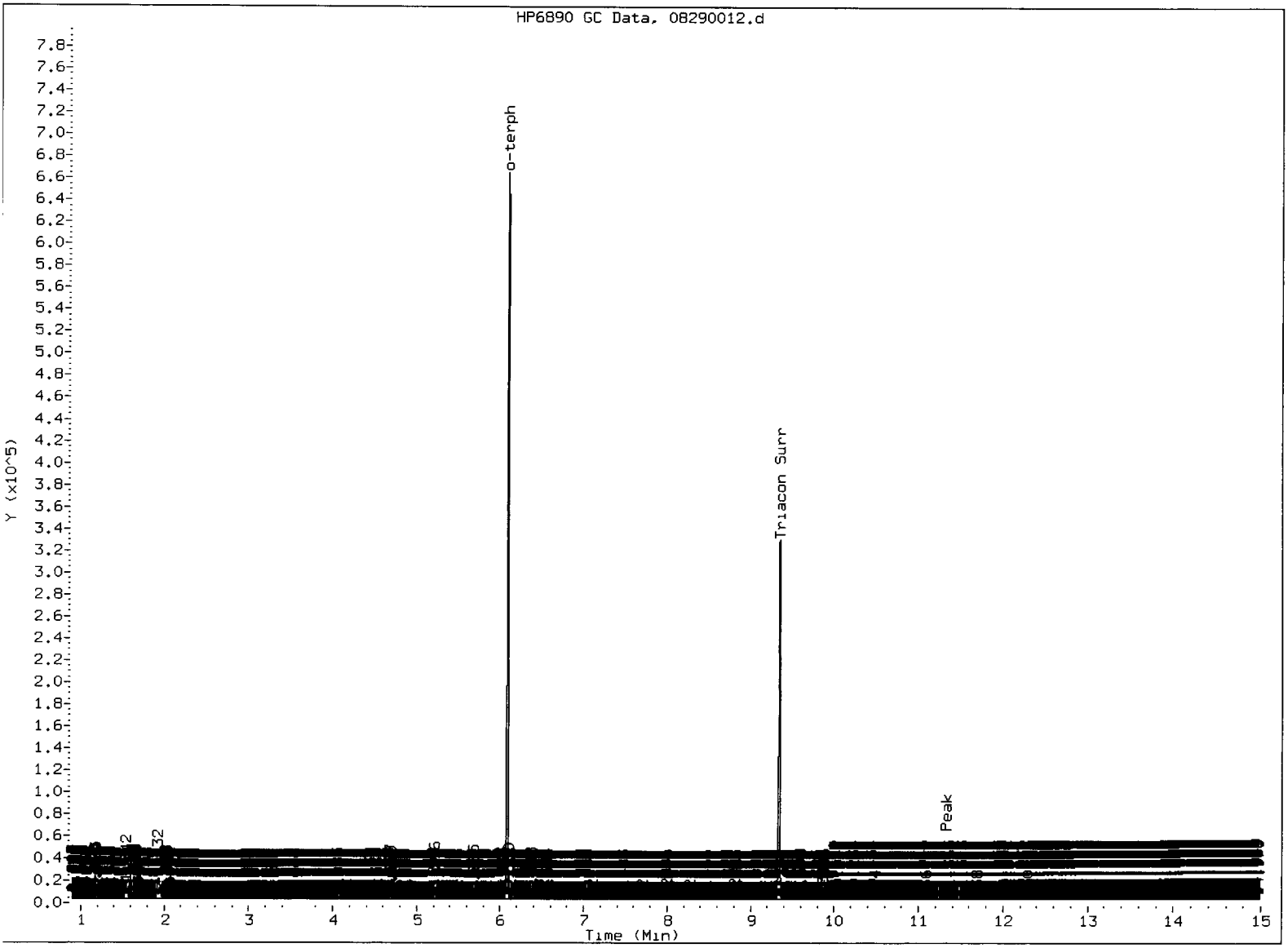
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: TW Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290013.d

Date : 29-AUG-2014 16:22

Client ID: MW4-1

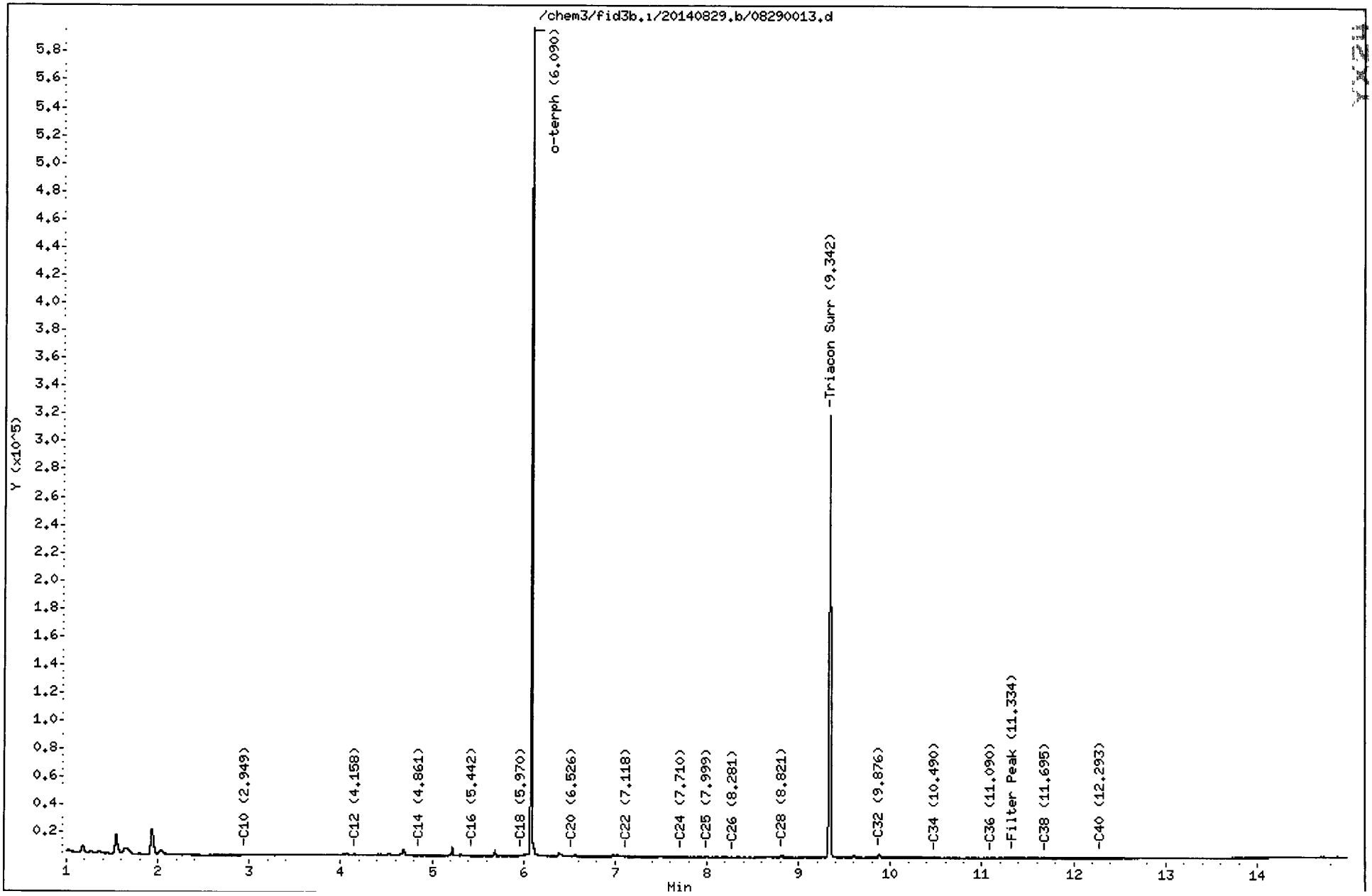
Sample Info: YX24D

Instrument: fid3b.i

Operator: JW

Column phase: RTX-1

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140829.b/08290014.d

Date : 29-AUG-2014 16:48

Client ID: MW7

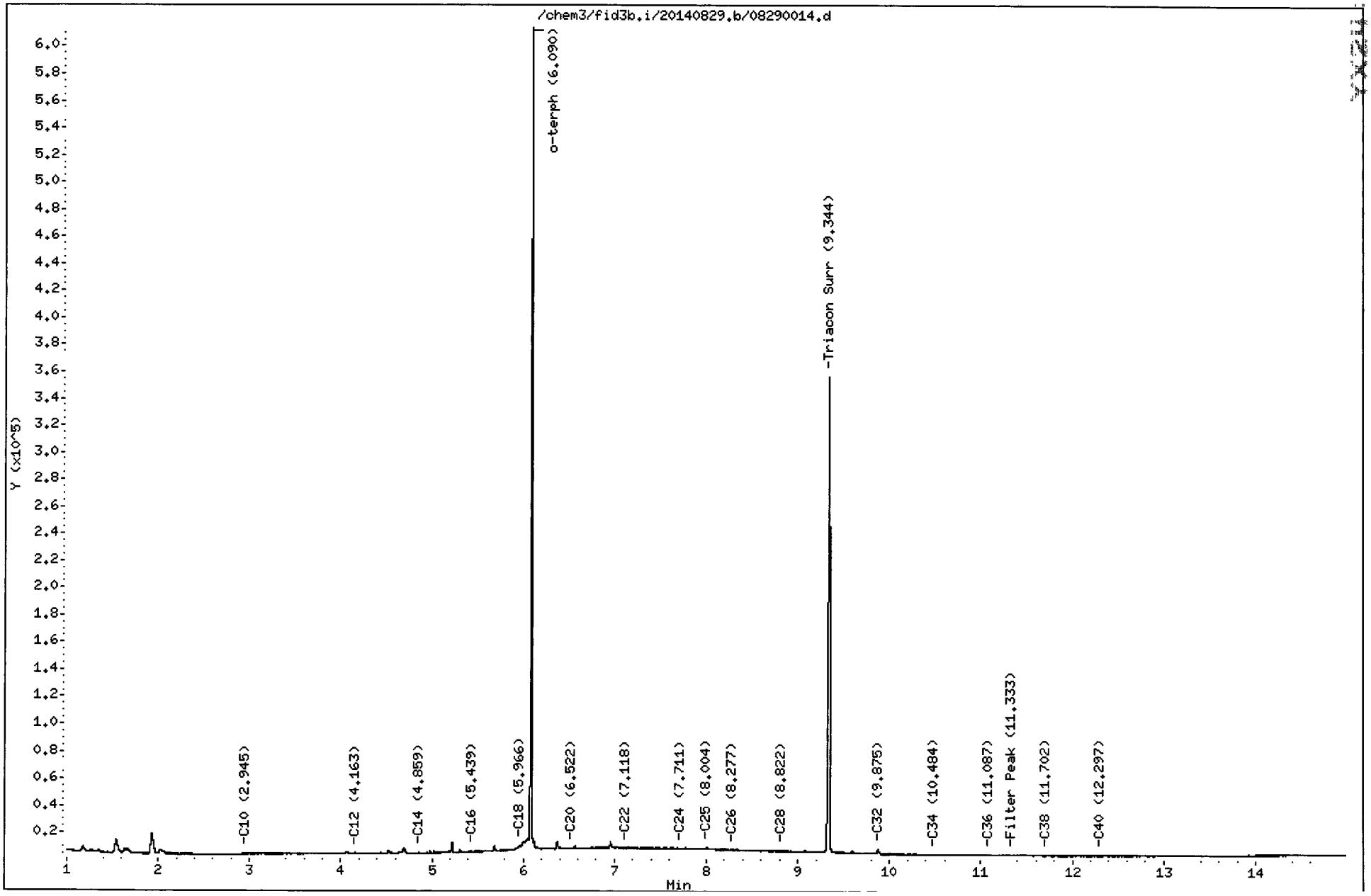
Sample Info: YX24E

Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

Column diameter: 0.25



Data File: /chem3/fid3b.i/20140829.b/08290015.d

Date : 29-AUG-2014 17:13

Client ID: MW8

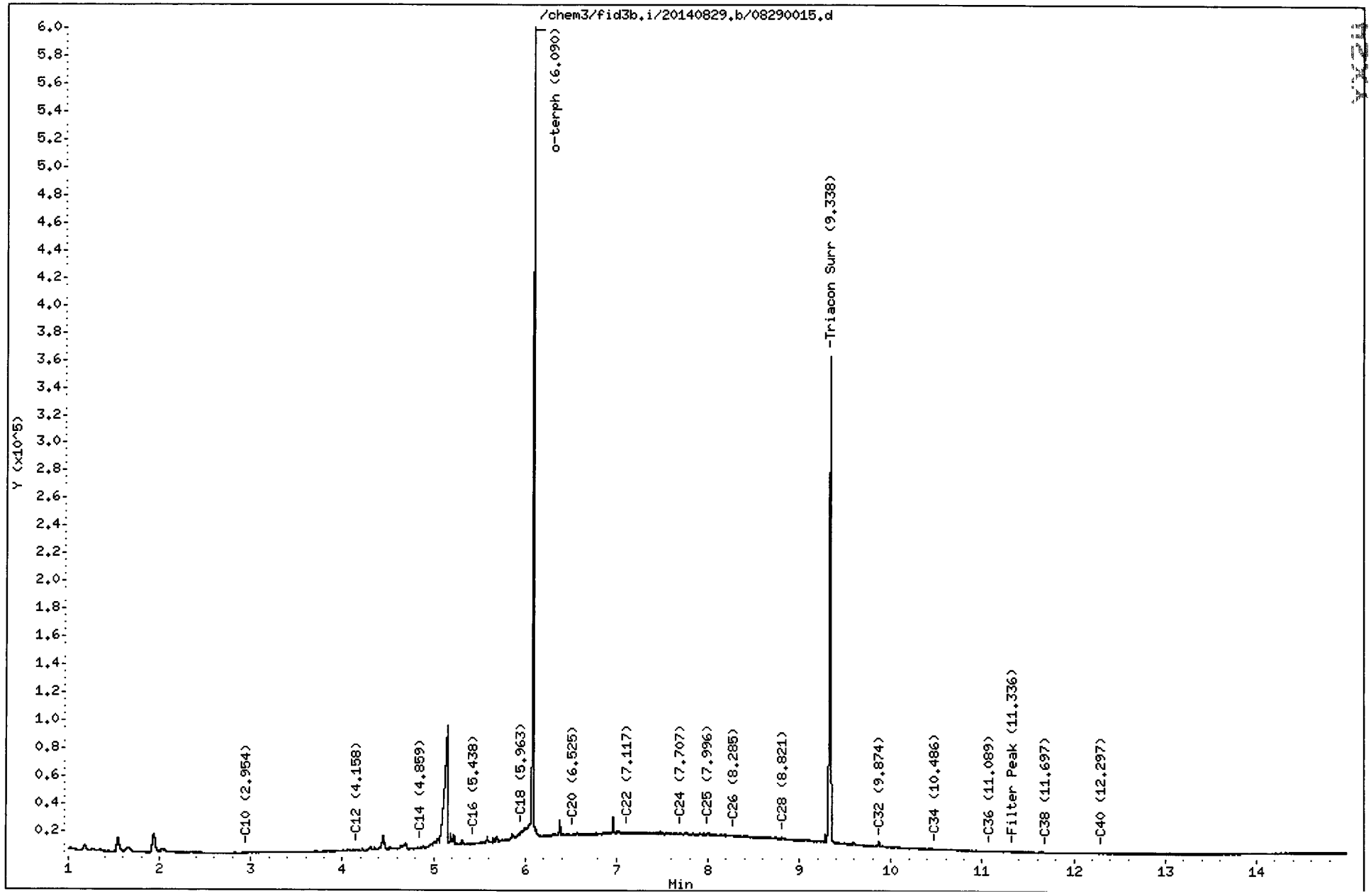
Sample Info: YX24F

Column phase: RTX-1

Instrument: fid3b.i

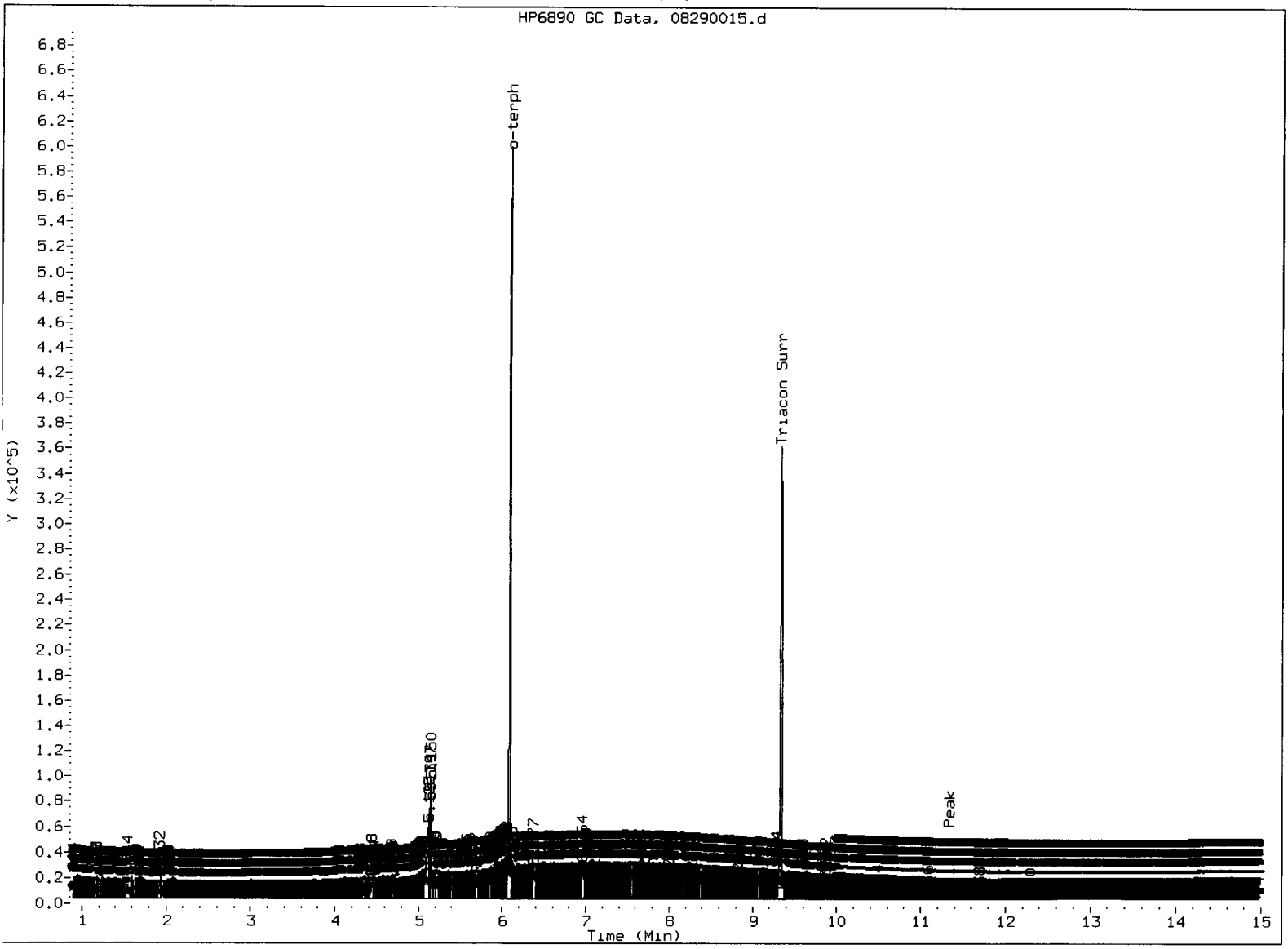
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 YX24F

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JJ Date: 9/1/14

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

Data Release Authorized:
Reported: 08/22/14
Date Received: 08/20/14
Page 1 of 1

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW1 YX24A 14-17143	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW2 YX24B 14-17144	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW4 YX24C 14-17145	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW4-1 YX24D 14-17146	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW7 YX24E 14-17147	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW8 YX24F 14-17148	08/20/14	Water	08/20/14 082014#1	0.010	0.017

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

YX24_00044

METHOD BLANK RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/22/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/20/14 20:15	mg/L	< 0.010 U

YX24 : 000045

STANDARD REFERENCE RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/22/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/20/14 20:15	mg/L	0.514	0.500	102.8%

YX24.00046

REPLICATE RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/22/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YX24A Client ID: MW1					
Hexavalent Chromium	08/20/14	mg/L	< 0.010	< 0.010	NA

YX24 : 00047

MS/MSD RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/22/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YX24A Client ID: MW1						
Hexavalent Chromium	08/20/14	mg/L	< 0.010	0.065	0.063	103.2%

YX24.00048

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW1
SAMPLE

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX24 : 00049

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW1
DUPLICATE

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.005 U	0.005 U	0.0%	+/- 0.005	L
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

YX24.00050

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW1
MATRIX SPIKE

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.13	2.00	106%	
Chromium	6010C	0.005 U	0.503	0.500	101%	
Lead	6010C	0.02 U	1.99	2.00	99.5%	
Selenium	6010C	0.05 U	2.06	2.00	103%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

YX24 . 00051

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW2
SAMPLE

Lab Sample ID: YX24B
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.005	**0.006**	
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW4
SAMPLE

Lab Sample ID: YX24C
LIMS ID: 14-17145
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX24.000053

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW4-1
SAMPLE

Lab Sample ID: YX24D
LIMS ID: 14-17146
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX24 . 00054

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW7
SAMPLE

Lab Sample ID: YX24E
LIMS ID: 14-17147
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW8
SAMPLE

Lab Sample ID: YX24F
LIMS ID: 14-17148
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	**7440-38-2**	**Arsenic**	0.05	**0.05**	
3010A	08/22/14	6010C	08/26/14	**7440-47-3**	**Chromium**	0.005	**0.008**	
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX24.00055

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YX24LCS
LIMS ID: 14-17148
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE/BLANK SPIKE DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Dup Found	Spike Added	Spike Recovery	Spike Dup Recovery	RPD	Q
Arsenic	6010C	2.13	2.13	2.00	106%	106%	0.0%	
Chromium	6010C	0.530	0.526	0.500	106%	105%	0.8%	
Lead	6010C	2.06	2.06	2.00	103%	103%	0.0%	
Selenium	6010C	2.12	2.12	2.00	106%	106%	0.0%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: YX24MB
LIMS ID: 14-17148
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

Analytical Resources, Incorporated
Analytical Chemists and Consultants

4 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YX35

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples on August 21, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for chloroethane and acetone were not within control limits for the 8/27/14 and 8/28/14 CCALs, respectively, that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW3. The percent recovery for hexavalent chromium was low following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YX35

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YX35	Turn-around Requested:	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: 206.753.3425	Date: 8/21/14	Ice Present? Y
Client Contact: Jessica Faragalli		No. of Coolers: 1	Cooler Temps: 3.4
Client Project Name: Precision Engineering			
Client Project #: 1396024*00	Samplers:		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Hex Cr; Metals As, Cr, Pb; VOCs; NWTPH-Dx	Notes/Comments
MW3	8/21/14	1015	groundwater	7	X X X X	
MW5		1130			X X X X	
MW6		0740			X X X X	
MW9		1440			X X X X	
MW10		1330			X X X X	
MW11		0910			X X X X	

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by: (Signature)	Received by (Signature)
Per QAPP	Printed Name: Raymond Lopez	Printed Name: Chris Atwell	Printed Name	Printed Name.
	Company: Kennedy/Jenks	Company: Ari	Company:	Company
	Date & Time: 8/21/14 1610	Date & Time: 8/21/14 1610	Date & Time	Date & Time:

YX35 : 20060

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

Project Name: Precision Engineering

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YX35

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 3.4		
Time: 1610		

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: CA Date: 8/21/14 Time: 1610

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI....	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 8/22/14 Time: 830

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

~~MW10 = 3LG~~ MW16 = 3LG MW10 = 3PB MW11 = 3PB

By: AV Date: 8/22/14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
○ ○	○ ○ ○	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YX35
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW3	YX35A	14-17239	Water	08/21/14 10:15	08/21/14 16:10
2.	MW5	YX35B	14-17240	Water	08/21/14 11:30	08/21/14 16:10
3.	MW6	YX35C	14-17241	Water	08/21/14 07:40	08/21/14 16:10
4.	MW9	YX35D	14-17242	Water	08/21/14 14:40	08/21/14 16:10
5.	MW10	YX35E	14-17243	Water	08/21/14 13:30	08/21/14 16:10
6.	MW11	YX35F	14-17244	Water	08/21/14 09:10	08/21/14 16:10

YX35 000004

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YX35 . 00005

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YX35 . 00006

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

YX35 : 00007

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082714A**
 METHOD BLANK

Lab Sample ID: MB-082714A
LIMS ID: 14-17239
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 16:47

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082714A**
 METHOD BLANK

Lab Sample ID: MB-082714A QC Report No: YX35-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-17239 Project: Precision Engineering
Matrix: Water 1396024*00
Date Analyzed: 08/27/14 16:47

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.5%
d8-Toluene	103%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	97.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-082814A**
 METHOD BLANK

Lab Sample ID: MB-082814A
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 08/28/14 13:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

Lab Sample ID: MB-082814A
LIMS ID: 14-17240
Matrix: Water
Date Analyzed: 08/28/14 13:27

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	104%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	98.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW3**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX35A
LIMS ID: 14-17239
Matrix: Water
Data Release Authorized: MW
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 17:45

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW3**
 SAMPLE

Lab Sample ID: YX35A
LIMS ID: 14-17239
Matrix: Water
Date Analyzed: 08/27/14 17:45

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.1%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	98.0%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX35B
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/28/14 14:23

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	**Trichloroethene**	**1.0**	**3.1**	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW5**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YX35B
LIMS ID: 14-17240
Matrix: Water
Date Analyzed: 08/28/14 14:23

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.9%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	97.8%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW6**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX35C
LIMS ID: 14-17241
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 18:42

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW6**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YX35C
LIMS ID: 14-17241
Matrix: Water
Date Analyzed: 08/27/14 18:42

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	97.3%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX35D
LIMS ID: 14-17242
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 19:11

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9**
 SAMPLE

Lab Sample ID: YX35D
LIMS ID: 14-17242
Matrix: Water
Date Analyzed: 08/27/14 19:11

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	103%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	99.6%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW10**
 SAMPLE

Lab Sample ID: YX35E
LIMS ID: 14-17243
Matrix: Water
Data Release Authorized: MW
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 19:40

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW10**
 SAMPLE

Lab Sample ID: YX35E
LIMS ID: 14-17243
Matrix: Water
Date Analyzed: 08/27/14 19:40

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	102%
Bromofluorobenzene	93.5%
d4-1,2-Dichlorobenzene	99.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: YX35F
LIMS ID: 14-17244
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 20:09

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW11**
Page 2 of 2 **SAMPLE**

Lab Sample ID: YX35F
LIMS ID: 14-17244
Matrix: Water
Date Analyzed: 08/27/14 20:09

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.7%
d8-Toluene	106%
Bromofluorobenzene	93.4%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082714A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082714A
LIMS ID: 14-17239
Matrix: Water
Data Release Authorized:
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 08/27/14 15:54
LCSD: 08/27/14 16:21

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	8.58		10.0	85.8%	9.10		10.0	91.0%	5.9%
Bromomethane	8.29		10.0	82.9%	8.38		10.0	83.8%	1.1%
Vinyl Chloride	8.78		10.0	87.8%	9.01		10.0	90.1%	2.6%
Chloroethane	7.50	Q	10.0	75.0%	7.81	Q	10.0	78.1%	4.0%
Methylene Chloride	8.70		10.0	87.0%	9.31		10.0	93.1%	6.8%
Acetone	42.2		50.0	84.4%	45.9		50.0	91.8%	8.4%
Carbon Disulfide	8.72		10.0	87.2%	9.32		10.0	93.2%	6.7%
1,1-Dichloroethene	8.81		10.0	88.1%	9.37		10.0	93.7%	6.2%
1,1-Dichloroethane	9.23		10.0	92.3%	9.49		10.0	94.9%	2.8%
trans-1,2-Dichloroethene	8.90		10.0	89.0%	9.28		10.0	92.8%	4.2%
cis-1,2-Dichloroethene	9.14		10.0	91.4%	9.51		10.0	95.1%	4.0%
Chloroform	9.01		10.0	90.1%	9.34		10.0	93.4%	3.6%
1,2-Dichloroethane	9.13		10.0	91.3%	9.74		10.0	97.4%	6.5%
2-Butanone	45.6		50.0	91.2%	47.8		50.0	95.6%	4.7%
1,1,1-Trichloroethane	8.57		10.0	85.7%	9.24		10.0	92.4%	7.5%
Carbon Tetrachloride	8.53		10.0	85.3%	8.86		10.0	88.6%	3.8%
Vinyl Acetate	9.90		10.0	99.0%	9.98		10.0	99.8%	0.8%
Bromodichloromethane	9.33		10.0	93.3%	9.64		10.0	96.4%	3.3%
1,2-Dichloropropane	9.70		10.0	97.0%	9.81		10.0	98.1%	1.1%
cis-1,3-Dichloropropene	10.2		10.0	102%	9.85		10.0	98.5%	3.5%
Trichloroethene	9.83		10.0	98.3%	9.96		10.0	99.6%	1.3%
Dibromochloromethane	9.08		10.0	90.8%	9.38		10.0	93.8%	3.3%
1,1,2-Trichloroethane	9.97		10.0	99.7%	9.55		10.0	95.5%	4.3%
Benzene	9.77		10.0	97.7%	10.0		10.0	100%	2.3%
trans-1,3-Dichloropropene	10.4		10.0	104%	9.72		10.0	97.2%	6.8%
2-Chloroethylvinylether	11.1		10.0	111%	10.9		10.0	109%	1.8%
Bromoform	9.42		10.0	94.2%	8.91		10.0	89.1%	5.6%
4-Methyl-2-Pentanone (MIBK)	48.1		50.0	96.2%	49.4		50.0	98.8%	2.7%
2-Hexanone	50.2		50.0	100%	53.1		50.0	106%	5.6%
Tetrachloroethene	10.1		10.0	101%	10.1		10.0	101%	0.0%
1,1,2,2-Tetrachloroethane	9.75		10.0	97.5%	9.63		10.0	96.3%	1.2%
Toluene	9.82		10.0	98.2%	9.69		10.0	96.9%	1.3%
Chlorobenzene	9.78		10.0	97.8%	9.79		10.0	97.9%	0.1%
Ethylbenzene	9.86		10.0	98.6%	9.90		10.0	99.0%	0.4%
Styrene	10.2		10.0	102%	10.5		10.0	105%	2.9%
Trichlorofluoromethane	8.72		10.0	87.2%	9.09		10.0	90.9%	4.2%
1,1,2-Trichloro-1,2,2-trifluoroetha	8.76		10.0	87.6%	9.13		10.0	91.3%	4.1%
m,p-Xylene	20.2		20.0	101%	20.9		20.0	104%	3.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082714A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082714A QC Report No: YX35-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-17239 Project: Precision Engineering
Matrix: Water 1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.88	10.0	98.8%	10.1	10.0	101%	2.2%
1,2-Dichlorobenzene	9.63	10.0	96.3%	9.59	10.0	95.9%	0.4%
1,3-Dichlorobenzene	10.2	10.0	102%	10.0	10.0	100%	2.0%
1,4-Dichlorobenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
Acrolein	42.0	50.0	84.0%	47.1	50.0	94.2%	11.4%
Iodomethane	8.73	10.0	87.3%	9.35	10.0	93.5%	6.9%
Bromoethane	8.99	10.0	89.9%	9.59	10.0	95.9%	6.5%
Acrylonitrile	8.84	10.0	88.4%	9.62	10.0	96.2%	8.5%
1,1-Dichloropropene	9.82	10.0	98.2%	10.0	10.0	100%	1.8%
Dibromomethane	9.41	10.0	94.1%	9.55	10.0	95.5%	1.5%
1,1,1,2-Tetrachloroethane	9.00	10.0	90.0%	9.52	10.0	95.2%	5.6%
1,2-Dibromo-3-chloropropane	8.43	10.0	84.3%	8.55	10.0	85.5%	1.4%
1,2,3-Trichloropropane	10.0	10.0	100%	9.46	10.0	94.6%	5.5%
trans-1,4-Dichloro-2-butene	9.80	10.0	98.0%	9.63	10.0	96.3%	1.7%
1,3,5-Trimethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
1,2,4-Trimethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
Hexachlorobutadiene	9.41	10.0	94.1%	8.92	10.0	89.2%	5.3%
1,2-Dibromoethane	9.76	10.0	97.6%	9.58	10.0	95.8%	1.9%
Bromochloromethane	8.73	10.0	87.3%	9.25	10.0	92.5%	5.8%
2,2-Dichloropropane	8.41	10.0	84.1%	9.08	10.0	90.8%	7.7%
1,3-Dichloropropane	9.67	10.0	96.7%	9.97	10.0	99.7%	3.1%
Isopropylbenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
n-Propylbenzene	11.0	10.0	110%	10.5	10.0	105%	4.7%
Bromobenzene	9.95	10.0	99.5%	9.75	10.0	97.5%	2.0%
2-Chlorotoluene	10.2	10.0	102%	10.1	10.0	101%	1.0%
4-Chlorotoluene	10.6	10.0	106%	10.3	10.0	103%	2.9%
tert-Butylbenzene	10.8	10.0	108%	10.4	10.0	104%	3.8%
sec-Butylbenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
4-Isopropyltoluene	11.1	10.0	111%	10.8	10.0	108%	2.7%
n-Butylbenzene	10.9	10.0	109%	10.8	10.0	108%	0.9%
1,2,4-Trichlorobenzene	10.9	10.0	109%	10.5	10.0	105%	3.7%
Naphthalene	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,2,3-Trichlorobenzene	10.5	10.0	105%	10.3	10.0	103%	1.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.3%	94.4%
d8-Toluene	102%	101%
Bromofluorobenzene	98.3%	100%
d4-1,2-Dichlorobenzene	98.9%	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082814A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082814A
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized: MW
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 08/28/14 12:34
LCSD: 08/28/14 13:00

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.17	10.0	91.7%	9.71	10.0	97.1%	5.7%
Bromomethane	8.59	10.0	85.9%	9.25	10.0	92.5%	7.4%
Vinyl Chloride	9.33	10.0	93.3%	9.90	10.0	99.0%	5.9%
Chloroethane	10.3	10.0	103%	10.6	10.0	106%	2.9%
Methylene Chloride	8.78	10.0	87.8%	9.21	10.0	92.1%	4.8%
Acetone	43.8 Q	50.0	87.6%	46.1 Q	50.0	92.2%	5.1%
Carbon Disulfide	9.28	10.0	92.8%	9.49	10.0	94.9%	2.2%
1,1-Dichloroethene	9.21	10.0	92.1%	9.46	10.0	94.6%	2.7%
1,1-Dichloroethane	9.17	10.0	91.7%	9.48	10.0	94.8%	3.3%
trans-1,2-Dichloroethene	8.95	10.0	89.5%	9.10	10.0	91.0%	1.7%
cis-1,2-Dichloroethene	9.06	10.0	90.6%	9.38	10.0	93.8%	3.5%
Chloroform	9.18	10.0	91.8%	9.37	10.0	93.7%	2.0%
1,2-Dichloroethane	9.61	10.0	96.1%	9.62	10.0	96.2%	0.1%
2-Butanone	44.8	50.0	89.6%	45.9	50.0	91.8%	2.4%
1,1,1-Trichloroethane	8.94	10.0	89.4%	9.25	10.0	92.5%	3.4%
Carbon Tetrachloride	8.63	10.0	86.3%	8.90	10.0	89.0%	3.1%
Vinyl Acetate	9.72	10.0	97.2%	10.2	10.0	102%	4.8%
Bromodichloromethane	9.07	10.0	90.7%	9.56	10.0	95.6%	5.3%
1,2-Dichloropropane	9.82	10.0	98.2%	9.64	10.0	96.4%	1.8%
cis-1,3-Dichloropropene	9.92	10.0	99.2%	9.88	10.0	98.8%	0.4%
Trichloroethene	9.74	10.0	97.4%	9.82	10.0	98.2%	0.8%
Dibromochloromethane	9.39	10.0	93.9%	9.58	10.0	95.8%	2.0%
1,1,2-Trichloroethane	9.38	10.0	93.8%	9.48	10.0	94.8%	1.1%
Benzene	9.65	10.0	96.5%	9.78	10.0	97.8%	1.3%
trans-1,3-Dichloropropene	9.94	10.0	99.4%	9.88	10.0	98.8%	0.6%
2-Chloroethylvinylether	10.6	10.0	106%	10.4	10.0	104%	1.9%
Bromoform	9.82	10.0	98.2%	9.32	10.0	93.2%	5.2%
4-Methyl-2-Pentanone (MIBK)	47.5	50.0	95.0%	49.8	50.0	99.6%	4.7%
2-Hexanone	52.7	50.0	105%	53.4	50.0	107%	1.3%
Tetrachloroethene	10.4	10.0	104%	10.5	10.0	105%	1.0%
1,1,2,2-Tetrachloroethane	10.1	10.0	101%	10.1	10.0	101%	0.0%
Toluene	9.73	10.0	97.3%	9.70	10.0	97.0%	0.3%
Chlorobenzene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Ethylbenzene	10.4	10.0	104%	10.5	10.0	105%	1.0%
Styrene	10.7	10.0	107%	10.7	10.0	107%	0.0%
Trichlorofluoromethane	8.95	10.0	89.5%	9.33	10.0	93.3%	4.2%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.30	10.0	93.0%	9.56	10.0	95.6%	2.8%
m,p-Xylene	20.8	20.0	104%	21.5	20.0	108%	3.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-082814A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-082814A QC Report No: YX35-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-17240 Project: Precision Engineering
Matrix: Water 1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.4	10.0	104%	10.7	10.0	107%	2.8%
1,2-Dichlorobenzene	10.0	10.0	100%	10.4	10.0	104%	3.9%
1,3-Dichlorobenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
1,4-Dichlorobenzene	10.5	10.0	105%	10.7	10.0	107%	1.9%
Acrolein	44.6	50.0	89.2%	46.0	50.0	92.0%	3.1%
Iodomethane	9.11	10.0	91.1%	9.29	10.0	92.9%	2.0%
Bromoethane	9.33	10.0	93.3%	9.49	10.0	94.9%	1.7%
Acrylonitrile	9.33	10.0	93.3%	9.86	10.0	98.6%	5.5%
1,1-Dichloropropene	9.57	10.0	95.7%	9.57	10.0	95.7%	0.0%
Dibromomethane	9.18	10.0	91.8%	9.78	10.0	97.8%	6.3%
1,1,1,2-Tetrachloroethane	9.83	10.0	98.3%	9.89	10.0	98.9%	0.6%
1,2-Dibromo-3-chloropropane	8.97	10.0	89.7%	10.8	10.0	108%	18.5%
1,2,3-Trichloropropane	10.0	10.0	100%	10.5	10.0	105%	4.9%
trans-1,4-Dichloro-2-butene	11.3	10.0	113%	11.2	10.0	112%	0.9%
1,3,5-Trimethylbenzene	11.3	10.0	113%	11.2	10.0	112%	0.9%
1,2,4-Trimethylbenzene	11.3	10.0	113%	11.2	10.0	112%	0.9%
Hexachlorobutadiene	11.8	10.0	118%	12.3	10.0	123%	4.1%
1,2-Dibromoethane	9.65	10.0	96.5%	9.76	10.0	97.6%	1.1%
Bromochloromethane	9.33	10.0	93.3%	9.47	10.0	94.7%	1.5%
2,2-Dichloropropane	8.97	10.0	89.7%	9.20	10.0	92.0%	2.5%
1,3-Dichloropropane	10.2	10.0	102%	10.1	10.0	101%	1.0%
Isopropylbenzene	10.9	10.0	109%	11.2	10.0	112%	2.7%
n-Propylbenzene	10.9	10.0	109%	10.8	10.0	108%	0.9%
Bromobenzene	10.3	10.0	103%	10.2	10.0	102%	1.0%
2-Chlorotoluene	10.6	10.0	106%	10.5	10.0	105%	0.9%
4-Chlorotoluene	10.8	10.0	108%	10.6	10.0	106%	1.9%
tert-Butylbenzene	10.9	10.0	109%	10.9	10.0	109%	0.0%
sec-Butylbenzene	11.1	10.0	111%	11.1	10.0	111%	0.0%
4-Isopropyltoluene	11.2	10.0	112%	11.3	10.0	113%	0.9%
n-Butylbenzene	11.3	10.0	113%	11.5	10.0	115%	1.8%
1,2,4-Trichlorobenzene	11.1	10.0	111%	11.8	10.0	118%	6.1%
Naphthalene	11.3	10.0	113%	12.5	10.0	125%	10.1%
1,2,3-Trichlorobenzene	11.0	10.0	110%	11.9	10.0	119%	7.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.7%	101%
d8-Toluene	101%	102%
Bromofluorobenzene	97.6%	99.5%
d4-1,2-Dichlorobenzene	98.2%	98.7%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-082714A	Method Blank	10	98.5%	103%	96.8%	97.7%	0
LCS-082714A	Lab Control	10	94.3%	102%	98.3%	98.9%	0
LCSD-082714A	Lab Control Dup	10	94.4%	101%	100%	100%	0
YX35A	MW3	10	97.1%	101%	100%	98.0%	0
YX35C	MW6	10	103%	102%	97.3%	100%	0
YX35D	MW9	10	101%	103%	94.5%	99.6%	0
YX35E	MW10	10	104%	102%	93.5%	99.2%	0
YX35F	MW11	10	99.7%	106%	93.4%	100%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-17239 to 14-17244

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Analysis Type: WATER Init. Cal. Times: 11:40 14:53
Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	1.34050	1.49830	1.49830	0.010	11.77125	20.00000	Averaged	
2 Chloromethane	1.70094	1.81266	1.81266	0.100	6.56783	20.00000	Averaged	
3 Vinyl Chloride	1.70918	1.83560	1.83560	0.100	7.39654	20.00000	Averaged	
4 Bromomethane	0.82395	0.86221	0.86221	0.100	4.64324	20.00000	Averaged	
5 Chloroethane	12.04822	10.00000	0.98746	0.010	20.48222	20.00000	Linear	<-
6 Trichlorofluoromethane	1.63223	1.72260	1.72260	0.010	5.53693	20.00000	Averaged	
7 1,1-Dichloroethene	1.74793	1.82008	1.82008	0.100	4.12746	20.00000	Averaged	
8 Carbon Disulfide	3.68300	3.87153	3.87153	0.010	5.11888	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	1.12433	1.14895	1.14895	0.010	2.18945	20.00000	Averaged	
10 Iodomethane	1.50739	1.56177	1.56177	0.010	3.60772	20.00000	Averaged	
11 Bromoethane	0.72031	0.74453	0.74453	0.100	3.36325	20.00000	Averaged	
12 Acrolein	0.10942	0.10451	0.10451	0.000	-4.48680	20.00000	Averaged	
13 Methylene Chloride	1.02297	1.05019	1.05019	0.010	2.66025	20.00000	Averaged	
14 Acetone	0.17522	0.16972	0.16972	0.001	-3.13971	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	1.00618	1.02239	1.02239	0.010	1.61134	20.00000	Averaged	
16 n-hexane	0.81617	0.73898	0.73898	0.100	-9.45693	20.00000	Averaged	
17 Methyl tert butyl ether	2.15209	2.10420	2.10420	0.100	-2.22496	20.00000	Averaged	
18 1,1-Dichloroethane	1.70174	1.74815	1.74815	0.200	2.72725	20.00000	Averaged	
19 Acrylonitrile	0.22206	0.21213	0.21213	0.001	-4.47030	20.00000	Averaged	
20 Vinyl Acetate	0.37254	0.30200	0.30200	0.010	-18.93549	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.94272	0.94699	0.94699	0.010	0.45329	20.00000	Averaged	
23 2,2-Dichloropropane	1.01181	1.00866	1.00866	0.010	-0.31137	20.00000	Averaged	
24 Bromochloromethane	0.39197	0.39207	0.39207	0.050	0.02642	20.00000	Averaged	
25 Chloroform	1.47217	1.48476	1.48476	0.200	0.85516	20.00000	Averaged	
26 Carbon Tetrachloride	0.59819	0.63869	0.63869	0.100	6.77003	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.69112	0.70457	0.70457	0.100	1.94597	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.43465	1.47437	1.47437	0.100	2.76871	20.00000	Averaged	
29 2-Butanone	0.20939	0.19345	0.19345	0.001	-7.61244	20.00000	Averaged	
30 1,1-Dichloropropene	0.57491	0.56133	0.56133	0.010	-2.36275	20.00000	Averaged	
31 Benzene	1.64110	1.67792	1.67792	0.500	2.24373	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.76558	0.75864	0.75864	0.010	-0.90708	20.00000	Averaged	
34 1,2-Dichloroethane	0.50444	0.48774	0.48774	0.100	-3.31154	20.00000	Averaged	
36 Trichloroethene	0.37780	0.38395	0.38395	0.100	1.62814	20.00000	Averaged	
38 Dibromomethane	0.20936	0.19933	0.19933	0.010	-4.79238	20.00000	Averaged	
39 1,2-Dichloropropane	0.38065	0.37149	0.37149	0.100	-2.40581	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Analysis Type: WATER Init. Cal. Times: 11:40 14:53
Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 Bromodichloromethane	0.47040	0.47437	0.47437	0.100	0.84529	20.00000	Averaged
41 2-Chloroethyl Vinyl Ether	0.13926	0.12388	0.12388	0.000	-11.04533	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.47827	0.46556	0.46556	0.200	-2.65756	20.00000	Averaged
$ 43 d8-Toluene	1.26522	1.26272	1.26272	0.010	-0.19768	20.00000	Averaged
44 Toluene	0.95750	0.93053	0.93053	0.400	-2.81679	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.10979	0.10685	0.10685	0.000	-2.68050	20.00000	Averaged
46 Tetrachloroethene	0.30695	0.31552	0.31552	0.200	2.79236	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.39623	0.38946	0.38946	0.010	-1.71068	20.00000	Averaged
48 1,1,2-Trichloroethane	0.25361	0.24657	0.24657	0.100	-2.77586	20.00000	Averaged
49 Chlorodibromomethane	0.25957	0.25454	0.25454	0.100	-1.93528	20.00000	Averaged
50 1,3-Dichloropropane	0.41974	0.40048	0.40048	0.100	-4.58840	20.00000	Averaged
51 1,2-Dibromoethane	0.26980	0.24967	0.24967	0.010	-7.45755	20.00000	Averaged
52 2-Hexanone	0.16957	0.16575	0.16575	0.010	-2.25634	20.00000	Averaged
54 Chlorobenzene	0.97688	0.96840	0.96840	0.500	-0.86810	20.00000	Averaged
55 Ethyl Benzene	0.54168	0.54668	0.54668	0.100	0.92402	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.34043	0.36608	0.36608	0.010	7.53654	20.00000	Averaged
57 m,p-xylene	0.65853	0.68618	0.68618	0.300	4.19832	20.00000	Averaged
58 o-Xylene	0.69382	0.73362	0.73362	0.300	5.73585	20.00000	Averaged
59 Styrene	1.11296	1.19516	1.19516	0.300	7.38585	20.00000	Averaged
60 Bromoform	0.24740	0.24060	0.24060	0.010	-2.75174	20.00000	Averaged
61 Isopropyl Benzene	2.89403	2.94515	2.94515	0.010	1.76624	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.58751	0.60911	0.60911	0.200	3.67617	20.00000	Averaged
63 Bromobenzene	0.66911	0.62991	0.62991	0.010	-5.85859	20.00000	Averaged
64 N-Propyl Benzene	3.43787	3.43183	3.43183	0.010	-0.17585	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.56690	0.53384	0.53384	0.100	-5.83136	20.00000	Averaged
66 2-Chloro Toluene	2.51805	2.46417	2.46417	0.010	-2.13969	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.52446	2.61663	2.61663	0.010	3.65097	20.00000	Averaged
68 1,2,3-Trichloropropane	0.16816	0.14837	0.14837	0.010	-11.76834	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.16652	0.16250	0.16250	0.001	-2.41271	20.00000	Averaged
70 4-Chloro Toluene	2.31781	2.26025	2.26025	0.010	-2.48321	20.00000	Averaged
71 T-Butyl Benzene	2.00560	1.97823	1.97823	0.010	-1.36443	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.55281	2.61663	2.61663	0.010	3.65097	20.00000	Averaged
73 S-Butyl Benzene	3.22991	3.31594	3.31594	0.010	2.66355	20.00000	Averaged
74 4-Isopropyl Toluene	2.49005	2.54739	2.54739	0.010	2.30264	20.00000	Averaged
75 1,3-Dichlorobenzene	1.42369	1.40466	1.40466	0.600	-1.33662	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Analysis Type: WATER Init. Cal. Times: 11:40 14:53
Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
77 1,4-Dichlorobenzene	1.43106	1.44126	1.44126	0.500	0.71295	20.00000	Averaged
78 N-Butyl Benzene	2.56285	2.62517	2.62517	0.010	2.43185	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92258	0.91926	0.91926	0.010	-0.35967	20.00000	Averaged
80 1,2-Dichlorobenzene	1.36067	1.30227	1.30227	0.400	-4.29234	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.09053	0.09286	0.09286	0.010	2.57598	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	11.42311	10.00000	0.31787	0.010	14.23114	20.00000	Linear
84 1,2,4-Trichlorobenzene	0.69478	0.73908	0.73908	0.010	6.37594	20.00000	Averaged
85 Naphthalene	1.19928	1.24332	1.24332	0.010	3.67222	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.54771	0.56120	0.56120	0.010	2.46293	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc0828.d
Analysis Type: WATER
Lab Sample ID: CC0828
Method: /chem3/nt2.i/20140828.b/82600827L.m

Injection Date: 28-AUG-2014 12:07
Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Init. Cal. Times: 11:40 14:53
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	1.28772	1.22299	1.22299	0.010	-5.02638	20.00000	Averaged	
2 Chloromethane	1.66898	1.41378	1.41378	0.100	-15.29099	20.00000	Averaged	
3 Vinyl Chloride	1.68559	1.42171	1.42171	0.100	-15.65508	20.00000	Averaged	
4 Bromomethane	0.81243	0.65506	0.65506	0.100	-19.37077	20.00000	Averaged	
5 Chloroethane	9.48642	10.00000	0.77753	0.010	-5.13577	20.00000	Linear	
6 Trichlorofluoromethane	1.60350	1.38336	1.38336	0.010	-13.72880	20.00000	Averaged	
7 1,1-Dichloroethene	1.72817	1.52739	1.52739	0.100	-11.61839	20.00000	Averaged	
8 Carbon Disulfide	3.62748	3.17498	3.17498	0.010	-12.47420	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	1.10182	0.94050	0.94050	0.010	-14.64108	20.00000	Averaged	
10 Iodomethane	1.48721	1.28897	1.28897	0.010	-13.32938	20.00000	Averaged	
11 Bromoethane	0.71980	0.63410	0.63410	0.100	-11.90580	20.00000	Averaged	
12 Acrolein	0.10898	0.09054	0.09054	0.000	-16.92266	20.00000	Averaged	
13 Methylene Chloride	1.03903	0.87702	0.87702	0.010	-15.59237	20.00000	Averaged	
14 Acetone	0.17637	0.13621	0.13621	0.001	-22.76914	20.00000	Averaged	<-
15 Trans-1,2-Dichloroethene	0.99767	0.87169	0.87169	0.010	-12.62773	20.00000	Averaged	
16 n-hexane	0.79410	0.85900	0.85900	0.100	8.17298	20.00000	Averaged	
17 Methyl tert butyl ether	2.11778	1.74095	1.74095	0.100	-17.79353	20.00000	Averaged	
18 1,1-Dichloroethane	1.69995	1.51075	1.51075	0.200	-11.12966	20.00000	Averaged	
19 Acrylonitrile	0.22103	0.18317	0.18317	0.001	-17.13078	20.00000	Averaged	
20 Vinyl Acetate	0.37626	0.33183	0.33183	0.010	-11.80719	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.94059	0.82943	0.82943	0.010	-11.81780	20.00000	Averaged	
23 2,2-Dichloropropane	0.98736	0.84875	0.84875	0.010	-14.03846	20.00000	Averaged	
24 Bromochloromethane	0.38828	0.31787	0.31787	0.050	-18.13343	20.00000	Averaged	
25 Chloroform	1.46371	1.29072	1.29072	0.200	-11.81888	20.00000	Averaged	
26 Carbon Tetrachloride	0.58717	0.49515	0.49515	0.100	-15.67150	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.68947	0.63175	0.63175	0.100	-8.37167	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.41274	1.21054	1.21054	0.100	-14.31258	20.00000	Averaged	
29 2-Butanone	0.21388	0.17921	0.17921	0.001	-16.20671	20.00000	Averaged	
30 1,1-Dichloropropene	0.57459	0.54026	0.54026	0.010	-5.97331	20.00000	Averaged	
31 Benzene	1.62784	1.57829	1.57829	0.500	-3.04366	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.76465	0.71854	0.71854	0.010	-6.03001	20.00000	Averaged	
34 1,2-Dichloroethane	0.50464	0.46681	0.46681	0.100	-7.49722	20.00000	Averaged	
36 Trichloroethene	0.37870	0.36317	0.36317	0.100	-4.09935	20.00000	Averaged	
38 Dibromomethane	0.20829	0.18578	0.18578	0.010	-10.80477	20.00000	Averaged	
39 1,2-Dichloropropane	0.38245	0.36675	0.36675	0.100	-4.10614	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc0828.d
Analysis Type: WATER
Lab Sample ID: CC0828
Method: /chem3/nt2.i/20140828.b/82600827L.m

Injection Date: 28-AUG-2014 12:07
Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Init. Cal. Times: 11:40 14:53
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 Bromodichloromethane	0.47014	0.42920	0.42920	0.100	-8.70693	20.00000	Averaged
41 2-Chloroethyl Vinyl Ether	0.14480	0.14351	0.14351	0.000	-0.89066	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.47473	0.46411	0.46411	0.200	-2.23690	20.00000	Averaged
$ 43 d8-Toluene	1.26383	1.27196	1.27196	0.010	0.64353	20.00000	Averaged
44 Toluene	0.95067	0.92715	0.92715	0.400	-2.47462	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.11111	0.10048	0.10048	0.000	-9.56422	20.00000	Averaged
46 Tetrachloroethene	0.30275	0.31794	0.31794	0.200	5.01839	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.39743	0.39067	0.39067	0.010	-1.70197	20.00000	Averaged
48 1,1,2-Trichloroethane	0.25545	0.22912	0.22912	0.100	-10.30545	20.00000	Averaged
49 Chlorodibromomethane	0.25462	0.23346	0.23346	0.100	-8.31294	20.00000	Averaged
50 1,3-Dichloropropane	0.41914	0.41449	0.41449	0.100	-1.10940	20.00000	Averaged
51 1,2-Dibromoethane	0.27048	0.25259	0.25259	0.010	-6.61416	20.00000	Averaged
52 2-Hexanone	0.17101	0.16810	0.16810	0.010	-1.70111	20.00000	Averaged
54 Chlorobenzene	0.97508	0.97499	0.97499	0.500	-0.00906	20.00000	Averaged
55 Ethyl Benzene	0.53553	0.55092	0.55092	0.100	2.87261	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.33195	0.31440	0.31440	0.010	-5.28597	20.00000	Averaged
57 m,p-xylene	0.65350	0.68616	0.68616	0.300	4.99774	20.00000	Averaged
58 o-Xylene	0.68554	0.70353	0.70353	0.300	2.62448	20.00000	Averaged
59 Styrene	1.10049	1.15943	1.15943	0.300	5.35608	20.00000	Averaged
60 Bromoform	0.24618	0.23697	0.23697	0.010	-3.74358	20.00000	Averaged
61 Isopropyl Benzene	2.88780	3.35438	3.35438	0.010	16.15679	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.58491	0.55600	0.55600	0.200	-4.94366	20.00000	Averaged
63 Bromobenzene	0.66987	0.71984	0.71984	0.010	7.46040	20.00000	Averaged
64 N-Propyl Benzene	3.46118	4.03008	4.03008	0.010	16.43683	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.57292	0.58373	0.58373	0.100	1.88735	20.00000	Averaged
66 2-Chloro Toluene	2.51006	2.78976	2.78976	0.010	11.14297	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.51770	2.93995	2.93995	0.010	16.77127	20.00000	Averaged
68 1,2,3-Trichloropropane	0.16882	0.17412	0.17412	0.010	3.13572	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.16261	0.17664	0.17664	0.001	8.62399	20.00000	Averaged
70 4-Chloro Toluene	2.32237	2.61578	2.61578	0.010	12.63398	20.00000	Averaged
71 T-Butyl Benzene	2.00675	2.30283	2.30283	0.010	14.75397	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.58145	2.98253	2.98253	0.010	15.53691	20.00000	Averaged
73 S-Butyl Benzene	3.22332	3.74212	3.74212	0.010	16.09500	20.00000	Averaged
74 4-Isopropyl Toluene	2.46417	2.89632	2.89632	0.010	17.53762	20.00000	Averaged
75 1,3-Dichlorobenzene	1.42365	1.54210	1.54210	0.600	8.32001	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc0828.d
Analysis Type: WATER
Lab Sample ID: CC0828
Method: /chem3/nt2.i/20140828.b/82600827L.m

Injection Date: 28-AUG-2014 12:07
Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Init. Cal. Times: 11:40 14:53
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
77 1,4-Dichlorobenzene	1.43711	1.53406	1.53406	0.500	6.74628	20.00000	Averaged
78 N-Butyl Benzene	2.52568	2.91049	2.91049	0.010	15.23603	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92198	0.88914	0.88914	0.010	-3.56245	20.00000	Averaged
80 1,2-Dichlorobenzene	1.35607	1.38165	1.38165	0.400	1.88612	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.08814	0.08394	0.08394	0.010	-4.76206	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	11.88166	10.00000	0.33067	0.010	18.81656	20.00000	Linear
84 1,2,4-Trichlorobenzene	0.68756	0.74662	0.74662	0.010	8.58987	20.00000	Averaged
85 Naphthalene	1.17723	1.21236	1.21236	0.010	2.98385	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.54054	0.55549	0.55549	0.010	2.76604	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YX35-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024*00

Matrix: Water

Date Received: 08/21/14

Data Release Authorized:
Reported: 09/02/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-082714	Method Blank	08/27/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17239	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		88.2%
YX35A	MW3	08/27/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17239	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		91.7%
YX35B	MW5	08/27/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17240	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		88.9%
YX35C	MW6	08/27/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.30**
14-17241	HC ID: **DRO**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		67.5%
YX35D	MW9	08/27/14	08/29/14	1.00	Diesel Range	0.10	< 0.10 U
14-17242	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		85.5%
YX35E	MW10	08/27/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.13**
14-17243	HC ID: **DRO**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		83.4%
YX35F	MW11	08/27/14	08/29/14	1.00	**Diesel Range**	**0.10**	**0.12**
14-17244	HC ID: **DRO**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		86.8%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client ID	OTER	TOT OUT
MB-082714	88.2%	0
LCS-082714	83.6%	0
LCSD-082714	84.2%	0
MW3	91.7%	0
MW5	88.9%	0
MW6	67.5%	0
MW9	85.5%	0
MW10	83.4%	0
MW11	86.8%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-17239 to 14-17244

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-082714
LCS/LCSD

Lab Sample ID: LCS-082714
LIMS ID: 14-17239
Matrix: Water
Data Release Authorized:
Reported: 09/02/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 08/27/14
Date Analyzed LCS: 08/29/14 16:21
LCSD: 08/29/14 16:42
Instrument/Analyst LCS: FID9/JLW
LCSD: FID9/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.75	3.00	91.7%	2.77	3.00	92.3%	0.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	83.6%	84.2%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: YX35
Matrix: Water
Project: Precision Engineering
Date Received: 08/21/14
1396024*00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-17239-082714MB1	Method Blank	500 mL	1.00 mL	08/27/14
14-17239-082714LCS1	Lab Control	500 mL	1.00 mL	08/27/14
14-17239-082714LCSD1	Lab Control Dup	500 mL	1.00 mL	08/27/14
14-17239-YX35A	MW3	500 mL	1.00 mL	08/27/14
14-17240-YX35B	MW5	500 mL	1.00 mL	08/27/14
14-17241-YX35C	MW6	500 mL	1.00 mL	08/27/14
14-17242-YX35D	MW9	500 mL	1.00 mL	08/27/14
14-17243-YX35E	MW10	500 mL	1.00 mL	08/27/14
14-17244-YX35F	MW11	500 mL	1.00 mL	08/27/14

Data File: /chem2/fid9.i/20140829.b/0829a021.d

Date : 29-AUG-2014 16:00

Client ID: YX35MBW1

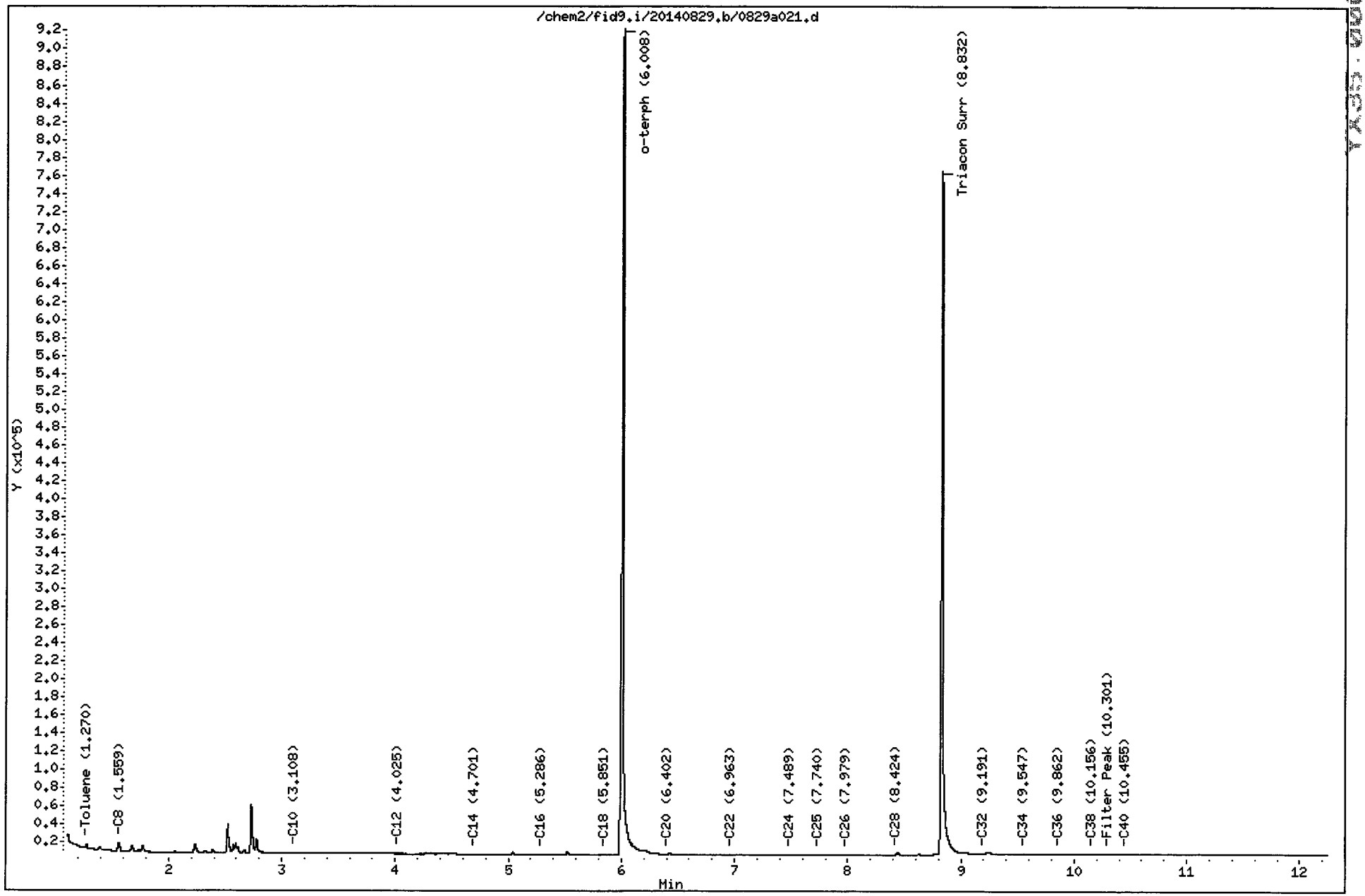
Sample Info: YX35MBW1

Column phase: RTX-1

Instrument: fid9.i

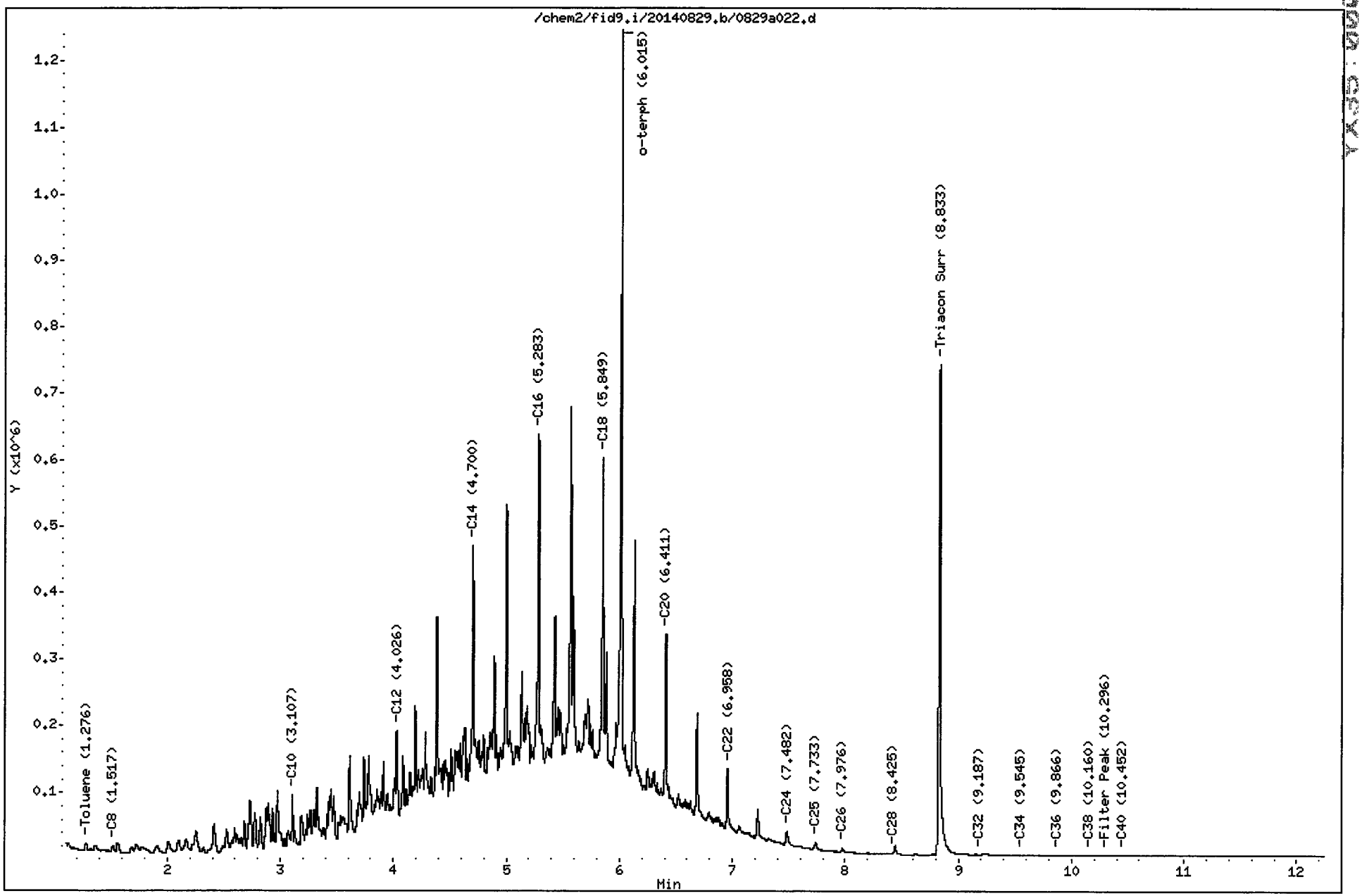
Operator: JW

Column diameter: 0.25

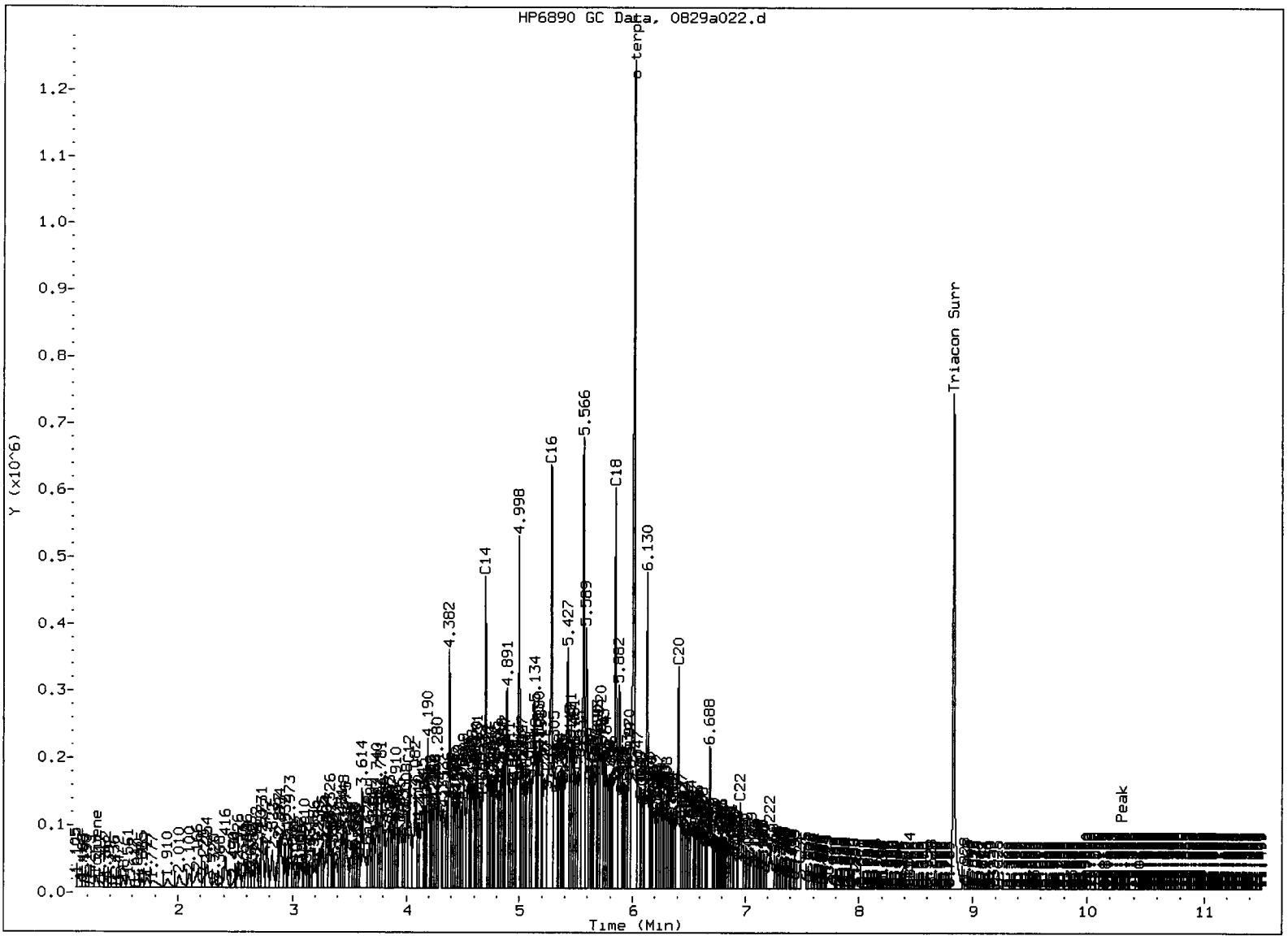


Data File: /chem2/fid9.i/20140829.b/0829a022.d
Date : 29-AUG-2014 16:21
Client ID: YX35LCSW1
Sample Info: YX35LCSW1

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 YX35LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 9/1/14

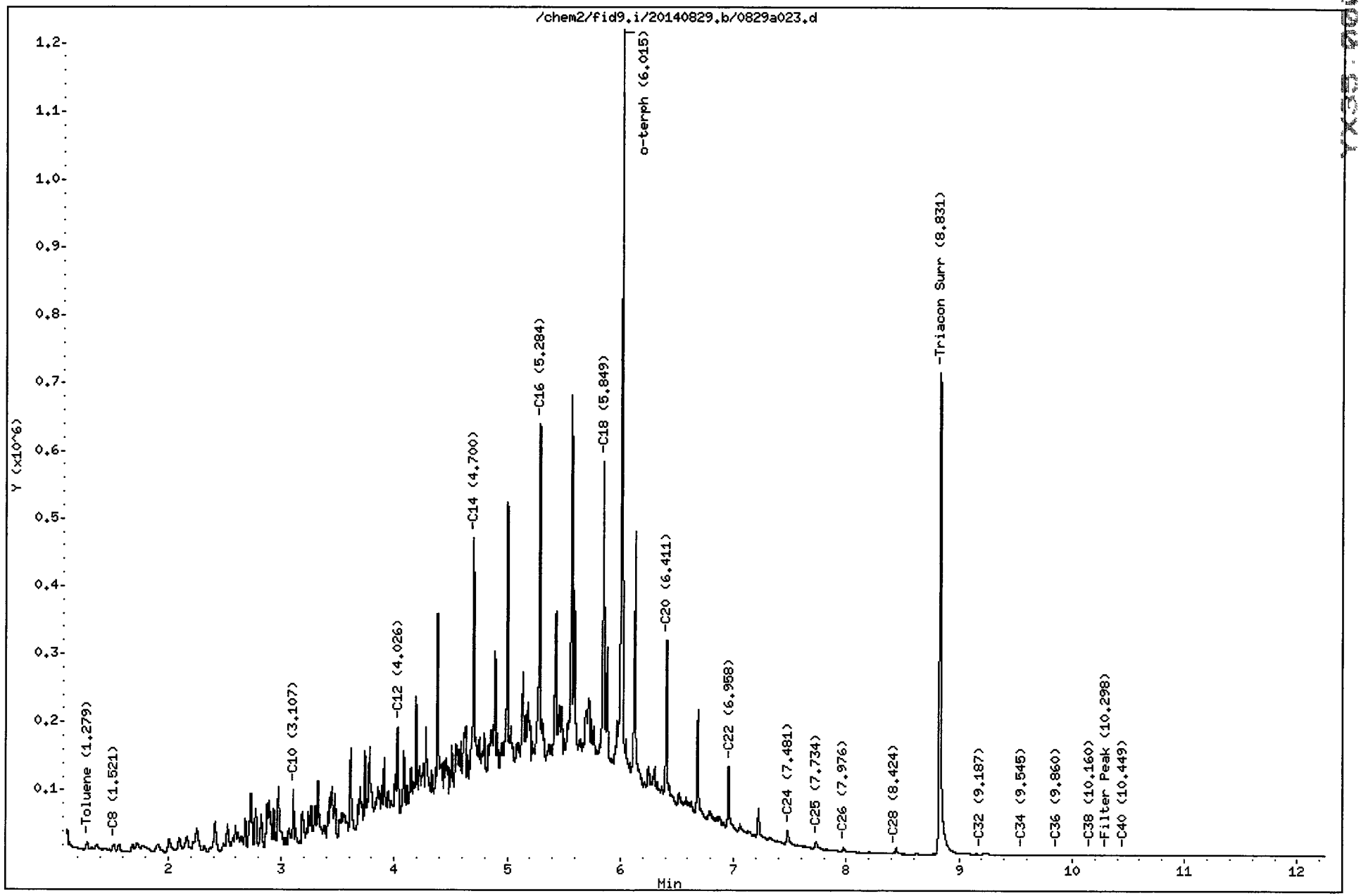
YX35.00041

Data File: /chem2/fid9.i/20140829.b/0829a023.d
Date : 29-AUG-2014 16:42
Client ID: YX35LCSDW1
Sample Info: YX35LCSDW1

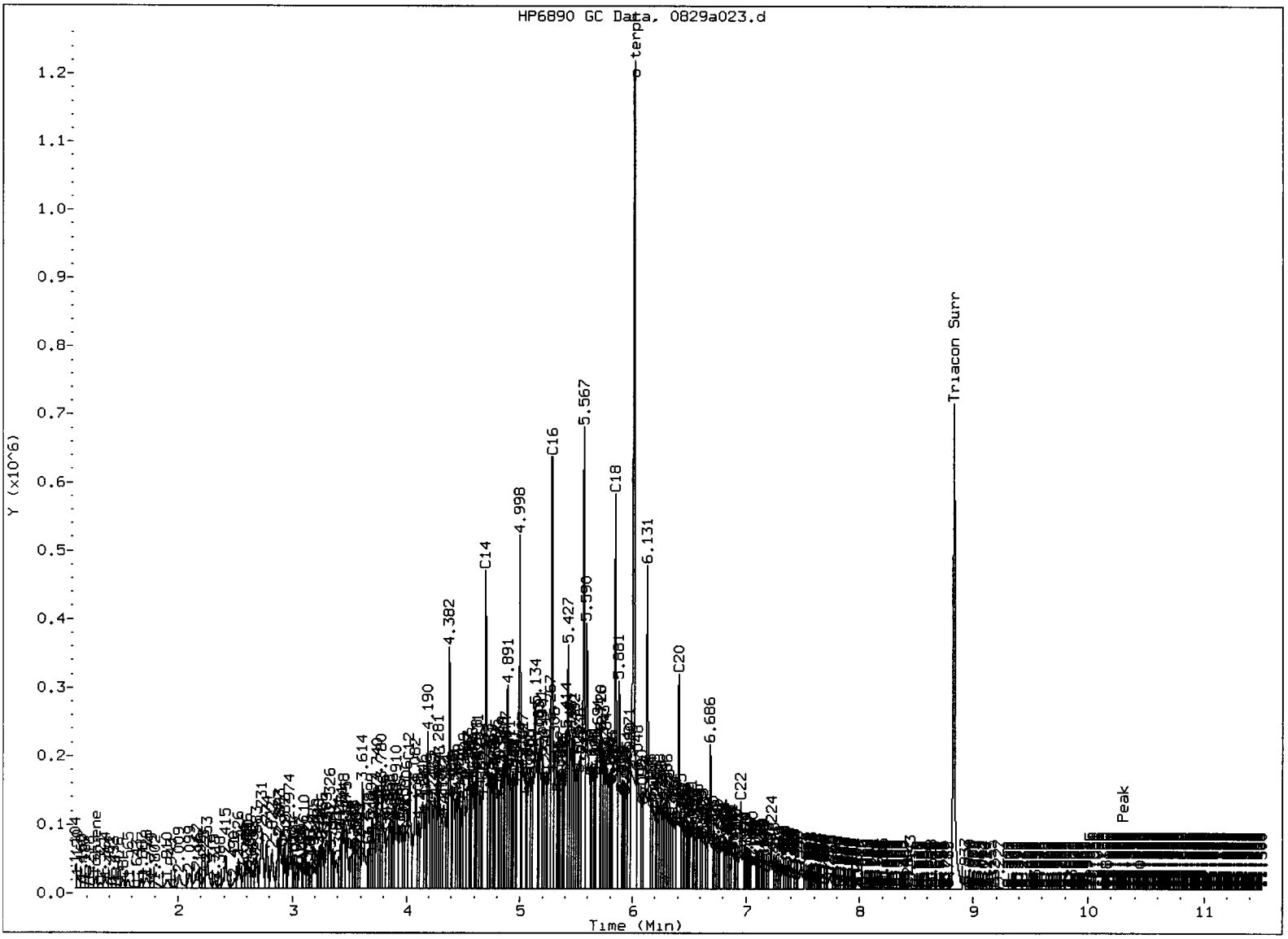
Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 YX35LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JD Date: 2/1/14

Data File: /chem2/fid9.i/20140829.b/0829a024.d

Date : 29-AUG-2014 17:04

Client ID: MW3

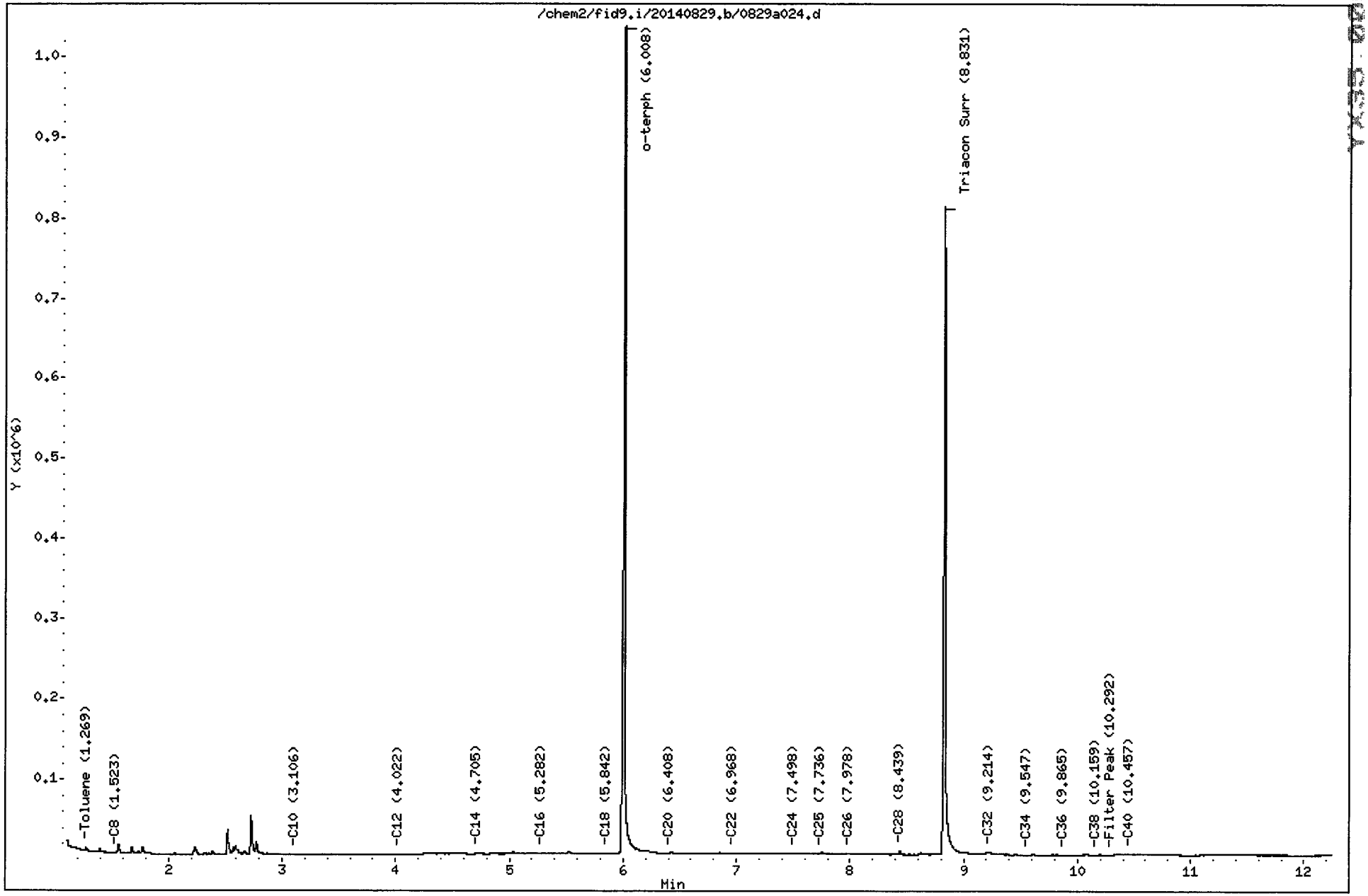
Sample Info: YX35A

Column phase: RTX-1

Instrument: fid9.i

Operator: JW

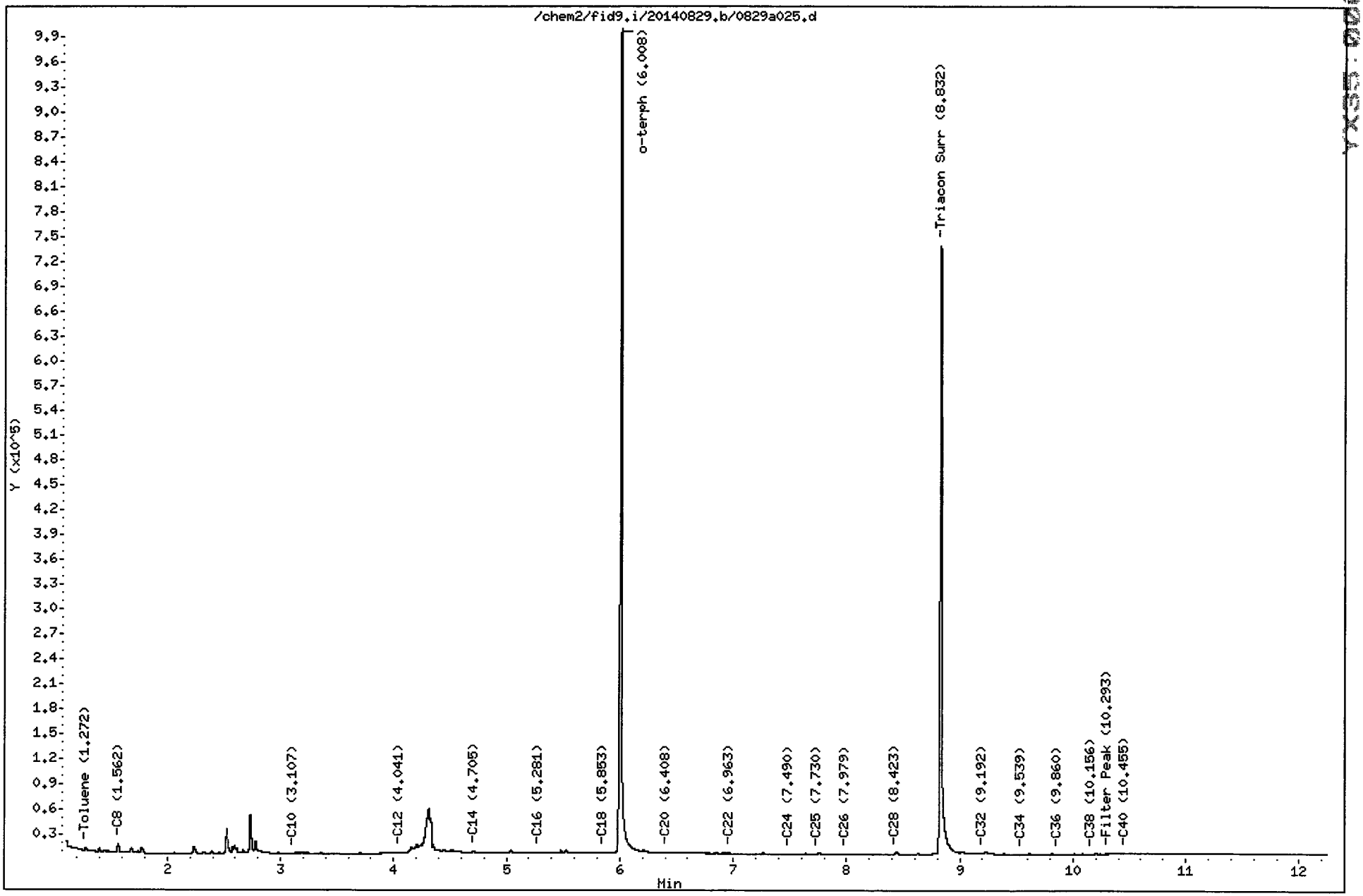
Column diameter: 0.25



Data File: /chem2/fid9.i/20140829.b/0829a025.d
Date : 29-AUG-2014 17:25
Client ID: MW5
Sample Info: YX35B

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



Data File: /chem2/fid9.i/20140829.b/0829a026.d

Date : 29-AUG-2014 17:46

Client ID: MW6

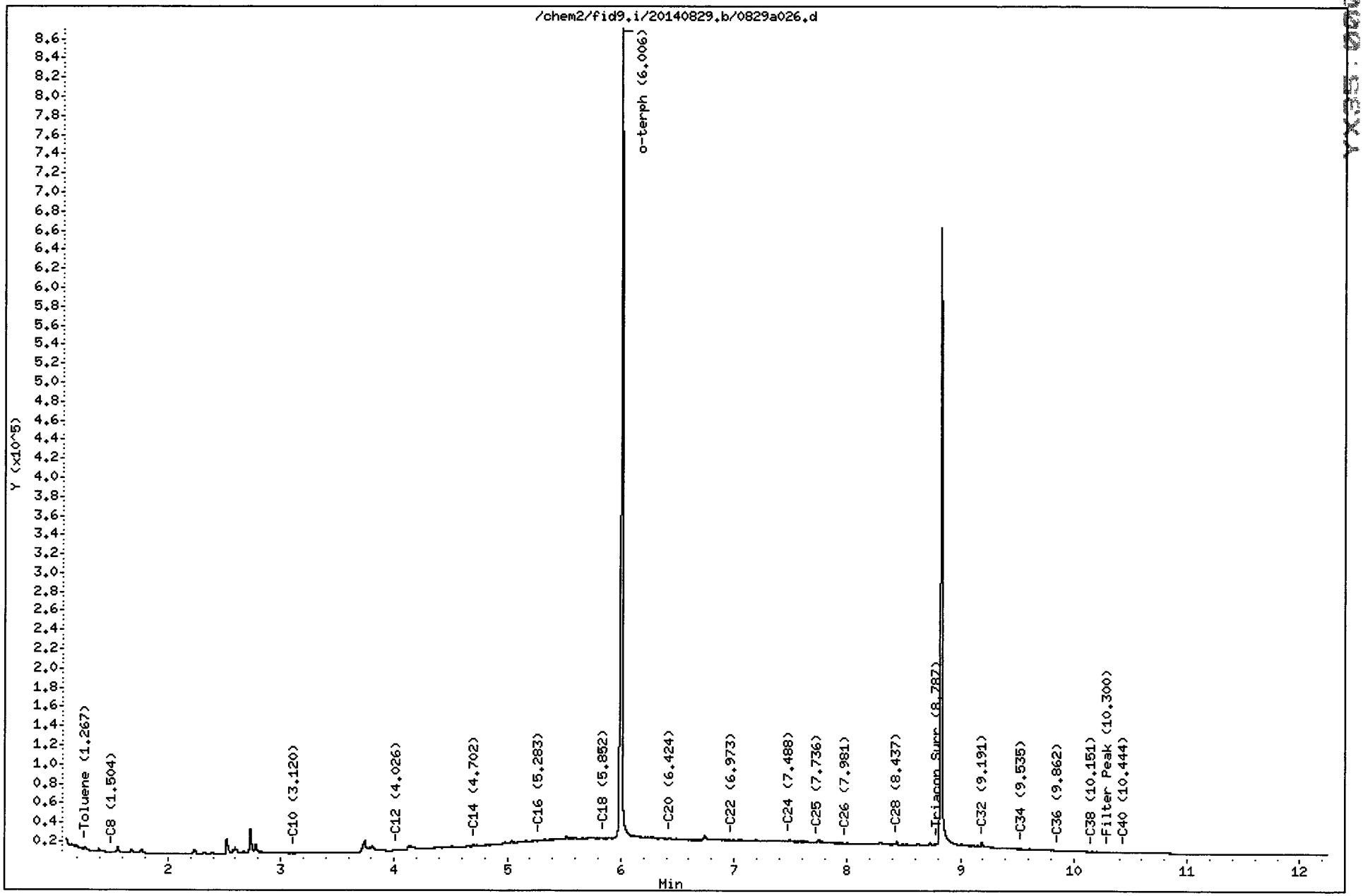
Sample Info: YX35C

Column phase: RTX-1

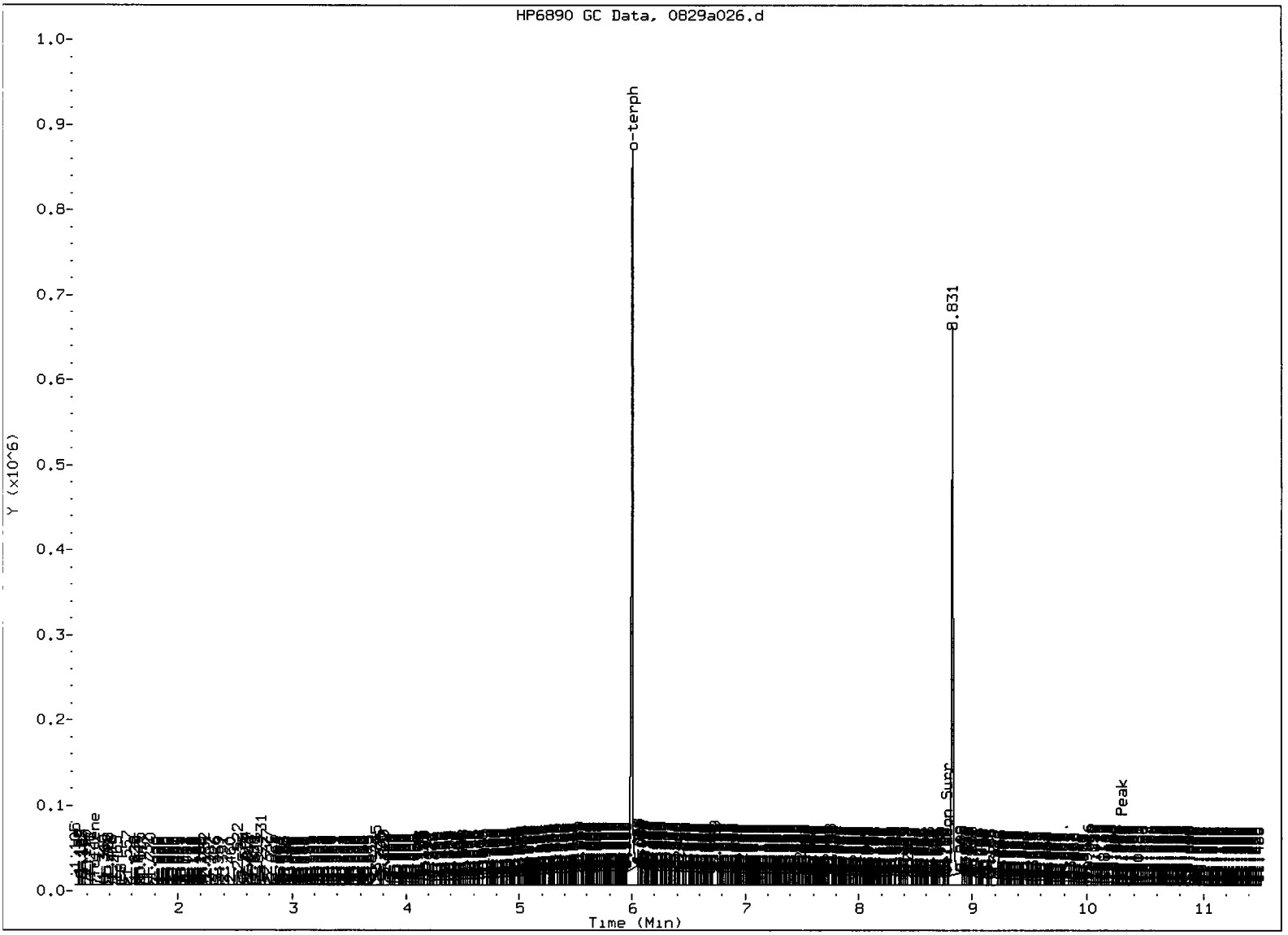
Instrument: fid9.i

Operator: JW

Column diameter: 0.25



FID:9A-2C/RTX-1 YX35C FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JD Date: 9/1/14

Data File: /chem2/fid9.i/20140829.b/0829a027.d

Date : 29-AUG-2014 18:07

Client ID: MW9

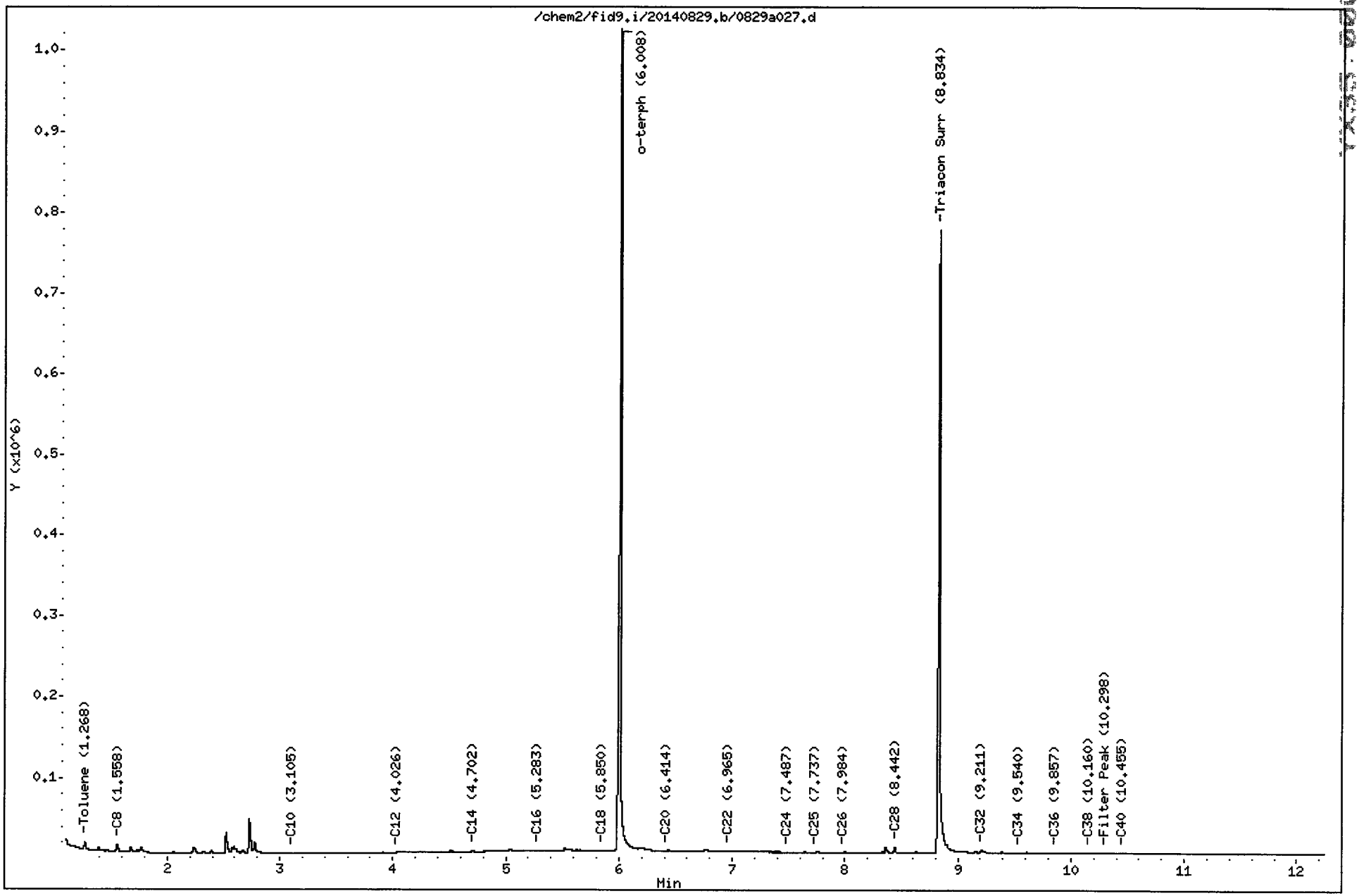
Sample Info: YX35D

Column phase: RTX-1

Instrument: fid9.i

Operator: JW

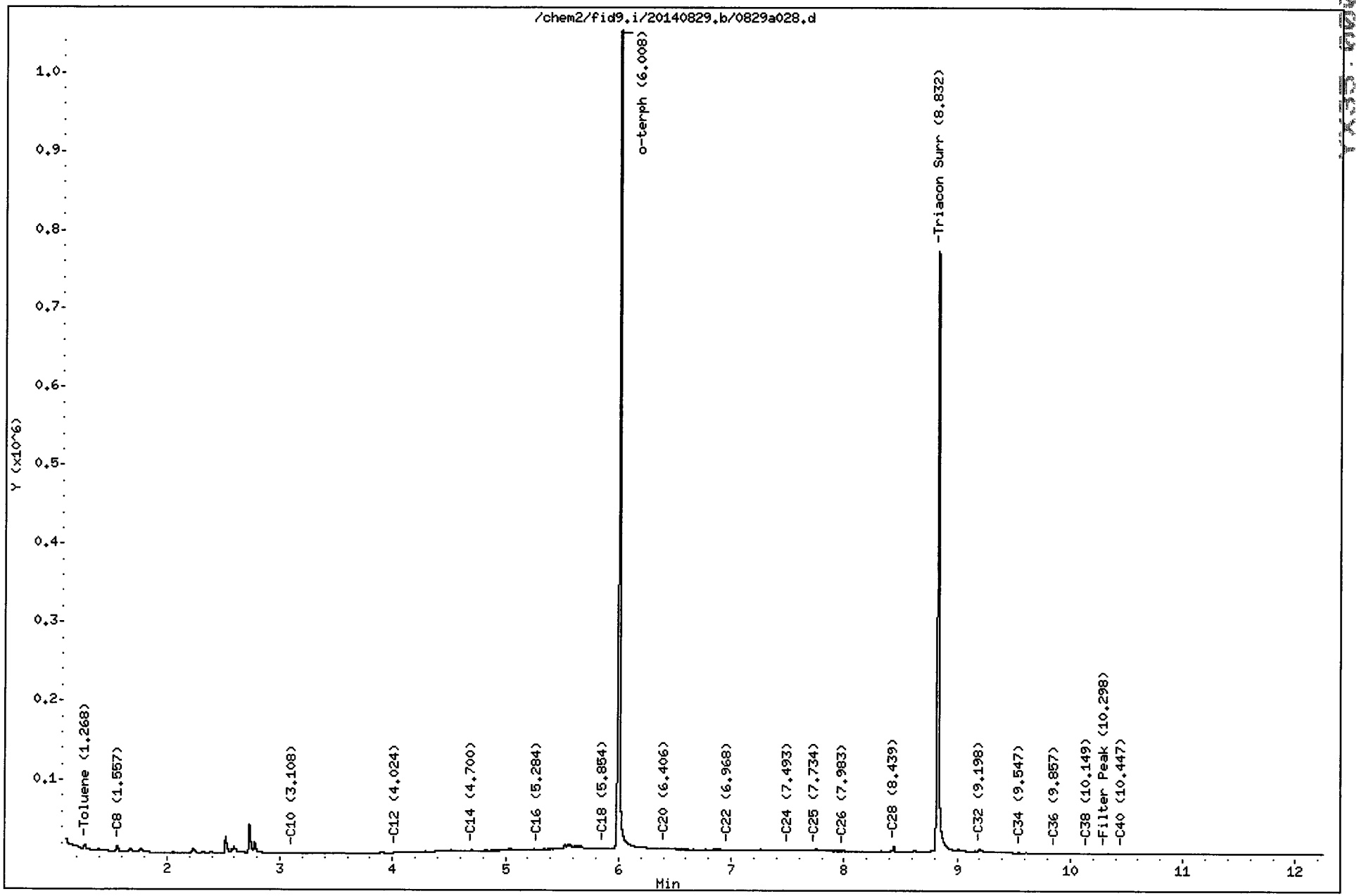
Column diameter: 0.25



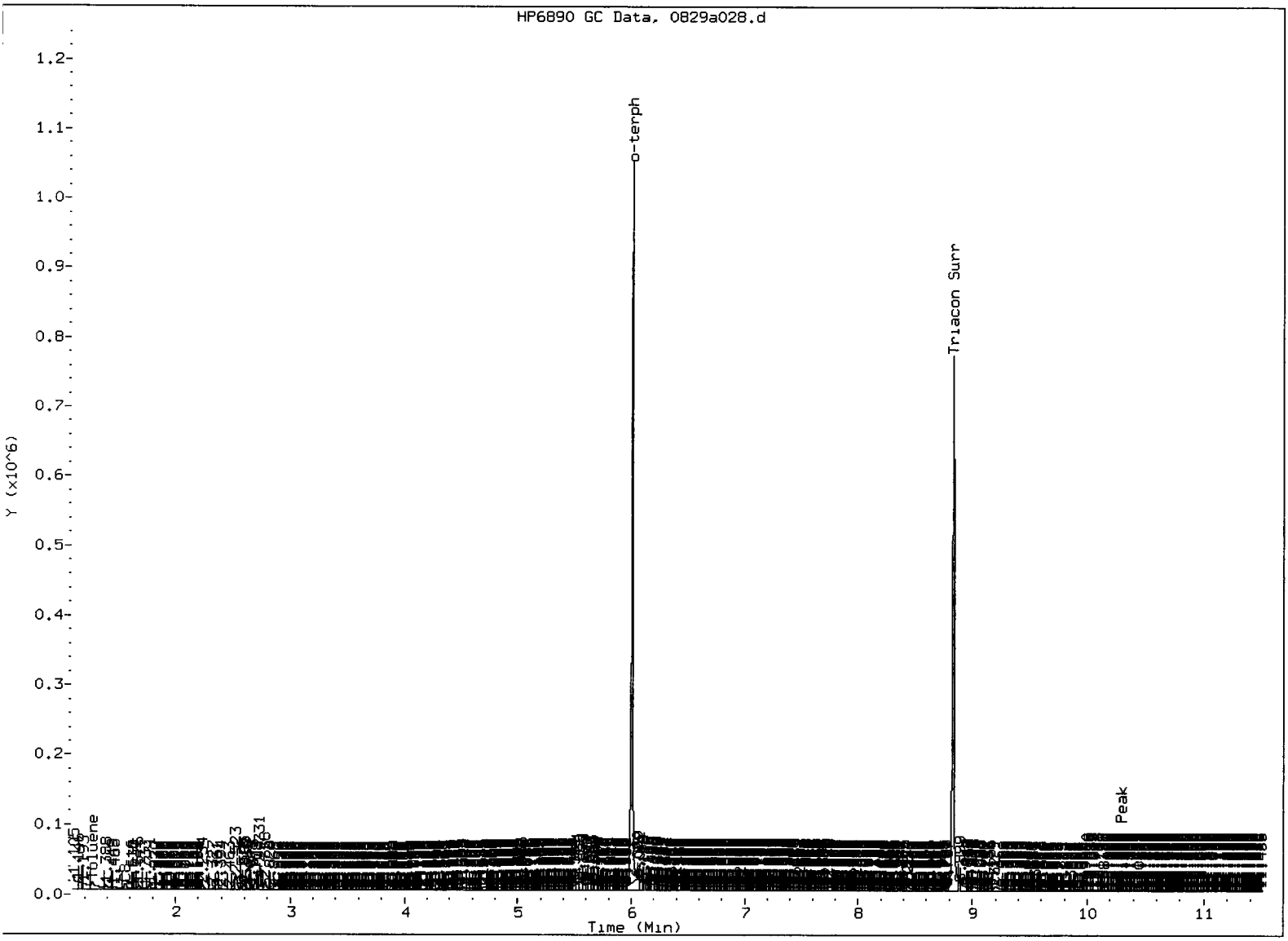
Data File: /chem2/fid9.i/20140829.b/0829a028.d
Date : 29-AUG-2014 18:29
Client ID: MW10
Sample Info: YX35E

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 YX35E FID:9A SIGNAL



MANUAL INTEGRATION

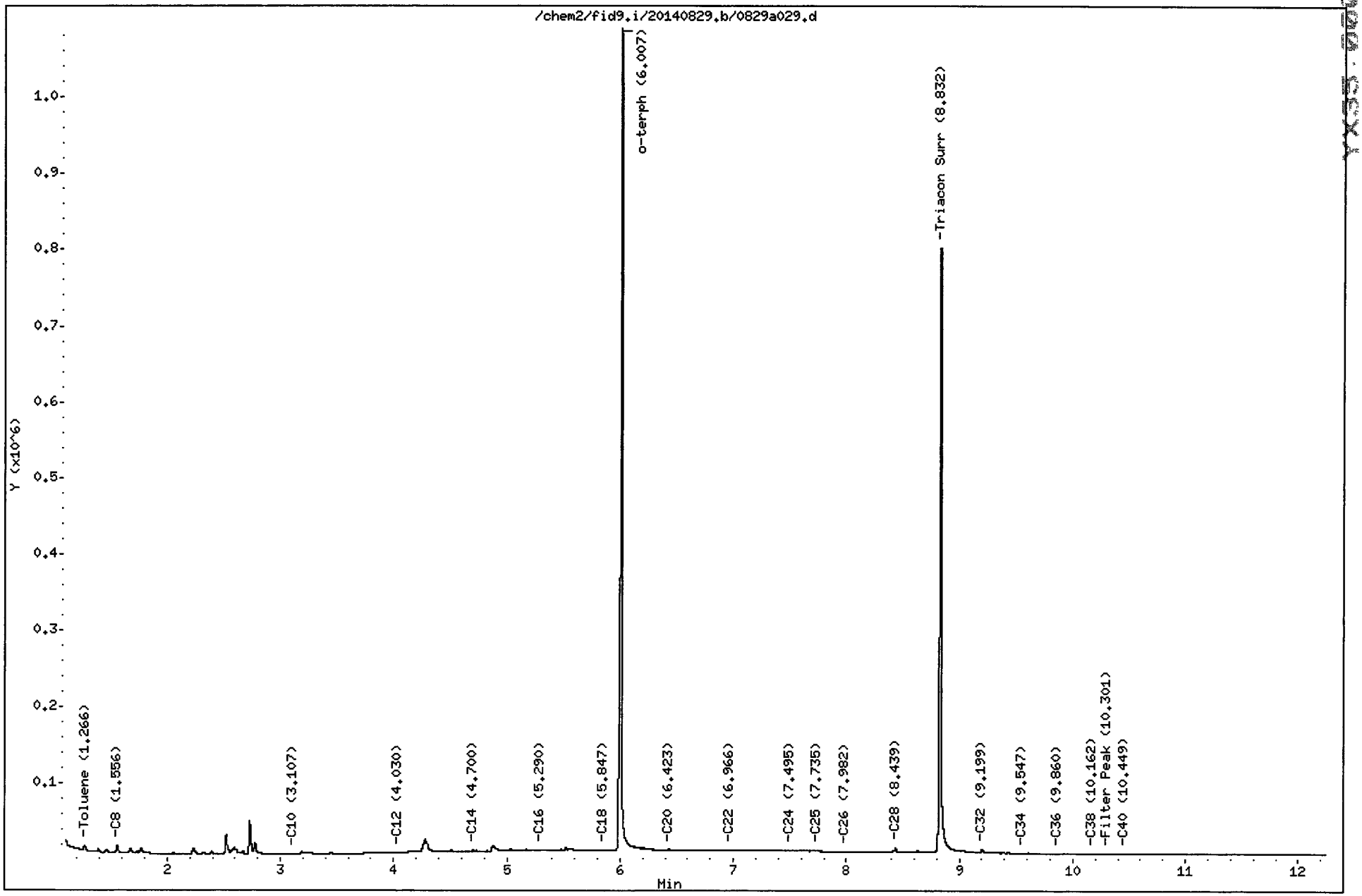
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 9/1/14

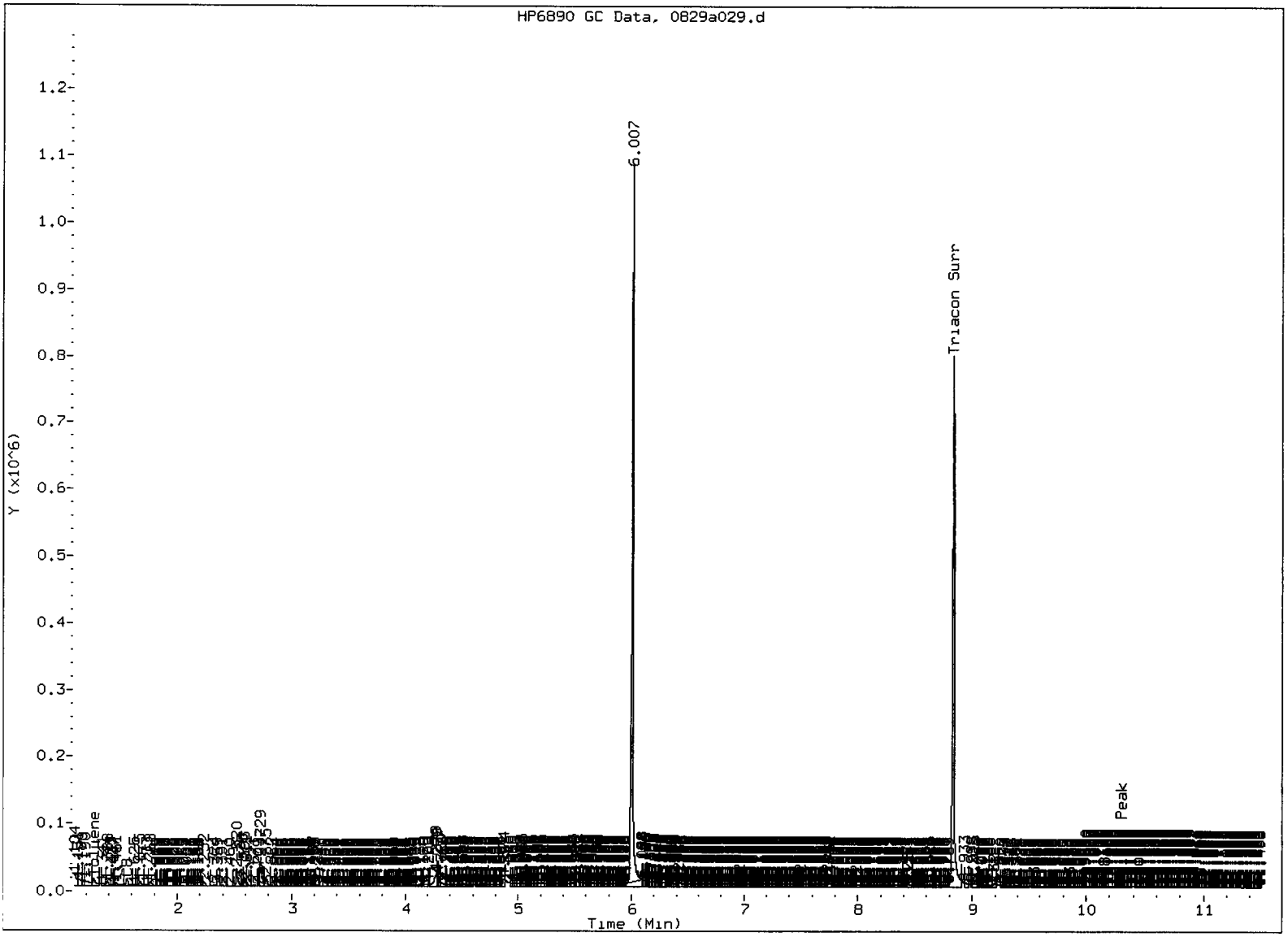
YX35 : 60859

Data File: /chem2/fid9.i/20140829.b/0829a029.d
Date : 29-AUG-2014 18:50
Client ID: MW11
Sample Info: YX35F

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 YX35F FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: _____ Date: 9/1/14

YX35 : 80852

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 08/25/14
Date Received: 08/21/14
Page 1 of 1

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW3 YX35A 14-17239	08/21/14	Water	08/21/14 082114#1	0.010	0.012
MW5 YX35B 14-17240	08/21/14	Water	08/21/14 082114#1	5.00	95.5
MW6 YX35C 14-17241	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW9 YX35D 14-17242	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW10 YX35E 14-17243	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW11 YX35F 14-17244	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

YX35 - 00053

METHOD BLANK RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/25/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/21/14 16:35	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/25/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/21/14 16:35	mg/L	0.639	0.630	101.4%

REPLICATE RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/25/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YX35A Client ID: MW3					
Hexavalent Chromium	08/21/14	mg/L	0.012	0.015	22.2%

YX35:00056

MS/MSD RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 08/25/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YX35A Client ID: MW3						
Hexavalent Chromium	08/21/14	mg/L	0.012	0.017	0.063	7.9%

YX35.00057

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW3
SAMPLE

Lab Sample ID: YX35A
LIMS ID: 14-17239
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX35 . 00058

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW5
SAMPLE

Lab Sample ID: YX35B
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	**7440-47-3**	**Chromium**	0.005	**82.4**	
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW6
SAMPLE

Lab Sample ID: YX35C
LIMS ID: 14-17241
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	**7440-38-2**	**Arsenic**	0.05	**0.08**	
3010A	08/25/14	6010C	08/27/14	**7440-47-3**	**Chromium**	0.005	**0.023**	
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW9
SAMPLE

Lab Sample ID: YX35D
LIMS ID: 14-17242
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW10
SAMPLE

Lab Sample ID: YX35E
LIMS ID: 14-17243
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX35.000052

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: MW11
SAMPLE

Lab Sample ID: YX35F
LIMS ID: 14-17244
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

YX35:00063

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YX35LCS
LIMS ID: 14-17244
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.06	2.00	103%	
Chromium	6010C	0.508	0.500	102%	
Lead	6010C	2.00	2.00	100%	
Selenium	6010C	2.06	2.00	103%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: YX35MB
LIMS ID: 14-17244
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

December 2014

Analytical Resources, Incorporated
Analytical Chemists and Consultants
23 December 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: ZM93

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received three water samples on December 2, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for two compounds were not within control limits for the CCALs that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

The percent recovery for styrene was slightly high following the analysis of the LCSD associated with these samples. Since this compound was not detected in any sample associated with this LCSD, the high bias does not compromise any LOQ. No corrective actions were taken.

All samples were to be extracted on 12/9/14 for NWTPH-Dx, within the 7 day holding time. Due to a power outage, the samples could not be extracted on that day. The NWTPH-Dx bottles for all samples were preserved with 1:1 HCl on 12/9/14. The samples were extracted as quickly as possible the following day, one day outside of the recommended holding time.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: ZM93

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AM93 YE18	Turn-around Requested:
ARI Client Company: Kennedy/Jenks	Phone: 253-835-6400
Client Contact: Jessica Faragalli	
Client Project Name: Precision Engineering	
Client Project #: 1391002A.00	Samplers: DKR & CEJ

Page: 1 of 1	
Date: 12/2/14	Ice Present? Yes
No. of Coolers: 1	Cooler Temps: 3.3

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Nutrients DX	Metals	VOCs	Hex-Chrome					Notes/Comments
MW-1 ~~DUP~~ DUP	12/2/14	1355	GW	6	X	X	X	X					Metals: Cr, Pb, As, Se
MW-4	12/2/14	1500	GW	6	X	X	X	X					
MW-2	12/2/14	1640	GW	6	X	X	X	X					Effluent

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by: (Signature)
	Printed Name: Diane Rauch	Printed Name: A. Volgardsen	Printed Name	Printed Name.
	Company: Kennedy/Jenks	Company: ARI	Company	Company.
	Date & Time: 12/2/14 1720	Date & Time: 12/2/14 1720	Date & Time	Date & Time.

COC 001.xlsx

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks Project Name: Precision Engineering

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: ZM93 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 3.3

Time: 1720

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90077955

Cooler Accepted by: AV Date: 12/2/14 Time: 1720

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs).	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: _____ Date: _____ Time _____

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

MW 2 1 Lg

By: TS Date: 12 3 14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 12/03/14
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ZM93**

PC: Mark
VTSR: 12/02/14

Inquiry Number: NONE
Analysis Requested: 12/03/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #: 1396024.00
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-26123 **ZM93A**	MW-1						TOT Pass															
14-26124 **ZM93B**	MW-4						TOT Pass															
14-26125 **ZM93C**	MW-2						TOT Pass															

ZM93 : 15555

Checked By TS Date 12.3.14

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZM93
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024.00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-1	ZM93A	14-26123	Water	12/02/14 13:55	12/02/14 17:20
2.	MW-4	ZM93B	14-26124	Water	12/02/14 15:00	12/02/14 17:20
3.	MW-2	ZM93C	14-26125	Water	12/02/14 16:40	12/02/14 17:20

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ZM93 : 00006

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

ZM93 : 00007

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-120814A**
 METHOD BLANK

Lab Sample ID: MB-120814A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized: MW
Reported: 12/12/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 12/08/14 11:31

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-120814A**
 METHOD BLANK

Lab Sample ID: MB-120814A
LIMS ID: 14-26123
Matrix: Water
Date Analyzed: 12/08/14 11:31

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	97.1%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-1**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZM93A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Instrument/Analyst: NT2/LH
Date Analyzed: 12/08/14 19:39

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-1**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ZM93A QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-26123 Project: Precision Engineering
Matrix: Water 1396024.00
Date Analyzed: 12/08/14 19:39

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	101%
Bromofluorobenzene	95.8%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-4**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZM93B
LIMS ID: 14-26124
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Instrument/Analyst: NT2/LH
Date Analyzed: 12/08/14 20:06

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-4**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ZM93B
LIMS ID: 14-26124
Matrix: Water
Date Analyzed: 12/08/14 20:06

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	104%
d8-Toluene	99.9%
Bromofluorobenzene	94.8%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-2**
 SAMPLE

Lab Sample ID: ZM93C
LIMS ID: 14-26125
Matrix: Water
Data Release Authorized: MW
Reported: 12/12/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Instrument/Analyst: NT2/LH
Date Analyzed: 12/08/14 20:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-2**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ZM93C
LIMS ID: 14-26125
Matrix: Water
Date Analyzed: 12/08/14 20:33

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	99.4%
Bromofluorobenzene	95.3%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-120814A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-120814A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 12/08/14 10:38
LCSD: 12/08/14 11:05

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.16		10.0	91.6%	10.8		10.0	108%	16.4%
Bromomethane	9.21		10.0	92.1%	10.3		10.0	103%	11.2%
Vinyl Chloride	9.56		10.0	95.6%	11.0		10.0	110%	14.0%
Chloroethane	9.78		10.0	97.8%	11.1		10.0	111%	12.6%
Methylene Chloride	10.3		10.0	103%	11.5		10.0	115%	11.0%
Acetone	44.7		50.0	89.4%	50.9		50.0	102%	13.0%
Carbon Disulfide	9.16		10.0	91.6%	10.4		10.0	104%	12.7%
1,1-Dichloroethene	9.05		10.0	90.5%	10.6		10.0	106%	15.8%
1,1-Dichloroethane	9.32		10.0	93.2%	10.8		10.0	108%	14.7%
trans-1,2-Dichloroethene	9.35		10.0	93.5%	10.8		10.0	108%	14.4%
cis-1,2-Dichloroethene	9.41		10.0	94.1%	10.8		10.0	108%	13.8%
Chloroform	9.49		10.0	94.9%	10.8		10.0	108%	12.9%
1,2-Dichloroethane	8.98		10.0	89.8%	10.8		10.0	108%	18.4%
2-Butanone	44.7		50.0	89.4%	51.0		50.0	102%	13.2%
1,1,1-Trichloroethane	9.46		10.0	94.6%	11.0		10.0	110%	15.1%
Carbon Tetrachloride	9.53		10.0	95.3%	11.3		10.0	113%	17.0%
Vinyl Acetate	8.38		10.0	83.8%	10.4		10.0	104%	21.5%
Bromodichloromethane	9.13		10.0	91.3%	11.2		10.0	112%	20.4%
1,2-Dichloropropane	9.24		10.0	92.4%	10.9		10.0	109%	16.5%
cis-1,3-Dichloropropene	9.57		10.0	95.7%	11.7		10.0	117%	20.0%
Trichloroethene	9.24		10.0	92.4%	11.0		10.0	110%	17.4%
Dibromochloromethane	9.46		10.0	94.6%	11.1		10.0	111%	16.0%
1,1,2-Trichloroethane	8.76		10.0	87.6%	10.7		10.0	107%	19.9%
Benzene	9.47		10.0	94.7%	11.2		10.0	112%	16.7%
trans-1,3-Dichloropropene	9.43		10.0	94.3%	11.7		10.0	117%	21.5%
2-Chloroethylvinylether	7.90		10.0	79.0%	10.7		10.0	107%	30.1%
Bromoform	9.30		10.0	93.0%	11.0		10.0	110%	16.7%
4-Methyl-2-Pentanone (MIBK)	46.1		50.0	92.2%	56.5		50.0	113%	20.3%
2-Hexanone	44.9		50.0	89.8%	53.7		50.0	107%	17.8%
Tetrachloroethene	9.09		10.0	90.9%	10.5		10.0	105%	14.4%
1,1,2,2-Tetrachloroethane	8.38		10.0	83.8%	9.90		10.0	99.0%	16.6%
Toluene	9.07		10.0	90.7%	10.9		10.0	109%	18.3%
Chlorobenzene	9.17		10.0	91.7%	10.6		10.0	106%	14.5%
Ethylbenzene	9.51		10.0	95.1%	11.3		10.0	113%	17.2%
Styrene	10.7	Q	10.0	107%	12.3	Q	10.0	123%	13.9%
Trichlorofluoromethane	11.1	Q	10.0	111%	12.4	Q	10.0	124%	11.1%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.48		10.0	94.8%	10.8		10.0	108%	13.0%
m,p-Xylene	19.6		20.0	98.0%	22.9		20.0	114%	15.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-120814A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-120814A QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-26123 Project: Precision Engineering
Matrix: Water 1396024.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.87	10.0	98.7%	11.4	10.0	114%	14.4%
1,2-Dichlorobenzene	8.84	10.0	88.4%	10.2	10.0	102%	14.3%
1,3-Dichlorobenzene	9.23	10.0	92.3%	10.6	10.0	106%	13.8%
1,4-Dichlorobenzene	8.90	10.0	89.0%	10.3	10.0	103%	14.6%
Acrolein	45.5	50.0	91.0%	52.9	50.0	106%	15.0%
Iodomethane	8.83	10.0	88.3%	10.0	10.0	100%	12.4%
Bromoethane	9.37	10.0	93.7%	10.8	10.0	108%	14.2%
Acrylonitrile	9.06	10.0	90.6%	10.7	10.0	107%	16.6%
1,1-Dichloropropene	9.57	10.0	95.7%	11.4	10.0	114%	17.5%
Dibromomethane	9.09	10.0	90.9%	10.9	10.0	109%	18.1%
1,1,1,2-Tetrachloroethane	9.57	10.0	95.7%	11.2	10.0	112%	15.7%
1,2-Dibromo-3-chloropropane	8.30	10.0	83.0%	10.1	10.0	101%	19.6%
1,2,3-Trichloropropane	8.23	10.0	82.3%	9.98	10.0	99.8%	19.2%
trans-1,4-Dichloro-2-butene	8.87	10.0	88.7%	10.7	10.0	107%	18.7%
1,3,5-Trimethylbenzene	9.92	10.0	99.2%	11.4	10.0	114%	13.9%
1,2,4-Trimethylbenzene	10.1	10.0	101%	11.7	10.0	117%	14.7%
Hexachlorobutadiene	10.4	10.0	104%	11.7	10.0	117%	11.8%
1,2-Dibromoethane	9.01	10.0	90.1%	11.1	10.0	111%	20.8%
Bromochloromethane	9.29	10.0	92.9%	11.1	10.0	111%	17.8%
2,2-Dichloropropane	10.1	10.0	101%	11.2	10.0	112%	10.3%
1,3-Dichloropropane	8.73	10.0	87.3%	10.6	10.0	106%	19.3%
Isopropylbenzene	9.99	10.0	99.9%	11.5	10.0	115%	14.1%
n-Propylbenzene	9.55	10.0	95.5%	11.1	10.0	111%	15.0%
Bromobenzene	9.02	10.0	90.2%	10.6	10.0	106%	16.1%
2-Chlorotoluene	9.25	10.0	92.5%	10.8	10.0	108%	15.5%
4-Chlorotoluene	9.33	10.0	93.3%	10.9	10.0	109%	15.5%
tert-Butylbenzene	9.78	10.0	97.8%	11.2	10.0	112%	13.5%
sec-Butylbenzene	9.87	10.0	98.7%	11.4	10.0	114%	14.4%
4-Isopropyltoluene	10.3	10.0	103%	11.8	10.0	118%	13.6%
n-Butylbenzene	9.72	10.0	97.2%	11.2	10.0	112%	14.1%
1,2,4-Trichlorobenzene	9.23	10.0	92.3%	10.7	10.0	107%	14.8%
Naphthalene	8.68	10.0	86.8%	10.4	10.0	104%	18.0%
1,2,3-Trichlorobenzene	8.60	10.0	86.0%	10.2	10.0	102%	17.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.5%	96.7%
d8-Toluene	98.9%	102%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	98.6%	99.3%

ZM93 : 00018

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-120814A	Method Blank	10	104%	97.1%	97.2%	102%	0
LCS-120814A	Lab Control	10	96.5%	98.9%	101%	98.6%	0
LCSD-120814A	Lab Control Dup	10	96.7%	102%	101%	99.3%	0
ZM93A	MW-1	10	102%	101%	95.8%	102%	0
ZM93B	MW-4	10	104%	99.9%	94.8%	102%	0
ZM93C	MW-2	10	103%	99.4%	95.3%	102%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-26123 to 14-26125

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: cc1208a.d
Analysis Type: WATER
Lab Sample ID: CC1208
Method: /chem3/nt2.i/20141208.b/82601204L.m

Injection Date: 08-DEC-2014 10:05
Init. Cal. Date(s): 04-DEC-2014 04-DEC-2014
Init. Cal. Times: 12:12 15:19
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.61212	0.73226	0.73226	0.010	19.62710	20.00000	Averaged	
2 Chloromethane	1.04102	1.09070	1.09070	0.100	4.77184	20.00000	Averaged	
3 Vinyl Chloride	0.94362	1.02332	1.02332	0.100	8.44643	20.00000	Averaged	
4 Bromomethane	0.40340	0.44747	0.44747	0.100	10.92523	20.00000	Averaged	
5 Chloroethane	0.51025	0.57148	0.57148	0.010	12.00090	20.00000	Averaged	
6 Trichlorofluoromethane	0.67896	0.88524	0.88524	0.010	30.38232	20.00000	Averaged	<-
7 1,1-Dichloroethene	1.31994	1.34520	1.34520	0.100	1.91397	20.00000	Averaged	
8 Carbon Disulfide	2.36814	2.50052	2.50052	0.010	5.59015	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.67505	0.72872	0.72872	0.010	7.95097	20.00000	Averaged	
10 Iodomethane	1.02721	1.04302	1.04302	0.010	1.53889	20.00000	Averaged	
11 Bromoethane	0.51894	0.55138	0.55138	0.100	6.25057	20.00000	Averaged	
12 Acrolein	0.06642	0.06553	0.06553	0.000	-1.34849	20.00000	Averaged	
13 Methylene Chloride	11.35059	10.00000	0.77836	0.010	13.50591	20.00000	Linear	
14 Acetone	0.11462	0.10256	0.10256	0.001	-10.52734	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.71262	0.76092	0.76092	0.010	6.77691	20.00000	Averaged	
17 Methyl tert butyl ether	1.52603	1.51778	1.51778	0.100	-0.54058	20.00000	Averaged	
18 1,1-Dichloroethane	1.40773	1.48544	1.48544	0.200	5.52000	20.00000	Averaged	
19 Acrylonitrile	0.14036	0.12769	0.12769	0.001	-9.02726	20.00000	Averaged	
20 Vinyl Acetate	0.17721	0.16409	0.16409	0.010	-7.39959	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.70202	0.73728	0.73728	0.010	5.02253	20.00000	Averaged	
23 2,2-Dichloropropane	0.71547	0.81841	0.81841	0.010	14.38672	20.00000	Averaged	
24 Bromochloromethane	0.27556	0.28729	0.28729	0.050	4.25808	20.00000	Averaged	
25 Chloroform	1.14586	1.20620	1.20620	0.200	5.26590	20.00000	Averaged	
26 Carbon Tetrachloride	0.45218	0.49464	0.49464	0.100	9.38907	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.57807	0.58442	0.58442	0.100	1.09873	20.00000	Averaged	
28 1,1,1-Trichloroethane	0.97058	1.06714	1.06714	0.100	9.94821	20.00000	Averaged	
29 2-Butanone	0.17942	0.15946	0.15946	0.001	-11.12550	20.00000	Averaged	
30 1,1-Dichloropropene	0.51542	0.56599	0.56599	0.010	9.81177	20.00000	Averaged	
31 Benzene	1.45877	1.57668	1.57668	0.500	8.08330	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.67065	0.62534	0.62534	0.010	-6.75619	20.00000	Averaged	
34 1,2-Dichloroethane	0.43730	0.43294	0.43294	0.100	-0.99614	20.00000	Averaged	
36 Trichloroethene	0.33982	0.35425	0.35425	0.100	4.24830	20.00000	Averaged	
38 Dibromomethane	0.16009	0.16012	0.16012	0.010	0.01584	20.00000	Averaged	
39 1,2-Dichloropropane	0.36903	0.38055	0.38055	0.100	3.12060	20.00000	Averaged	
40 Bromodichloromethane	0.39770	0.42284	0.42284	0.100	6.32299	20.00000	Averaged	

ZM93 : 00020

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 08-DEC-2014 10:05
Lab File ID: cc1208a.d Init. Cal. Date(s): 04-DEC-2014 04-DEC-2014
Analysis Type: WATER Init. Cal. Times: 12:12 15:19
Lab Sample ID: CC1208 Quant Type: ISTD
Method: /chem3/nt2.i/20141208.b/82601204L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
41 2-Chloroethyl Vinyl Ether	0.11208	0.10395	0.10395	0.000	-7.25261	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.46843	0.51032	0.51032	0.200	8.94224	20.00000	Averaged	
$ 43 d8-Toluene	1.21791	1.22074	1.22074	0.010	0.23228	20.00000	Averaged	
44 Toluene	0.88765	0.93485	0.93485	0.400	5.31741	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.08778	0.08439	0.08439	0.000	-3.86798	20.00000	Averaged	
46 Tetrachloroethene	0.34028	0.35269	0.35269	0.200	3.64862	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.40968	0.43921	0.43921	0.010	7.20766	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.21643	0.21125	0.21125	0.100	-2.39467	20.00000	Averaged	
49 Chlorodibromomethane	0.24003	0.24292	0.24292	0.100	1.20380	20.00000	Averaged	
50 1,3-Dichloropropane	0.44785	0.43557	0.43557	0.100	-2.74330	20.00000	Averaged	
51 1,2-Dibromoethane	0.20175	0.20214	0.20214	0.010	0.19036	20.00000	Averaged	
52 2-Hexanone	0.15927	0.14488	0.14488	0.010	-9.03734	20.00000	Averaged	
54 Chlorobenzene	0.97483	1.00727	1.00727	0.500	3.32690	20.00000	Averaged	
55 Ethyl Benzene	0.54511	0.59616	0.59616	0.100	9.36630	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.31232	0.33209	0.33209	0.010	6.33241	20.00000	Averaged	
57 m,p-xylene	0.65595	0.73577	0.73577	0.300	12.16911	20.00000	Averaged	
58 o-Xylene	0.63150	0.70282	0.70282	0.300	11.29338	20.00000	Averaged	
59 Styrene	0.93879	1.13211	1.13211	0.300	20.59265	20.00000	Averaged	<-
60 Bromoform	0.25172	0.25318	0.25318	0.010	0.57886	20.00000	Averaged	
61 Isopropyl Benzene	3.17073	3.61478	3.61478	0.010	14.00446	20.00000	Averaged	
$ 62 4-Bromofluorobenzene	0.52572	0.53086	0.53086	0.200	0.97728	20.00000	Averaged	
63 Bromobenzene	0.72006	0.73154	0.73154	0.010	1.59388	20.00000	Averaged	
64 N-Propyl Benzene	3.87185	4.22549	4.22549	0.010	9.13386	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.57557	0.52788	0.52788	0.100	-8.28574	20.00000	Averaged	
66 2-Chloro Toluene	2.75182	2.92714	2.92714	0.010	6.37114	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.74664	3.08335	3.08335	0.010	12.25899	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.17666	0.16019	0.16019	0.010	-9.32331	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.17934	0.17907	0.17907	0.001	-0.15568	20.00000	Averaged	
70 4-Chloro Toluene	2.55021	2.73655	2.73655	0.010	7.30685	20.00000	Averaged	
71 T-Butyl Benzene	2.17626	2.37349	2.37349	0.010	9.06265	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.68634	3.12014	3.12014	0.010	16.14850	20.00000	Averaged	
73 S-Butyl Benzene	3.36450	3.76648	3.76648	0.010	11.94776	20.00000	Averaged	
74 4-Isopropyl Toluene	2.52041	2.93005	2.93005	0.010	16.25267	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.45324	1.51127	1.51127	0.600	3.99275	20.00000	Averaged	
77 1,4-Dichlorobenzene	1.49956	1.49358	1.49358	0.500	-0.39875	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 08-DEC-2014 10:05
Lab File ID: cc1208a.d Init. Cal. Date(s): 04-DEC-2014 04-DEC-2014
Analysis Type: WATER Init. Cal. Times: 12:12 15:19
Lab Sample ID: CC1208 Quant Type: ISTD
Method: /chem3/nt2.i/20141208.b/82601204L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	2.53165	2.81612	2.81612	0.010	11.23652	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.86732	0.84153	0.84153	0.010	-2.97412	20.00000	Averaged
80 1,2-Dichlorobenzene	1.31914	1.30159	1.30159	0.400	-1.33030	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.07930	0.06972	0.06972	0.010	-12.08076	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	11.36265	10.00000	0.29646	0.010	13.62651	20.00000	Linear
84 1,2,4-Trichlorobenzene	0.62171	0.63894	0.63894	0.010	2.77141	20.00000	Averaged
85 Naphthalene	1.02814	0.94732	0.94732	0.010	-7.86066	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.46155	0.42336	0.42336	0.010	-8.27396	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: ZM93-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024.00

Matrix: Water

Date Received: 12/02/14

Data Release Authorized:
Reported: 12/22/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-121014	Method Blank	12/10/14	12/20/14	1.00	Diesel Range	0.10	< 0.10 U
14-26123	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		78.0%
ZM93A	MW-1	12/10/14	12/20/14	1.00	Diesel Range	0.10	< 0.10 U
14-26123	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		80.5%
ZM93B	MW-4	12/10/14	12/20/14	1.00	Diesel Range	0.10	< 0.10 U
14-26124	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.7%
ZM93C	MW-2	12/10/14	12/20/14	1.00	**Diesel Range**	**0.10**	**0.33**
14-26125	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.22**
					o-Terphenyl		57.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ZM93 · 00023

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-121014
LCS/LCSD

Lab Sample ID: LCS-121014
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/22/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/10/14
Date Analyzed LCS: 12/20/14 19:30
LCSD: 12/20/14 19:55
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.12	3.00	70.7%	2.40	3.00	80.0%	12.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	67.5%	60.0%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: ZM93
Matrix: Water
Project: Precision Engineering
Date Received: 12/02/14
1396024.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-26123-121014MB1	Method Blank	500 mL	1.00 mL	12/10/14
14-26123-121014LCS1	Lab Control	500 mL	1.00 mL	12/10/14
14-26123-121014LCSD1	Lab Control Dup	500 mL	1.00 mL	12/10/14
14-26123-ZM93A	MW-1	500 mL	1.00 mL	12/10/14
14-26124-ZM93B	MW-4	500 mL	1.00 mL	12/10/14
14-26125-ZM93C	MW-2	500 mL	1.00 mL	12/10/14

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client ID	OTER	TOT OUT
MB-121014	78.0%	0
LCS-121014	67.5%	0
LCSD-121014	60.0%	0
MW-1	80.5%	0
MW-4	81.7%	0
MW-2	57.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-26123 to 14-26125

ZM93 : 0026

Data File: /chem3/fid3b.i/20141220.b/1220b024.d

Date : 20-DEC-2014 19:06

Client ID: ZM93MBW1

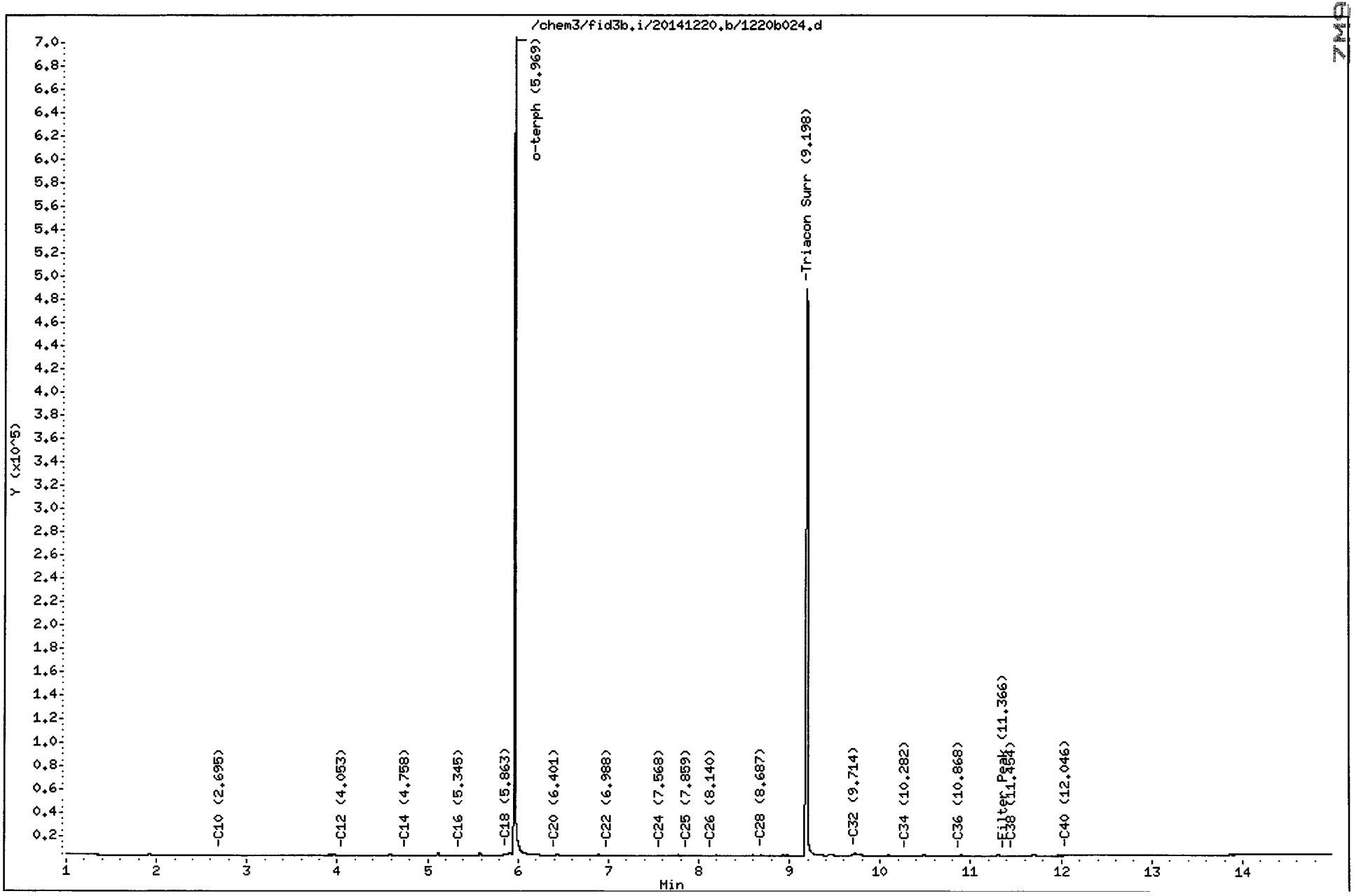
Sample Info: ZM93MBW1

Column phase: RTX-1

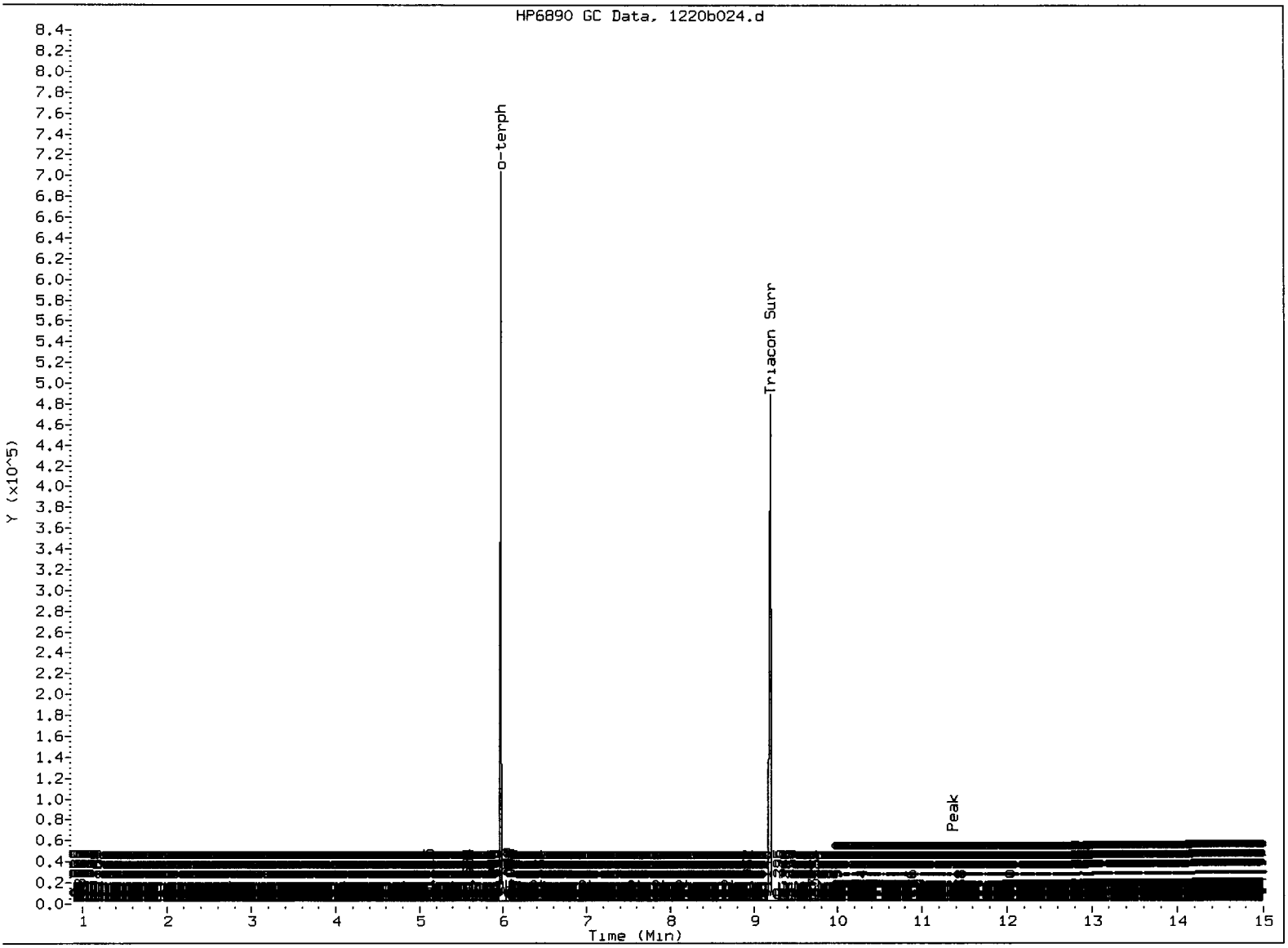
Instrument: fid3b.i

Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 ZM93MBW1 FID:3B SIGNAL



MANUAL INTEGRATION

2. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b025.d

Date : 20-DEC-2014 19:30

Client ID: ZM93LCSW1

Sample Info: ZM93LCSW1

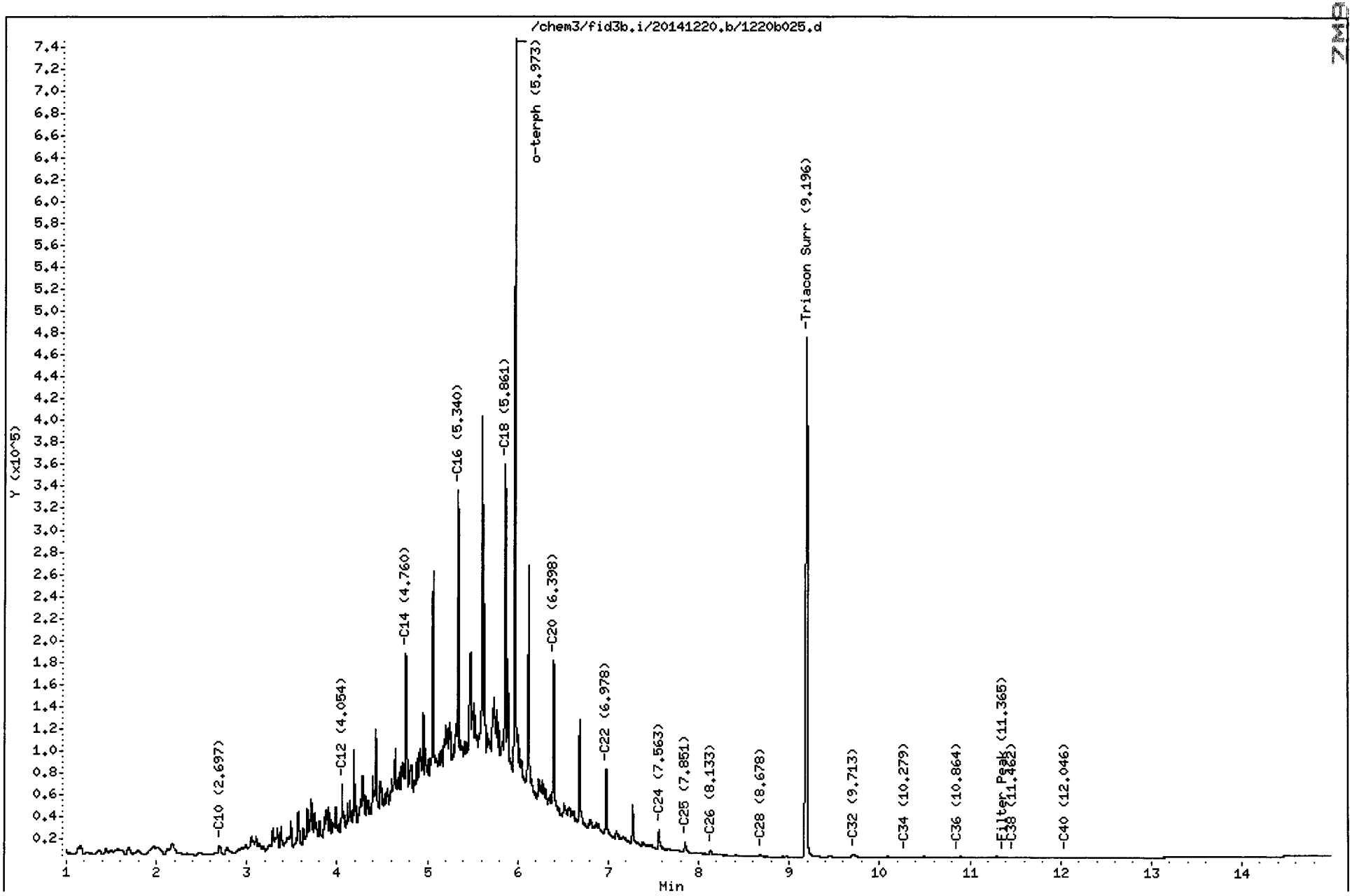
Column phase: RTX-1

Instrument: fid3b.i

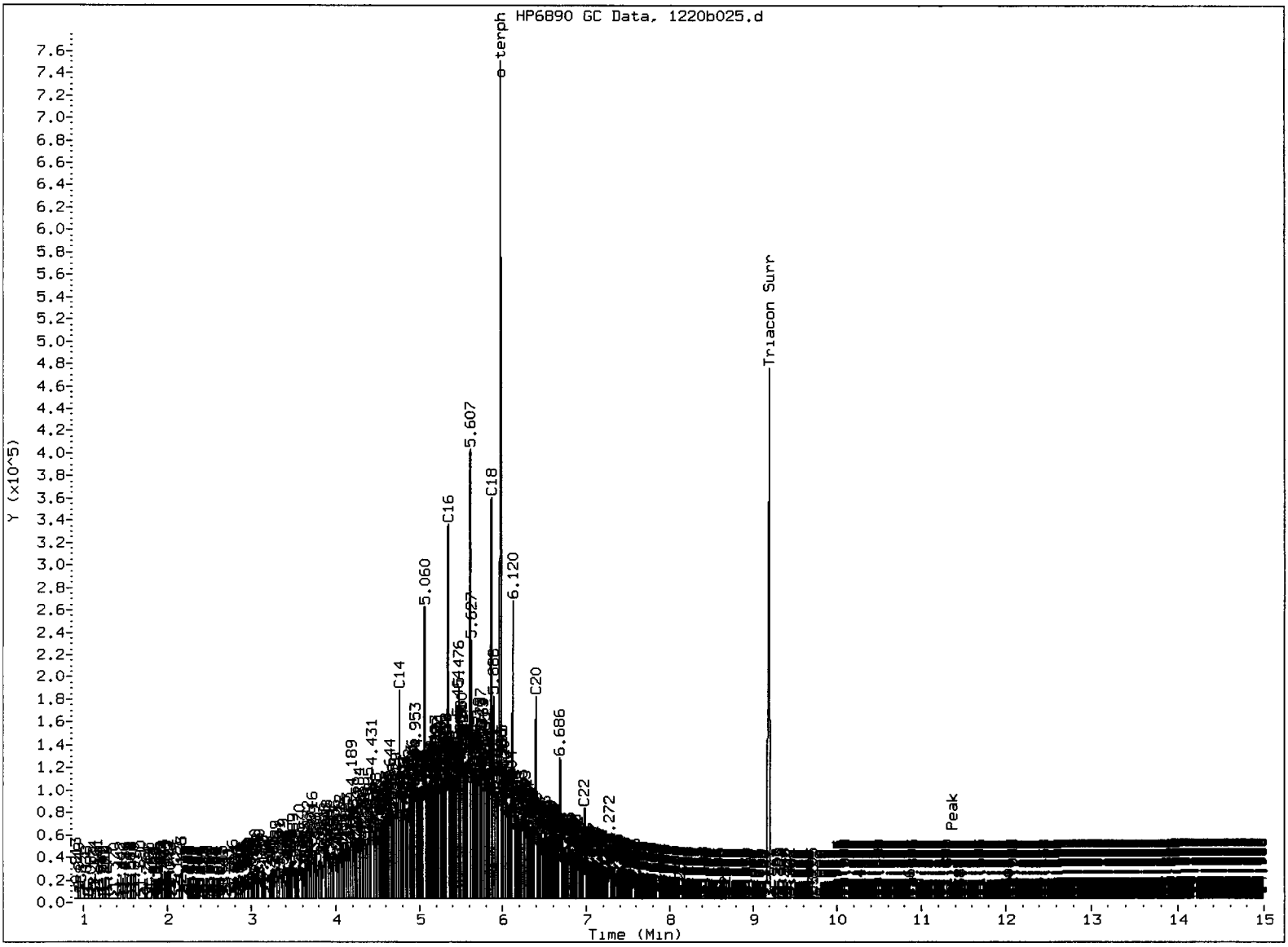
Operator: JW

Column diameter: 0.25

ZM93 : 060923



FID:3B-2C/RTX-1 ZM93LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JU Date: 12/22/11

Data File: /chem3/fid3b.i/20141220.b/1220b026.d

Date : 20-DEC-2014 19:55

Client ID: ZM93LCSDW1

Sample Info: ZM93LCSDW1

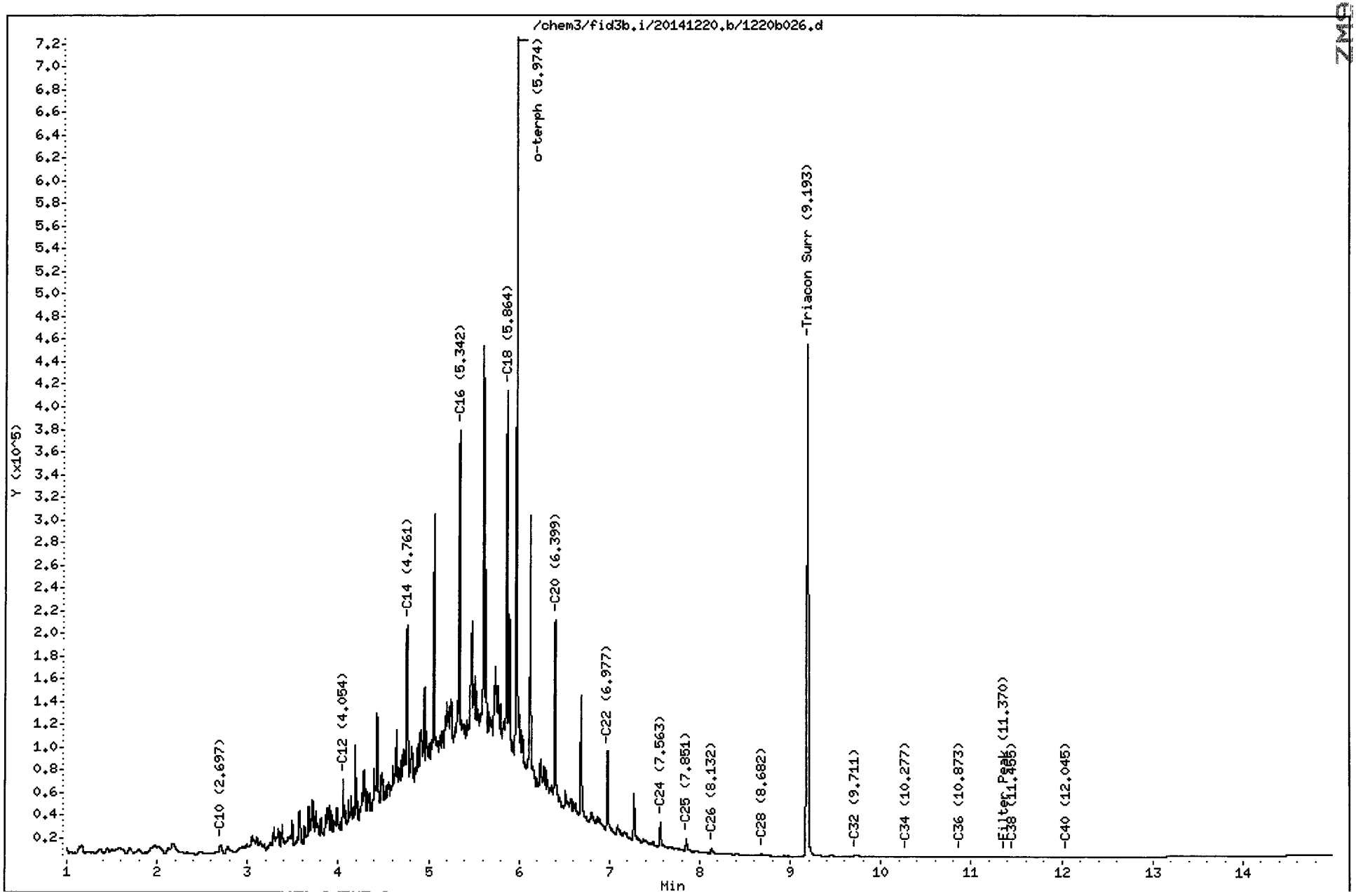
Column phase: RTX-1

Instrument: fid3b.i

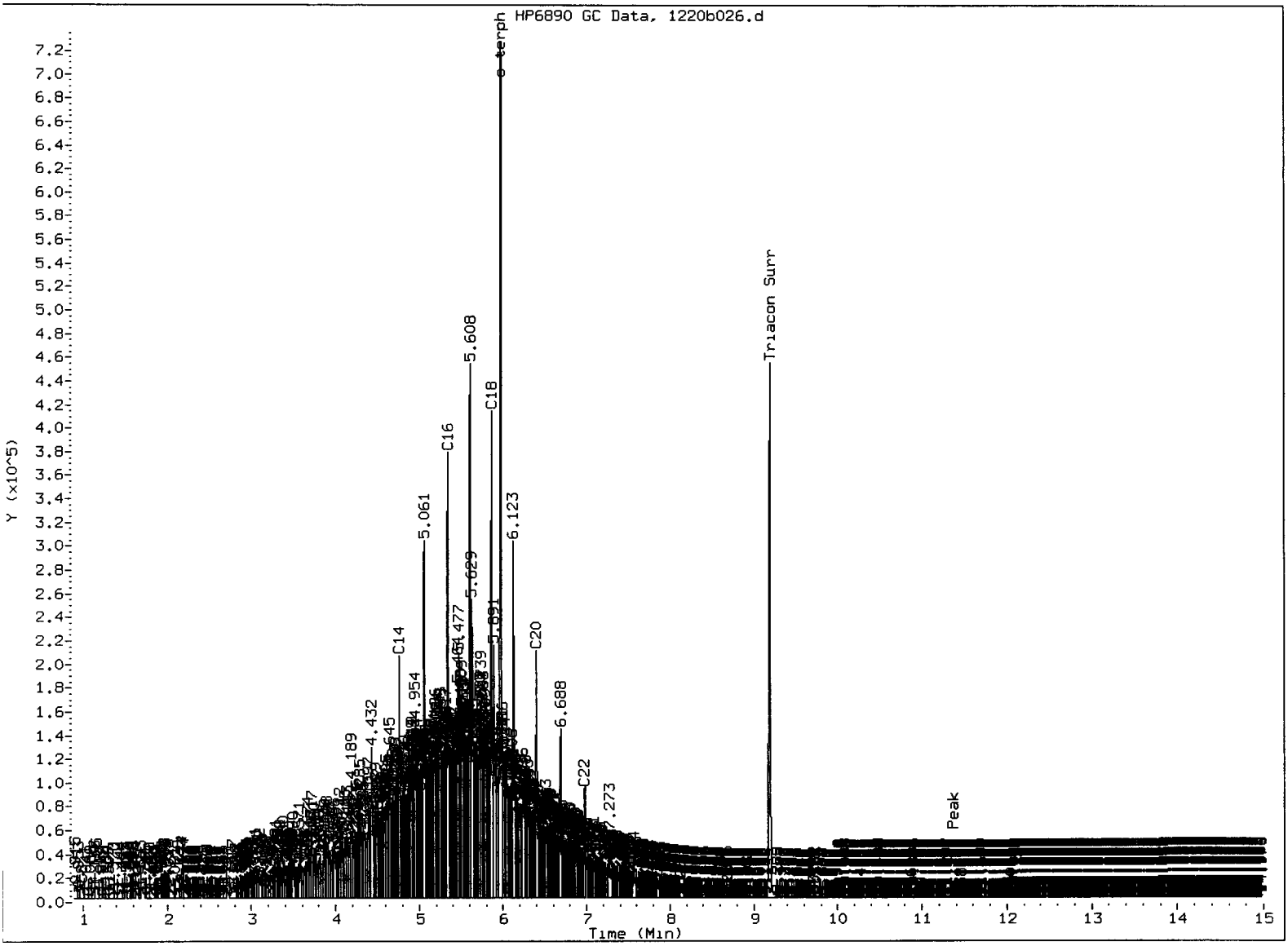
Operator: JW

Column diameter: 0.25

ZM93 12/20/14



FID:3B-2C/RTX-1 ZM93LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JU Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b028.d

Date : 20-DEC-2014 20:44

Client ID: MW-1

Sample Info: ZM93A

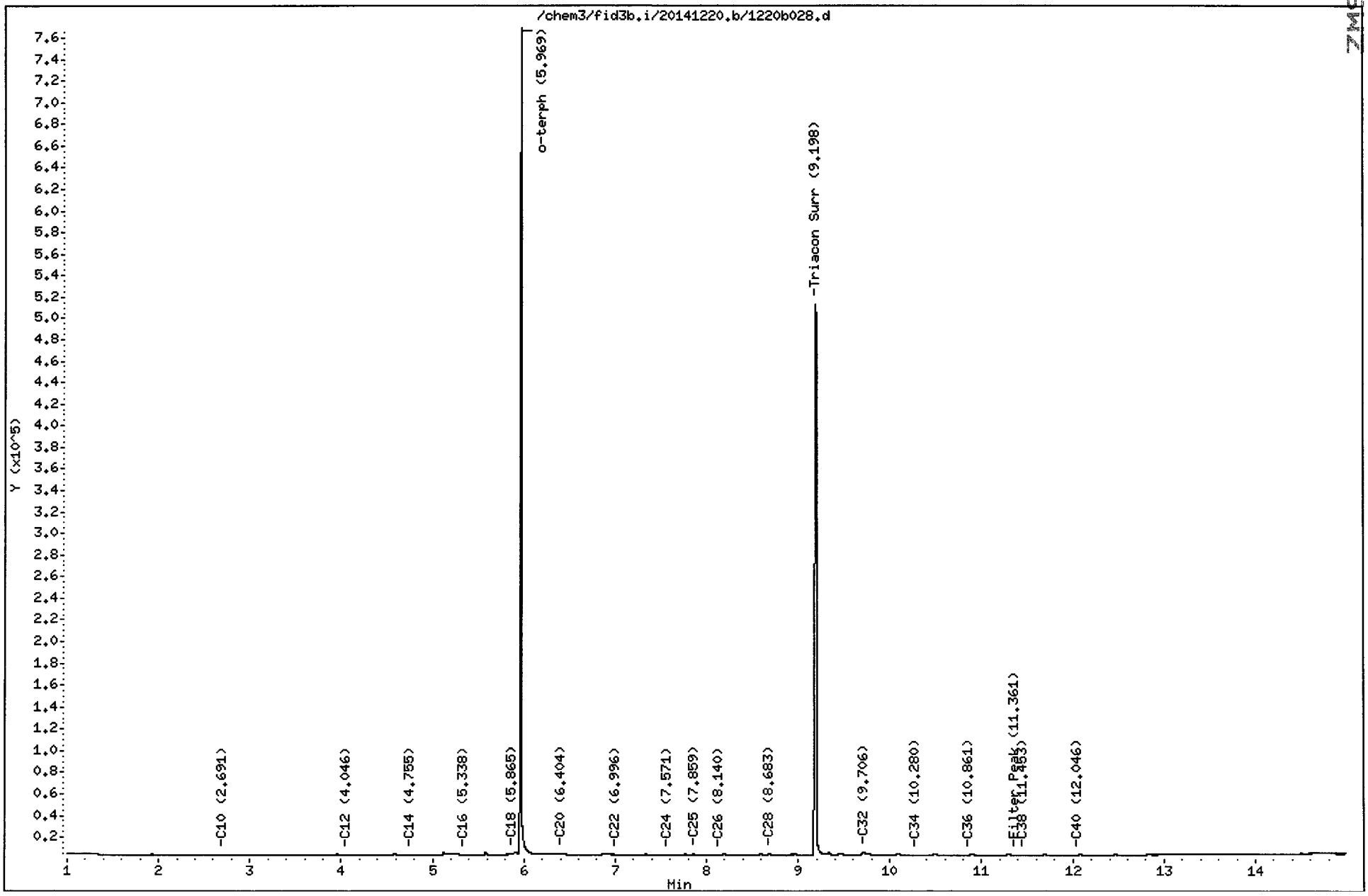
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

Column diameter: 0.25

ZM93-060903



Data File: /chem3/fid3b.i/20141220.b/1220b029.d

Date : 20-DEC-2014 21:09

Client ID: MW-4

Sample Info: ZM93B

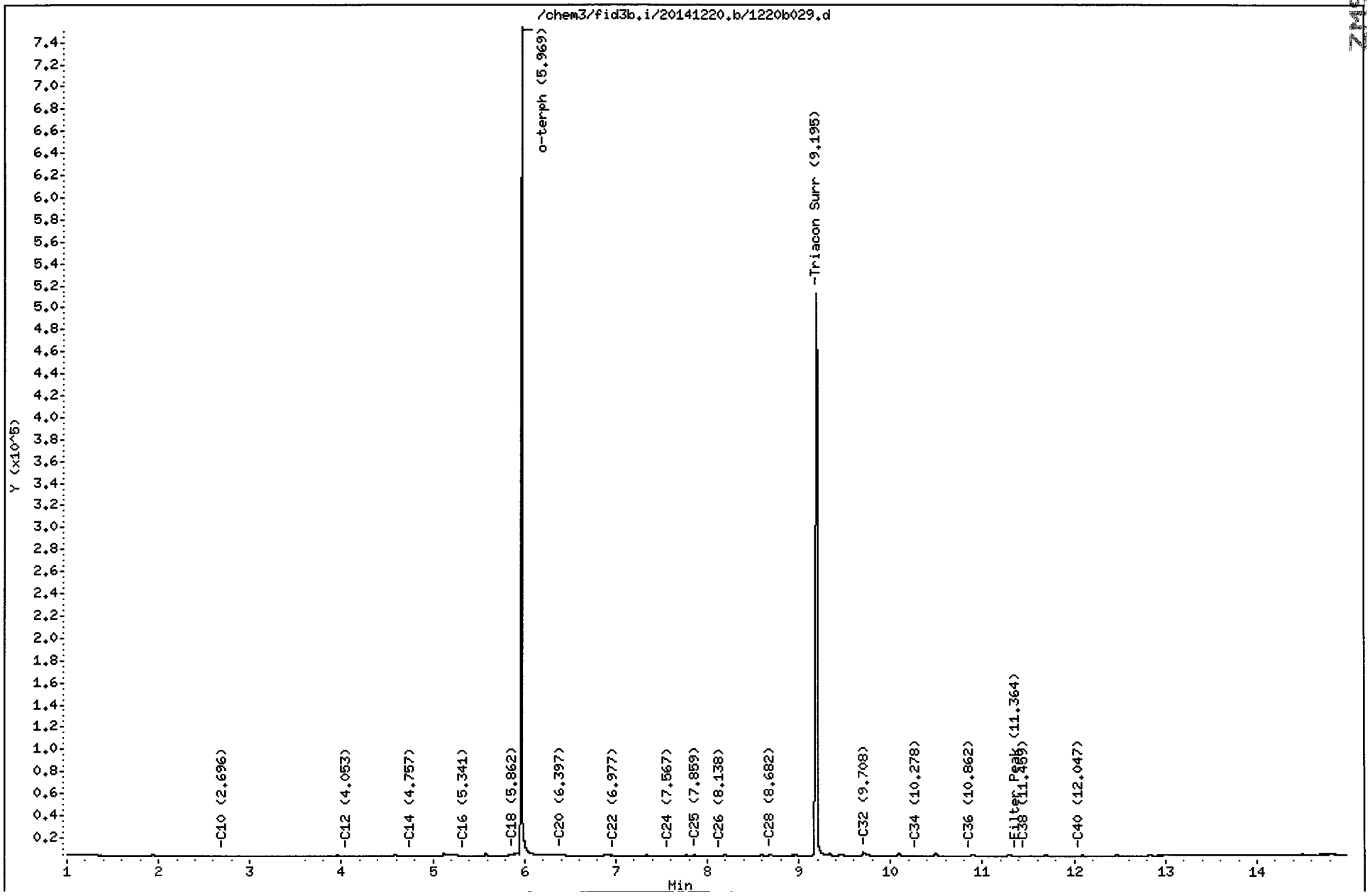
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

Column diameter: 0.25

ZM93 : 12/20/14



Data File: /chem3/fid3b.i/20141220.b/1220b030.d

Date : 20-DEC-2014 21:33

Client ID: MW-2

Sample Info: ZM93C

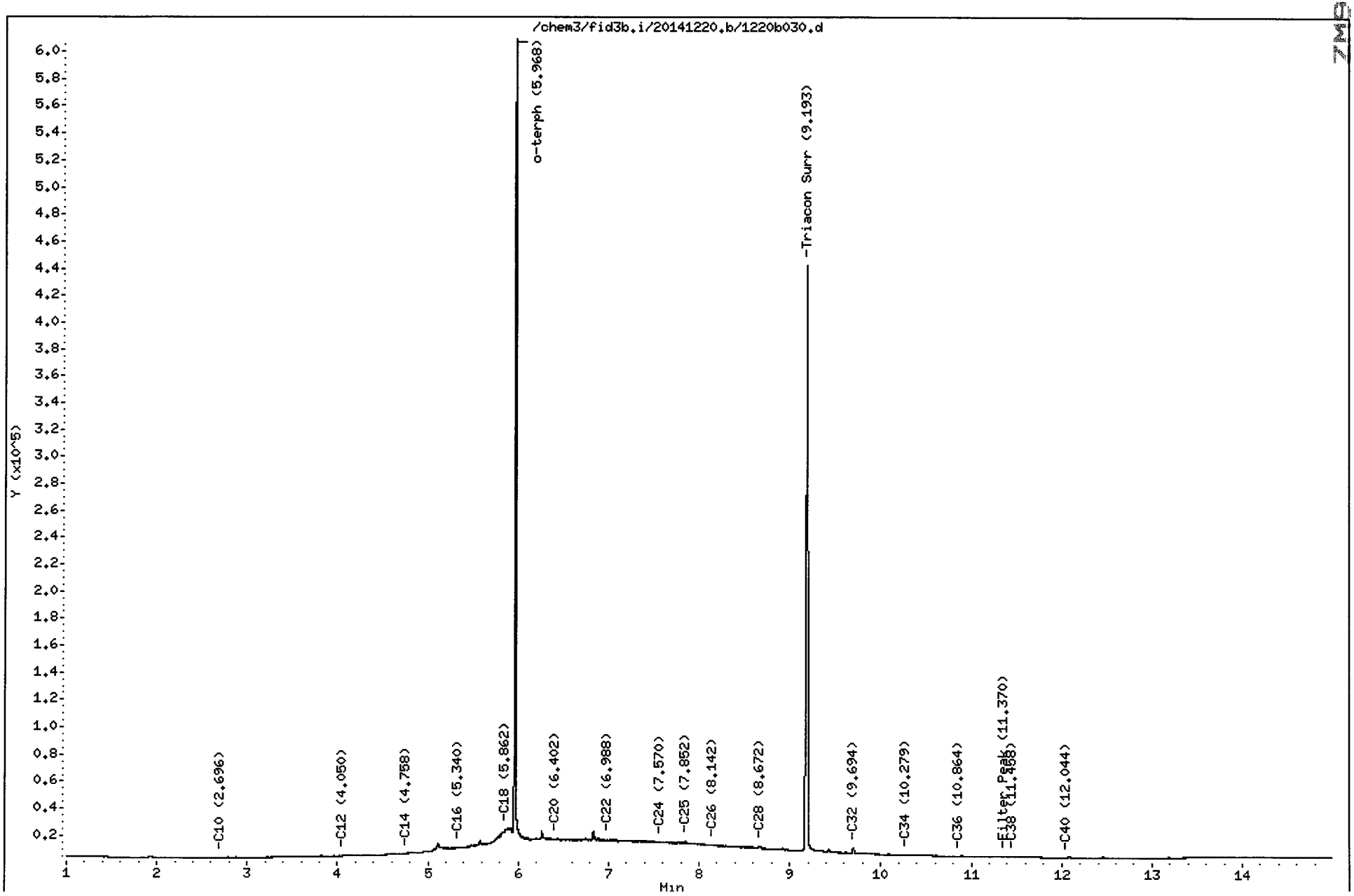
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

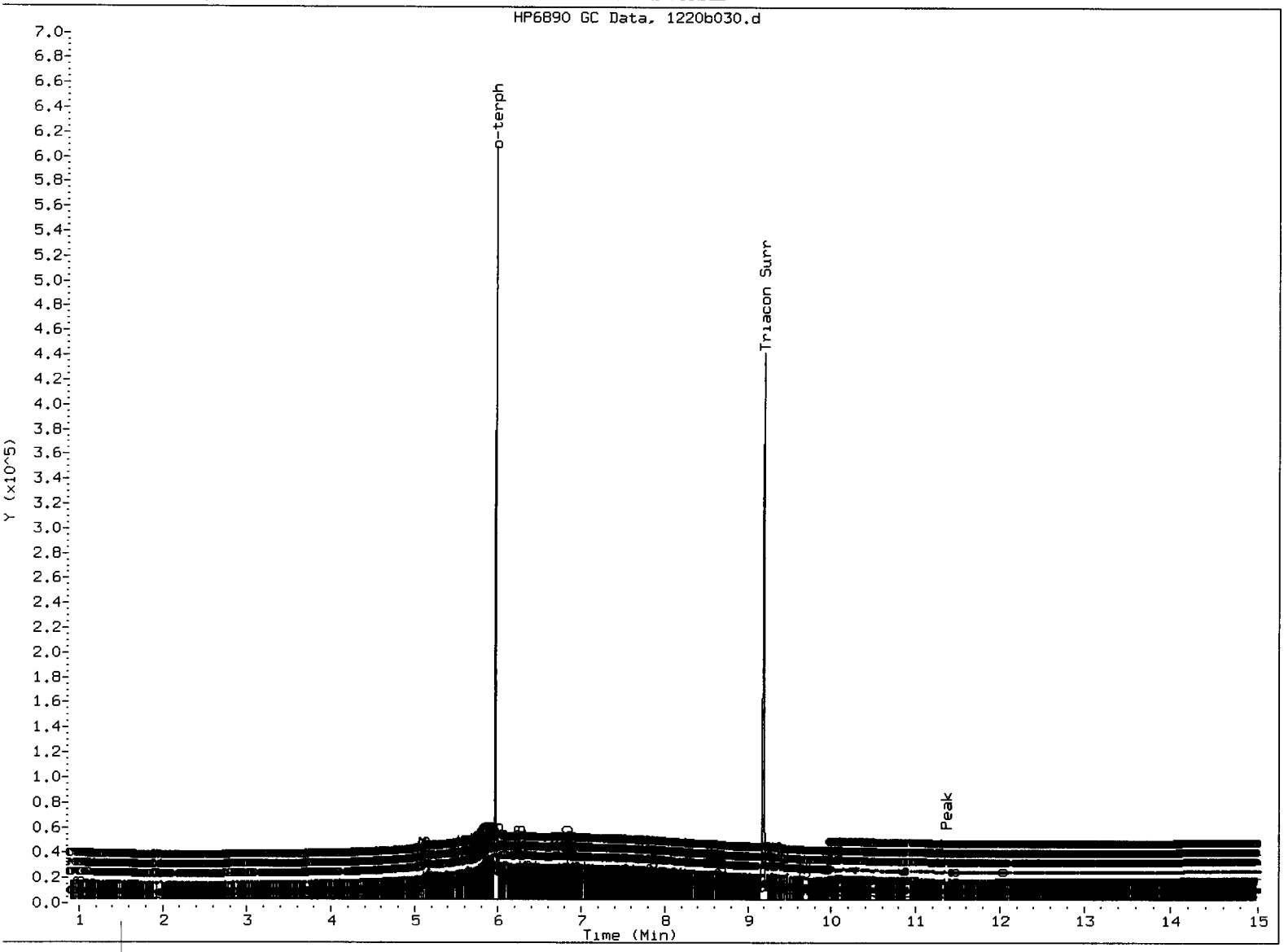
Column diameter: 0.25

ZM93 : 99935



FID:3B-2C/RTX-1 ZM93C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: SW Date: 12/22/14

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

Data Release Authorized:
Reported: 12/04/14
Date Received: 12/02/14
Page 1 of 1

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-1 ZM93A 14-26123	12/02/14	Water	12/02/14 120214#1	0.010	< 0.010 U
MW-4 ZM93B 14-26124	12/02/14	Water	12/02/14 120214#1	0.010	< 0.010 U
MW-2 ZM93C 14-26125	12/02/14	Water	12/02/14 120214#1	0.010	< 0.010 U

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

ZM93:00037

METHOD BLANK RESULTS-CONVENTIONALS
ZM93-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/04/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	12/02/14 17:40	mg/L	< 0.010 U

ZM93 : 00038

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZM93-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/04/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	12/02/14 17:40	mg/L	0.637	0.630	101.1%

REPLICATE RESULTS-CONVENTIONALS
ZM93-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/04/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZM93A Client ID: MW-1					
Hexavalent Chromium	12/02/14	mg/L	< 0.010	< 0.010	NA

ZM93 : 00014

MS/MSD RESULTS-CONVENTIONALS
ZM93-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/04/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZM93A Client ID: MW-1						
Hexavalent Chromium	12/02/14	mg/L	< 0.010	0.059	0.063	93.7%

ZM93 · 00001

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-1
SAMPLE

Lab Sample ID: ZM93A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/04/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/04/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/04/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/04/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-1
DUPLICATE

Lab Sample ID: ZM93A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.005 U	0.005 U	0.0%	+/- 0.005	L
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-1**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: ZM93A
LIMS ID: 14-26123
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.05	2.00	102%	
Chromium	6010C	0.005 U	0.500	0.500	100%	
Lead	6010C	0.02 U	2.00	2.00	100%	
Selenium	6010C	0.05 U	2.00	2.00	100%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ZM93 · 000044

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-4
SAMPLE

Lab Sample ID: ZM93B
LIMS ID: 14-26124
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/04/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/04/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/04/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/04/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ZM93 : 00015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-2
SAMPLE

Lab Sample ID: ZM93C
LIMS ID: 14-26125
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/02/14
Date Received: 12/02/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/04/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/04/14	6010C	12/08/14	**7440-47-3**	**Chromium**	0.005	**0.011**	
3010A	12/04/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/04/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ZM93 : 00015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ZM93MB
LIMS ID: 14-26124
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/04/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/04/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/04/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/04/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: ZM93LCS
LIMS ID: 14-26124
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZM93-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.05	2.00	102%	
Chromium	6010C	0.529	0.500	106%	
Lead	6010C	2.09	2.00	104%	
Selenium	6010C	2.04	2.00	102%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ZM93 · 0808W

Analytical Resources, Incorporated
Analytical Chemists and Consultants

23 December 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: ZN05

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received fine water samples and one trip blank on December 3, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for two compounds were not within control limits for the CCALs that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-8. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: ZN05

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: ZN05 YI18	Turn-around Requested:	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: 253-835-6400	Date: 12/3/14	Ice Present?
Client Contact: Jessica Favagelli		No. of Coolers:	Cooler Temps: 5.3
Client Project Name: Precision Engineering			
Client Project #: 1396024-00	Samplers: DKR		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	NWTPH-Dx	Metals	VOCs	Cr VI					Notes/Comments
					Analysis Requested								Metals: Cr, Pb, As, +Se
MW-8	12/3/14	1010	GW	6	X	X	X	X					slightly effervescent
MW-9	12/3/14	1140	GW	6	X	X	X	X					
MW-10	12/3/14	1340	GW	6	X	X	X	X					
MW-7	12/3/14	1540	GW	6	X	X	X	X					
MW-6	12/3/14	1630	GW	6	X	X	X	X					Very effervescent. No HCl in VOC
TRIP Blank	12/3/14	-	-	1			X						

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by: (Signature)	Received by (Signature)
	Printed Name: Diane Rauch	Printed Name: Jayler Stratton	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 12/3/14 1725	Date & Time: 12-3-14 1725	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: ICSC

Project Name: Precision Engineering

COC No(s): (NA)

Delivered by. Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: ZNQ4 ZNQ5

Tracking No: (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 5.3

Time: 1725

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90879512

Cooler Accepted by: TS Date: 12-3-14 Time: 1725

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	(Bubble Wrap)	(Wet Ice) Gel Packs	(Baggies) (Foam Block) Paper Other:
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	11/23/14	

Was Sample Split by ARI : (NA) YES Date/Time: Equipment: Split by:

Samples Logged by: AV Date: 12/4/14 Time: 1130

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

MW-6 = 2 HS ~~Each Sample has 5 containers, 2-40ml vials, 2-500ml HS, 1-500ml HDPE~~ AV 12/4/14

By: AV Date: 12/4/14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)	
Peabubbles → "pb" (2 to < 4 mm)	
Large → "lg" (4 to < 6 mm)	
Headspace → "hs" (> 6 mm)	

PRESERVATION VERIFICATION 12/04/14
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ZN05**

Inquiry Number: NONE
Analysis Requested: 12/04/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 12/03/14

Project #: 1396024.00
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-26227 **ZN05A**	MW-8						TOT Pass															
14-26228 **ZN05B**	MW-9						TOT Pass															
14-26229 **ZN05C**	MW-10						TOT Fail															
14-26230 **ZN05D**	MW-7						TOT Pass															
14-26231 **ZN05E**	MW-6						TOT Fail															

*ZN05E - preservation is weak

ZN05 15396024

Checked By AV Date 12/4/14

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZN05
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024.00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-8	ZN05A	14-26227	Water	12/03/14 10:10	12/03/14 17:25
2.	MW-9	ZN05B	14-26228	Water	12/03/14 11:40	12/03/14 17:25
3.	MW-10	ZN05C	14-26229	Water	12/03/14 13:40	12/03/14 17:25
4.	MW-7	ZN05D	14-26230	Water	12/03/14 15:40	12/03/14 17:25
5.	MW-6	ZN05E	14-26231	Water	12/03/14 16:30	12/03/14 17:25
6.	TRIP BLANK	ZN05F	14-26232	Water	12/03/14	12/03/14 17:25

ZN05:00005

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ZN05 · 00006

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

ZNAS : 00007

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ZN05 00008

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-8**
 SAMPLE

Lab Sample ID: ZN05A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 18:42

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-8**
 SAMPLE

Lab Sample ID: ZN05A
LIMS ID: 14-26227
Matrix: Water
Date Analyzed: 12/12/14 18:42

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	94.8%
d8-Toluene	98.5%
Bromofluorobenzene	94.3%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-9**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZN05B
LIMS ID: 14-26228
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 19:38

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-9**
 SAMPLE

Lab Sample ID: ZN05B
LIMS ID: 14-26228
Matrix: Water
Date Analyzed: 12/12/14 19:38

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.7%
d8-Toluene	95.6%
Bromofluorobenzene	97.0%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-10**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZN05C
LIMS ID: 14-26229
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 20:04

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-10**
 SAMPLE

Lab Sample ID: ZN05C
LIMS ID: 14-26229
Matrix: Water
Date Analyzed: 12/12/14 20:04

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	95.5%
Bromofluorobenzene	97.1%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-7**
 SAMPLE

Lab Sample ID: ZN05D
LIMS ID: 14-26230
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 20:31

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-7**
 SAMPLE

Lab Sample ID: ZN05D
LIMS ID: 14-26230
Matrix: Water
Date Analyzed: 12/12/14 20:31

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	95.5%
Bromofluorobenzene	95.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-6**
 SAMPLE

Lab Sample ID: ZN05E
LIMS ID: 14-26231
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 19:11

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-6**
 SAMPLE

Lab Sample ID: ZN05E
LIMS ID: 14-26231
Matrix: Water
Date Analyzed: 12/12/14 19:11

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.4%
d8-Toluene	97.0%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK SAMPLE**

Lab Sample ID: ZN05F
LIMS ID: 14-26232
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering 1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 20:57

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: ZN05F
LIMS ID: 14-26232
Matrix: Water
Date Analyzed: 12/12/14 20:57

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.3%
d8-Toluene	98.3%
Bromofluorobenzene	93.6%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-121214A**
 METHOD BLANK

Lab Sample ID: MB-121214A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/PAB
Date Analyzed: 12/12/14 17:13

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

Lab Sample ID: MB-121214A
LIMS ID: 14-26227
Matrix: Water
Date Analyzed: 12/12/14 17:13

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	95.8%
d8-Toluene	101%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-121214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-121214A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/15/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/PAB
LCSD: NT2/PAB
Date Analyzed LCS: 12/12/14 16:20
LCSD: 12/12/14 16:46

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.9	10.0	109%	11.0	10.0	110%	0.9%
Bromomethane	10.9	10.0	109%	11.8	10.0	118%	7.9%
Vinyl Chloride	10.5	10.0	105%	10.6	10.0	106%	0.9%
Chloroethane	11.0	10.0	110%	11.6	10.0	116%	5.3%
Methylene Chloride	11.4	10.0	114%	11.5	10.0	115%	0.9%
Acetone	50.8	50.0	102%	40.8	50.0	81.6%	21.8%
Carbon Disulfide	11.6	10.0	116%	11.7	10.0	117%	0.9%
1,1-Dichloroethene	11.6	10.0	116%	11.6	10.0	116%	0.0%
1,1-Dichloroethane	11.0	10.0	110%	11.1	10.0	111%	0.9%
trans-1,2-Dichloroethene	11.7	10.0	117%	12.0	10.0	120%	2.5%
cis-1,2-Dichloroethene	11.4	10.0	114%	11.4	10.0	114%	0.0%
Chloroform	10.9	10.0	109%	11.1	10.0	111%	1.8%
1,2-Dichloroethane	10.8	10.0	108%	11.0	10.0	110%	1.8%
2-Butanone	49.4	50.0	98.8%	51.8	50.0	104%	4.7%
1,1,1-Trichloroethane	11.3	10.0	113%	11.5	10.0	115%	1.8%
Carbon Tetrachloride	11.6	10.0	116%	12.1	10.0	121%	4.2%
Vinyl Acetate	8.50	10.0	85.0%	8.43	10.0	84.3%	0.8%
Bromodichloromethane	11.0	10.0	110%	11.2	10.0	112%	1.8%
1,2-Dichloropropane	11.3	10.0	113%	11.4	10.0	114%	0.9%
cis-1,3-Dichloropropene	9.40	10.0	94.0%	9.65	10.0	96.5%	2.6%
Trichloroethene	11.6	10.0	116%	11.8	10.0	118%	1.7%
Dibromochloromethane	8.92	10.0	89.2%	8.83	10.0	88.3%	1.0%
1,1,2-Trichloroethane	11.1	10.0	111%	11.6	10.0	116%	4.4%
Benzene	12.0	10.0	120%	12.0	10.0	120%	0.0%
trans-1,3-Dichloropropene	10.0	10.0	100%	10.2	10.0	102%	2.0%
2-Chloroethylvinylether	7.86	10.0	78.6%	8.47	10.0	84.7%	7.5%
Bromoform	8.71	10.0	87.1%	8.84	10.0	88.4%	1.5%
4-Methyl-2-Pentanone (MIBK)	52.8	50.0	106%	55.1	50.0	110%	4.3%
2-Hexanone	52.5	50.0	105%	55.2	50.0	110%	5.0%
Tetrachloroethene	11.5	10.0	115%	11.3	10.0	113%	1.8%
1,1,2,2-Tetrachloroethane	10.2	10.0	102%	10.7	10.0	107%	4.8%
Toluene	12.1	10.0	121%	11.7	10.0	117%	3.4%
Chlorobenzene	11.7	10.0	117%	11.6	10.0	116%	0.9%
Ethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
Styrene	10.5	10.0	105%	10.1	10.0	101%	3.9%
Trichlorofluoromethane	6.64 Q	10.0	66.4%	7.48 Q	10.0	74.8%	11.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	12.2	10.0	122%	12.1	10.0	121%	0.8%
m,p-Xylene	23.3	20.0	116%	22.9	20.0	114%	1.7%

Lab Sample ID: LCS-121214A
LIMS ID: 14-26227
Matrix: Water

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.6	10.0	106%	10.5	10.0	105%	0.9%
1,2-Dichlorobenzene	11.4	10.0	114%	11.3	10.0	113%	0.9%
1,3-Dichlorobenzene	11.8	10.0	118%	11.6	10.0	116%	1.7%
1,4-Dichlorobenzene	11.7	10.0	117%	11.3	10.0	113%	3.5%
Acrolein	48.1 Q	50.0	96.2%	46.8 Q	50.0	93.6%	2.7%
Iodomethane	11.4	10.0	114%	11.5	10.0	115%	0.9%
Bromoethane	11.6	10.0	116%	11.6	10.0	116%	0.0%
Acrylonitrile	8.87	10.0	88.7%	8.53	10.0	85.3%	3.9%
1,1-Dichloropropene	12.0	10.0	120%	12.1	10.0	121%	0.8%
Dibromomethane	11.1	10.0	111%	11.6	10.0	116%	4.4%
1,1,1,2-Tetrachloroethane	11.6	10.0	116%	11.6	10.0	116%	0.0%
1,2-Dibromo-3-chloropropane	8.28	10.0	82.8%	8.41	10.0	84.1%	1.6%
1,2,3-Trichloropropane	11.1	10.0	111%	11.0	10.0	110%	0.9%
trans-1,4-Dichloro-2-butene	8.75	10.0	87.5%	8.59	10.0	85.9%	1.8%
1,3,5-Trimethylbenzene	11.7	10.0	117%	11.4	10.0	114%	2.6%
1,2,4-Trimethylbenzene	11.4	10.0	114%	11.2	10.0	112%	1.8%
Hexachlorobutadiene	13.3	10.0	133%	12.8	10.0	128%	3.8%
1,2-Dibromoethane	11.6	10.0	116%	11.7	10.0	117%	0.9%
Bromochloromethane	10.4	10.0	104%	10.6	10.0	106%	1.9%
2,2-Dichloropropane	11.7	10.0	117%	12.1	10.0	121%	3.4%
1,3-Dichloropropane	9.31	10.0	93.1%	9.54	10.0	95.4%	2.4%
Isopropylbenzene	11.6	10.0	116%	11.2	10.0	112%	3.5%
n-Propylbenzene	12.6	10.0	126%	12.2	10.0	122%	3.2%
Bromobenzene	11.5	10.0	115%	11.5	10.0	115%	0.0%
2-Chlorotoluene	11.9	10.0	119%	11.7	10.0	117%	1.7%
4-Chlorotoluene	10.9	10.0	109%	10.7	10.0	107%	1.9%
tert-Butylbenzene	10.2	10.0	102%	9.80	10.0	98.0%	4.0%
sec-Butylbenzene	11.9	10.0	119%	11.6	10.0	116%	2.6%
4-Isopropyltoluene	11.5	10.0	115%	11.2	10.0	112%	2.6%
n-Butylbenzene	11.8	10.0	118%	11.3	10.0	113%	4.3%
1,2,4-Trichlorobenzene	9.52	10.0	95.2%	9.53	10.0	95.3%	0.1%
Naphthalene	8.78	10.0	87.8%	9.41	10.0	94.1%	6.9%
1,2,3-Trichlorobenzene	10.0	10.0	100%	10.4	10.0	104%	3.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.7%	95.1%
d8-Toluene	102%	103%
Bromofluorobenzene	102%	101%
d4-1,2-Dichlorobenzene	99.0%	99.7%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-121214A	Method Blank	10	95.8%	101%	98.2%	102%	0
LCS-121214A	Lab Control	10	95.7%	102%	102%	99.0%	0
LCSD-121214A	Lab Control Dup	10	95.1%	103%	101%	99.7%	0
ZN05A	MW-8	10	94.8%	98.5%	94.3%	101%	0
ZN05B	MW-9	10	99.7%	95.6%	97.0%	104%	0
ZN05C	MW-10	10	101%	95.5%	97.1%	104%	0
ZN05D	MW-7	10	103%	95.5%	95.7%	103%	0
ZN05E	MW-6	10	97.4%	97.0%	96.3%	102%	0
ZN05F	TRIP BLANK	10	98.3%	98.3%	93.6%	104%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-26227 to 14-26232

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 12-DEC-2014 13:15
Lab File ID: 1001212.d Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Analysis Type: WATER Init. Cal. Times: 11:27 14:35
Lab Sample ID: IC1212 Quant Type: ISTD
Method: /chem3/nt2.i/20141212A.b/82601204L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	10.89761	10.00000	0.65302	0.010	8.97614	20.00000	Linear	
2 Chloromethane	1.15723	1.23809	1.23809	0.100	6.98655	20.00000	Averaged	
3 Vinyl Chloride	10.02131	10.00000	1.04925	0.100	0.21307	20.00000	Linear	
4 Bromomethane	11.35135	10.00000	0.40191	0.100	13.51353	20.00000	Linear	
5 Chloroethane	0.50662	0.55409	0.55409	0.010	9.37141	20.00000	Averaged	
6 Trichlorofluoromethane	6.82889	10.00000	0.68509	0.010	-31.71111	20.00000	Quadratic	<-
7 1,1-Dichloroethene	1.23768	1.43493	1.43493	0.100	15.93665	20.00000	Averaged	
8 Carbon Disulfide	1.95767	2.22310	2.22310	0.010	13.55829	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	11.90312	10.00000	0.62811	0.010	19.03121	20.00000	Linear	
10 Iodomethane	0.83379	0.91849	0.91849	0.010	10.15909	20.00000	Averaged	
11 Bromoethane	0.46860	0.50765	0.50765	0.100	8.33323	20.00000	Averaged	
12 Acrolein	36.88643	50.00000	0.08333	0.000	-26.22715	20.00000	Linear	<-
13 Methylene Chloride	11.14510	10.00000	0.76840	0.010	11.45102	20.00000	Linear	
14 Acetone	49.63017	50.00000	0.18156	0.001	-0.73965	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.63660	0.71451	0.71451	0.010	12.23853	20.00000	Averaged	
17 Methyl tert butyl ether	9.99525	10.00000	1.74349	0.100	-0.04755	20.00000	Linear	
18 1,1-Dichloroethane	1.41762	1.55890	1.55890	0.200	9.96611	20.00000	Averaged	
19 Acrylonitrile	8.65559	10.00000	0.22611	0.001	-13.44405	20.00000	Linear	
20 Vinyl Acetate	9.09624	10.00000	0.25119	0.010	-9.03756	20.00000	Linear	
22 Cis-1,2-Dichloroethene	0.65950	0.73151	0.73151	0.010	10.91881	20.00000	Averaged	
23 2,2-Dichloropropane	0.62625	0.69693	0.69693	0.010	11.28616	20.00000	Averaged	
24 Bromochloromethane	10.49562	10.00000	0.29924	0.050	4.95617	20.00000	Linear	
25 Chloroform	1.04535	1.15142	1.15142	0.200	10.14639	20.00000	Averaged	
26 Carbon Tetrachloride	0.39708	0.45891	0.45891	0.100	15.57230	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.60902	0.59544	0.59544	0.100	-2.22890	20.00000	Averaged	
28 1,1,1-Trichloroethane	0.88043	0.98257	0.98257	0.100	11.60052	20.00000	Averaged	
29 2-Butanone	0.26700	0.28891	0.28891	0.001	8.20608	20.00000	Averaged	
30 1,1-Dichloropropene	0.45272	0.52873	0.52873	0.010	16.78821	20.00000	Averaged	
31 Benzene	1.28098	1.49709	1.49709	0.500	16.87098	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.80010	0.79963	0.79963	0.010	-0.05842	20.00000	Averaged	
34 1,2-Dichloroethane	0.48029	0.53743	0.53743	0.100	11.89553	20.00000	Averaged	
36 Trichloroethene	0.29273	0.33215	0.33215	0.100	13.46674	20.00000	Averaged	
38 Dibromomethane	0.15767	0.17523	0.17523	0.010	11.13768	20.00000	Averaged	
39 1,2-Dichloropropane	0.37318	0.41178	0.41178	0.100	10.34514	20.00000	Averaged	
40 Bromodichloromethane	0.36763	0.40845	0.40845	0.100	11.10371	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 12-DEC-2014 13:15
Lab File ID: 1001212.d Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Analysis Type: WATER Init. Cal. Times: 11:27 14:35
Lab Sample ID: IC1212 Quant Type: ISTD
Method: /chem3/nt2.i/20141212A.b/82601204L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 2-Chloroethyl Vinyl Ether	8.12070	10.00000	0.13643	0.000	-18.79295	20.00000	Linear
42 Cis 1,3-dichloropropene	9.44155	10.00000	0.46684	0.200	-5.58453	20.00000	Linear
$ 43 d8-Toluene	1.20339	1.21597	1.21597	0.010	1.04549	20.00000	Averaged
44 Toluene	0.72315	0.82817	0.82817	0.400	14.52151	20.00000	Averaged
45 4-Methyl-2-Pentanone	53.71561	50.00000	0.14369	0.000	7.43122	20.00000	Linear
46 Tetrachloroethene	0.30288	0.34043	0.34043	0.200	12.39662	20.00000	Averaged
47 Trans 1,3-Dichloropropene	10.12291	10.00000	0.40422	0.010	1.22908	20.00000	Linear
48 1,1,2-Trichloroethane	0.20101	0.22965	0.22965	0.100	14.24985	20.00000	Averaged
49 Chlorodibromomethane	9.23538	10.00000	0.27751	0.100	-7.64625	20.00000	Linear
50 1,3-Dichloropropane	9.64350	10.00000	0.48223	0.100	-3.56499	20.00000	Linear
51 1,2-Dibromoethane	0.18913	0.21390	0.21390	0.010	13.10160	20.00000	Averaged
52 2-Hexanone	55.09107	50.00000	0.26988	0.010	10.18214	20.00000	Linear
54 Chlorobenzene	0.82544	0.95116	0.95116	0.500	15.23010	20.00000	Averaged
55 Ethyl Benzene	10.34162	10.00000	0.52904	0.100	3.41622	20.00000	Linear
56 1,1,1,2-Tetrachloroethane	0.30314	0.34363	0.34363	0.010	13.35829	20.00000	Averaged
57 m,p-xylene	22.30510	20.00000	0.65895	0.300	11.52552	20.00000	Linear
58 o-Xylene	9.96503	10.00000	0.66567	0.300	-0.34973	20.00000	Linear
59 Styrene	10.19344	10.00000	1.04649	0.300	1.93441	20.00000	Linear
60 Bromoform	8.87694	10.00000	0.28001	0.010	-11.23056	20.00000	Linear
61 Isopropyl Benzene	11.02140	10.00000	3.13715	0.010	10.21403	20.00000	Linear
$ 62 4-Bromofluorobenzene	0.56914	0.55871	0.55871	0.200	-1.83286	20.00000	Averaged
63 Bromobenzene	0.58201	0.64660	0.64660	0.010	11.09731	20.00000	Averaged
64 N-Propyl Benzene	3.01290	3.61140	3.61140	0.010	19.86466	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.61594	0.65116	0.65116	0.100	5.71781	20.00000	Averaged
66 2-Chloro Toluene	2.24766	2.60819	2.60819	0.010	16.03993	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	11.28076	10.00000	2.71137	0.010	12.80761	20.00000	Linear
68 1,2,3-Trichloropropane	0.17547	0.19549	0.19549	0.010	11.41140	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	8.97359	10.00000	0.24513	0.001	-10.26406	20.00000	Linear
70 4-Chloro Toluene	10.47153	10.00000	2.35571	0.010	4.71534	20.00000	Linear
71 T-Butyl Benzene	9.72040	10.00000	2.19717	0.010	-2.79596	20.00000	Linear
72 1,2,4-Trimethylbenzene	11.04911	10.00000	2.70894	0.010	10.49105	20.00000	Linear
73 S-Butyl Benzene	11.17174	10.00000	3.21703	0.010	11.71742	20.00000	Linear
74 4-Isopropyl Toluene	10.84384	10.00000	2.62982	0.010	8.43842	20.00000	Linear
75 1,3-Dichlorobenzene	1.21419	1.38832	1.38832	0.600	14.34115	20.00000	Averaged
77 1,4-Dichlorobenzene	1.25780	1.40487	1.40487	0.500	11.69272	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 12-DEC-2014 13:15
Lab File ID: 1001212.d Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Analysis Type: WATER Init. Cal. Times: 11:27 14:35
Lab Sample ID: IC1212 Quant Type: ISTD
Method: /chem3/nt2.i/20141212A.b/82601204L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	10.84745	10.00000	2.44870	0.010	8.47450	20.00000	Linear
$ 79 d4-1,2-Dichlorobenzene	0.92753	0.92456	0.92456	0.010	-0.31984	20.00000	Averaged
80 1,2-Dichlorobenzene	1.18729	1.33062	1.33062	0.400	12.07262	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	8.95316	10.00000	0.10783	0.010	-10.46840	20.00000	Linear
83 Hexachloro 1,3-Butadiene	0.27216	0.29938	0.29938	0.010	10.00161	20.00000	Averaged
84 1,2,4-Trichlorobenzene	9.30676	10.00000	0.65461	0.010	-6.93240	20.00000	Linear
85 Naphthalene	9.15929	10.00000	1.53827	0.010	-8.40709	20.00000	Linear
86 1,2,3-Trichlorobenzene	10.09835	10.00000	0.55776	0.010	0.98353	20.00000	Linear

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: ZN05-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024.00

Matrix: Water

Date Received: 12/03/14

Data Release Authorized:
Reported: 12/22/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-121014	Method Blank	12/10/14	12/20/14	1.00	Diesel Range	0.10	< 0.10 U
14-26227	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		78.0%
ZN05A	MW-8	12/10/14	12/20/14	1.00	**Diesel Range**	**0.10**	**0.42**
14-26227	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.24**
					o-Terphenyl		73.2%
ZN05B	MW-9	12/10/14	12/20/14	1.00	**Diesel Range**	**0.10**	**0.15**
14-26228	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		66.6%
ZN05C	MW-10	12/10/14	12/20/14	1.00	**Diesel Range**	**0.10**	**0.39**
14-26229	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.31**
					o-Terphenyl		74.2%
ZN05D	MW-7	12/10/14	12/21/14	1.00	**Diesel Range**	**0.10**	**0.17**
14-26230	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		68.1%
ZN05E	MW-6	12/10/14	12/21/14	1.00	**Diesel Range**	**0.10**	**0.77**
14-26231	HC ID: **DRO/RRO**		FID3B	1.0	**Motor Oil Range**	**0.20**	**0.79**
					o-Terphenyl		51.2%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ZN05 00029

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-121014
LCS/LCSD

Lab Sample ID: LCS-121014
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/22/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/10/14
Date Analyzed LCS: 12/20/14 19:30
LCSD: 12/20/14 19:55
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.12	3.00	70.7%	2.40	3.00	80.0%	12.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	67.5%	60.0%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: ZN05
Matrix: Water Project: Precision Engineering
Date Received: 12/03/14 1396024.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-26227-121014MB1	Method Blank	500 mL	1.00 mL	12/10/14
14-26227-121014LCS1	Lab Control	500 mL	1.00 mL	12/10/14
14-26227-121014LCSD1	Lab Control Dup	500 mL	1.00 mL	12/10/14
14-26227-ZN05A	MW-8	500 mL	1.00 mL	12/10/14
14-26228-ZN05B	MW-9	500 mL	1.00 mL	12/10/14
14-26229-ZN05C	MW-10	500 mL	1.00 mL	12/10/14
14-26230-ZN05D	MW-7	500 mL	1.00 mL	12/10/14
14-26231-ZN05E	MW-6	500 mL	1.00 mL	12/10/14

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client ID	OTER	TOT OUT
MB-121014	78.0%	0
LCS-121014	67.5%	0
LCSD-121014	60.0%	0
MW-8	73.2%	0
MW-9	66.6%	0
MW-10	74.2%	0
MW-7	68.1%	0
MW-6	51.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-26227 to 14-26231

Data File: /chem3/fid3b.i/20141220.b/1220b025.d

Date : 20-DEC-2014 19:30

Client ID: ZM93LCSW1

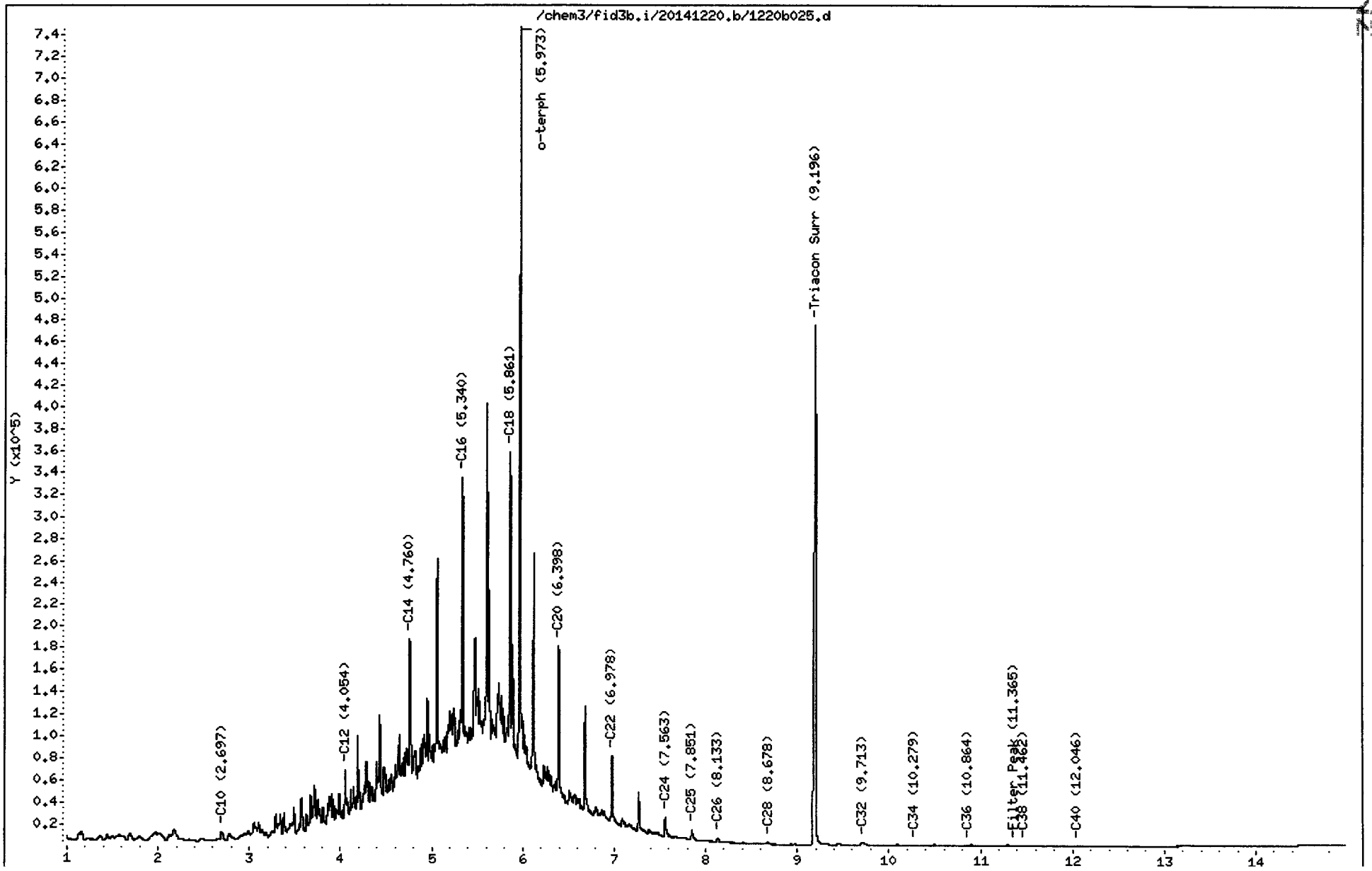
Sample Info: ZM93LCSW1

Instrument: fid3b.i

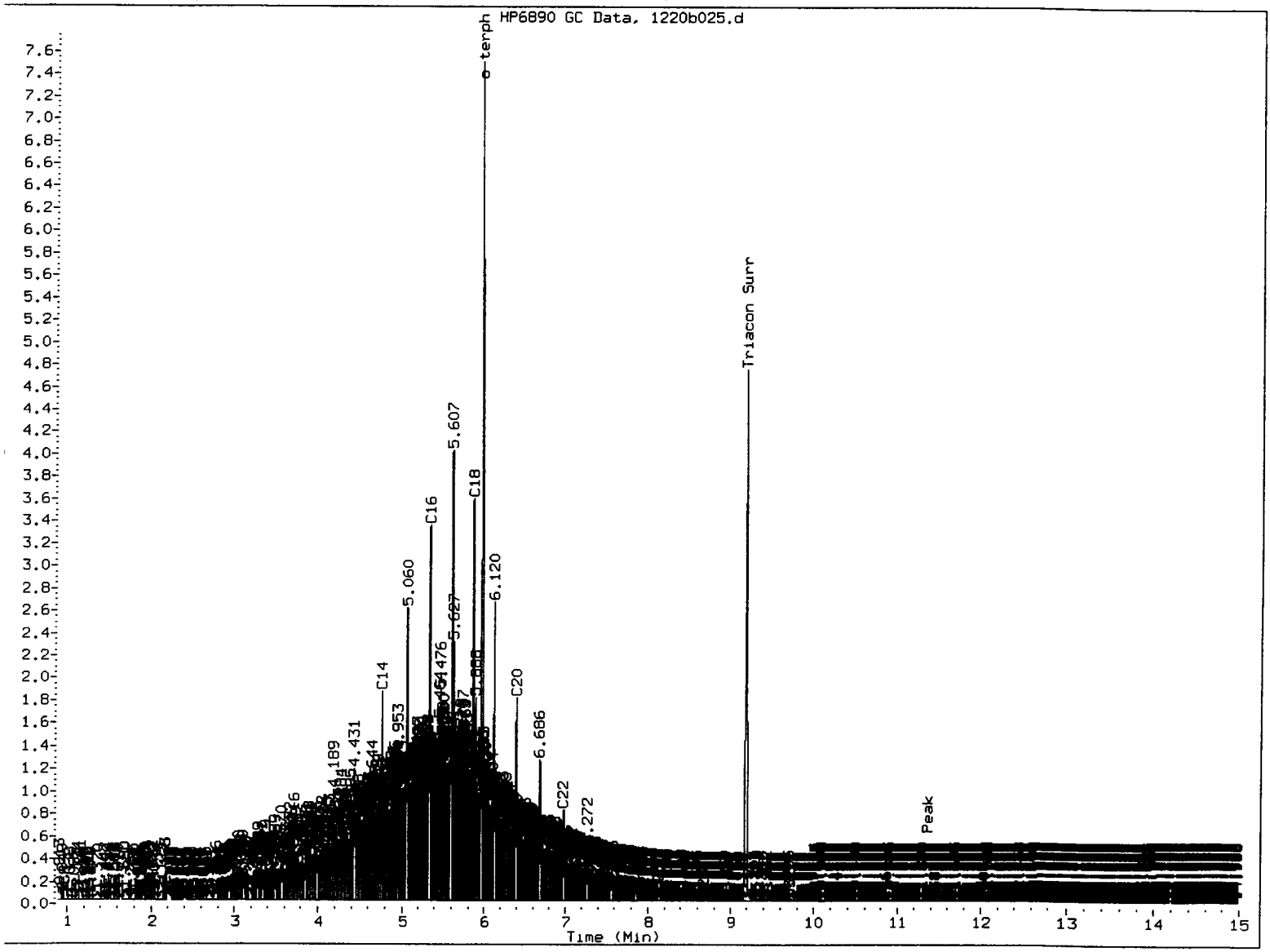
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:3B-2C/RTX-1 ZM93LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JCl Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b026.d

Date : 20-DEC-2014 19:55

Client ID: ZM93LCSDW1

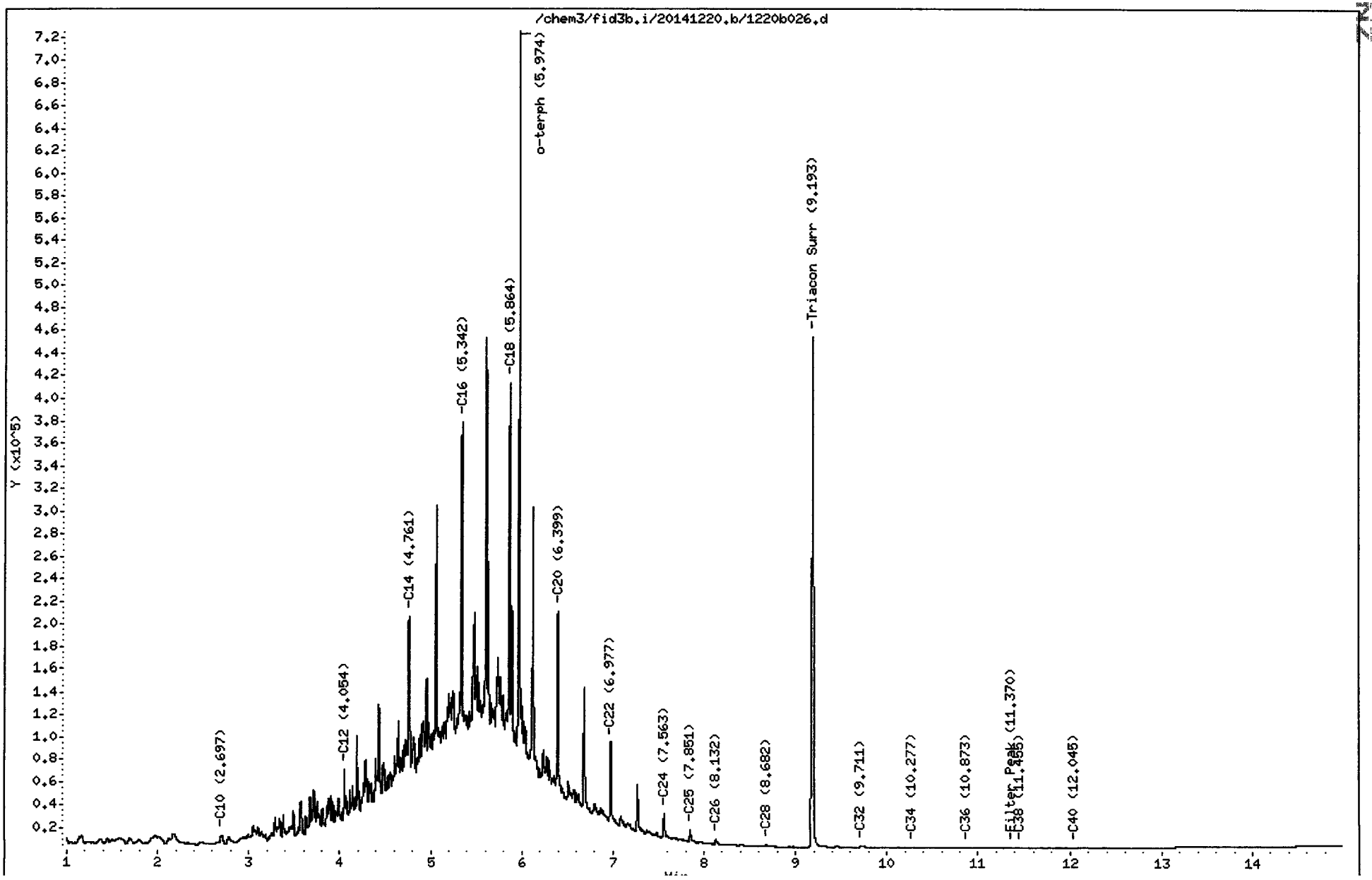
Sample Info: ZM93LCSDW1

Instrument: fid3b.i

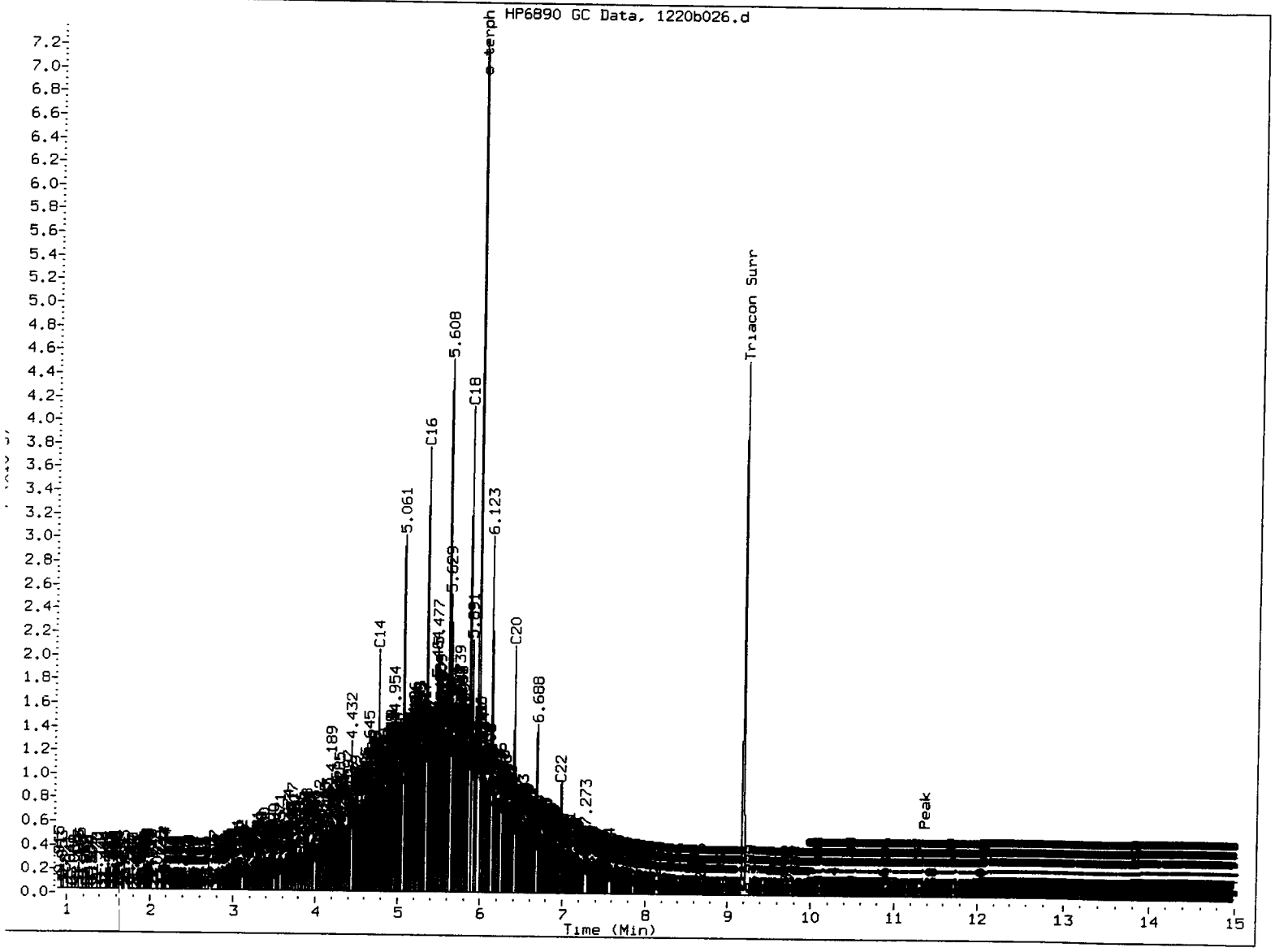
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:3B-2C/RTX-1 ZM93LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JV Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b024.d

Date : 20-DEC-2014 19:06

Client ID: ZM93MBW1

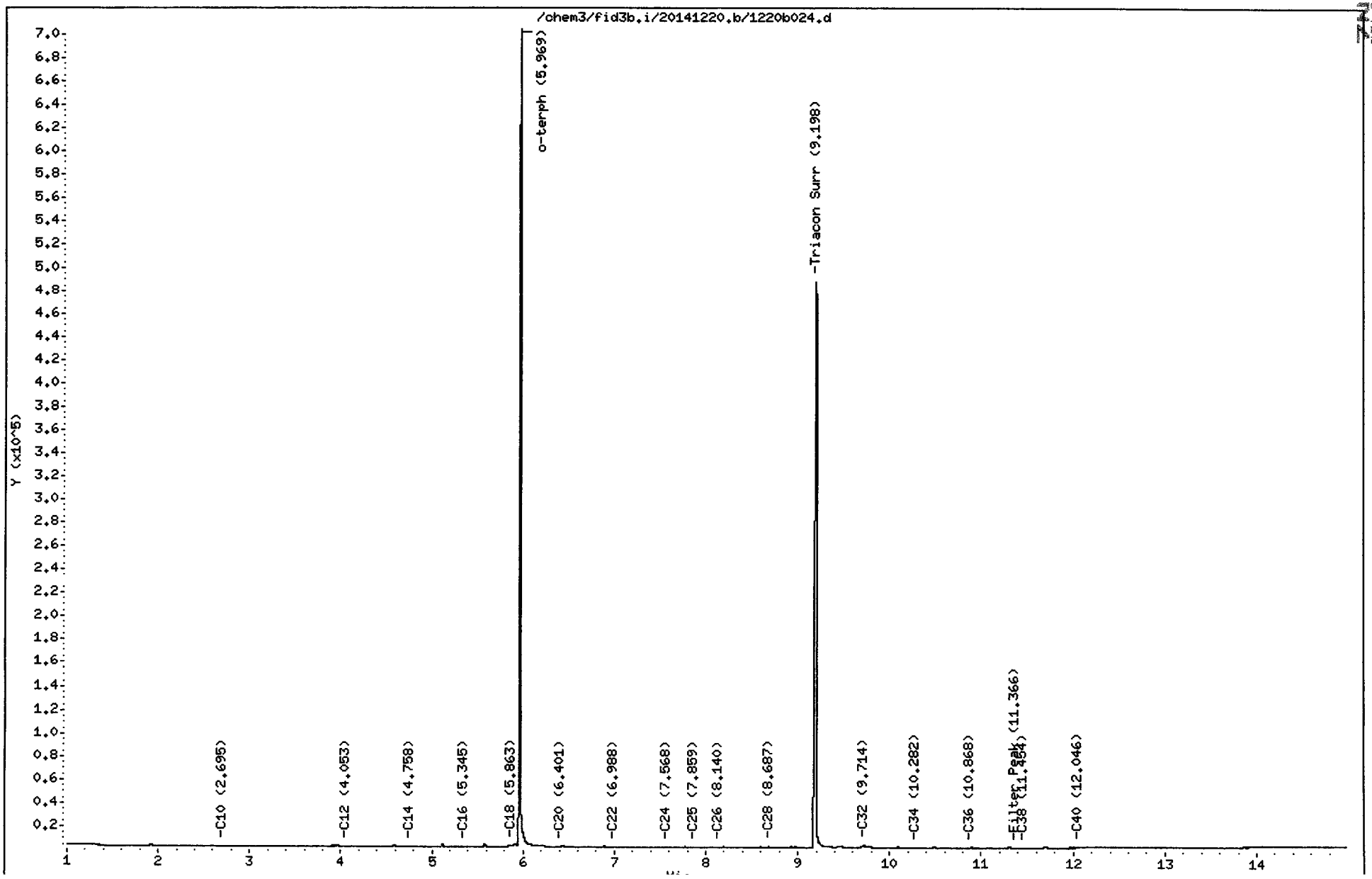
Sample Info: ZM93MBW1

Instrument: fid3b.i

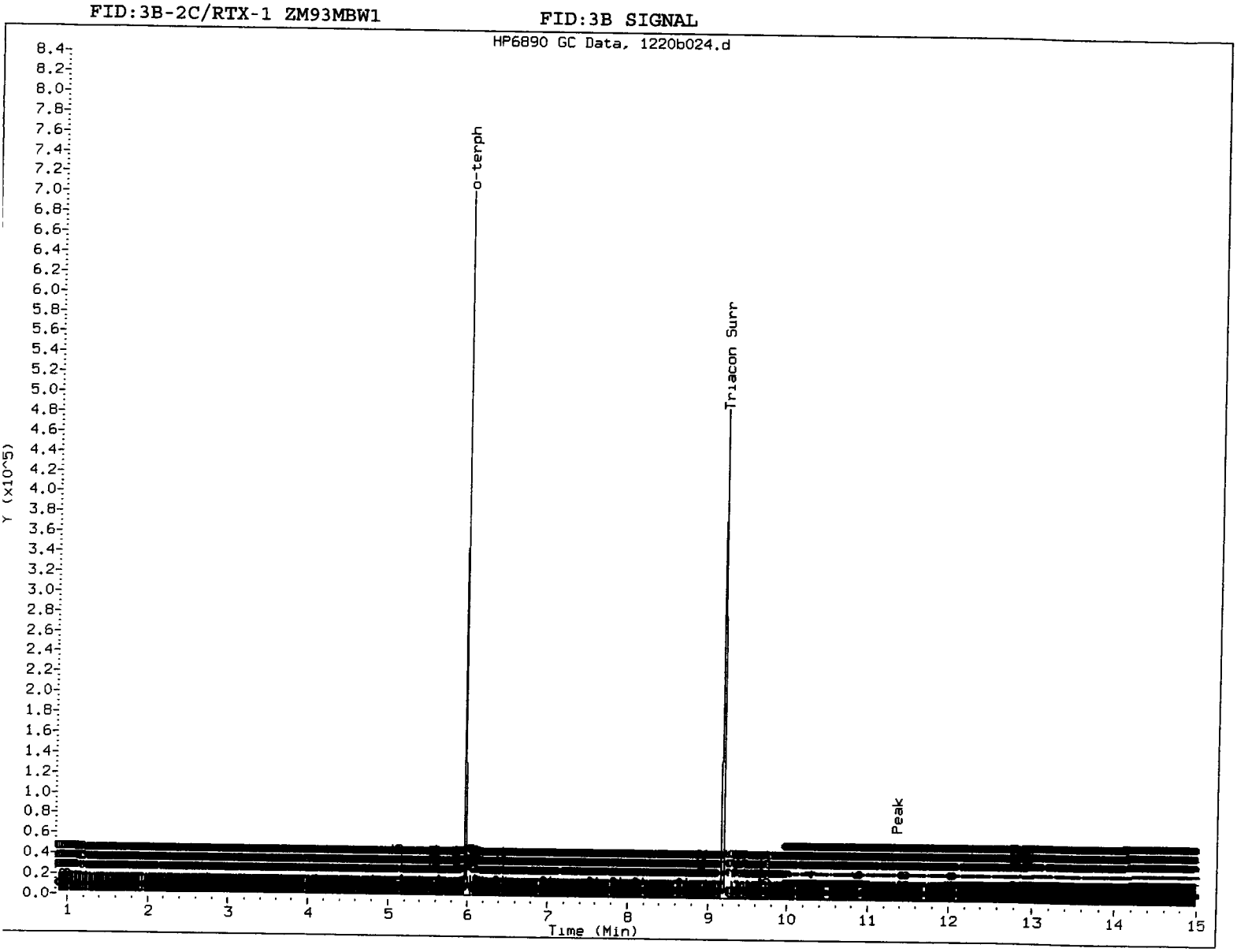
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:3B-2C/RTX-1 ZM93MBW1 FID:3B SIGNAL



MANUAL INTEGRATION

2. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b031.d

Date : 20-DEC-2014 21:58

Client ID: MW-8

Sample Info: ZN05A

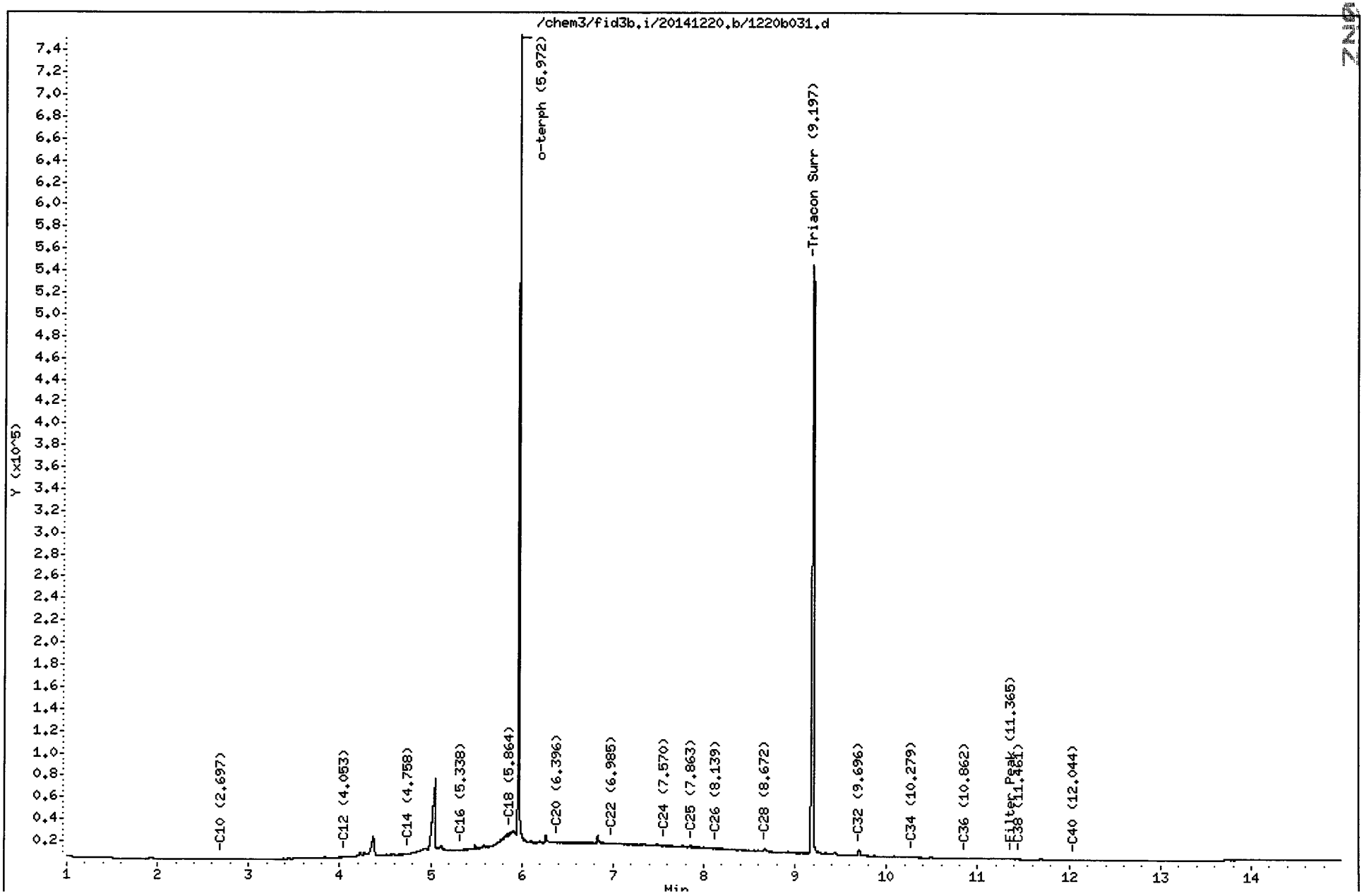
Column phase: RTX-1

Instrument: fid3b.i

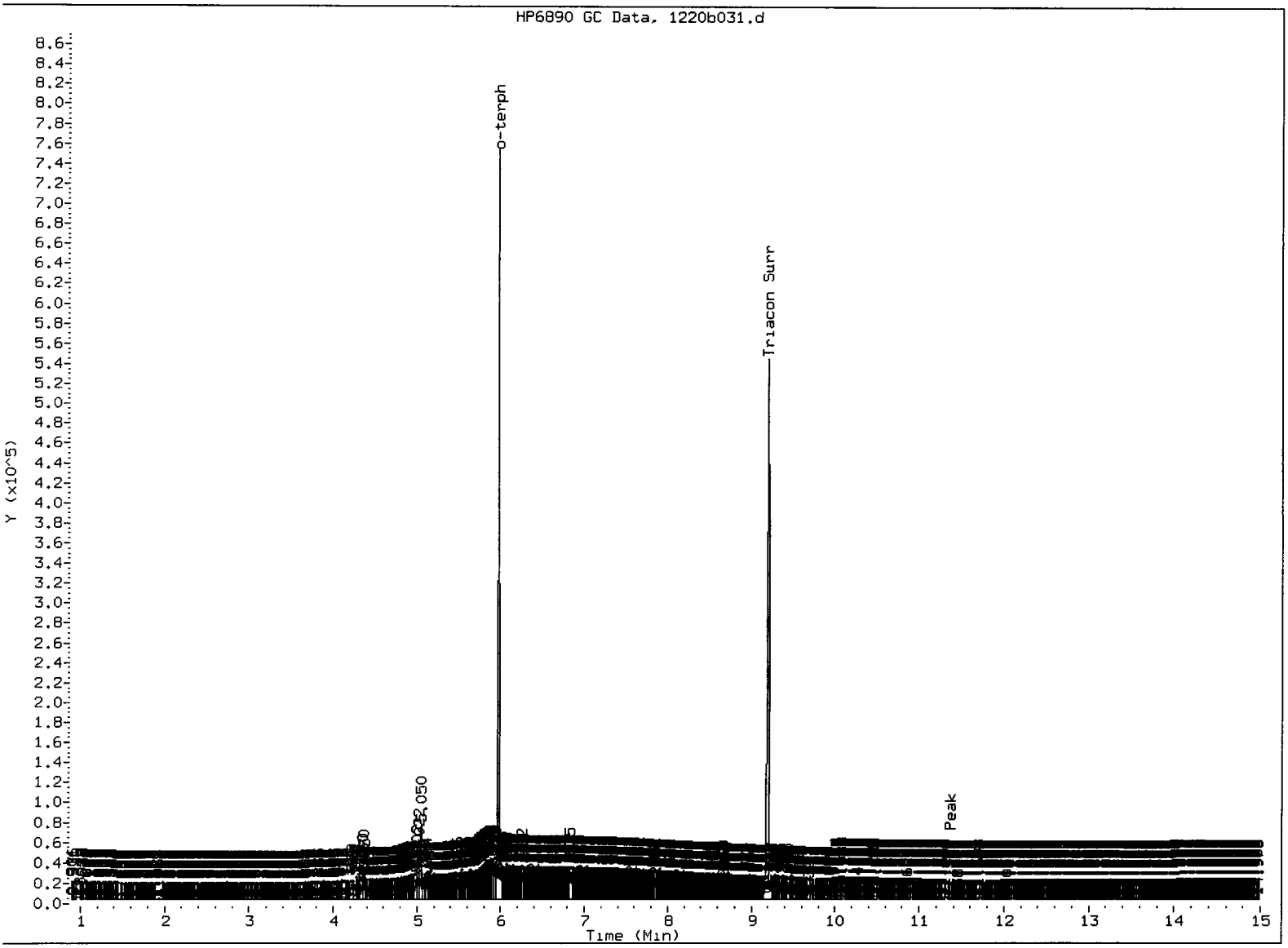
Operator: JW

Column diameter: 0.25

ZN05 : 08839



FID:3B-2C/RTX-1 ZN05A FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: RW Date: 12/22/14

ZN05 : aaaua

Data File: /chem3/fid3b.i/20141220.b/1220b034.d

Date : 20-DEC-2014 23:12

Client ID: MW-9

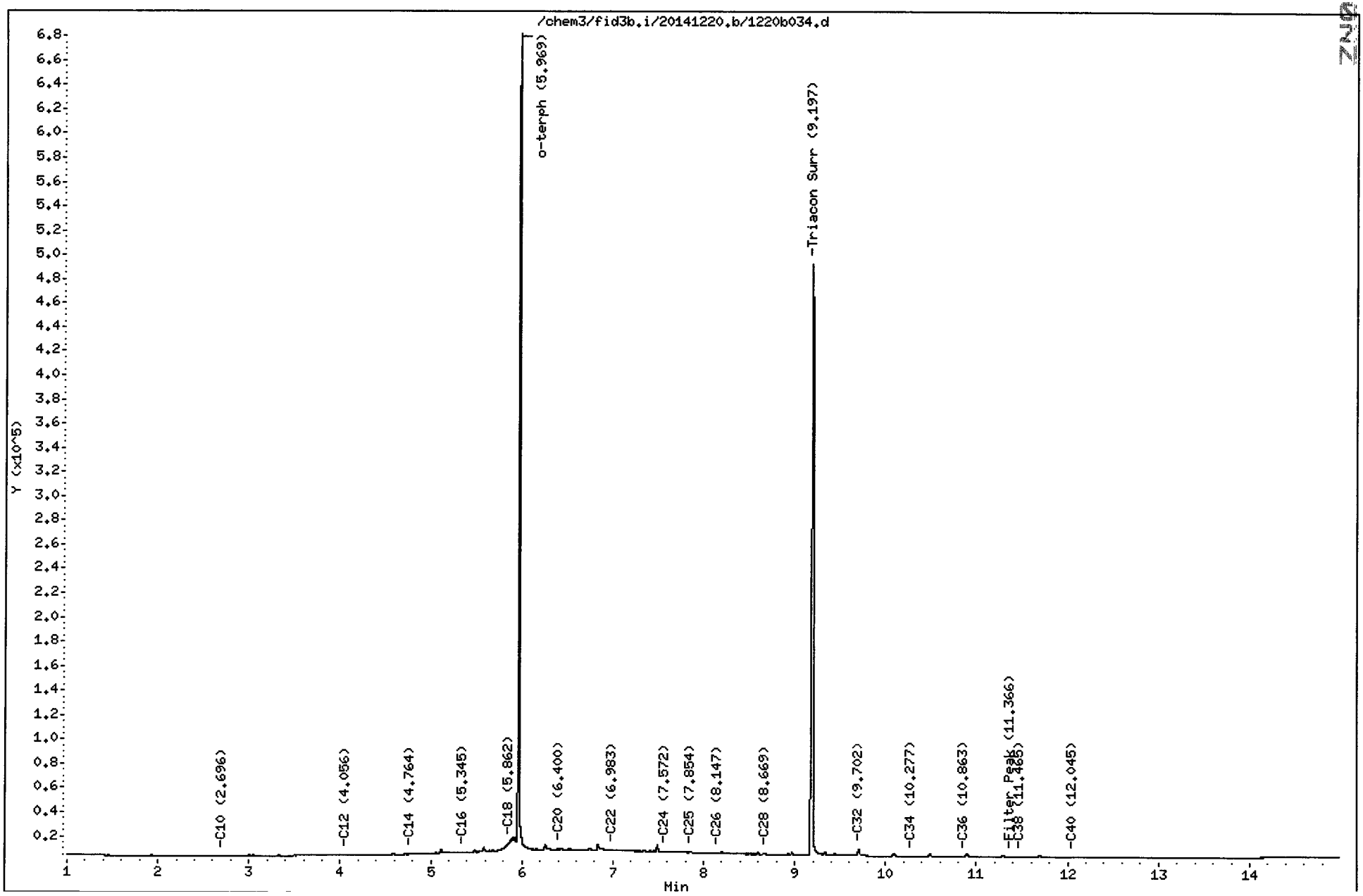
Sample Info: ZN05B

Column phase: RTX-1

Instrument: fid3b.i

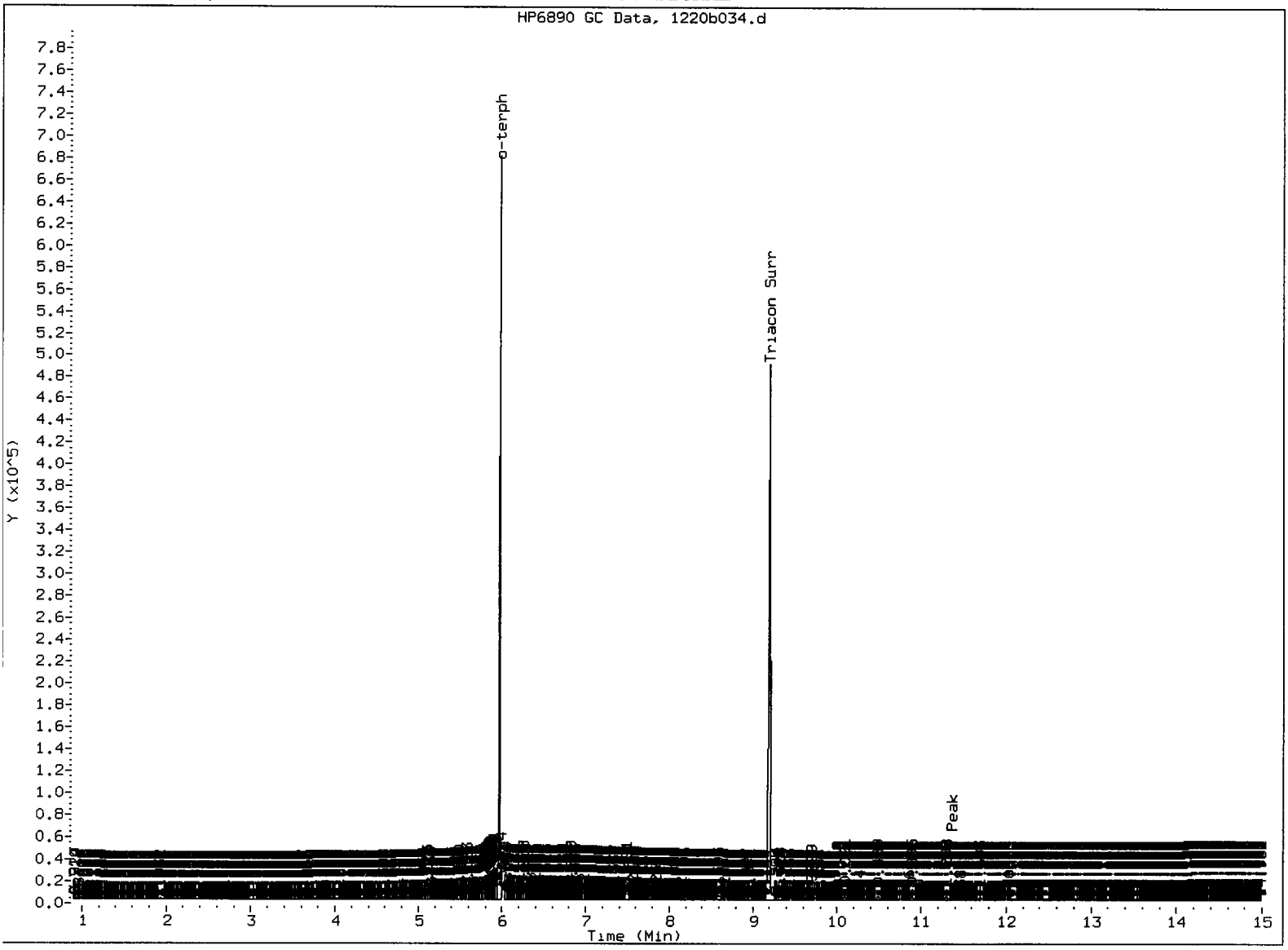
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 ZN05B

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JN Date: 12/22/11

Data File: /chem3/fid3b.i/20141220.b/1220b035.d

Date : 20-DEC-2014 23:36

Client ID: MW-10

Sample Info: ZN05C

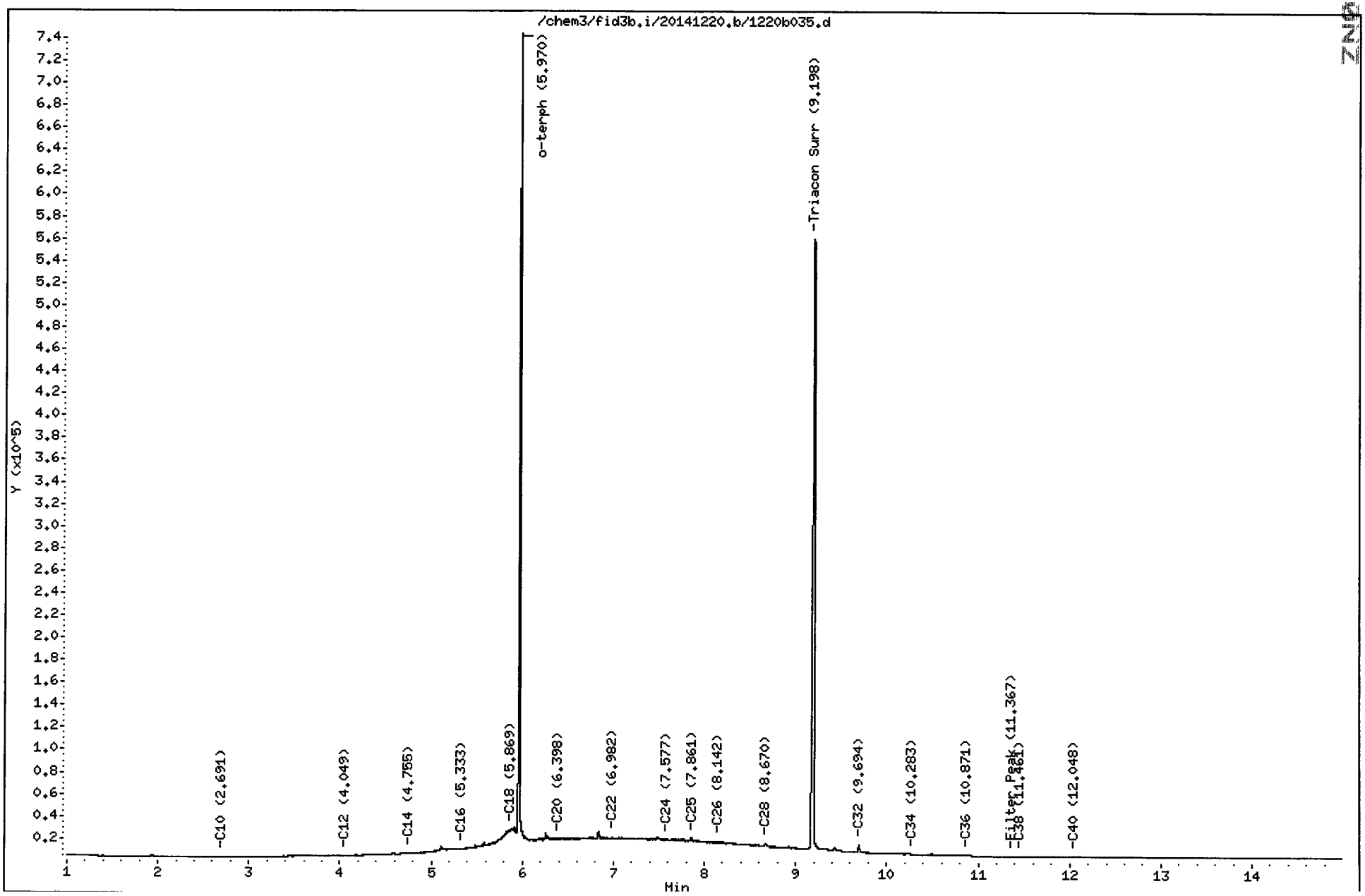
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

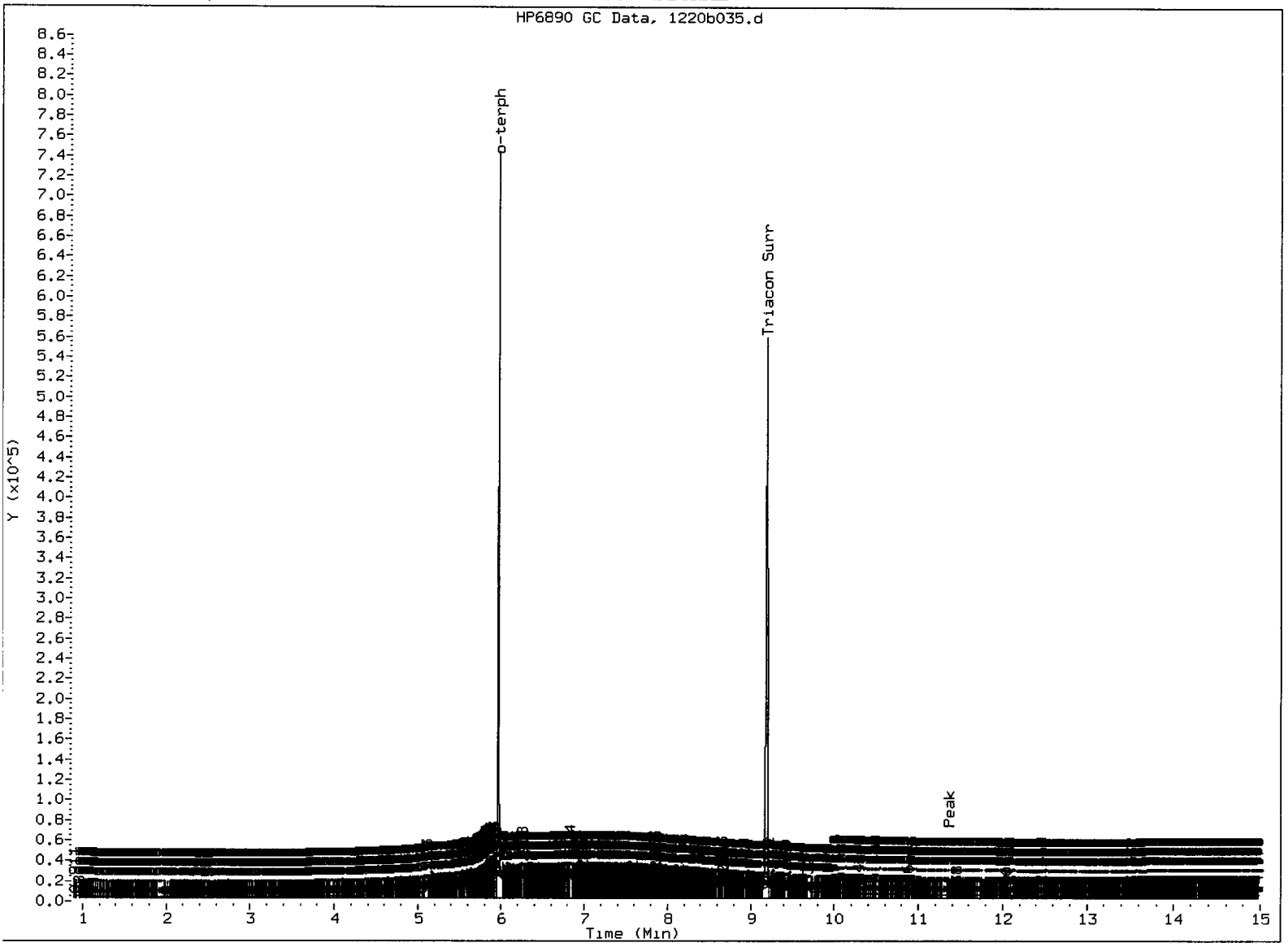
Column diameter: 0.25

ZN05C 20141220



FID:3B-2C/RTX-1 ZN05C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JW Date: 12/22/14

Data File: /chem3/fid3b.i/20141220.b/1220b036.d

Date : 21-DEC-2014 00:01

Client ID: MW-7

Sample Info: ZN05D

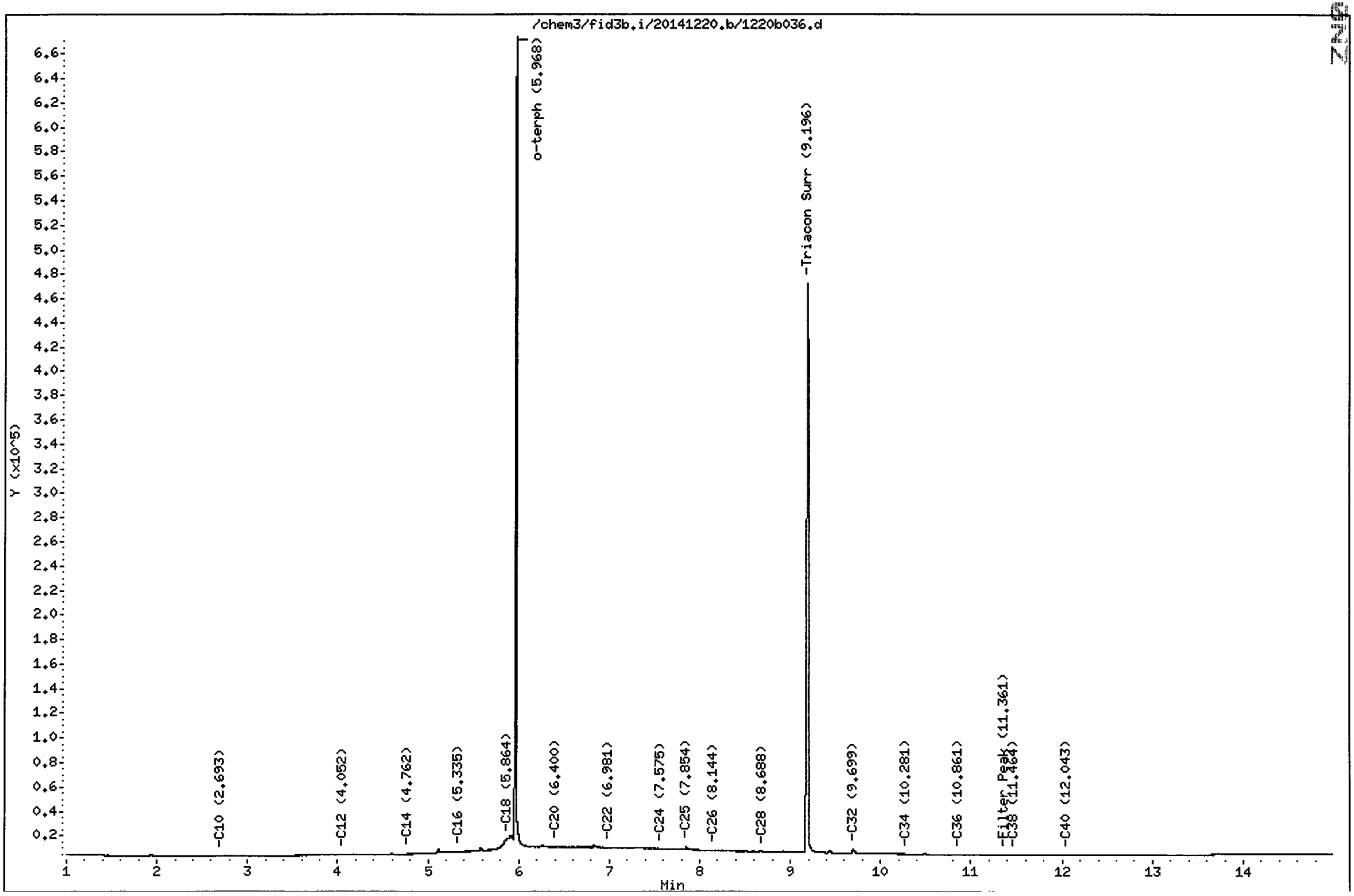
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

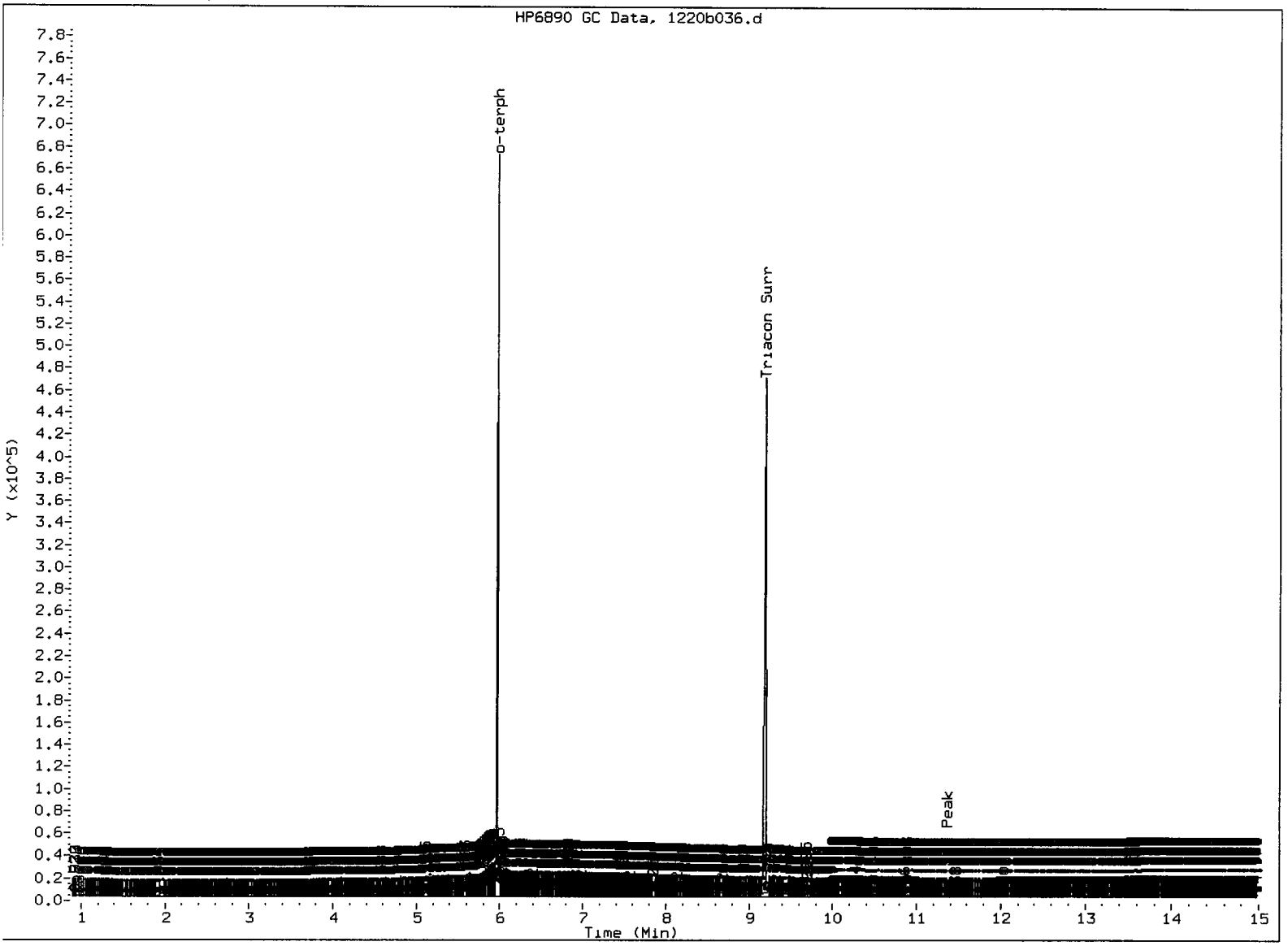
Column diameter: 0.25

ZN05 : 20015



FID:3B-2C/RTX-1 ZN05D

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JCl Date: 12/22/14

ZN05 8886US

Data File: /chem3/fid3b.i/20141220.b/1220b037.d

Date : 21-DEC-2014 00:26

Client ID: MW-6

Sample Info: ZN05E

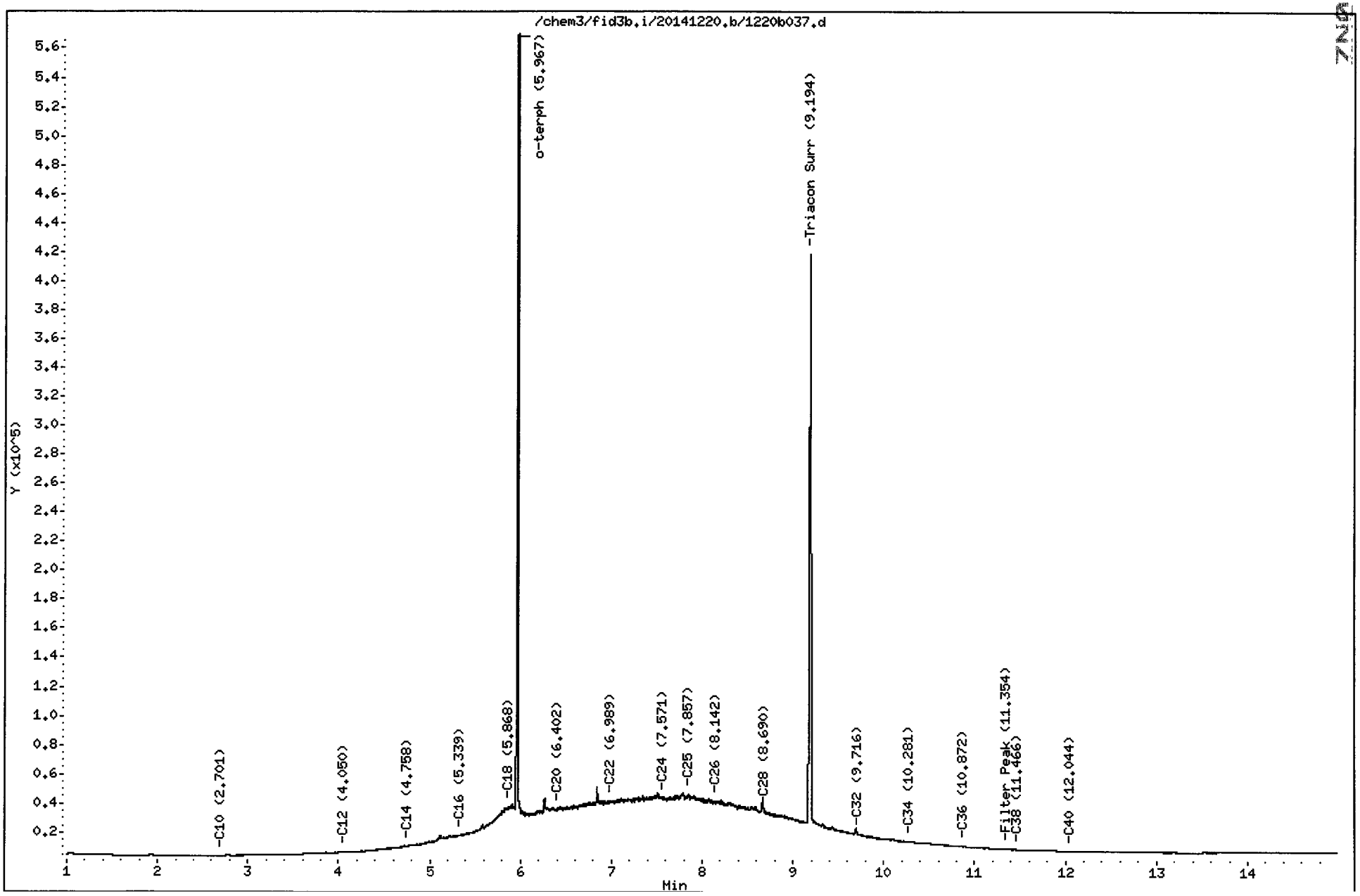
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

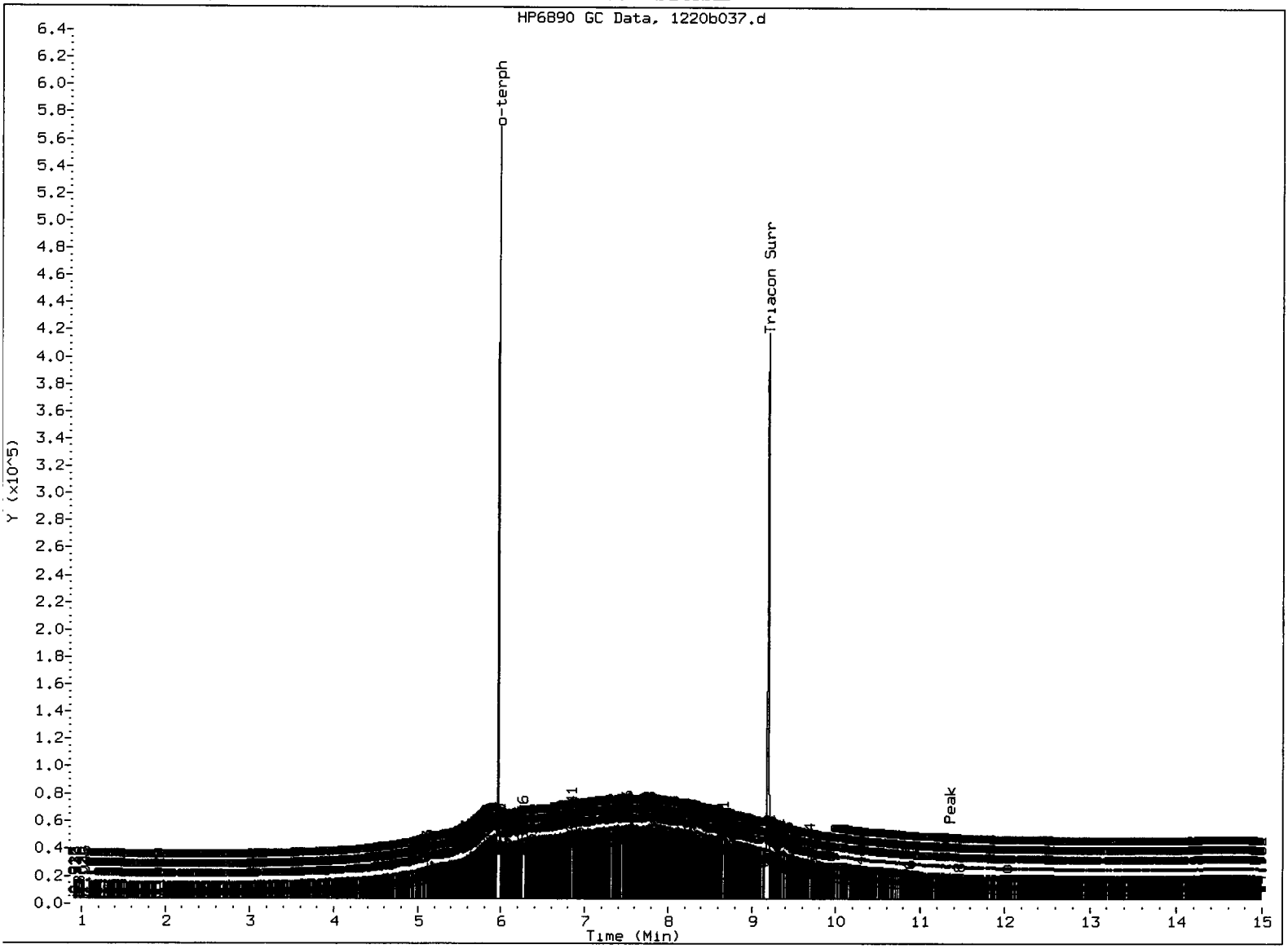
Column diameter: 0.25

ZN05 0311.7



FID:3B-2C/RTX-1 ZN05E

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: SW Date: 12/22/14

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 12/05/14
Date Received: 12/03/14
Page 1 of 1

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-8 ZN05A 14-26227	12/03/14	Water	12/03/14 120314#1	0.010	< 0.010 U
MW-9 ZN05B 14-26228	12/03/14	Water	12/03/14 120314#1	0.010	< 0.010 U
MW-10 ZN05C 14-26229	12/03/14	Water	12/03/14 120314#1	0.010	< 0.010 U
MW-7 ZN05D 14-26230	12/03/14	Water	12/03/14 120314#1	0.010	< 0.010 U
MW-6 ZN05E 14-26231	12/03/14	Water	12/03/14 120314#1	0.010	< 0.010 U

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
ZN05-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/05/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	12/03/14 17:45	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZN05-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/05/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	12/03/14 17:45	mg/L	0.633	0.630	100.5%

REPLICATE RESULTS-CONVENTIONALS
ZN05-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/05/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZN05A Client ID: MW-8					
Hexavalent Chromium	12/03/14	mg/L	< 0.010	0.011	NA

ZN05:00052

MS/MSD RESULTS-CONVENTIONALS
ZN05-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/05/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZN05A Client ID: MW-8						
Hexavalent Chromium	12/03/14	mg/L	< 0.010	< 0.010 U	0.063	NA

ZN05 : 00053

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-8
SAMPLE

Lab Sample ID: ZN05A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/05/14	6010C	12/08/14	**7440-47-3**	**Chromium**	0.005	**0.012**	
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-8
DUPLICATE

Lab Sample ID: ZN05A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.012	0.012	0.0%	+/- 0.005	L
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-8
MATRIX SPIKE

Lab Sample ID: ZN05A
LIMS ID: 14-26227
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.02	2.00	101%	
Chromium	6010C	0.012	0.481	0.500	93.8%	
Lead	6010C	0.02 U	1.88	2.00	94.0%	
Selenium	6010C	0.05 U	2.01	2.00	100%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-9
SAMPLE

Lab Sample ID: ZN05B
LIMS ID: 14-26228
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/05/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-10
SAMPLE

Lab Sample ID: ZN05C
LIMS ID: 14-26229
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/05/14	6010C	12/08/14	**7440-47-3**	**Chromium**	0.005	**0.009**	
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-7
SAMPLE

Lab Sample ID: ZN05D
LIMS ID: 14-26230
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/05/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-6
SAMPLE

Lab Sample ID: ZN05E
LIMS ID: 14-26231
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/03/14
Date Received: 12/03/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	**7440-38-2**	**Arsenic**	0.05	**0.07**	
3010A	12/05/14	6010C	12/08/14	**7440-47-3**	**Chromium**	0.005	**0.025**	
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ZN05MB
LIMS ID: 14-26228
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/05/14	6010C	12/08/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/05/14	6010C	12/08/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/05/14	6010C	12/08/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/05/14	6010C	12/08/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: ZN05LCS
LIMS ID: 14-26228
Matrix: Water
Data Release Authorized:
Reported: 12/10/14

QC Report No: ZN05-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	1.91	2.00	95.5%	
Chromium	6010C	0.492	0.500	98.4%	
Lead	6010C	1.93	2.00	96.5%	
Selenium	6010C	1.92	2.00	96.0%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

22 December 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: ZN27

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received four water samples on December 4, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for three compounds were not within control limits for the CCALs that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-11. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: ZN27

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: YI 18	Turn-around Requested:	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: 253-835-6400	Date: 12/4/14	Ice Present? Y
Client Contact: Jessica Faragalli		No. of Coolers: 1	Cooler Temps: 4.1
Client Project Name: Precision Engineering			
Client Project #: 1391602A-00	Samplers: DLR		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: NWTPH-Dx	VOCs	Metals	Cr VI					Notes/Comments
MW-11	12/4/14	0930	GW	6	X	X	X	X					Slightly effervescent
MW-12	12/4/14	1000	GW	6	X	X	X	X					
MW-5	12/4/14	1105	GW	6	X	X	X	X					
MW-3	12/4/14	1240	GW	6	X	X	X	X					
TRIP BLANK	12/4/14	-	-	1		X							
													Metals: Cr, Pb, As, Se

Comments/Special Instructions	Relinquished by: (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by: (Signature)
	Printed Name: Diane Rauch	Printed Name: A. Volgardsen	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company.
	Date & Time: 12/4/14 1405	Date & Time 12/4/14 1405	Date & Time	Date & Time.

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks
Project Name: Precision Engineering
COC No(s): _____ (NA)
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No: ZN27
Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 4.1
Time: 1405
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID# 90277952

Cooler Accepted by: AV Date: 12/4/14 Time: 1405

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)..	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	11/23/14	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 12/5/14 Time: 1626

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZN27
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024.00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-11	ZN27A	14-26406	Water	12/04/14 09:30	12/04/14 14:05
2.	MW-12	ZN27B	14-26407	Water	12/04/14 10:00	12/04/14 14:05
3.	MW-5	ZN27C	14-26408	Water	12/04/14 11:05	12/04/14 14:05
4.	MW-3	ZN27D	14-26409	Water	12/04/14 12:40	12/04/14 14:05
5.	TRIP BLANKS	ZN27E	14-26410	Water	12/04/14	12/04/14 14:05

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ZN27 : 00005

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

ZN27 : 00006

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ZN27 : 00007

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-121214A**
 METHOD BLANK

Lab Sample ID: MB-121214A
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 18:12

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-121214A**
 METHOD BLANK

Lab Sample ID: MB-121214A
LIMS ID: 14-26406
Matrix: Water
Date Analyzed: 12/12/14 18:12

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.3%
d8-Toluene	100%
Bromofluorobenzene	98.3%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-11**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZN27A
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 18:34

Sample Amount: 1.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	10	< 10	U
74-83-9	Bromomethane	10	< 10	U
75-01-4	Vinyl Chloride	10	< 10	U
75-00-3	Chloroethane	10	< 10	U
75-09-2	Methylene Chloride	20	< 20	U
67-64-1	Acetone	100	< 100	U
75-15-0	Carbon Disulfide	10	< 10	U
75-35-4	1,1-Dichloroethene	10	< 10	U
75-34-3	1,1-Dichloroethane	10	< 10	U
156-60-5	trans-1,2-Dichloroethene	10	< 10	U
156-59-2	cis-1,2-Dichloroethene	10	< 10	U
67-66-3	Chloroform	10	< 10	U
107-06-2	1,2-Dichloroethane	10	< 10	U
78-93-3	2-Butanone	50	< 50	U
71-55-6	1,1,1-Trichloroethane	10	< 10	U
56-23-5	Carbon Tetrachloride	10	< 10	U
108-05-4	Vinyl Acetate	50	< 50	U
75-27-4	Bromodichloromethane	10	< 10	U
78-87-5	1,2-Dichloropropane	10	< 10	U
10061-01-5	cis-1,3-Dichloropropene	10	< 10	U
79-01-6	Trichloroethene	10	< 10	U
124-48-1	Dibromochloromethane	10	< 10	U
79-00-5	1,1,2-Trichloroethane	10	< 10	U
71-43-2	Benzene	10	< 10	U
10061-02-6	trans-1,3-Dichloropropene	10	< 10	U
110-75-8	2-Chloroethylvinylether	50	< 50	U
75-25-2	Bromoform	10	< 10	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	50	< 50	U
591-78-6	2-Hexanone	50	< 50	U
127-18-4	Tetrachloroethene	10	< 10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	< 10	U
108-88-3	Toluene	10	< 10	U
108-90-7	Chlorobenzene	10	< 10	U
100-41-4	Ethylbenzene	10	< 10	U
100-42-5	Styrene	10	< 10	U
75-69-4	Trichlorofluoromethane	10	< 10	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	20	< 20	U
179601-23-1	m,p-Xylene	20	< 20	U
95-47-6	o-Xylene	10	< 10	U
95-50-1	1,2-Dichlorobenzene	10	< 10	U
541-73-1	1,3-Dichlorobenzene	10	< 10	U
106-46-7	1,4-Dichlorobenzene	10	< 10	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-11**
 SAMPLE

Lab Sample ID: ZN27A
LIMS ID: 14-26406
Matrix: Water
Date Analyzed: 12/12/14 18:34

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	100	< 100	U
74-88-4	Iodomethane	10	< 10	U
74-96-4	Bromoethane	20	< 20	U
107-13-1	Acrylonitrile	50	< 50	U
563-58-6	1,1-Dichloropropene	10	< 10	U
74-95-3	Dibromomethane	10	< 10	U
630-20-6	1,1,1,2-Tetrachloroethane	10	< 10	U
96-12-8	1,2-Dibromo-3-chloropropane	50	< 50	U
96-18-4	1,2,3-Trichloropropane	20	< 20	U
110-57-6	trans-1,4-Dichloro-2-butene	50	< 50	U
108-67-8	1,3,5-Trimethylbenzene	10	< 10	U
95-63-6	1,2,4-Trimethylbenzene	10	< 10	U
87-68-3	Hexachlorobutadiene	50	< 50	U
106-93-4	1,2-Dibromoethane	10	< 10	U
74-97-5	Bromochloromethane	10	< 10	U
594-20-7	2,2-Dichloropropane	10	< 10	U
142-28-9	1,3-Dichloropropane	50	< 50	U
98-82-8	Isopropylbenzene	10	< 10	U
103-65-1	n-Propylbenzene	10	< 10	U
108-86-1	Bromobenzene	10	< 10	U
95-49-8	2-Chlorotoluene	10	< 10	U
106-43-4	4-Chlorotoluene	10	< 10	U
98-06-6	tert-Butylbenzene	10	< 10	U
135-98-8	sec-Butylbenzene	10	< 10	U
99-87-6	4-Isopropyltoluene	10	< 10	U
104-51-8	n-Butylbenzene	10	< 10	U
120-82-1	1,2,4-Trichlorobenzene	50	< 50	U
91-20-3	Naphthalene	50	< 50	U
87-61-6	1,2,3-Trichlorobenzene	50	< 50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.2%
d8-Toluene	99.6%
Bromofluorobenzene	98.1%
d4-1,2-Dichlorobenzene	99.7%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-12**
 SAMPLE

Lab Sample ID: ZN27B
LIMS ID: 14-26407
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 18:57

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-12**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ZN27B
LIMS ID: 14-26407
Matrix: Water
Date Analyzed: 12/12/14 18:57

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.1%
d8-Toluene	100%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	99.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZN27C
LIMS ID: 14-26408
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 19:19

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	**Trichloroethene**	**1.0**	**1.0**	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-5**
 SAMPLE

Lab Sample ID: ZN27C
LIMS ID: 14-26408
Matrix: Water
Date Analyzed: 12/12/14 19:19

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.0%
d8-Toluene	99.7%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	98.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-3**
 SAMPLE

Lab Sample ID: ZN27D
LIMS ID: 14-26409
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 19:42

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW-3**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ZN27D
LIMS ID: 14-26409
Matrix: Water
Date Analyzed: 12/12/14 19:42

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.1%
d8-Toluene	99.9%
Bromofluorobenzene	99.0%
d4-1,2-Dichlorobenzene	98.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS**
 SAMPLE

Lab Sample ID: ZN27E
LIMS ID: 14-26410
Matrix: Water
Data Release Authorized: MW
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Instrument/Analyst: NT15/PAB
Date Analyzed: 12/12/14 20:04

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS**
 SAMPLE

Lab Sample ID: ZN27E
LIMS ID: 14-26410
Matrix: Water
Date Analyzed: 12/12/14 20:04

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.5%
d8-Toluene	101%
Bromofluorobenzene	97.0%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-121214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-121214A
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/17/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT15/PAB
LCSD: NT15/PAB
Date Analyzed LCS: 12/12/14 15:37
LCSD: 12/12/14 17:17

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.88		10.0	98.8%	9.38		10.0	93.8%	5.2%
Bromomethane	9.66		10.0	96.6%	8.50		10.0	85.0%	12.8%
Vinyl Chloride	9.95		10.0	99.5%	9.56		10.0	95.6%	4.0%
Chloroethane	10.8	Q	10.0	108%	10.1	Q	10.0	101%	6.7%
Methylene Chloride	10.2		10.0	102%	9.78		10.0	97.8%	4.2%
Acetone	46.3		50.0	92.6%	45.4		50.0	90.8%	2.0%
Carbon Disulfide	9.25		10.0	92.5%	8.77		10.0	87.7%	5.3%
1,1-Dichloroethene	8.98		10.0	89.8%	8.53		10.0	85.3%	5.1%
1,1-Dichloroethane	10.0		10.0	100%	9.57		10.0	95.7%	4.4%
trans-1,2-Dichloroethene	10.2		10.0	102%	9.55		10.0	95.5%	6.6%
cis-1,2-Dichloroethene	10.1		10.0	101%	9.78		10.0	97.8%	3.2%
Chloroform	10.2		10.0	102%	9.78		10.0	97.8%	4.2%
1,2-Dichloroethane	10.1		10.0	101%	9.73		10.0	97.3%	3.7%
2-Butanone	40.3		50.0	80.6%	39.0		50.0	78.0%	3.3%
1,1,1-Trichloroethane	10.2		10.0	102%	9.72		10.0	97.2%	4.8%
Carbon Tetrachloride	11.0		10.0	110%	10.5		10.0	105%	4.7%
Vinyl Acetate	10.2		10.0	102%	9.50		10.0	95.0%	7.1%
Bromodichloromethane	10.3		10.0	103%	9.76		10.0	97.6%	5.4%
1,2-Dichloropropane	10.3		10.0	103%	9.81		10.0	98.1%	4.9%
cis-1,3-Dichloropropene	11.0		10.0	110%	10.5		10.0	105%	4.7%
Trichloroethene	11.2		10.0	112%	10.8		10.0	108%	3.6%
Dibromochloromethane	11.6		10.0	116%	11.3		10.0	113%	2.6%
1,1,2-Trichloroethane	10.3		10.0	103%	9.99		10.0	99.9%	3.1%
Benzene	9.97		10.0	99.7%	9.60		10.0	96.0%	3.8%
trans-1,3-Dichloropropene	11.0		10.0	110%	10.7		10.0	107%	2.8%
2-Chloroethylvinylether	7.44	Q	10.0	74.4%	7.35	Q	10.0	73.5%	1.2%
Bromoform	10.6		10.0	106%	10.0		10.0	100%	5.8%
4-Methyl-2-Pentanone (MIBK)	49.0		50.0	98.0%	48.0		50.0	96.0%	2.1%
2-Hexanone	54.8		50.0	110%	54.4		50.0	109%	0.7%
Tetrachloroethene	11.7		10.0	117%	11.6		10.0	116%	0.9%
1,1,2,2-Tetrachloroethane	10.1		10.0	101%	9.67		10.0	96.7%	4.4%
Toluene	10.3		10.0	103%	9.87		10.0	98.7%	4.3%
Chlorobenzene	11.0		10.0	110%	10.7		10.0	107%	2.8%
Ethylbenzene	11.7		10.0	117%	11.4		10.0	114%	2.6%
Styrene	12.9		10.0	129%	12.5		10.0	125%	3.1%
Trichlorofluoromethane	9.39		10.0	93.9%	8.78		10.0	87.8%	6.7%
1,1,2-Trichloro-1,2,2-trifluoroetha	12.1		10.0	121%	11.8		10.0	118%	2.5%
m,p-Xylene	23.1		20.0	116%	22.6		20.0	113%	2.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-121214A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-121214A QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
LIMS ID: 14-26406 Project: Precision Engineering
Matrix: Water 1396024.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.9	10.0	119%	11.6	10.0	116%	2.6%
1,2-Dichlorobenzene	11.0	10.0	110%	10.6	10.0	106%	3.7%
1,3-Dichlorobenzene	11.1	10.0	111%	10.6	10.0	106%	4.6%
1,4-Dichlorobenzene	11.0	10.0	110%	10.7	10.0	107%	2.8%
Acrolein	43.8	50.0	87.6%	42.4	50.0	84.8%	3.2%
Iodomethane	6.25 Q	10.0	62.5%	7.39 Q	10.0	73.9%	16.7%
Bromoethane	9.68	10.0	96.8%	9.01	10.0	90.1%	7.2%
Acrylonitrile	8.76	10.0	87.6%	8.49	10.0	84.9%	3.1%
1,1-Dichloropropene	10.1	10.0	101%	9.68	10.0	96.8%	4.2%
Dibromomethane	9.80	10.0	98.0%	9.62	10.0	96.2%	1.9%
1,1,1,2-Tetrachloroethane	11.5	10.0	115%	11.2	10.0	112%	2.6%
1,2-Dibromo-3-chloropropane	9.68	10.0	96.8%	9.45	10.0	94.5%	2.4%
1,2,3-Trichloropropane	10.1	10.0	101%	9.88	10.0	98.8%	2.2%
trans-1,4-Dichloro-2-butene	9.53	10.0	95.3%	9.06	10.0	90.6%	5.1%
1,3,5-Trimethylbenzene	11.0	10.0	110%	10.6	10.0	106%	3.7%
1,2,4-Trimethylbenzene	11.4	10.0	114%	11.0	10.0	110%	3.6%
Hexachlorobutadiene	12.3	10.0	123%	12.0	10.0	120%	2.5%
1,2-Dibromoethane	9.80	10.0	98.0%	9.64	10.0	96.4%	1.6%
Bromochloromethane	10.1	10.0	101%	9.64	10.0	96.4%	4.7%
2,2-Dichloropropane	10.5	10.0	105%	9.91	10.0	99.1%	5.8%
1,3-Dichloropropane	10.4	10.0	104%	10.3	10.0	103%	1.0%
Isopropylbenzene	11.1	10.0	111%	10.7	10.0	107%	3.7%
n-Propylbenzene	11.3	10.0	113%	10.9	10.0	109%	3.6%
Bromobenzene	10.6	10.0	106%	10.3	10.0	103%	2.9%
2-Chlorotoluene	10.4	10.0	104%	10.0	10.0	100%	3.9%
4-Chlorotoluene	11.1	10.0	111%	10.6	10.0	106%	4.6%
tert-Butylbenzene	11.1	10.0	111%	10.7	10.0	107%	3.7%
sec-Butylbenzene	11.4	10.0	114%	11.1	10.0	111%	2.7%
4-Isopropyltoluene	11.6	10.0	116%	11.3	10.0	113%	2.6%
n-Butylbenzene	11.9	10.0	119%	11.5	10.0	115%	3.4%
1,2,4-Trichlorobenzene	11.8	10.0	118%	11.5	10.0	115%	2.6%
Naphthalene	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,2,3-Trichlorobenzene	10.7	10.0	107%	10.5	10.0	105%	1.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.7%	97.4%
d8-Toluene	100%	94.7%
Bromofluorobenzene	104%	104%
d4-1,2-Dichlorobenzene	97.5%	98.5%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-121214A	Method Blank	10	97.3%	100%	98.3%	101%	0
LCS-121214A	Lab Control	10	97.7%	100%	104%	97.5%	0
LCSD-121214A	Lab Control Dup	10	97.4%	94.7%	104%	98.5%	0
ZN27A	MW-11	10	97.2%	99.6%	98.1%	99.7%	0
ZN27B	MW-12	10	96.1%	100%	97.7%	99.2%	0
ZN27C	MW-5	10	96.0%	99.7%	98.8%	98.9%	0
ZN27D	MW-3	10	97.1%	99.9%	99.0%	98.9%	0
ZN27E	TRIP BLANKS	10	96.5%	101%	97.0%	100%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-26406 to 14-26410

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 12-DEC-2014 12:01
Lab File ID: 1001212.d Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Analysis Type: WATER Init. Cal. Times: 10:34 13:06
Lab Sample ID: IC1212 Quant Type: ISTD
Method: /chem1/nt15.i/20141212A.b/82600612L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.33569	0.33133	0.33133	0.010	-1.29857	20.00000	Averaged	
2 Chloromethane	0.54616	0.49150	0.49150	0.100	-10.00795	20.00000	Averaged	
3 Vinyl Chloride	0.57581	0.55616	0.55616	0.100	-3.41259	20.00000	Averaged	
4 Bromomethane	0.40216	0.40415	0.40415	0.100	0.49557	20.00000	Averaged	
5 Chloroethane	15.93432	10.00000	0.28693	0.010	59.34318	20.00000	Linear	<-
6 Trichlorofluoromethane	0.57943	0.59908	0.59908	0.010	3.39145	20.00000	Averaged	
7 1,1-Dichloroethene	0.72000	0.68495	0.68495	0.100	-4.86767	20.00000	Averaged	
8 Carbon Disulfide	1.51634	1.33161	1.33161	0.010	-12.18259	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.37590	0.32752	0.32752	0.010	-12.87030	20.00000	Averaged	
10 Iodomethane	4.96747	10.00000	0.23791	0.010	-50.32531	20.00000	Quadratic	<-
11 Bromoethane	0.32261	0.28475	0.28475	0.100	-11.73573	20.00000	Averaged	
12 Acrolein	0.06760	0.06554	0.06554	0.000	-3.05924	20.00000	Averaged	
13 Methylene Chloride	10.11574	10.00000	0.51442	0.010	1.15735	20.00000	Linear	
14 Acetone	0.08279	0.07273	0.07273	0.001	-12.15053	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.49527	0.47717	0.47717	0.010	-3.65287	20.00000	Averaged	
17 Methyl tert butyl ether	1.18998	1.16550	1.16550	0.100	-2.05747	20.00000	Averaged	
18 1,1-Dichloroethane	0.90289	0.88484	0.88484	0.200	-1.99912	20.00000	Averaged	
19 Acrylonitrile	0.13321	0.11440	0.11440	0.001	-14.12207	20.00000	Averaged	
20 Vinyl Acetate	0.15809	0.14777	0.14777	0.010	-6.52706	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.49953	0.49152	0.49152	0.010	-1.60446	20.00000	Averaged	
23 2,2-Dichloropropane	0.70012	0.68432	0.68432	0.010	-2.25763	20.00000	Averaged	
24 Bromochloromethane	0.20111	0.19701	0.19701	0.050	-2.03451	20.00000	Averaged	
25 Chloroform	0.78333	0.78291	0.78291	0.200	-0.05477	20.00000	Averaged	
26 Carbon Tetrachloride	0.27216	0.28854	0.28854	0.100	6.01822	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.49379	0.49060	0.49060	0.100	-0.64654	20.00000	Averaged	
28 1,1,1-Trichloroethane	0.67432	0.66470	0.66470	0.100	-1.42725	20.00000	Averaged	
29 2-Butanone	0.14461	0.13374	0.13374	0.001	-7.52123	20.00000	Averaged	
30 1,1-Dichloropropene	0.37558	0.36585	0.36585	0.010	-2.59066	20.00000	Averaged	
31 Benzene	9.47007	10.00000	1.14000	0.500	-5.29929	20.00000	Linear	
$ 33 d4-1,2-Dichloroethane	0.60582	0.62868	0.62868	0.010	3.77306	20.00000	Averaged	
34 1,2-Dichloroethane	0.31207	0.30661	0.30661	0.100	-1.75147	20.00000	Averaged	
36 Trichloroethene	0.23400	0.24430	0.24430	0.100	4.40306	20.00000	Averaged	
38 Dibromomethane	0.12367	0.12255	0.12255	0.010	-0.91172	20.00000	Averaged	
39 1,2-Dichloropropane	0.28561	0.28007	0.28007	0.100	-1.93928	20.00000	Averaged	
40 Bromodichloromethane	0.32350	0.32235	0.32235	0.100	-0.35501	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 12-DEC-2014 12:01
Lab File ID: 1001212.d Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Analysis Type: WATER Init. Cal. Times: 10:34 13:06
Lab Sample ID: IC1212 Quant Type: ISTD
Method: /chem1/nt15.i/20141212A.b/82600612L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
41 2-Chloroethyl Vinyl Ether	6.50261	10.00000	0.07410	0.000	-34.97390	20.00000	Linear	<-
42 Cis 1,3-dichloropropene	0.35030	0.36911	0.36911	0.200	5.36944	20.00000	Averaged	
$ 43 d8-Toluene	1.24762	1.26147	1.26147	0.010	1.11043	20.00000	Averaged	
44 Toluene	0.72182	0.70520	0.70520	0.400	-2.30309	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.07387	0.06974	0.06974	0.000	-5.59828	20.00000	Averaged	
46 Tetrachloroethene	0.24744	0.26375	0.26375	0.200	6.59047	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.27421	0.28276	0.28276	0.010	3.11930	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.18957	0.18935	0.18935	0.100	-0.11731	20.00000	Averaged	
49 Chlorodibromomethane	0.19723	0.22178	0.22178	0.100	12.44563	20.00000	Averaged	
50 1,3-Dichloropropane	0.39751	0.41188	0.41188	0.100	3.61558	20.00000	Averaged	
51 1,2-Dibromoethane	0.15152	0.15329	0.15329	0.010	1.16967	20.00000	Averaged	
52 2-Hexanone	0.11935	0.12684	0.12684	0.010	6.27852	20.00000	Averaged	
54 Chlorobenzene	0.80241	0.82512	0.82512	0.500	2.83061	20.00000	Averaged	
55 Ethyl Benzene	0.42217	0.45519	0.45519	0.100	7.82190	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.23588	0.25841	0.25841	0.010	9.55165	20.00000	Averaged	
57 m,p-xylene	0.54000	0.56413	0.56413	0.300	4.46835	20.00000	Averaged	
58 o-Xylene	0.49921	0.54864	0.54864	0.300	9.90282	20.00000	Averaged	
59 Styrene	0.76045	0.89724	0.89724	0.300	17.98801	20.00000	Averaged	
60 Bromoform	0.23286	0.24653	0.24653	0.010	5.87042	20.00000	Averaged	
61 Isopropyl Benzene	2.87871	2.92995	2.92995	0.010	1.78017	20.00000	Averaged	
$ 62 4-Bromofluorobenzene	0.52255	0.54317	0.54317	0.200	3.94489	20.00000	Averaged	
63 Bromobenzene	0.60808	0.59971	0.59971	0.010	-1.37634	20.00000	Averaged	
64 N-Propyl Benzene	3.24301	3.28519	3.28519	0.010	1.30071	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.54424	0.53481	0.53481	0.100	-1.73425	20.00000	Averaged	
66 2-Chloro Toluene	2.05323	1.94159	1.94159	0.010	-5.43710	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.37784	2.44329	2.44329	0.010	2.75233	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.15097	0.15502	0.15502	0.010	2.68145	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.10969	0.09256	0.09256	0.001	-15.61460	20.00000	Averaged	
70 4-Chloro Toluene	2.06124	2.05674	2.05674	0.010	-0.21826	20.00000	Averaged	
71 T-Butyl Benzene	2.04755	2.08229	2.08229	0.010	1.69648	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.26846	2.29641	2.29641	0.010	1.23218	20.00000	Averaged	
73 S-Butyl Benzene	2.98067	3.04352	3.04352	0.010	2.10862	20.00000	Averaged	
74 4-Isopropyl Toluene	2.27487	2.33013	2.33013	0.010	2.42940	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.15421	1.13861	1.13861	0.600	-1.35124	20.00000	Averaged	
77 1,4-Dichlorobenzene	1.18542	1.15896	1.15896	0.500	-2.23210	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i
Lab File ID: 1001212.d
Analysis Type: WATER
Lab Sample ID: IC1212
Method: /chem1/nt15.i/20141212A.b/82600612L.m

Injection Date: 12-DEC-2014 12:01
Init. Cal. Date(s): 12-DEC-2014 12-DEC-2014
Init. Cal. Times: 10:34 13:06
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	2.08511	2.07355	2.07355	0.010	-0.55401	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.94634	0.94603	0.94603	0.010	-0.03245	20.00000	Averaged
80 1,2-Dichlorobenzene	1.10381	1.10714	1.10714	0.400	0.30142	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.08431	0.08314	0.08314	0.010	-1.38166	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.29026	0.29044	0.29044	0.010	0.06345	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.65098	0.65838	0.65838	0.010	1.13732	20.00000	Averaged
85 Naphthalene	1.55458	1.56686	1.56686	0.010	0.79008	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.62367	0.59409	0.59409	0.010	-4.74245	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: ZN27-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024.00

Matrix: Water

Date Received: 12/04/14

Data Release Authorized:
Reported: 12/22/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-121114	Method Blank	12/11/14	12/18/14	1.00	Diesel Range	0.10	< 0.10 U
14-26406	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		75.4%
ZN27A	MW-11	12/11/14	12/18/14	1.00	**Diesel Range**	**0.10**	**0.26**
14-26406	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		64.9%
ZN27B	MW-12	12/11/14	12/18/14	1.00	Diesel Range	0.10	< 0.10 U
14-26407	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		85.5%
ZN27C	MW-5	12/11/14	12/18/14	1.00	Diesel Range	0.10	< 0.10 U
14-26408	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		91.6%
ZN27D	MW-3	12/11/14	12/18/14	1.00	**Diesel Range**	**0.10**	**0.12**
14-26409	HC ID: **DRO**		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		60.9%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client ID	OTER	TOT OUT
MB-121114	75.4%	0
LCS-121114	82.2%	0
LCSD-121114	68.6%	0
MW-11	64.9%	0
MW-12	85.5%	0
MW-5	91.6%	0
MW-3	60.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-26406 to 14-26409

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID **Sample ID: LCS-121114**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-121114
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/22/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/11/14
Date Analyzed LCS: 12/18/14 17:03
LCSD: 12/18/14 17:28
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.34	3.00	78.0%	2.54	3.00	84.7%	8.2%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	82.2%	68.6%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: ZN27
Matrix: Water
Project: Precision Engineering
Date Received: 12/04/14
1396024.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-26406-121114MB1	Method Blank	500 mL	1.00 mL	12/11/14
14-26406-121114LCS1	Lab Control	500 mL	1.00 mL	12/11/14
14-26406-121114LCSD1	Lab Control Dup	500 mL	1.00 mL	12/11/14
14-26406-ZN27A	MW-11	500 mL	1.00 mL	12/11/14
14-26407-ZN27B	MW-12	500 mL	1.00 mL	12/11/14
14-26408-ZN27C	MW-5	500 mL	1.00 mL	12/11/14
14-26409-ZN27D	MW-3	500 mL	1.00 mL	12/11/14

Data File: /chem3/fid3b.i/20141218.b/1218b012.d

Date : 18-DEC-2014 16:38

Client ID: ZN25MBW1

Sample Info: ZN25MBW1

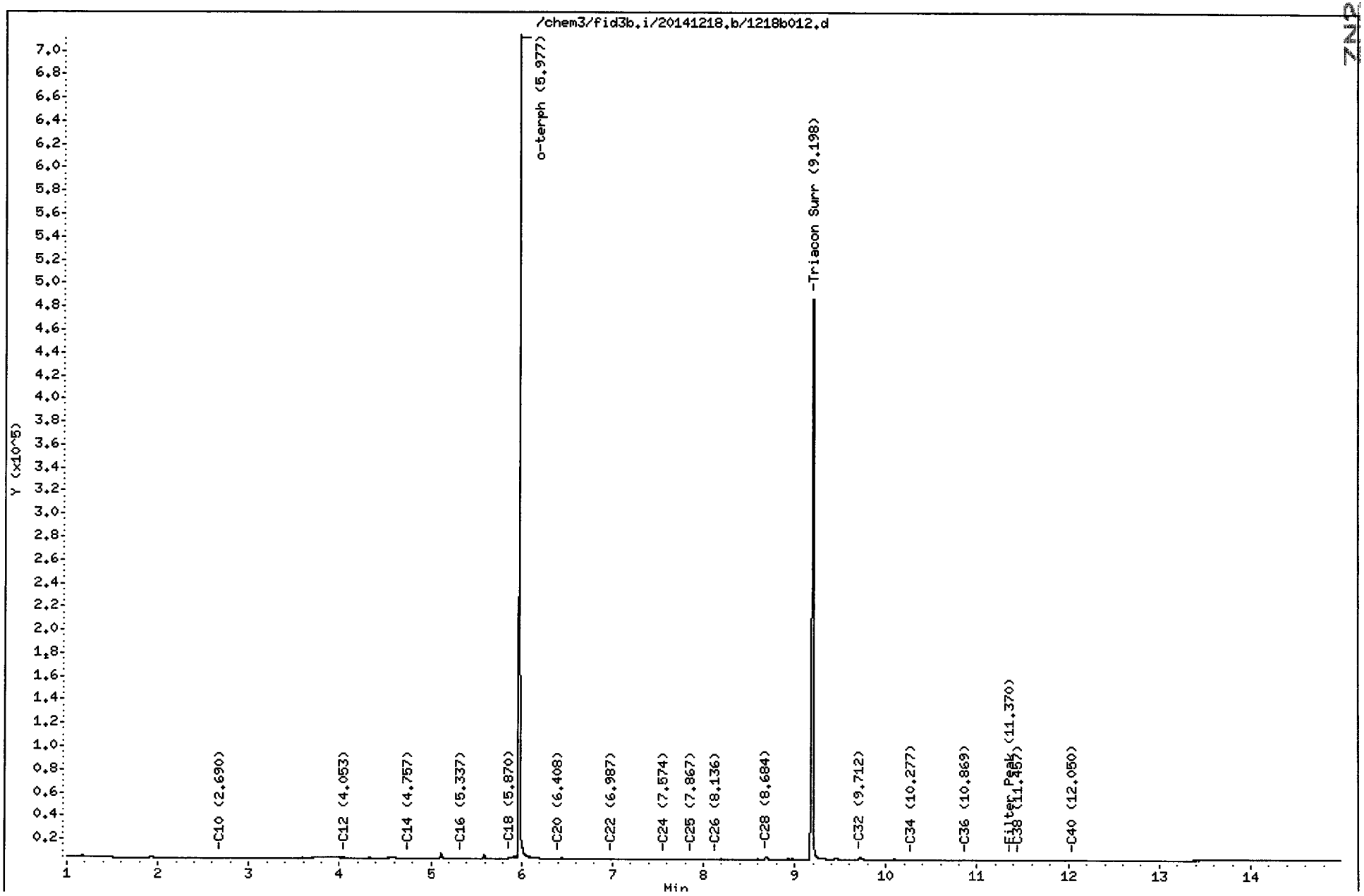
Instrument: fid3b.i

Operator: VTS

Column phase: RTX-1

Column diameter: 0.25

ZN27-080626



Data File: /chem3/fid3b.i/20141218.b/1218b013.d

Date : 18-DEC-2014 17:03

Client ID: ZN25LCSW1

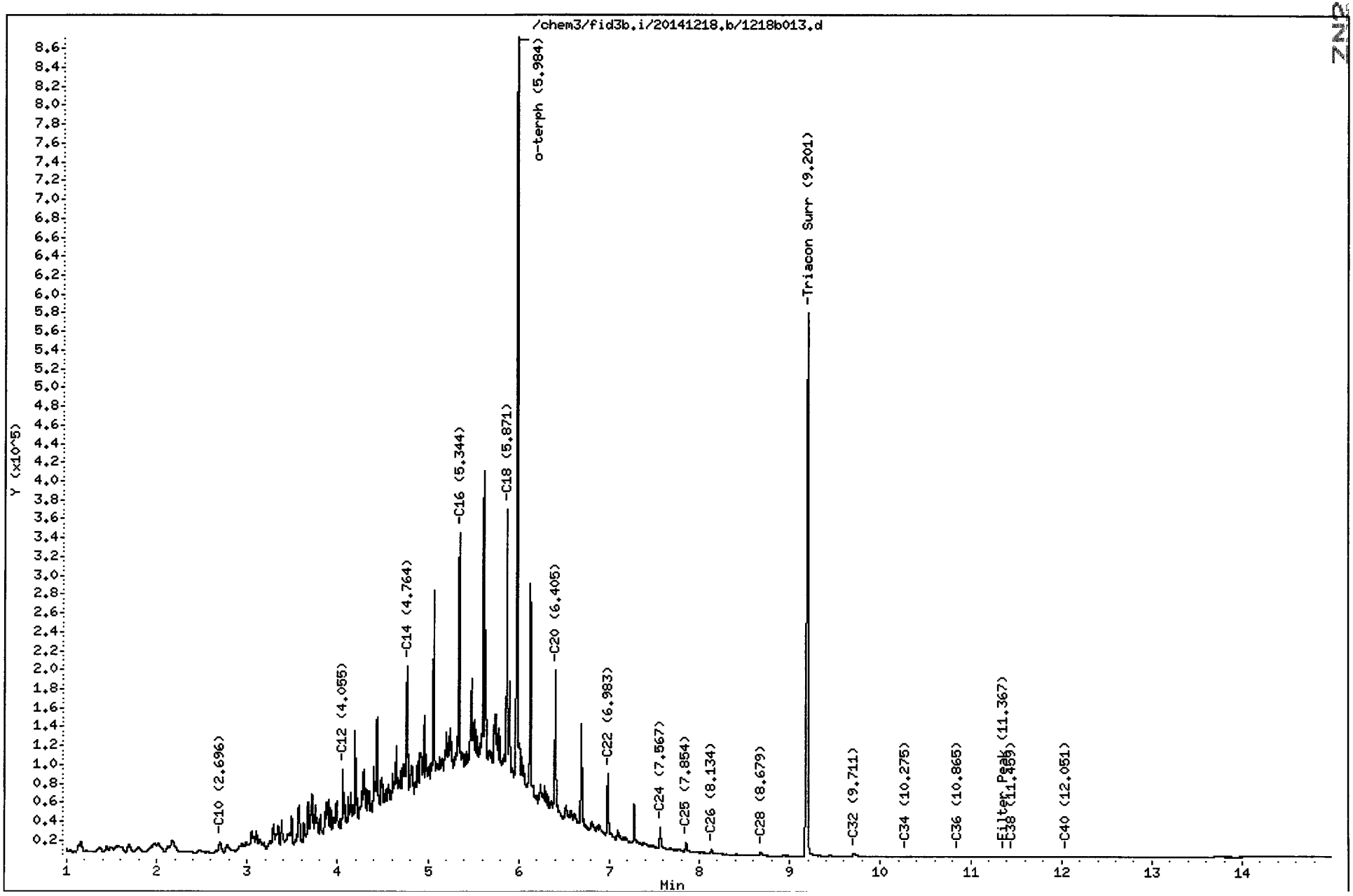
Sample Info: ZN25LCSW1

Column phase: RTX-1

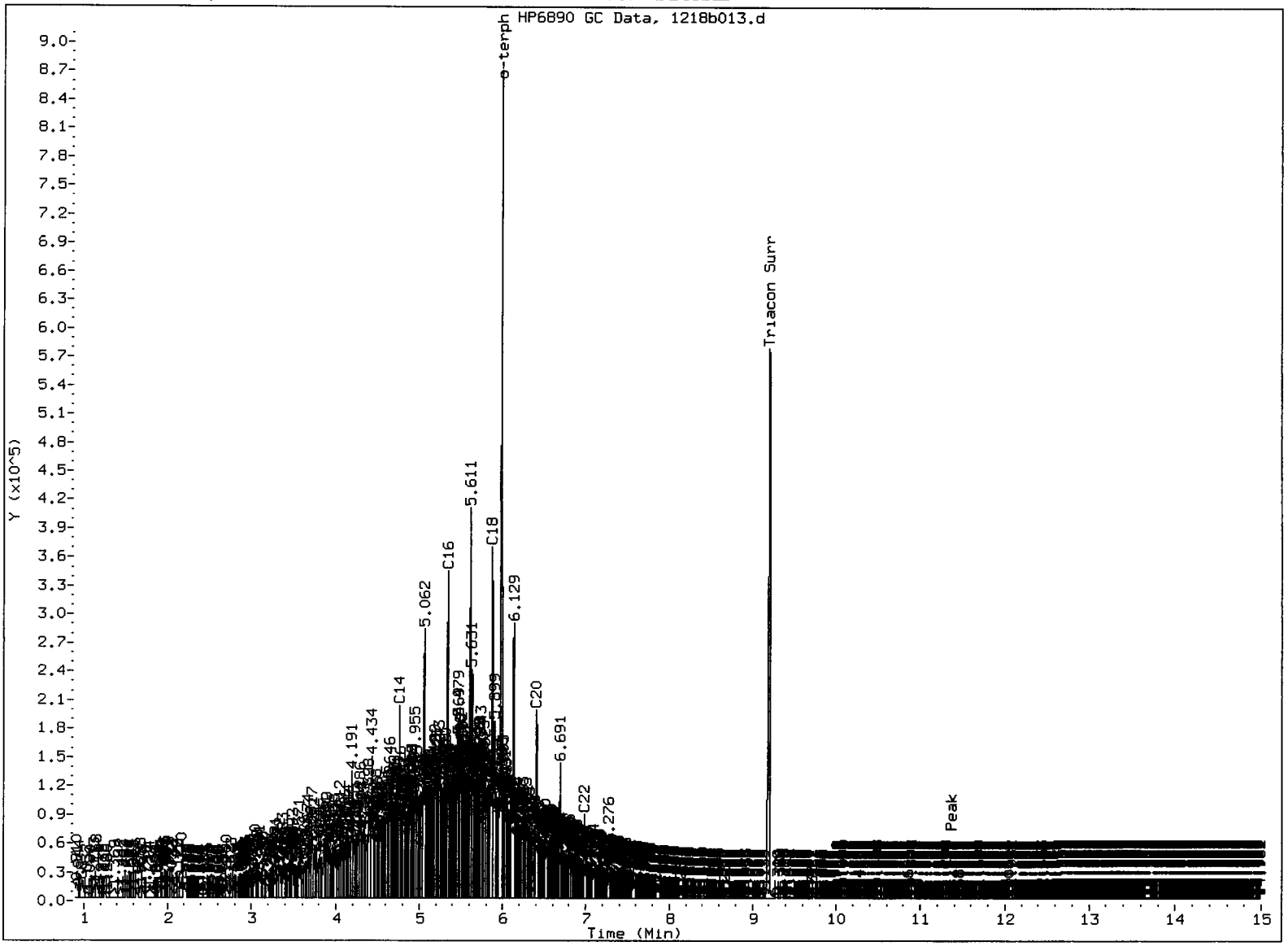
Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25



FID:3B-2C/RTX-1 ZN25LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: FV Date: 12/20/14

Data File: /chem3/fid3b.i/20141218.b/1218b014.d

Date : 18-DEC-2014 17:28

Client ID: ZN25LCSDW1

Sample Info: ZN25LCSDW1

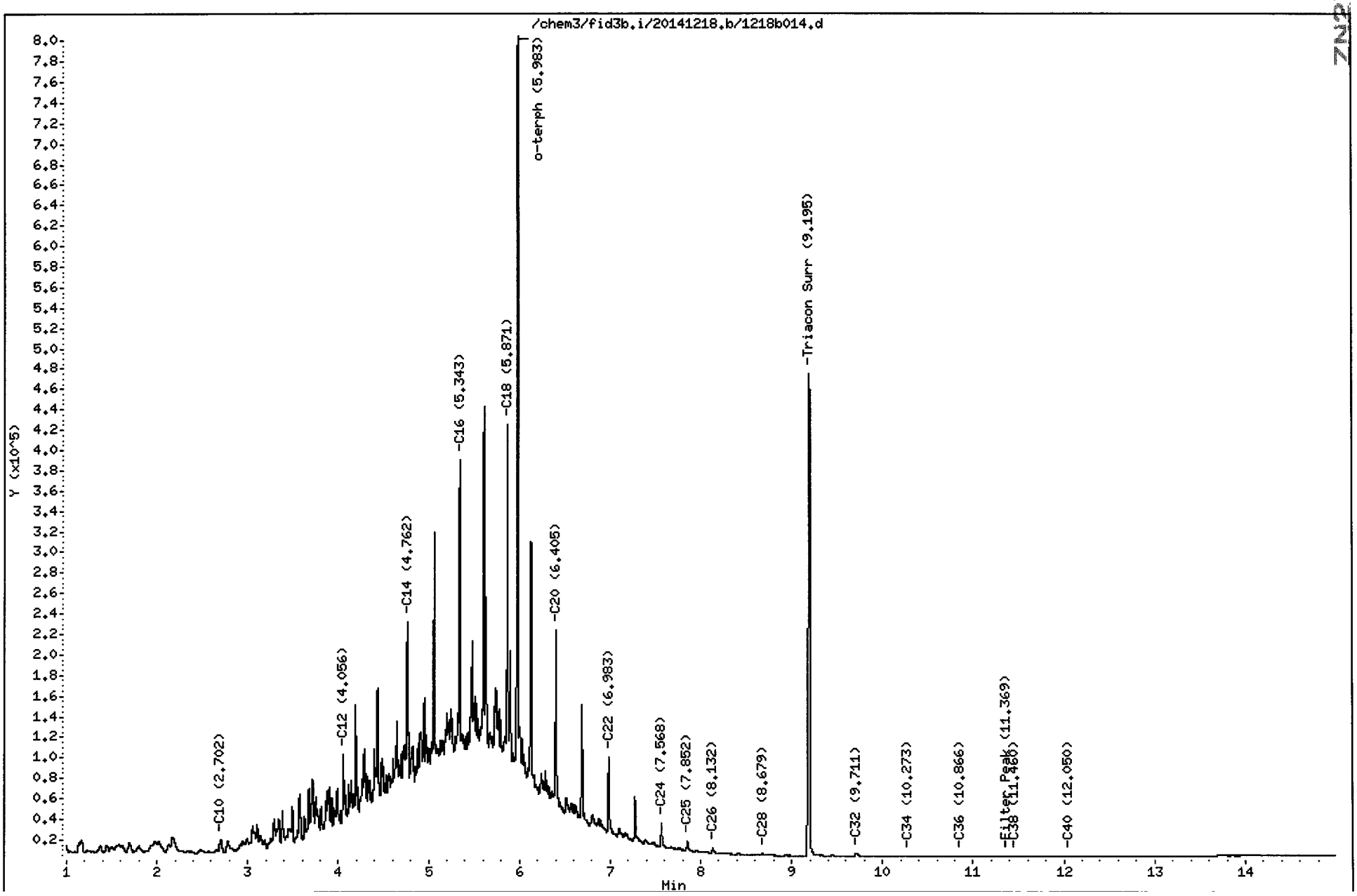
Instrument: fid3b.i

Operator: VTS

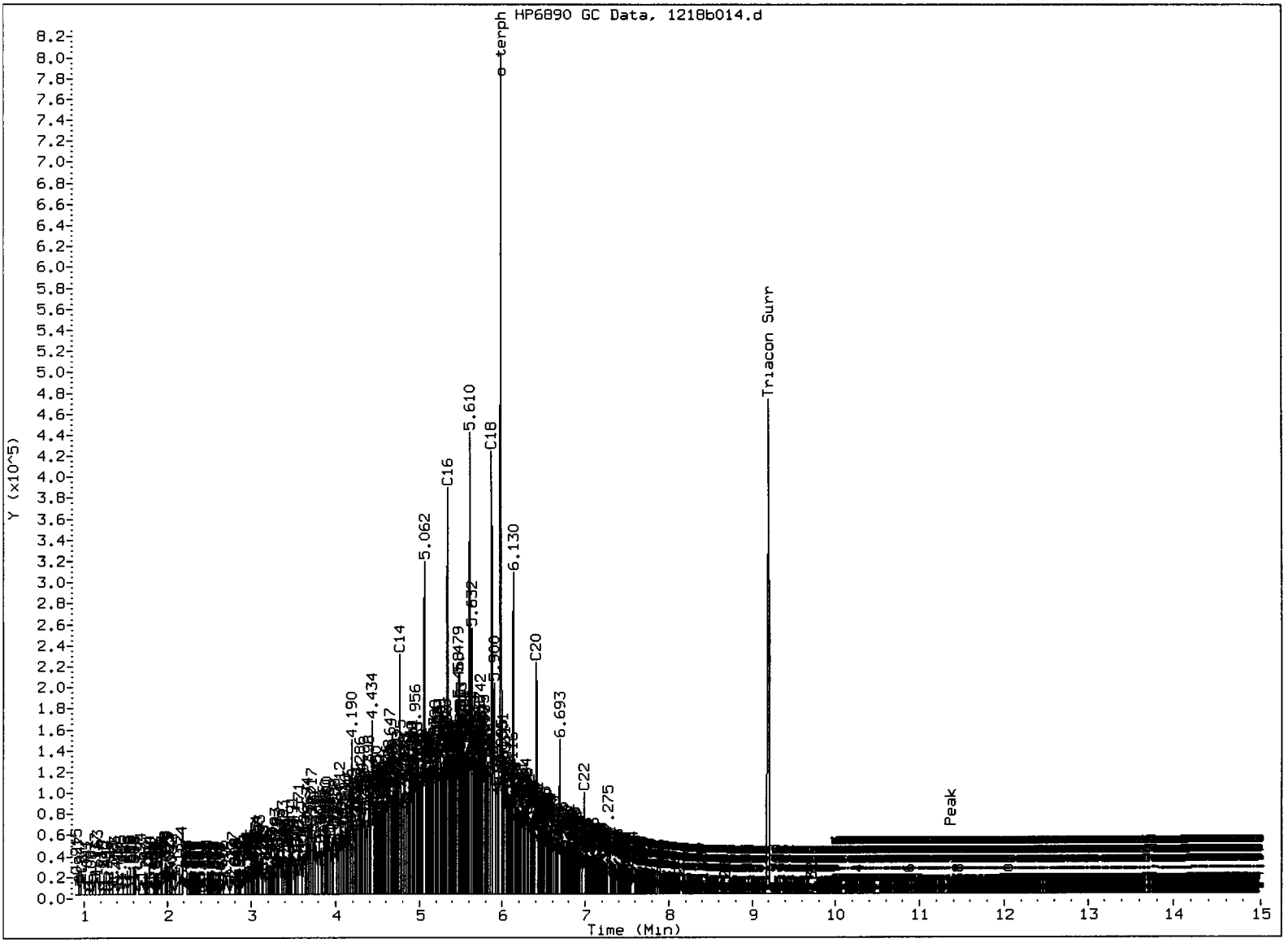
Column phase: RTX-1

Column diameter: 0.25

ZN25LCSDW1 : 5555



FID:3B-2C/RTX-1 ZN25LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: SW Date: 12/10/14

Data File: /chem3/fid3b.i/20141218.b/1218b020.d

Date : 18-DEC-2014 19:57

Client ID: MW-11

Instrument: fid3b.i

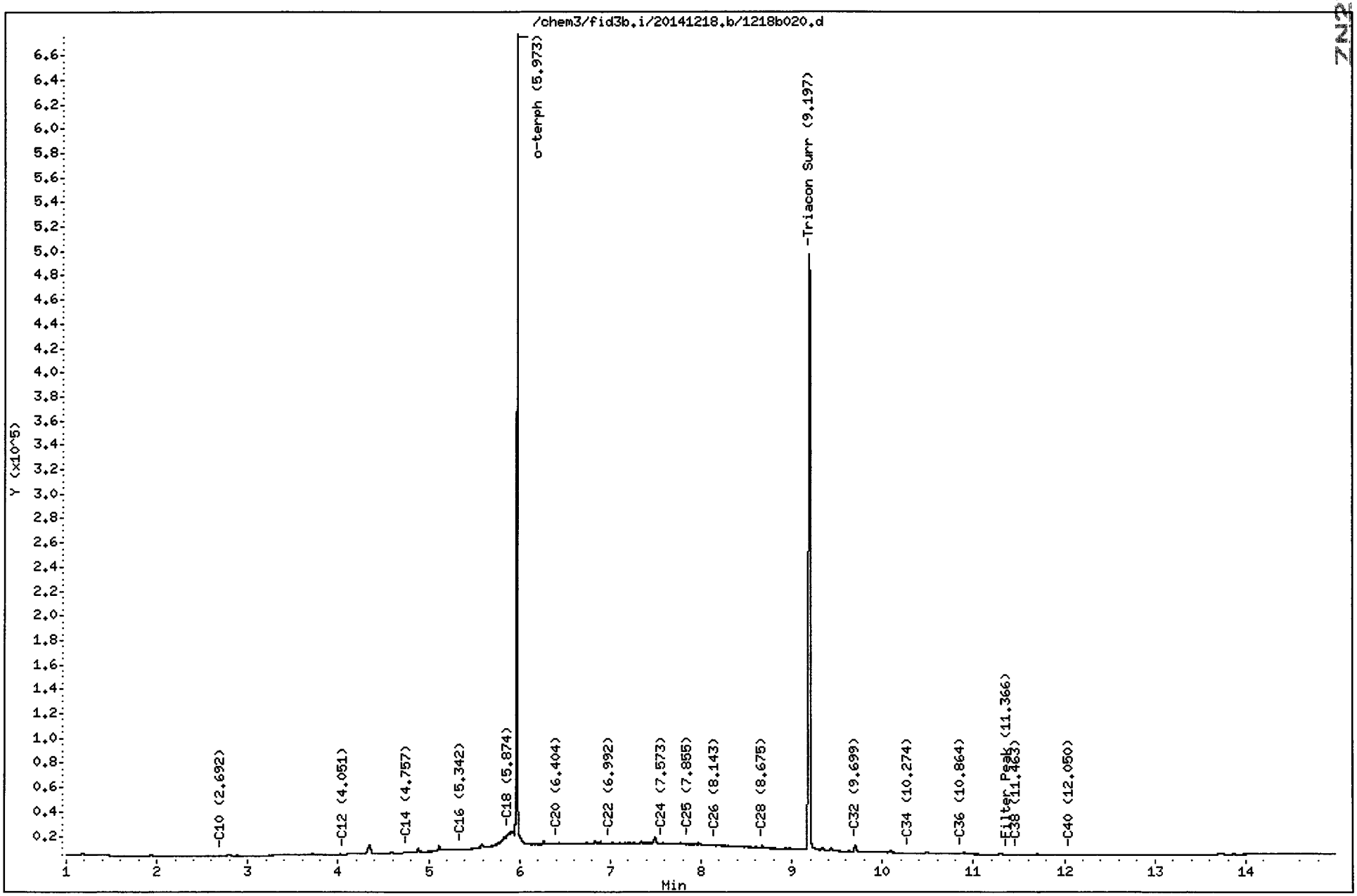
Sample Info: ZN27A

Operator: VTS

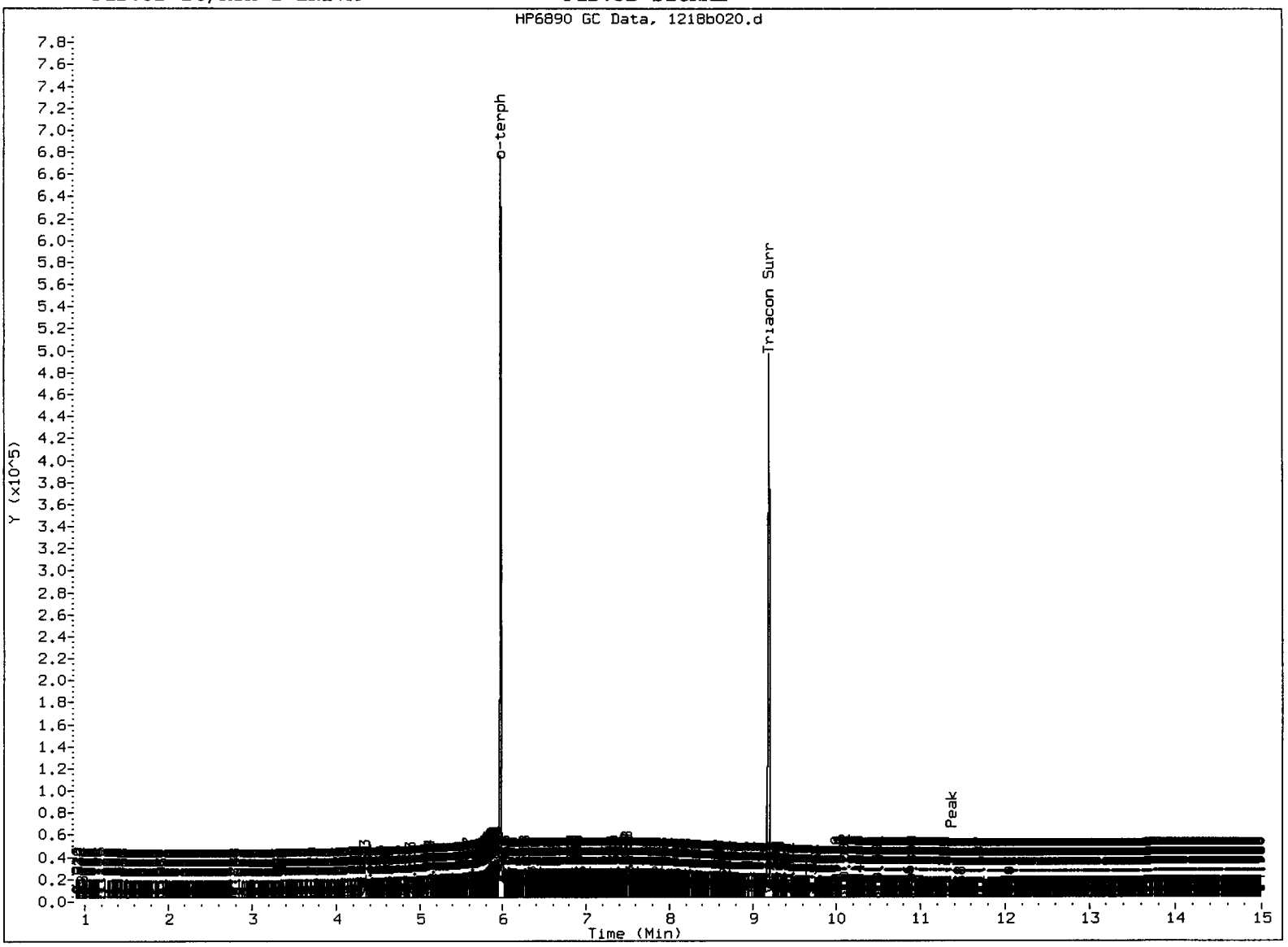
Column phase: RTX-1

Column diameter: 0.25

ZN27 : 09035



FID:3B-2C/RTX-1 ZN27A FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: DD Date: 12/20/19

Data File: /chem3/fid3b.i/20141218.b/1218b021.d

Date : 18-DEC-2014 20:21

Client ID: MW-12

Sample Info: ZN27B

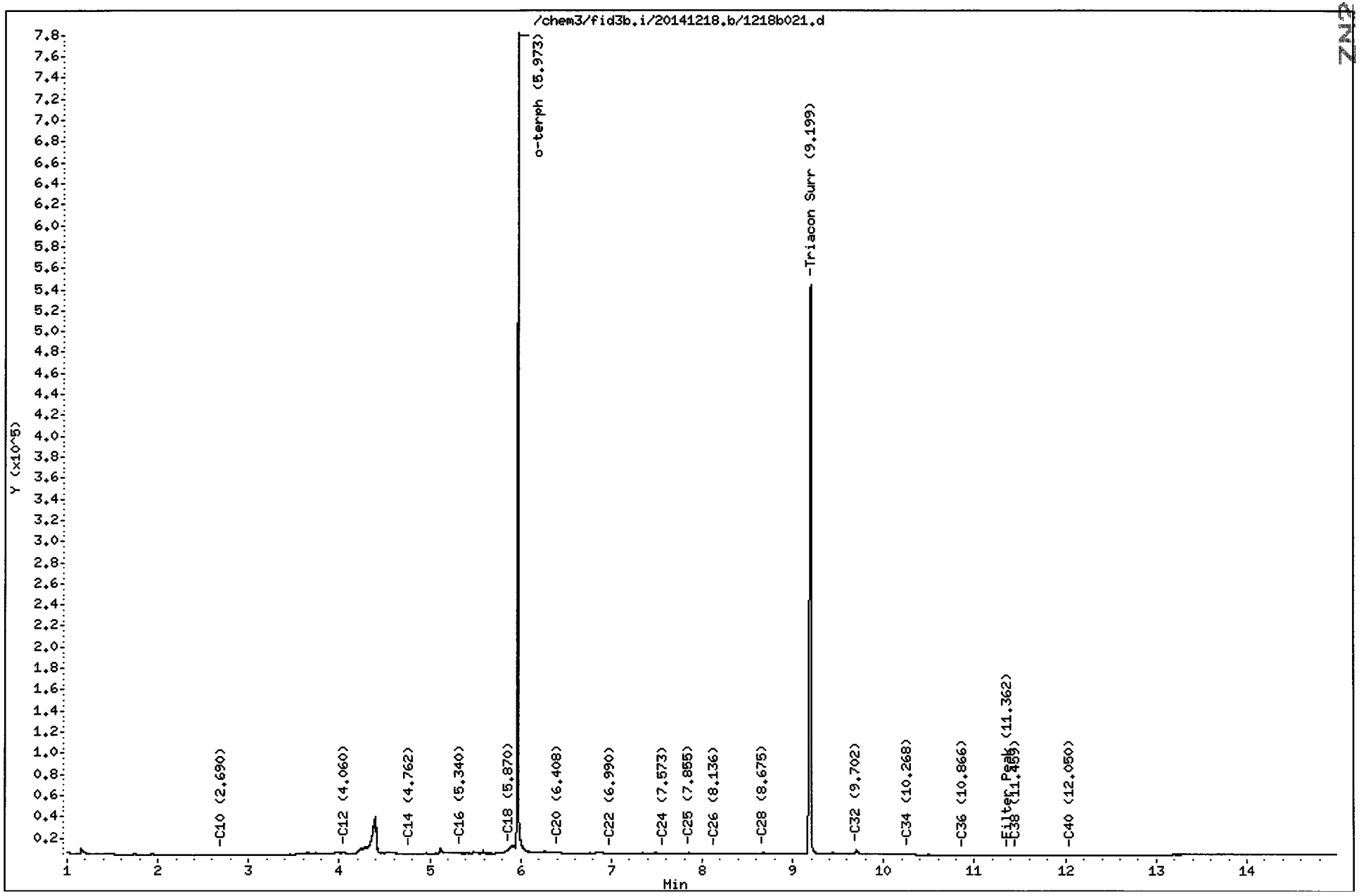
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

ZN27-090827



Data File: /chem3/fid3b.i/20141218.b/1218b022.d

Date : 18-DEC-2014 20:46

Client ID: MW-5

Sample Info: ZN27C

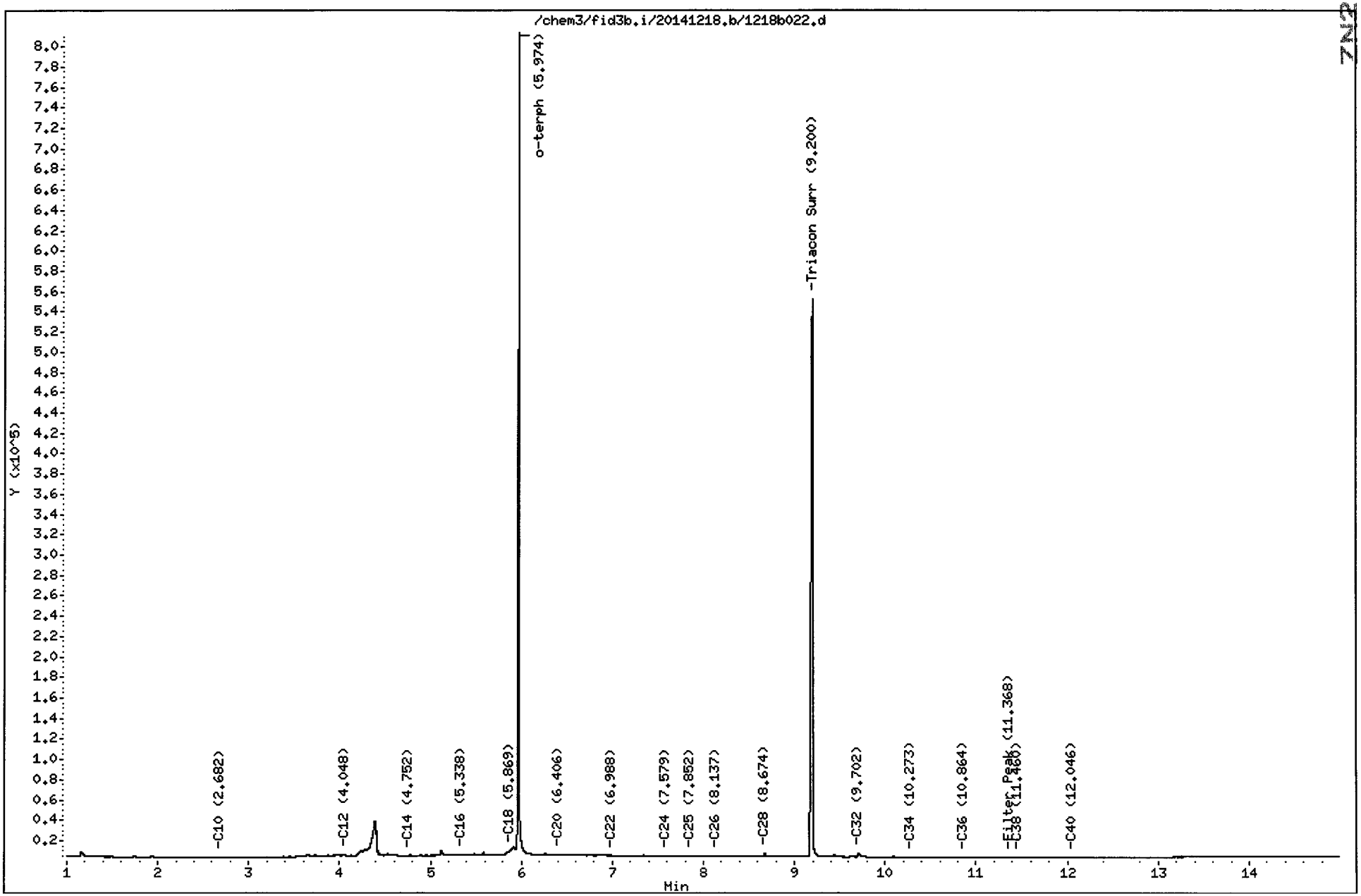
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

ZN27 060328



Data File: /chem3/fid3b.i/20141218.b/1218b023.d

Date : 18-DEC-2014 21:11

Client ID: MW-3

Sample Info: ZN27D

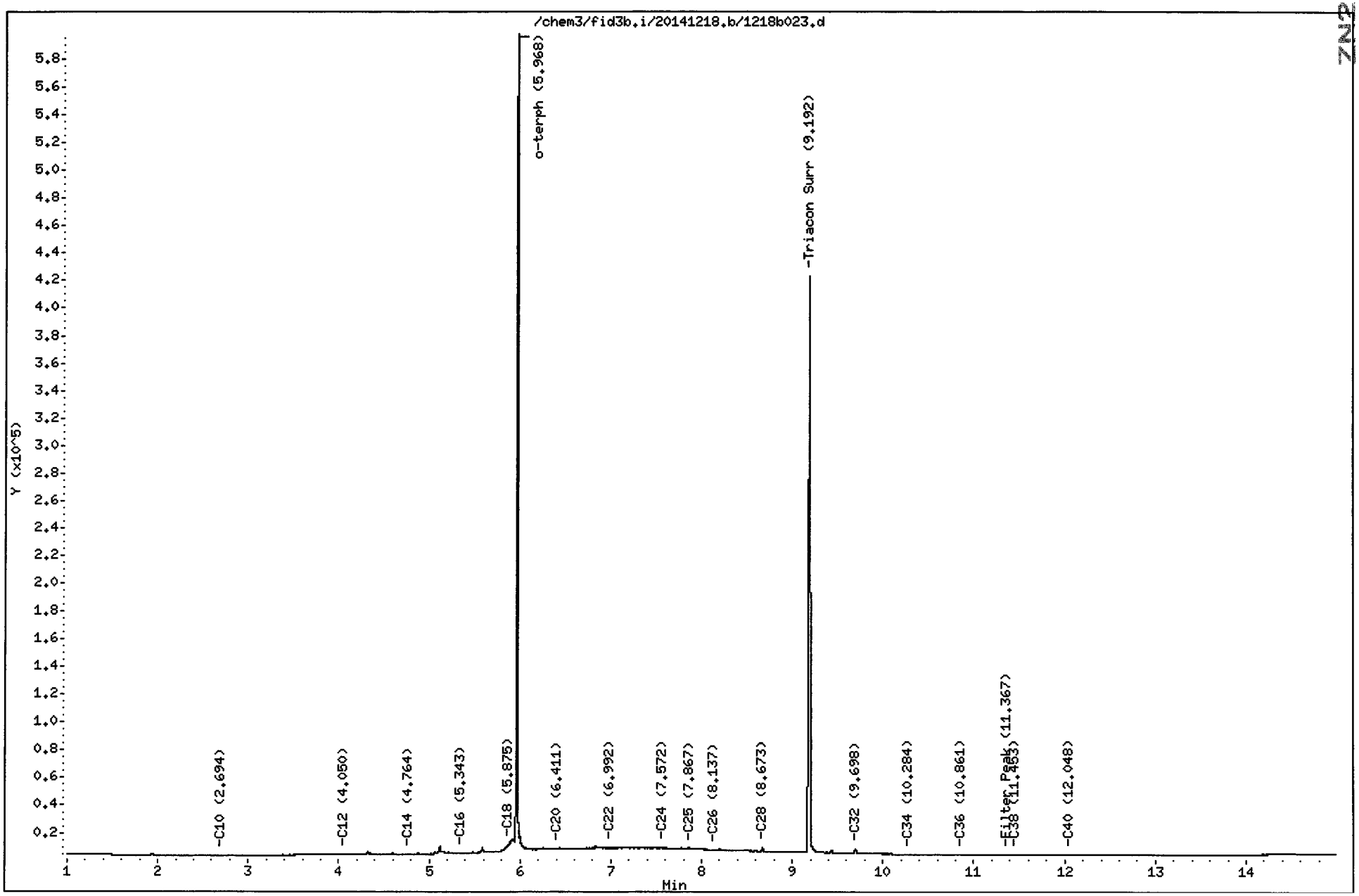
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

ZN27 B023



ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

Data Release Authorized:
Reported: 12/10/14
Date Received: 12/04/14
Page 1 of 1

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-11 ZN27A 14-26406	12/04/14	Water	12/04/14 120414#1	0.010	0.012
MW-12 ZN27B 14-26407	12/04/14	Water	12/04/14 120414#1	0.500	22.2
MW-5 ZN27C 14-26408	12/04/14	Water	12/04/14 120414#1	0.500	27.2
MW-3 ZN27D 14-26409	12/04/14	Water	12/04/14 120414#1	0.010	0.017

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
ZN27-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/10/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	12/04/14 15:00	mg/L	< 0.010 U

ZN27 : 00041

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZN27-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/10/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	12/04/14 15:00	mg/L	0.638	0.630	101.3%

REPLICATE RESULTS-CONVENTIONALS
ZN27-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/10/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZN27A Client ID: MW-11					
Hexavalent Chromium	12/04/14	mg/L	0.012	0.014	15.4%

ZN27 : 000043

MS/MSD RESULTS-CONVENTIONALS
ZN27-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 12/10/14

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZN27A Client ID: MW-11						
Hexavalent Chromium	12/04/14	mg/L	0.012	0.012	0.063	0.0%

ZN27 : 0000000

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-11
SAMPLE

Lab Sample ID: ZN27A
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/08/14	6010C	12/11/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/08/14	6010C	12/11/14	**7440-47-3**	**Chromium**	0.005	**0.005**	
3010A	12/08/14	6010C	12/11/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/08/14	6010C	12/11/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-12**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ZN27B
LIMS ID: 14-26407
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/08/14	6010C	12/11/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/08/14	6010C	12/11/14	**7440-47-3**	**Chromium**	0.005	**29.0**	
3010A	12/08/14	6010C	12/11/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/08/14	6010C	12/11/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-5
SAMPLE

Lab Sample ID: ZN27C
LIMS ID: 14-26408
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/08/14	6010C	12/11/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/08/14	6010C	12/11/14	**7440-47-3**	**Chromium**	0.005	**32.0**	
3010A	12/08/14	6010C	12/11/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/08/14	6010C	12/11/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: ZN27D
LIMS ID: 14-26409
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 12/04/14
Date Received: 12/04/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/08/14	6010C	12/11/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/08/14	6010C	12/11/14	**7440-47-3**	**Chromium**	0.005	**0.005**	
3010A	12/08/14	6010C	12/11/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/08/14	6010C	12/11/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ZN27MB
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
3010A	12/08/14	6010C	12/11/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	12/08/14	6010C	12/11/14	7440-47-3	Chromium	0.005	0.005	U
3010A	12/08/14	6010C	12/11/14	7439-92-1	Lead	0.02	0.02	U
3010A	12/08/14	6010C	12/11/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: ZN27LCS
LIMS ID: 14-26406
Matrix: Water
Data Release Authorized:
Reported: 12/12/14

QC Report No: ZN27-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.03	2.00	102%	
Chromium	6010C	0.527	0.500	105%	
Lead	6010C	2.03	2.00	102%	
Selenium	6010C	2.01	2.00	100%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

February 2015

Mobile Geochemistry Inc.

25 February 2015

Ms. Jessica Faragalli
Kennedy/Jenks Consultants - Seattle
1191 2nd Ave, Suite 630
Seattle, WA 98101

H&P Project: KJ021115-11
Client Project: 1396024.00 / Precision Eng.

Dear Ms. Jessica Faragalli:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 11-Feb-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1-020715	E502034-01	Vapor	07-Feb-15	11-Feb-15
IA-SHOP-020715	E502034-02	Vapor	07-Feb-15	11-Feb-15
AMB-OUTDOOR-020715	E502034-03	Vapor	07-Feb-15	11-Feb-15

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

DETECTIONS SUMMARY

Sample ID: **SS-1-020715** Laboratory ID: **E502034-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**21.0**	0.10	%	ASTM D1945M	
Acetone	**320**	4.8	ug/m3	EPA TO-15	E
Carbon disulfide	**2.2**	1.3	ug/m3	EPA TO-15	
2-Butanone (MEK)	**18**	2.4	ug/m3	EPA TO-15	
1,1,1-Trichloroethane	**4.4**	2.2	ug/m3	EPA TO-15	
Benzene	**7.0**	0.6	ug/m3	EPA TO-15	
Trichloroethene	**95**	2.2	ug/m3	EPA TO-15	
4-Methyl-2-pentanone (MIBK)	**12**	3.3	ug/m3	EPA TO-15	
Toluene	**32**	3.1	ug/m3	EPA TO-15	
Tetrachloroethene	**11**	2.8	ug/m3	EPA TO-15	
Ethylbenzene	**3.8**	1.8	ug/m3	EPA TO-15	
m,p-Xylene	**11**	1.8	ug/m3	EPA TO-15	
Styrene	**2.8**	1.7	ug/m3	EPA TO-15	
o-Xylene	**4.1**	1.8	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	**3.7**	2.0	ug/m3	EPA TO-15	

Sample ID: **IA-SHOP-020715** Laboratory ID: **E502034-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Dichlorodifluoromethane (F12)	**2.9**	1.0	ug/m3	EPA TO-15	
Chloromethane	**1.4**	0.21	ug/m3	EPA TO-15	
Vinyl chloride	**0.25**	0.13	ug/m3	EPA TO-15	
Bromomethane	**0.75**	0.39	ug/m3	EPA TO-15	
Trichlorofluoromethane (F11)	**1.2**	0.56	ug/m3	EPA TO-15	
Acetone	**33**	1.2	ug/m3	EPA TO-15	
Methylene chloride (Dichloromethane)	**0.66**	0.35	ug/m3	EPA TO-15	
Carbon disulfide	**0.64**	0.32	ug/m3	EPA TO-15	
2-Butanone (MEK)	**3.3**	0.60	ug/m3	EPA TO-15	
Benzene	**2.6**	0.16	ug/m3	EPA TO-15	
Carbon tetrachloride	**0.45**	0.32	ug/m3	EPA TO-15	
Trichloroethene	**240**	5.5	ug/m3	EPA TO-15	
4-Methyl-2-pentanone (MIBK)	**2.3**	0.83	ug/m3	EPA TO-15	
Toluene	**45**	0.76	ug/m3	EPA TO-15	
Tetrachloroethene	**1.6**	0.69	ug/m3	EPA TO-15	
Ethylbenzene	**5.9**	0.44	ug/m3	EPA TO-15	
m,p-Xylene	**12**	0.44	ug/m3	EPA TO-15	
Styrene	**0.66**	0.43	ug/m3	EPA TO-15	

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Sample ID: **IA-SHOP-020715** Laboratory ID: **E502034-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
o-Xylene	**5.1**	0.44	ug/m3	EPA TO-15	
4-Ethyltoluene	**2.2**	0.50	ug/m3	EPA TO-15	
1,3,5-Trimethylbenzene	**5.0**	0.50	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	**12**	0.50	ug/m3	EPA TO-15	

Sample ID: **AMB-OUTDOOR-020715** Laboratory ID: **E502034-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
Dichlorodifluoromethane (F12)	**2.3**	1.0	ug/m3	EPA TO-15	
Chloromethane	**1.1**	0.21	ug/m3	EPA TO-15	
Trichlorofluoromethane (F11)	**1.2**	0.56	ug/m3	EPA TO-15	
Acetone	**4.6**	1.2	ug/m3	EPA TO-15	
2-Butanone (MEK)	**0.79**	0.60	ug/m3	EPA TO-15	
Benzene	**0.67**	0.16	ug/m3	EPA TO-15	
Carbon tetrachloride	**0.40**	0.32	ug/m3	EPA TO-15	
Trichloroethene	**0.96**	0.55	ug/m3	EPA TO-15	
Toluene	**2.2**	0.76	ug/m3	EPA TO-15	
m,p-Xylene	**1.1**	0.44	ug/m3	EPA TO-15	

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1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SS-1-020715 (E502034-01) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
Helium (LCC)	**21.0**	0.10	%	1	EB51208	12-Feb-15	12-Feb-15	ASTM D1945M	

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1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SS-1-020715 (E502034-01) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
Dichlorodifluoromethane (F12)	ND	4.0	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Chloromethane	ND	0.8	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	2.8	"	"	"	"	"	"	
Vinyl chloride	ND	0.5	"	"	"	"	"	"	
Bromomethane	ND	1.6	"	"	"	"	"	"	
Chloroethane	ND	1.1	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	2.3	"	"	"	"	"	"	
Acetone	**320**	4.8	"	"	"	"	"	"	E
1,1-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1.4	"	"	"	"	"	"	
Carbon disulfide	**2.2**	1.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.6	"	"	"	"	"	"	
2-Butanone (MEK)	**18**	2.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	**4.4**	2.2	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	1.6	"	"	"	"	"	"	
Benzene	**7.0**	0.6	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.3	"	"	"	"	"	"	
Trichloroethene	**95**	2.2	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.9	"	"	"	"	"	"	
Bromodichloromethane	ND	2.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	**12**	3.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
Toluene	**32**	3.1	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.2	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	3.3	"	"	"	"	"	"	
Dibromochloromethane	ND	3.5	"	"	"	"	"	"	
Tetrachloroethene	**11**	2.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.1	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
Chlorobenzene	ND	1.9	"	"	"	"	"	"	
Ethylbenzene	**3.8**	1.8	"	"	"	"	"	"	
m,p-Xylene	**11**	1.8	"	"	"	"	"	"	
Styrene	**2.8**	1.7	"	"	"	"	"	"	

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Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SS-1-020715 (E502034-01) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
o-Xylene	**4.1**	1.8	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Bromoform	ND	4.2	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
4-Ethyltoluene	ND	2.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**3.7**	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*99.9 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*108 %*		*78-125*	"	"	"	"	
IA-SHOP-020715 (E502034-02) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
Dichlorodifluoromethane (F12)	**2.9**	1.0	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Chloromethane	**1.4**	0.21	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	0.71	"	"	"	"	"	"	
Vinyl chloride	**0.25**	0.13	"	"	"	"	"	"	
Bromomethane	**0.75**	0.39	"	"	"	"	"	"	
Chloroethane	ND	0.27	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.2**	0.56	"	"	"	"	"	"	
Acetone	**33**	1.2	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.40	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	0.77	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	**0.66**	0.35	"	"	"	"	"	"	
Carbon disulfide	**0.64**	0.32	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.41	"	"	"	"	"	"	
2-Butanone (MEK)	**3.3**	0.60	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
Chloroform	ND	0.25	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.55	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.41	"	"	"	"	"	"	
Benzene	**2.6**	0.16	"	"	"	"	"	"	
Carbon tetrachloride	**0.45**	0.32	"	"	"	"	"	"	
Trichloroethene	**240**	5.5	"	10	"	"	24-Feb-15	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
IA-SHOP-020715 (E502034-02) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
1,2-Dichloropropane	ND	0.47	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Bromodichloromethane	ND	0.68	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.46	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	**2.3**	0.83	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.46	"	"	"	"	"	"	
Toluene	**45**	0.76	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.55	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.83	"	"	"	"	"	"	
Dibromochloromethane	ND	0.86	"	"	"	"	"	"	
Tetrachloroethene	**1.6**	0.69	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.78	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.70	"	"	"	"	"	"	
Chlorobenzene	ND	0.47	"	"	"	"	"	"	
Ethylbenzene	**5.9**	0.44	"	"	"	"	"	"	
m,p-Xylene	**12**	0.44	"	"	"	"	"	"	
Styrene	**0.66**	0.43	"	"	"	"	"	"	
o-Xylene	**5.1**	0.44	"	"	"	"	"	"	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.70	"	"	"	"	"	"	
4-Ethyltoluene	**2.2**	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**5.0**	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**12**	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.9	"	"	"	"	"	"	
Hexachlorobutadiene	ND	2.7	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*101 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*111 %*		*78-125*	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
AMB-OUTDOOR-020715 (E502034-03) Vapor	**Sampled: 07-Feb-15**	**Received: 11-Feb-15**							
Dichlorodifluoromethane (F12)	**2.3**	1.0	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Chloromethane	**1.1**	0.21	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	0.71	"	"	"	"	"	"	
Vinyl chloride	ND	0.13	"	"	"	"	"	"	
Bromomethane	ND	0.39	"	"	"	"	"	"	
Chloroethane	ND	0.27	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	**1.2**	0.56	"	"	"	"	"	"	
Acetone	**4.6**	1.2	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.40	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	0.77	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	0.35	"	"	"	"	"	"	
Carbon disulfide	ND	0.32	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.41	"	"	"	"	"	"	
2-Butanone (MEK)	**0.79**	0.60	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
Chloroform	ND	0.25	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.55	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.41	"	"	"	"	"	"	
Benzene	**0.67**	0.16	"	"	"	"	"	"	
Carbon tetrachloride	**0.40**	0.32	"	"	"	"	"	"	
Trichloroethene	**0.96**	0.55	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.47	"	"	"	"	"	"	
Bromodichloromethane	ND	0.68	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.46	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	0.83	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.46	"	"	"	"	"	"	
Toluene	**2.2**	0.76	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.55	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.83	"	"	"	"	"	"	
Dibromochloromethane	ND	0.86	"	"	"	"	"	"	
Tetrachloroethene	ND	0.69	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.78	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.70	"	"	"	"	"	"	
Chlorobenzene	ND	0.47	"	"	"	"	"	"	
Ethylbenzene	ND	0.44	"	"	"	"	"	"	
m,p-Xylene	**1.1**	0.44	"	"	"	"	"	"	
Styrene	ND	0.43	"	"	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
AMB-OUTDOOR-020715 (E502034-03) Vapor Sampled: 07-Feb-15 Received: 11-Feb-15									
o-Xylene	ND	0.44	ug/m3	1	EB52305	23-Feb-15	23-Feb-15	EPA TO-15	
Bromoform	ND	1.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.70	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.61	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.9	"	"	"	"	"	"	
Hexachlorobutadiene	ND	2.7	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.0 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*98.1 %*		*78-125*	"	"	"	"	

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Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB51208 - GC										
Blank (EB51208-BLK1)				Prepared & Analyzed: 12-Feb-15						
Helium (LCC)	ND	0.10	%							

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Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB52305 - TO-15										
Blank (EB52305-BLK1)				Prepared & Analyzed: 23-Feb-15						
Dichlorodifluoromethane (F12)	ND	1.0	ug/m3							
Chloromethane	ND	0.21	"							
Dichlorotetrafluoroethane (F114)	ND	0.71	"							
Vinyl chloride	ND	0.13	"							
Bromomethane	ND	0.39	"							
Chloroethane	ND	0.27	"							
Trichlorofluoromethane (F11)	ND	0.56	"							
Acetone	ND	1.2	"							
1,1-Dichloroethene	ND	0.40	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	0.77	"							
Methylene chloride (Dichloromethane)	ND	0.35	"							
Carbon disulfide	ND	0.32	"							
trans-1,2-Dichloroethene	ND	0.40	"							
1,1-Dichloroethane	ND	0.41	"							
2-Butanone (MEK)	ND	0.60	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Chloroform	ND	0.25	"							
1,1,1-Trichloroethane	ND	0.55	"							
1,2-Dichloroethane (EDC)	ND	0.41	"							
Benzene	ND	0.16	"							
Carbon tetrachloride	ND	0.32	"							
Trichloroethene	ND	0.55	"							
1,2-Dichloropropane	ND	0.47	"							
Bromodichloromethane	ND	0.68	"							
cis-1,3-Dichloropropene	ND	0.46	"							
4-Methyl-2-pentanone (MIBK)	ND	0.83	"							
trans-1,3-Dichloropropene	ND	0.46	"							
Toluene	ND	0.76	"							
1,1,2-Trichloroethane	ND	0.55	"							
2-Hexanone (MBK)	ND	0.83	"							
Dibromochloromethane	ND	0.86	"							
Tetrachloroethene	ND	0.69	"							
1,2-Dibromoethane (EDB)	ND	0.78	"							
1,1,1,2-Tetrachloroethane	ND	0.70	"							

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
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Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB52305 - TO-15										
Blank (EB52305-BLK1)				Prepared & Analyzed: 23-Feb-15						
Chlorobenzene	ND	0.47	ug/m3							
Ethylbenzene	ND	0.44	"							
m,p-Xylene	ND	0.44	"							
Styrene	ND	0.43	"							
o-Xylene	ND	0.44	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	0.70	"							
4-Ethyltoluene	ND	0.50	"							
1,3,5-Trimethylbenzene	ND	0.50	"							
1,2,4-Trimethylbenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.61	"							
1,4-Dichlorobenzene	ND	0.61	"							
1,2-Dichlorobenzene	ND	0.61	"							
1,2,4-Trichlorobenzene	ND	1.9	"							
Hexachlorobutadiene	ND	2.7	"							
Surrogate: 1,2-Dichloroethane-d4	*207*		*"*	*214*		*96.6*	*76-134*			
Surrogate: Toluene-d8	*221*		*"*	*207*		*107*	*78-125*			
LCS (EB52305-BS1)				Prepared & Analyzed: 23-Feb-15						
Dichlorodifluoromethane (F12)	11	1.0	ug/m3	10.1		112	70-130			
Vinyl chloride	5.5	0.13	"	5.20		105	70-130			
Chloroethane	5.8	0.27	"	5.36		108	70-130			
Trichlorofluoromethane (F11)	13	0.56	"	11.3		112	70-130			
1,1-Dichloroethene	8.9	0.40	"	8.08		111	70-130			
1,1,2-Trichlorotrifluoroethane (F113)	17	0.77	"	15.5		111	70-130			
Methylene chloride (Dichloromethane)	7.1	0.35	"	7.08		99.7	70-130			
trans-1,2-Dichloroethene	9.4	0.40	"	8.08		116	70-130			
1,1-Dichloroethane	9.9	0.41	"	8.24		121	70-130			
cis-1,2-Dichloroethene	9.5	0.40	"	8.00		119	70-130			
Chloroform	11	0.25	"	9.92		113	70-130			
1,1,1-Trichloroethane	12	0.55	"	11.1		106	70-130			
1,2-Dichloroethane (EDC)	8.8	0.41	"	8.24		106	70-130			
Benzene	7.5	0.16	"	6.48		115	70-130			

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Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB52305 - TO-15										
LCS (EB52305-BS1)				Prepared & Analyzed: 23-Feb-15						
Carbon tetrachloride	14	0.32	ug/m3	12.8		107	70-130			
Trichloroethene	11	0.55	"	11.0		95.9	70-130			
Toluene	7.6	0.76	"	7.68		98.8	70-130			
1,1,2-Trichloroethane	11	0.55	"	11.1		97.4	70-130			
Tetrachloroethene	13	0.69	"	13.8		92.9	70-130			
1,1,1,2-Tetrachloroethane	13	0.70	"	14.0		93.1	70-130			
Ethylbenzene	8.7	0.44	"	8.84		98.0	70-130			
m,p-Xylene	18	0.44	"	17.7		101	70-130			
o-Xylene	8.6	0.44	"	8.84		96.7	70-130			
1,1,2,2-Tetrachloroethane	14	0.70	"	14.0		97.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	*231*		*"*	*214*		*108*	*70-130*			
Surrogate: Toluene-d8	*223*		*"*	*207*		*108*	*70-130*			
LCS Dup (EB52305-BSD1)				Prepared & Analyzed: 23-Feb-15						
Dichlorodifluoromethane (F12)	11	1.0	ug/m3	10.1		106	70-130	4.93	25	
Vinyl chloride	5.2	0.13	"	5.20		99.6	70-130	5.60	25	
Chloroethane	5.3	0.27	"	5.36		99.4	70-130	8.51	25	
Trichlorofluoromethane (F11)	12	0.56	"	11.3		107	70-130	4.05	25	
1,1-Dichloroethene	8.3	0.40	"	8.08		103	70-130	7.13	25	
1,1,2-Trichlorotrifluoroethane (F113)	17	0.77	"	15.5		107	70-130	3.52	25	
Methylene chloride (Dichloromethane)	6.6	0.35	"	7.08		93.2	70-130	6.71	25	
trans-1,2-Dichloroethene	8.2	0.40	"	8.08		102	70-130	13.2	25	
1,1-Dichloroethane	8.2	0.41	"	8.24		99.9	70-130	18.8	25	
cis-1,2-Dichloroethene	8.2	0.40	"	8.00		102	70-130	15.7	25	
Chloroform	11	0.25	"	9.92		107	70-130	5.33	25	
1,1,1-Trichloroethane	11	0.55	"	11.1		100	70-130	5.43	25	
1,2-Dichloroethane (EDC)	8.1	0.41	"	8.24		98.3	70-130	7.94	25	
Benzene	6.8	0.16	"	6.48		105	70-130	8.78	25	
Carbon tetrachloride	13	0.32	"	12.8		102	70-130	4.90	25	
Trichloroethene	10	0.55	"	11.0		94.8	70-130	1.20	25	
Toluene	6.8	0.76	"	7.68		88.2	70-130	11.3	25	
1,1,2-Trichloroethane	9.7	0.55	"	11.1		87.0	70-130	11.3	25	
Tetrachloroethene	12	0.69	"	13.8		86.1	70-130	7.69	25	

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Kennedy/Jenks Consultants - Seattle	Project: KJ021115-11	
1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB52305 - TO-15										
LCS Dup (EB52305-BSD1)				Prepared & Analyzed: 23-Feb-15						
1,1,1,2-Tetrachloroethane	11	0.70	ug/m3	14.0		76.5	70-130	19.5	25	
Ethylbenzene	8.4	0.44	"	8.84		95.1	70-130	2.99	25	
m,p-Xylene	17	0.44	"	17.7		98.6	70-130	2.61	25	
o-Xylene	8.1	0.44	"	8.84		92.1	70-130	4.90	25	
1,1,2,2-Tetrachloroethane	14	0.70	"	14.0		101	70-130	4.31	25	
Surrogate: 1,2-Dichloroethane-d4	*213*		*"*	*214*		*99.2*	*70-130*			
Surrogate: Toluene-d8	*204*		*"*	*207*		*98.6*	*70-130*			

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1191 2nd Ave, Suite 630	Project Number: 1396024.00 / Precision Eng.	Reported:
Seattle, WA 98101	Project Manager: Ms. Jessica Faragalli	25-Feb-15 09:38

Notes and Definitions

E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Mobile Geochemistry, Inc.
2470 Impala Drive, Carlsbad, CA 92010
& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com
P 760.804.9678 F 760.804.9159

VAPOR / AIR Chain of Custody

DATE: 2/7/15
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: Kennedy/Jenks Consultants	Project Name / #: 1396024.00 / Precision Eng.
Lab Client Project Manager: Jessica Faragalli	Project Location: Seattle, WA
Lab Client Address: 1191 2nd Ave, Suite 630	Report E-Mail(s): joshhoppe@kennedyjenks.com jessicafaragalli@kennedyjenks.com
Lab Client City, State, Zip: Seattle, WA 98101	
Phone Number: 206-753-3425	

Reporting Requirements

- [x] Standard Report ☐ Level III ☐ Level IV
- [x] Excel EDD ☐ Other EDD:_____
- ☐ CA Geotracker Global ID:_____

Turnaround Time

- [x] 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☐ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): Josh Hoppe / Craig Joseph
Signature:
Date: 2-7-15

Sample Receipt (Lab Use Only)

Date Rec'd: 2/11/15	Control #: 150088 01
H&P Project # KJ021115-11	
Lab Work Order # ES02034	
Sample Intact: [x] Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167 + 1076084	Temp: 22°C
Outside Lab:	
Receipt Notes/Tracking #: 1293TT61874609 7798	
Lab PM Initials: SN	

Additional Instructions to Laboratory:

☐ Check if Project Analyte List is Attached

Preferred VOC units (please choose one):

☐ µg/L [x] µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV [x] TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA [x] He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
SS-1-020715		02/07/15	1728 (JCH) 1739	SS	1L summa	435	-1.15	X							X					
IA-SHOP-020715		↓	1800	IA	6L summa	315	-2.54	X												
AMB-OUTDOOR-020715		↓	1810	AA	6L summa	297	.13	X												

Approved/Relinquished by:	Company: Kennedy Jenks	Date: 02/09/15	Time: 1330	Received by: Tori Unsworth	Company: H&P	Date: 2/11/15	Time: 2:20
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 12/31/2013

March 2015

Analytical Resources, Incorporated
Analytical Chemists and Consultants

30 March 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: ZZ43

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five water samples and one trip blank on March 9, 2015. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for three compounds were not within control limits for the CCALs that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW10. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: ZZ43

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 7243 4 of 8	Turn-around Requested: Std.	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: (253) 835-6400	Date: 3/9/15	Ice Present? Y
Client Contact: Jessica Fasagalli		No. of Coolers: 1	Cooler Temps: 4.1
Client Project Name: Precision Engineering			
Client Project #: 1396024.00C	Samplers: C. Joseph		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	NWTPH-Dx	VOCs	Metals (1)	Cu, Cr+6					Notes/Comments
MW10	3/9/15	1035	W	6	X	X	X	X					(1) Metals: Cr, Pb, As, Se
MW9		1205		6	X	X	X	X					
MW3		1340		6	X	X	X	X					
MW1		1505		6	X	X	X	X					
MW2		1620		6	X	X	X	X					
Trip Blank	3/9/15			2		X							

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: A. Vargardsen	Printed Name:	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company:	Company.
	Date & Time: 3/9/15 1726	Date & Time: 3/9/15 1726	Date & Time:	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks Project Name: Precision Engineering

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No. 2743 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 4.1

Time: 1726

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90837952

Cooler Accepted by: AV Date: 3/9/15 Time: 1726

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies (Foam Block) Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	3/5/15	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 3/10/15 Time: 1020

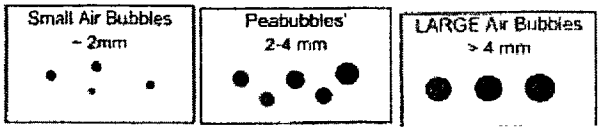
***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

MW10 = 2Lg MW2 = 1Lg

By: AV Date. 3/10/15



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 03/10/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ZZ43**

Inquiry Number: NONE
Analysis Requested: 03/10/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 03/09/15

Project #: 1396027000
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-4355 **ZZ43A**	MW10						TOT Pass															
15-4356 **ZZ43B**	MW9						TOT Pass															
15-4357 **ZZ43C**	MW3						TOT Pass															
15-4358 **ZZ43D**	MW1						TOT Pass															
15-4359 **ZZ43E**	MW2						TOT Pass															

15455 : ZZ43

Checked By AV Date 3/10/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZZ43
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396027000
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW10	ZZ43A	15-4355	Water	03/09/15 10:35	03/09/15 17:26
2.	MW9	ZZ43B	15-4356	Water	03/09/15 12:05	03/09/15 17:26
3.	MW3	ZZ43C	15-4357	Water	03/09/15 13:40	03/09/15 17:26
4.	MW1	ZZ43D	15-4358	Water	03/09/15 15:05	03/09/15 17:26
5.	MW2	ZZ43E	15-4359	Water	03/09/15 16:20	03/09/15 17:26
6.	TRIP BLANKS	ZZ43F	15-4360	Water	03/09/15	03/09/15 17:26

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ZZ43 : 00005

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-031715A**
 METHOD BLANK

Lab Sample ID: MB-031715A
LIMS ID: 15-4355
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 12:34

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-031715A**

METHOD BLANK

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: MB-031715A
LIMS ID: 15-4355
Matrix: Water
Date Analyzed: 03/17/15 12:34

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.1%
d8-Toluene	97.4%
Bromofluorobenzene	99.6%
d4-1,2-Dichlorobenzene	100%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW10**
 SAMPLE

Lab Sample ID: ZZ43A
LIMS ID: 15-4355
Matrix: Water
Data Release Authorized:
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 19:00

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW10**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43A
LIMS ID: 15-4355
Matrix: Water
Date Analyzed: 03/17/15 19:00

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.9%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9**
 SAMPLE

Lab Sample ID: ZZ43B
LIMS ID: 15-4356
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 19:24

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW9**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43B
LIMS ID: 15-4356
Matrix: Water
Date Analyzed: 03/17/15 19:24

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.1%
Bromofluorobenzene	97.8%
d4-1,2-Dichlorobenzene	98.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW3**
 SAMPLE

Lab Sample ID: ZZ43C
LIMS ID: 15-4357
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 19:49

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW3**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43C
LIMS ID: 15-4357
Matrix: Water
Date Analyzed: 03/17/15 19:49

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.1%
Bromofluorobenzene	97.8%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW1**
 SAMPLE

Lab Sample ID: ZZ43D
LIMS ID: 15-4358
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 20:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW1**
Page 2 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43D
LIMS ID: 15-4358
Matrix: Water
Date Analyzed: 03/17/15 20:14

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	97.1%
Bromofluorobenzene	96.9%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW2**
 SAMPLE

Lab Sample ID: ZZ43E
LIMS ID: 15-4359
Matrix: Water
Data Release Authorized:
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 20:38

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW2**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43E
LIMS ID: 15-4359
Matrix: Water
Date Analyzed: 03/17/15 20:38

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	97.5%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS**
 SAMPLE

Lab Sample ID: ZZ43F
LIMS ID: 15-4360
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/17/15 21:03

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ43F
LIMS ID: 15-4360
Matrix: Water
Date Analyzed: 03/17/15 21:03

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.2%
Bromofluorobenzene	97.1%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-031715A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-031715A
LIMS ID: 15-4355
Matrix: Water
Data Release Authorized: MW
Reported: 03/19/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT7/PAB
LCSD: NT7/PAB
Date Analyzed LCS: 03/17/15 11:45
LCSD: 03/17/15 12:09

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	11.5 Q	10.0	115%	12.1 Q	10.0	121%	5.1%
Bromomethane	10.8	10.0	108%	11.7	10.0	117%	8.0%
Vinyl Chloride	10.5	10.0	105%	11.6	10.0	116%	10.0%
Chloroethane	13.2 Q	10.0	132%	12.4 Q	10.0	124%	6.2%
Methylene Chloride	9.38	10.0	93.8%	9.95	10.0	99.5%	5.9%
Acetone	44.7	50.0	89.4%	47.7	50.0	95.4%	6.5%
Carbon Disulfide	9.23	10.0	92.3%	9.81	10.0	98.1%	6.1%
1,1-Dichloroethene	10.4	10.0	104%	11.2	10.0	112%	7.4%
1,1-Dichloroethane	9.58	10.0	95.8%	10.2	10.0	102%	6.3%
trans-1,2-Dichloroethene	9.84	10.0	98.4%	10.4	10.0	104%	5.5%
cis-1,2-Dichloroethene	9.89	10.0	98.9%	10.6	10.0	106%	6.9%
Chloroform	9.75	10.0	97.5%	10.3	10.0	103%	5.5%
1,2-Dichloroethane	9.49	10.0	94.9%	9.99	10.0	99.9%	5.1%
2-Butanone	46.6	50.0	93.2%	49.5	50.0	99.0%	6.0%
1,1,1-Trichloroethane	9.82	10.0	98.2%	10.5	10.0	105%	6.7%
Carbon Tetrachloride	9.79	10.0	97.9%	10.2	10.0	102%	4.1%
Vinyl Acetate	9.27	10.0	92.7%	10.1	10.0	101%	8.6%
Bromodichloromethane	9.66	10.0	96.6%	10.4	10.0	104%	7.4%
1,2-Dichloropropane	9.62	10.0	96.2%	10.1	10.0	101%	4.9%
cis-1,3-Dichloropropene	9.99	10.0	99.9%	10.7	10.0	107%	6.9%
Trichloroethene	10.0	10.0	100%	10.5	10.0	105%	4.9%
Dibromochloromethane	9.42	10.0	94.2%	10.2	10.0	102%	8.0%
1,1,2-Trichloroethane	9.74	10.0	97.4%	10.6	10.0	106%	8.5%
Benzene	9.73	10.0	97.3%	10.2	10.0	102%	4.7%
trans-1,3-Dichloropropene	10.1	10.0	101%	10.7	10.0	107%	5.8%
2-Chloroethylvinylether	8.93	10.0	89.3%	9.92	10.0	99.2%	10.5%
Bromoform	9.54	10.0	95.4%	10.2	10.0	102%	6.7%
4-Methyl-2-Pentanone (MIBK)	48.4	50.0	96.8%	51.6	50.0	103%	6.4%
2-Hexanone	46.2	50.0	92.4%	49.5	50.0	99.0%	6.9%
Tetrachloroethene	9.90	10.0	99.0%	10.4	10.0	104%	4.9%
1,1,2,2-Tetrachloroethane	9.44	10.0	94.4%	9.78	10.0	97.8%	3.5%
Toluene	9.42	10.0	94.2%	9.86	10.0	98.6%	4.6%
Chlorobenzene	9.52	10.0	95.2%	10.1	10.0	101%	5.9%
Ethylbenzene	9.78	10.0	97.8%	10.4	10.0	104%	6.1%
Styrene	10.5	10.0	105%	11.2	10.0	112%	6.5%
Trichlorofluoromethane	11.6	10.0	116%	12.0	10.0	120%	3.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.58	10.0	95.8%	9.93	10.0	99.3%	3.6%
m,p-Xylene	19.7	20.0	98.5%	21.0	20.0	105%	6.4%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-031715A**

LAB CONTROL SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: LCS-031715A
LIMS ID: 15-4355
Matrix: Water

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.82	10.0	98.2%	10.5	10.0	105%	6.7%
1,2-Dichlorobenzene	9.32	10.0	93.2%	9.64	10.0	96.4%	3.4%
1,3-Dichlorobenzene	9.72	10.0	97.2%	9.87	10.0	98.7%	1.5%
1,4-Dichlorobenzene	9.43	10.0	94.3%	9.67	10.0	96.7%	2.5%
Acrolein	50.6	50.0	101%	57.6	50.0	115%	12.9%
Iodomethane	9.98	10.0	99.8%	10.5	10.0	105%	5.1%
Bromoethane	9.52	10.0	95.2%	10.0	10.0	100%	4.9%
Acrylonitrile	9.18	10.0	91.8%	9.51	10.0	95.1%	3.5%
1,1-Dichloropropene	10.2	10.0	102%	10.6	10.0	106%	3.8%
Dibromomethane	9.65	10.0	96.5%	10.2	10.0	102%	5.5%
1,1,1,2-Tetrachloroethane	9.65	10.0	96.5%	10.4	10.0	104%	7.5%
1,2-Dibromo-3-chloropropane	8.30	10.0	83.0%	8.54	10.0	85.4%	2.9%
1,2,3-Trichloropropane	9.95	10.0	99.5%	10.2	10.0	102%	2.5%
trans-1,4-Dichloro-2-butene	9.01	10.0	90.1%	9.35	10.0	93.5%	3.7%
1,3,5-Trimethylbenzene	10.2	10.0	102%	10.4	10.0	104%	1.9%
1,2,4-Trimethylbenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Hexachlorobutadiene	9.46	10.0	94.6%	9.38	10.0	93.8%	0.8%
1,2-Dibromoethane	10.2	10.0	102%	10.7	10.0	107%	4.8%
Bromochloromethane	10.1	10.0	101%	10.7	10.0	107%	5.8%
2,2-Dichloropropane	10.2	10.0	102%	11.0	10.0	110%	7.5%
1,3-Dichloropropane	9.61	10.0	96.1%	10.2	10.0	102%	6.0%
Isopropylbenzene	9.92	10.0	99.2%	10.1	10.0	101%	1.8%
n-Propylbenzene	10.3	10.0	103%	10.4	10.0	104%	1.0%
Bromobenzene	9.61	10.0	96.1%	9.93	10.0	99.3%	3.3%
2-Chlorotoluene	9.76	10.0	97.6%	9.90	10.0	99.0%	1.4%
4-Chlorotoluene	9.65	10.0	96.5%	9.96	10.0	99.6%	3.2%
tert-Butylbenzene	9.57	10.0	95.7%	9.73	10.0	97.3%	1.7%
sec-Butylbenzene	9.84	10.0	98.4%	9.99	10.0	99.9%	1.5%
4-Isopropyltoluene	10.2	10.0	102%	10.4	10.0	104%	1.9%
n-Butylbenzene	10.1	10.0	101%	10.1	10.0	101%	0.0%
1,2,4-Trichlorobenzene	8.68	10.0	86.8%	8.83	10.0	88.3%	1.7%
Naphthalene	7.60 Q	10.0	76.0%	8.03 Q	10.0	80.3%	5.5%
1,2,3-Trichlorobenzene	9.51	10.0	95.1%	9.80	10.0	98.0%	3.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.5%	97.7%
d8-Toluene	101%	100%
Bromofluorobenzene	98.7%	101%
d4-1,2-Dichlorobenzene	102%	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-031715A	Method Blank	10	98.1%	97.4%	99.6%	100%	0
LCS-031715A	Lab Control	10	97.5%	101%	98.7%	102%	0
LCSD-031715A	Lab Control Dup	10	97.7%	100%	101%	101%	0
ZZ43A	MW10	10	104%	99.9%	96.8%	103%	0
ZZ43B	MW9	10	101%	99.1%	97.8%	98.9%	0
ZZ43C	MW3	10	102%	98.1%	97.8%	100%	0
ZZ43D	MW1	10	100%	97.1%	96.9%	100%	0
ZZ43E	MW2	10	106%	97.5%	98.9%	103%	0
ZZ43F	TRIP BLANKS	10	102%	98.2%	97.1%	100%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-4355 to 15-4360

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 17-MAR-2015 11:09
Lab File ID: cc0317.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0317 Quant Type: ISTD
Method: /chem1/nt7.i/20150317.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.45821	0.74796	0.74796	0.010	63.23535	20.00000	Averaged	<-
2 Chloromethane	0.51660	0.63800	0.63800	0.100	23.49914	20.00000	Averaged	<-
3 Vinyl Chloride	0.61195	0.67648	0.67648	0.100	10.54463	20.00000	Averaged	
4 Bromomethane	0.36508	0.41467	0.41467	0.100	13.58412	20.00000	Averaged	
5 Chloroethane	0.31046	0.43534	0.43534	0.010	40.22356	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.76053	0.86132	0.86132	0.010	13.25225	20.00000	Averaged	
7 1,1-Dichloroethene	0.79500	0.88616	0.88616	0.100	11.46617	20.00000	Averaged	
8 Carbon Disulfide	1.80859	1.74476	1.74476	0.010	-3.52957	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.52885	0.51211	0.51211	0.010	-3.16543	20.00000	Averaged	
10 Iodomethane	0.62671	0.65684	0.65684	0.010	4.80755	20.00000	Averaged	
11 Bromoethane	0.38201	0.38149	0.38149	0.100	-0.13573	20.00000	Averaged	
12 Acrolein	0.03337	0.03590	0.03590	0.000	7.58393	20.00000	Averaged	
13 Methylene Chloride	9.98395	10.00000	0.61914	0.010	-0.16047	20.00000	Linear	
14 Acetone	46.24734	50.00000	0.07866	0.001	-7.50531	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.60535	0.62043	0.62043	0.010	2.49108	20.00000	Averaged	
17 Methyl tert butyl ether	1.58455	1.62688	1.62688	0.100	2.67199	20.00000	Averaged	
18 1,1-Dichloroethane	1.03436	1.03107	1.03107	0.200	-0.31798	20.00000	Averaged	
19 Acrylonitrile	0.11466	0.10883	0.10883	0.001	-5.08765	20.00000	Averaged	
20 Vinyl Acetate	0.78310	0.75866	0.75866	0.010	-3.12032	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.62811	0.65070	0.65070	0.010	3.59697	20.00000	Averaged	
23 2,2-Dichloropropane	0.94664	0.95717	0.95717	0.010	1.11251	20.00000	Averaged	
24 Bromochloromethane	0.25643	0.27929	0.27929	0.050	8.91261	20.00000	Averaged	
25 Chloroform	1.03353	1.06889	1.06889	0.200	3.42124	20.00000	Averaged	
26 Carbon Tetrachloride	0.48813	0.49026	0.49026	0.100	0.43569	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.41932	0.42167	0.42167	0.100	0.55949	20.00000	Averaged	
28 1,1,1-Trichloroethane	0.94647	0.97586	0.97586	0.100	3.10565	20.00000	Averaged	
29 2-Butanone	0.14166	0.13248	0.13248	0.001	-6.47920	20.00000	Averaged	
30 1,1-Dichloropropene	0.55285	0.57134	0.57134	0.010	3.34483	20.00000	Averaged	
31 Benzene	1.60743	1.61586	1.61586	0.500	0.52455	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.53184	0.51876	0.51876	0.010	-2.45921	20.00000	Averaged	
34 1,2-Dichloroethane	0.48018	0.48019	0.48019	0.100	0.00390	20.00000	Averaged	
36 Trichloroethene	0.38665	0.39912	0.39912	0.100	3.22604	20.00000	Averaged	
38 Dibromomethane	0.18549	0.18350	0.18350	0.010	-1.06937	20.00000	Averaged	
39 1,2-Dichloropropane	0.36530	0.36169	0.36169	0.100	-0.98933	20.00000	Averaged	
40 Bromodichloromethane	0.47247	0.48025	0.48025	0.100	1.64702	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 17-MAR-2015 11:09
Lab File ID: cc0317.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0317 Quant Type: ISTD
Method: /chem1/nt7.i/20150317.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 2-Chloroethyl Vinyl Ether	0.18729	0.17748	0.17748	0.000	-5.23713	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.58968	0.60660	0.60660	0.200	2.86893	20.00000	Averaged
$ 43 d8-Toluene	1.19783	1.18981	1.18981	0.010	-0.66934	20.00000	Averaged
44 Toluene	1.03560	0.99658	0.99658	0.400	-3.76821	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.08529	0.08608	0.08608	0.000	0.92854	20.00000	Averaged
46 Tetrachloroethene	0.46897	0.46174	0.46174	0.200	-1.54084	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.49582	0.51036	0.51036	0.010	2.93250	20.00000	Averaged
48 1,1,2-Trichloroethane	0.27580	0.27907	0.27907	0.100	1.18592	20.00000	Averaged
49 Chlorodibromomethane	0.34434	0.34560	0.34560	0.100	0.36537	20.00000	Averaged
50 1,3-Dichloropropane	0.63311	0.63768	0.63768	0.100	0.72328	20.00000	Averaged
51 1,2-Dibromoethane	0.24974	0.26155	0.26155	0.010	4.72582	20.00000	Averaged
52 2-Hexanone	0.16820	0.16143	0.16143	0.010	-4.02111	20.00000	Averaged
54 Chlorobenzene	1.25885	1.23824	1.23824	0.500	-1.63709	20.00000	Averaged
55 Ethyl Benzene	0.68288	0.68241	0.68241	0.100	-0.06947	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.39243	0.39783	0.39783	0.010	1.37479	20.00000	Averaged
57 m,p-xylene	0.81573	0.82597	0.82597	0.300	1.25496	20.00000	Averaged
58 o-Xylene	0.81247	0.81376	0.81376	0.300	0.15870	20.00000	Averaged
59 Styrene	1.16854	1.27630	1.27630	0.300	9.22147	20.00000	Averaged
60 Bromoform	0.39802	0.38290	0.38290	0.010	-3.79874	20.00000	Averaged
61 Isopropyl Benzene	4.37908	4.24993	4.24993	0.010	-2.94924	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.52088	0.51515	0.51515	0.200	-1.09943	20.00000	Averaged
63 Bromobenzene	1.01363	0.96520	0.96520	0.010	-4.77785	20.00000	Averaged
64 N-Propyl Benzene	4.94182	4.93655	4.93655	0.010	-0.10656	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.77084	0.72651	0.72651	0.100	-5.75105	20.00000	Averaged
66 2-Chloro Toluene	3.14121	3.01142	3.01142	0.010	-4.13175	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	3.59234	3.58787	3.58787	0.010	-0.12427	20.00000	Averaged
68 1,2,3-Trichloropropane	0.23515	0.23399	0.23399	0.010	-0.49325	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.20747	0.18447	0.18447	0.001	-11.08478	20.00000	Averaged
70 4-Chloro Toluene	3.24956	3.07616	3.07616	0.010	-5.33622	20.00000	Averaged
71 T-Butyl Benzene	3.25561	3.05206	3.05206	0.010	-6.25236	20.00000	Averaged
72 1,2,4-Trimethylbenzene	3.62655	3.57799	3.57799	0.010	-1.33884	20.00000	Averaged
73 S-Butyl Benzene	4.65443	4.44370	4.44370	0.010	-4.52749	20.00000	Averaged
74 4-Isopropyl Toluene	3.79416	3.71900	3.71900	0.010	-1.98094	20.00000	Averaged
75 1,3-Dichlorobenzene	1.98455	1.87376	1.87376	0.600	-5.58293	20.00000	Averaged
77 1,4-Dichlorobenzene	2.01488	1.86913	1.86913	0.500	-7.23393	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 17-MAR-2015 11:09
Lab File ID: cc0317.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0317 Quant Type: ISTD
Method: /chem1/nt7.i/20150317.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
78 N-Butyl Benzene	3.57838	3.34952	3.34952	0.010	-6.39583	20.00000	Averaged	
$ 79 d4-1,2-Dichlorobenzene	0.89718	0.87904	0.87904	0.010	-2.02194	20.00000	Averaged	
80 1,2-Dichlorobenzene	1.87113	1.70923	1.70923	0.400	-8.65232	20.00000	Averaged	
81 1,2-Dibromo 3-Chloropropane	0.14246	0.11563	0.11563	0.010	-18.83725	20.00000	Averaged	
83 Hexachloro 1,3-Butadiene	8.55669	10.00000	0.59838	0.010	-14.43312	20.00000	Linear	
84 1,2,4-Trichlorobenzene	1.52797	1.24679	1.24679	0.010	-18.40191	20.00000	Averaged	
85 Naphthalene	2.94809	2.14944	2.14944	0.010	-27.09056	20.00000	Averaged	<-
86 1,2,3-Trichlorobenzene	9.14816	10.00000	1.08764	0.010	-8.51842	20.00000	Linear	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: ZZ43-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024000

Matrix: Water

Date Received: 03/09/15

Data Release Authorized: MW
Reported: 03/30/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-031315	Method Blank	03/13/15	03/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-4355	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		109%
ZZ43A	MW10	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.54**
15-4355	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.43**
					o-Terphenyl		79.9%
ZZ43B	MW9	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.12**
15-4356	HC ID: **DIESEL**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		83.6%
ZZ43C	MW3	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.12**
15-4357	HC ID: **DIESEL**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		96.5%
ZZ43D	MW1	03/13/15	03/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-4358	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		95.8%
ZZ43E	MW2	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.42**
15-4359	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.36**
					o-Terphenyl		81.8%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000

Client ID	OTER	TOT OUT
MB-031315	109%	0
LCS-031315	105%	0
LCSD-031315	106%	0
MW10	79.9%	0
MW9	83.6%	0
MW3	96.5%	0
MW1	95.8%	0
MW2	81.8%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-4355 to 15-4359

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-031315
LCS/LCSD

Lab Sample ID: LCS-031315
LIMS ID: 15-4355
Matrix: Water
Data Release Authorized:
Reported: 03/30/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 03/13/15

Date Analyzed LCS: 03/27/15 10:55
LCSD: 03/27/15 11:16
Instrument/Analyst LCS: FID9/ML
LCSD: FID9/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.69	3.00	89.7%	3.00	3.00	100%	10.9%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	105%	106%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 03/09/15

ARI Job: ZZ43
Project: Precision Engineering
1396024000

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-4355-031315MB1	Method Blank	500 mL	1.00 mL	03/13/15
15-4355-031315LCS1	Lab Control	500 mL	1.00 mL	03/13/15
15-4355-031315LCSD1	Lab Control Dup	500 mL	1.00 mL	03/13/15
15-4355-ZZ43A	MW10	500 mL	1.00 mL	03/13/15
15-4356-ZZ43B	MW9	500 mL	1.00 mL	03/13/15
15-4357-ZZ43C	MW3	500 mL	1.00 mL	03/13/15
15-4358-ZZ43D	MW1	500 mL	1.00 mL	03/13/15
15-4359-ZZ43E	MW2	500 mL	1.00 mL	03/13/15

Data File: /chem2/fid9.i/20150327.b/0327a007.d

Date : 27-MAR-2015 10:33

Client ID: ZZ46MBW1

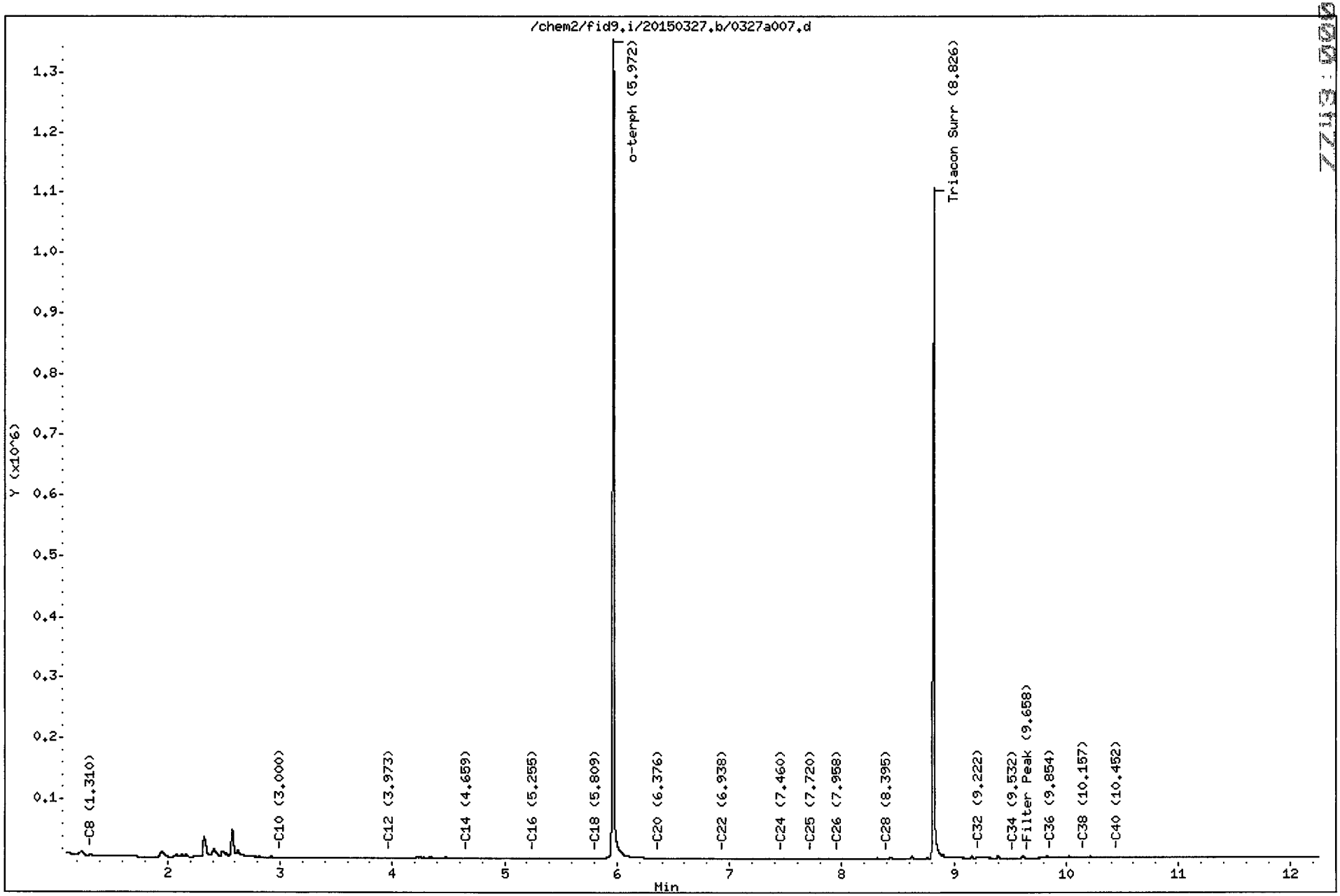
Sample Info: ZZ46MBW1

Column phase: RTX-1

Instrument: fid9.i

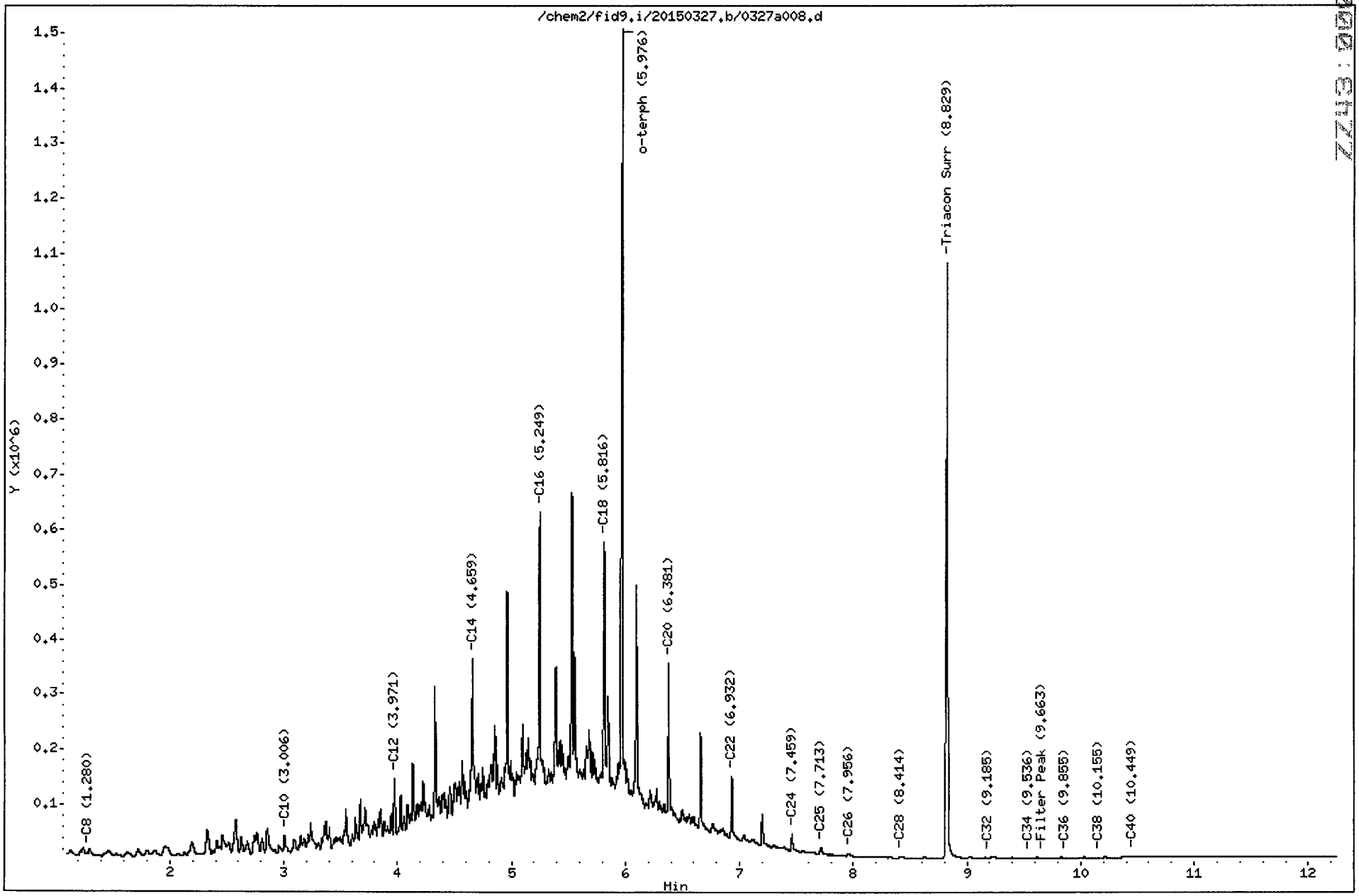
Operator: JW

Column diameter: 0.25

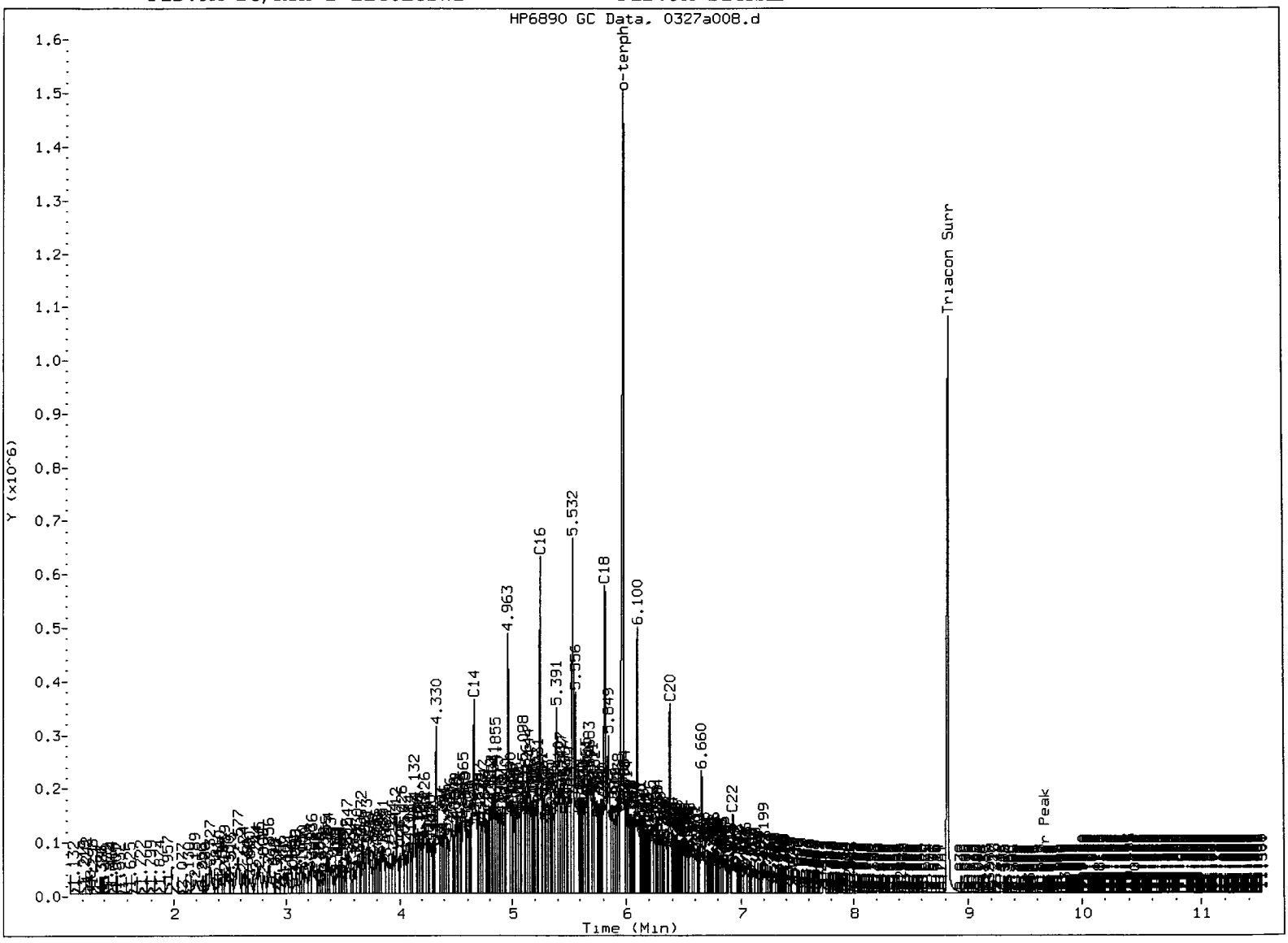


Data File: /chem2/fid9.i/20150327.b/0327a008.d
Date : 27-MAR-2015 10:55
Client ID: ZZ46LCSW1
Sample Info: ZZ46LCSW1

Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 ZZ46LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: ML Date: 3/30/15

Data File: /chem2/fid9.i/20150327.b/0327a009.d

Date : 27-MAR-2015 11:16

Client ID: ZZ46LCSDW1

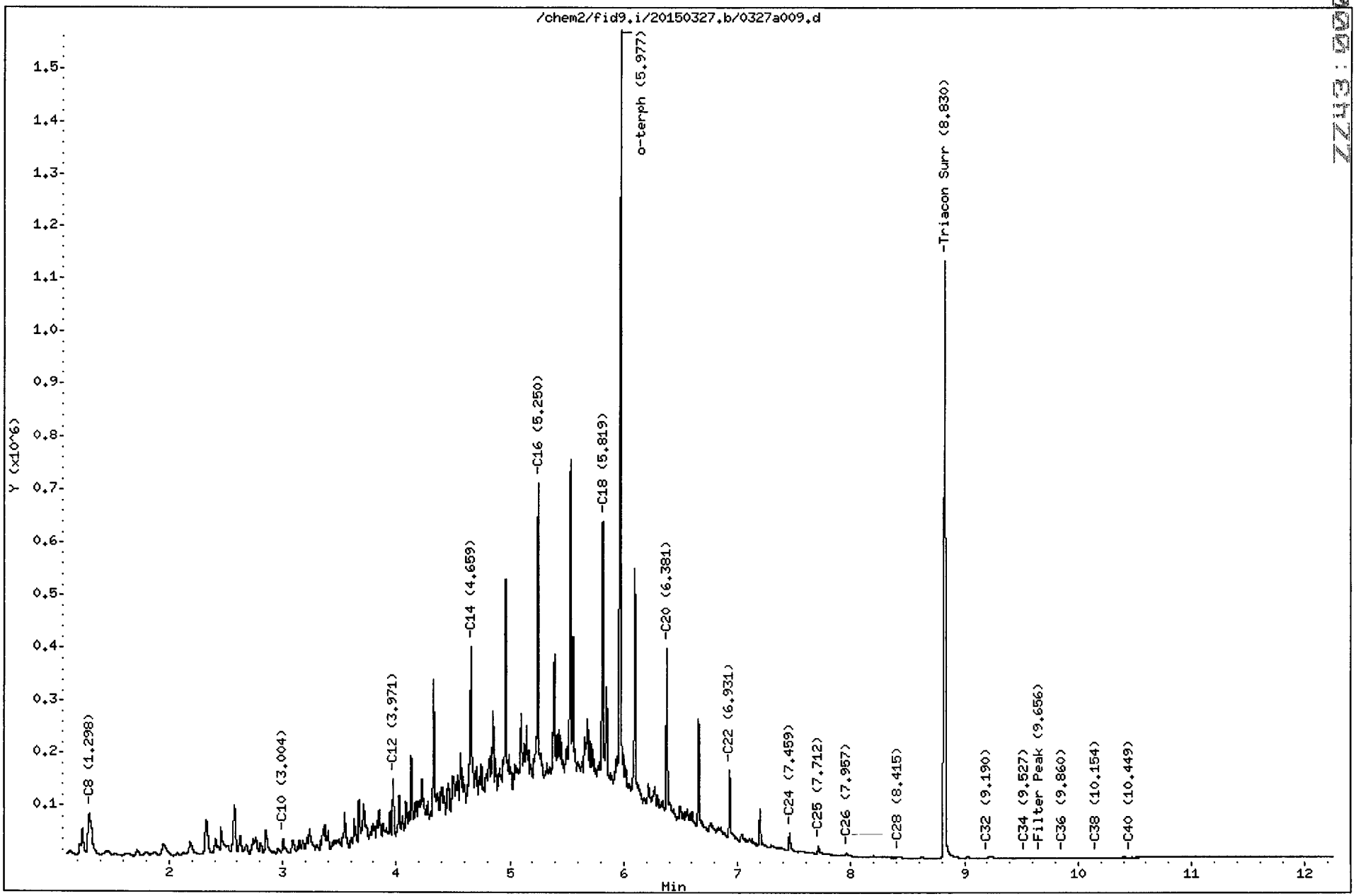
Sample Info: ZZ46LCSDW1

Instrument: fid9.i

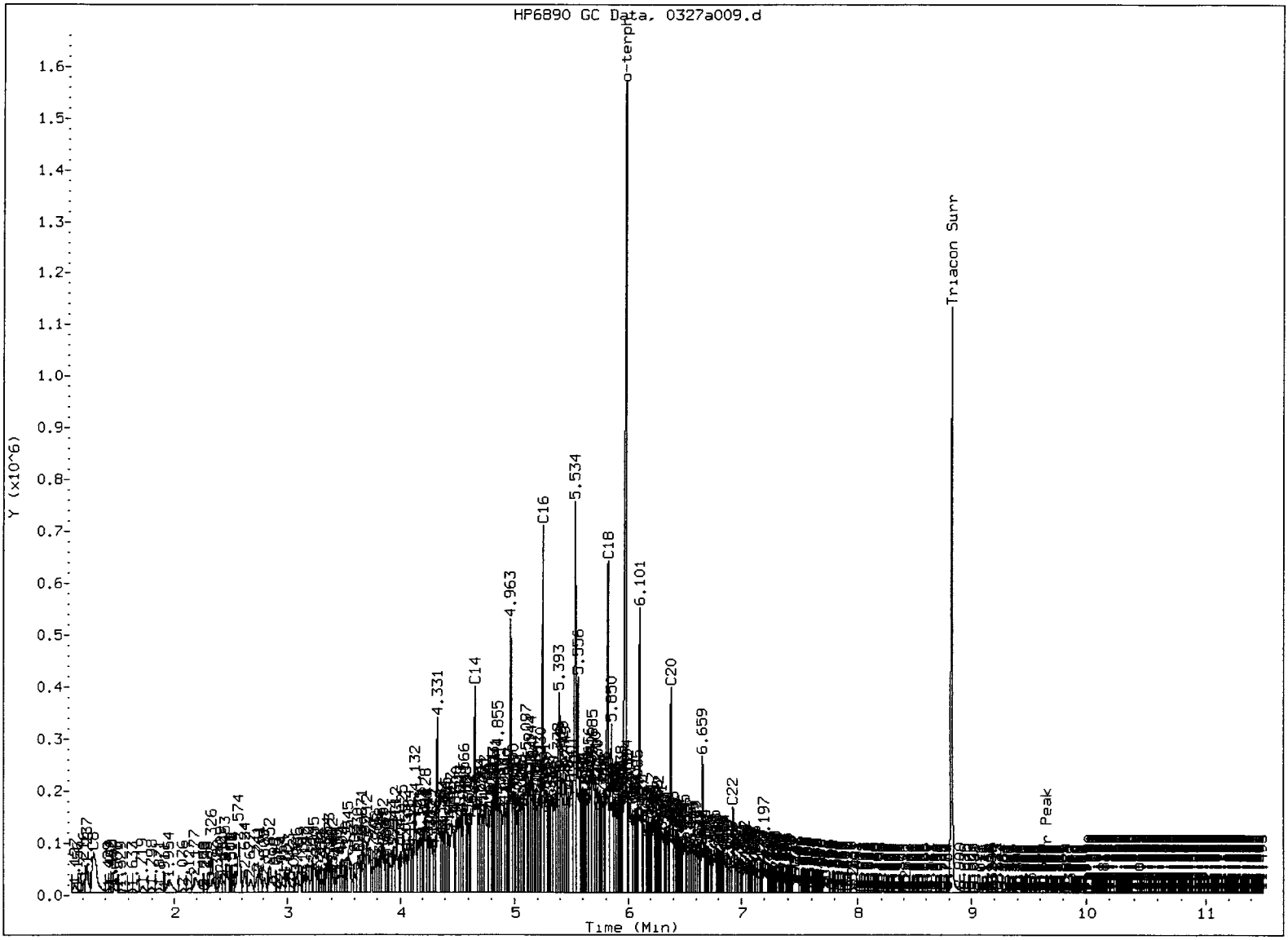
Operator: JW

Column phase: RTX-1

Column diameter: 0.25



FID:9A-2C/RTX-1 ZZ46LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

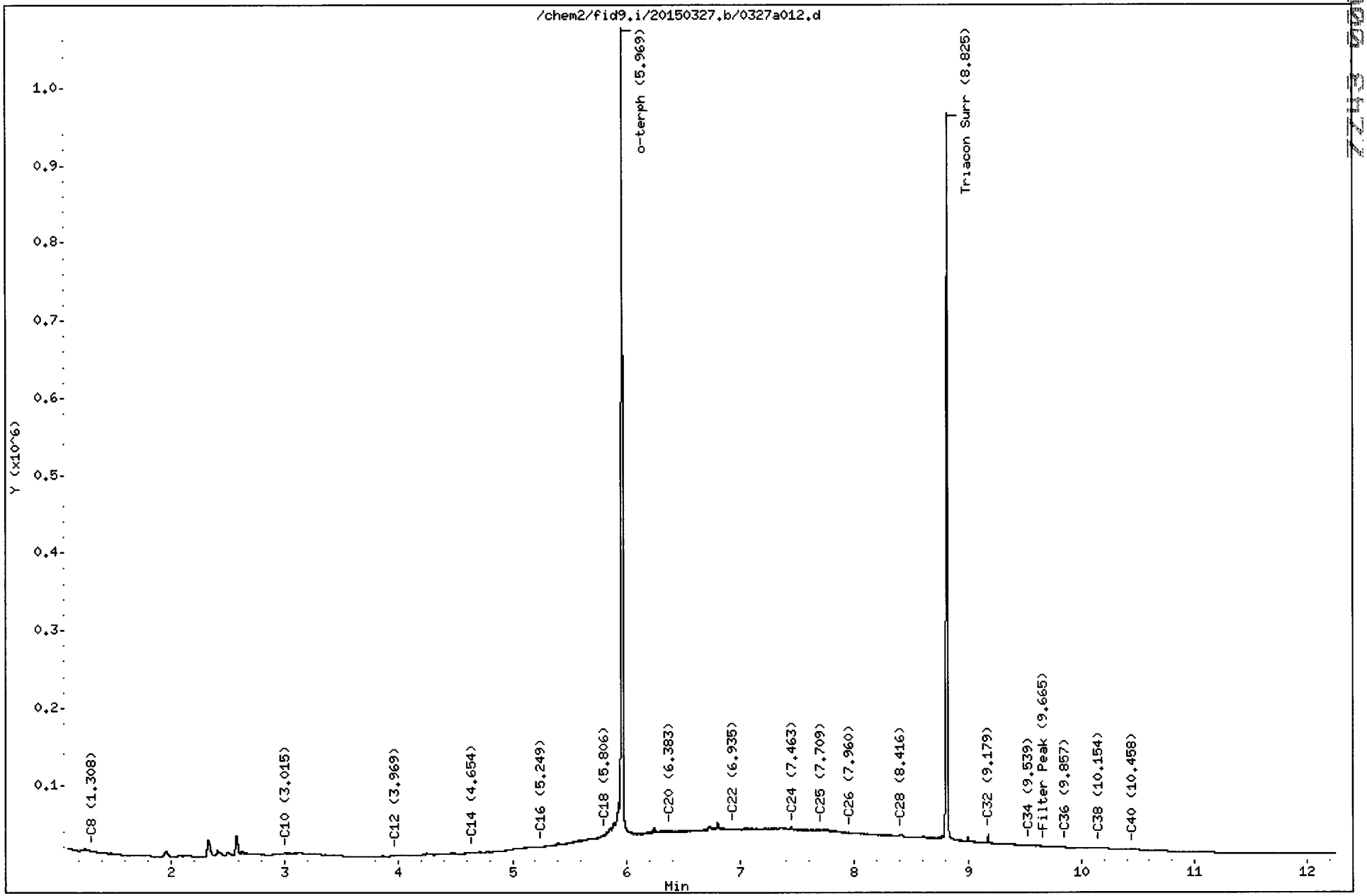
Analyst: ML Date: 3/30/15

Data File: /chem2/fid9.i/20150327.b/0327a012.d
Date : 27-MAR-2015 12:19
Client ID:
Sample Info: ZZ43A

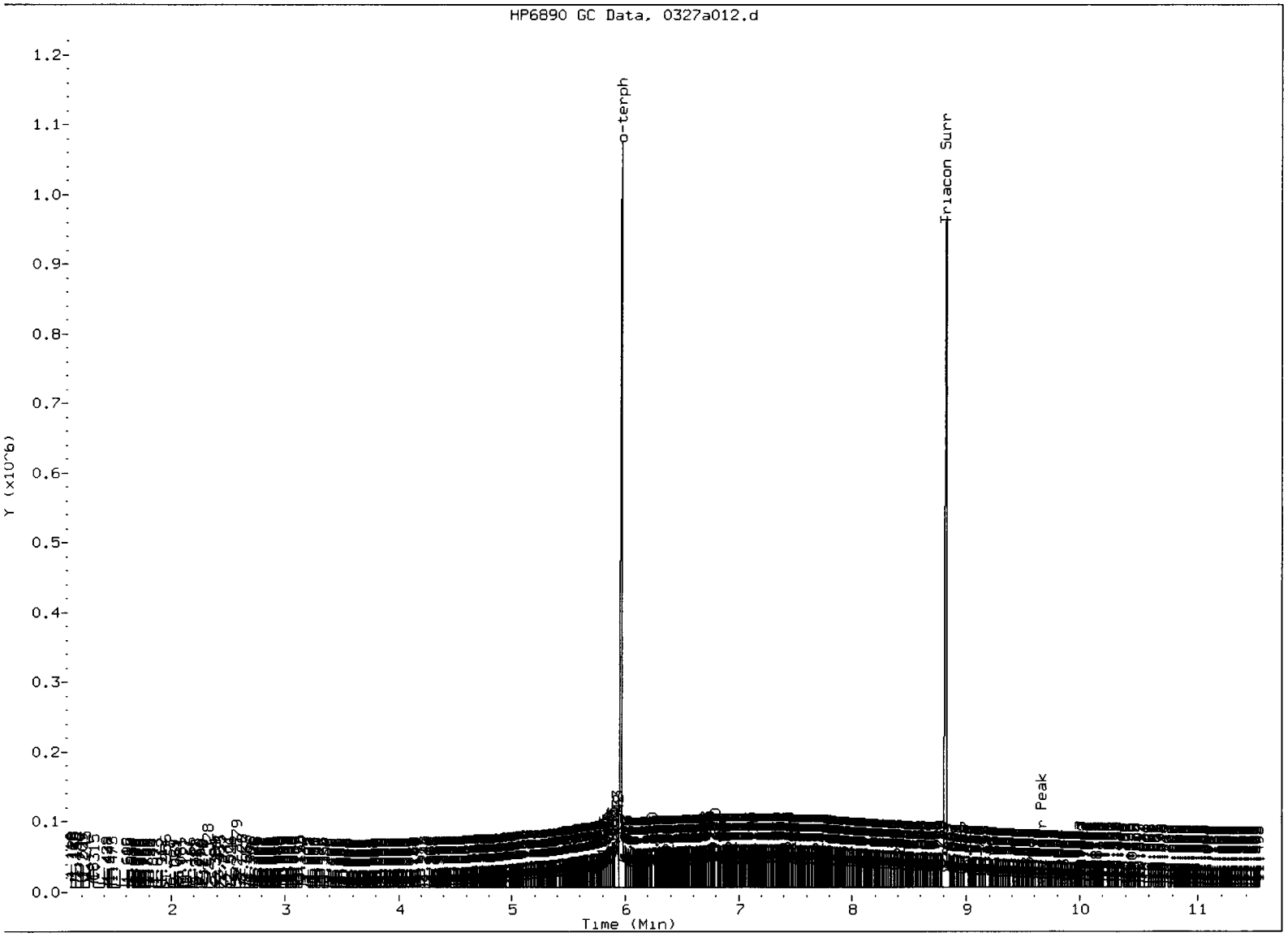
Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ43A FID:9A SIGNAL



MANUAL INTEGRATION

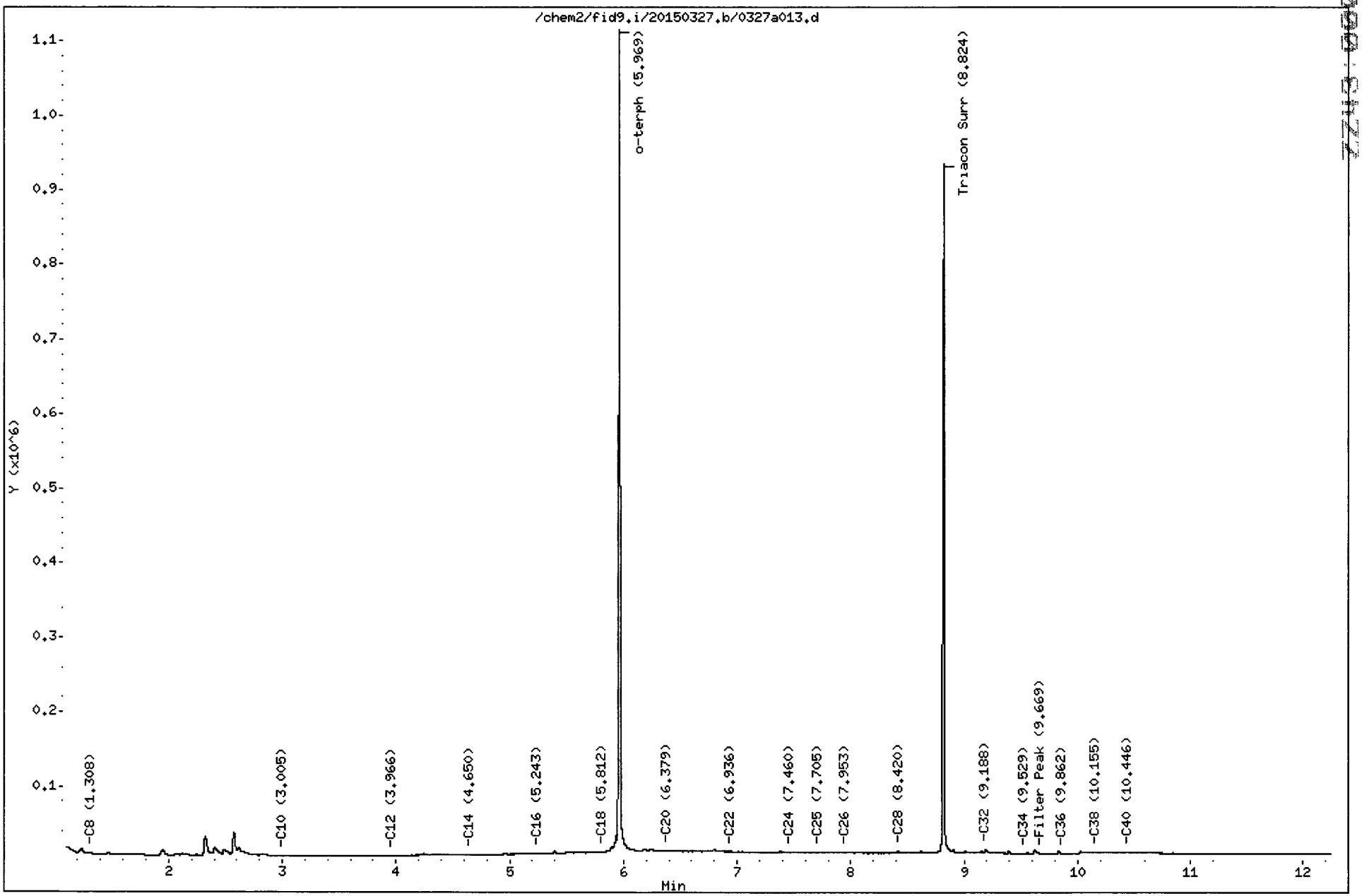
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

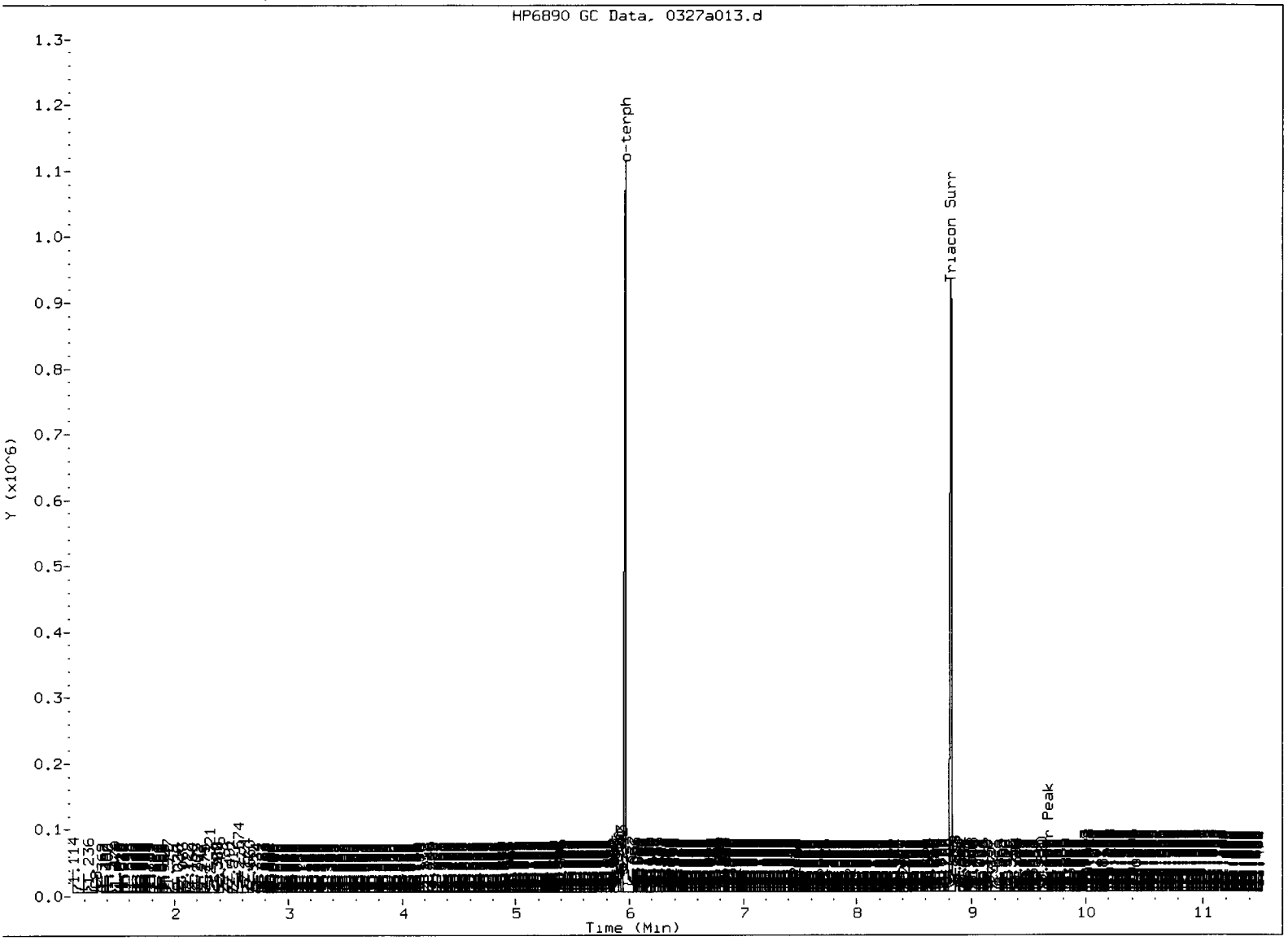
Data File: /chem2/fid9.i/20150327.b/0327a013.d
Date : 27-MAR-2015 12:41
Client ID:
Sample Info: ZZ43B

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ43B FID:9A SIGNAL



MANUAL INTEGRATION

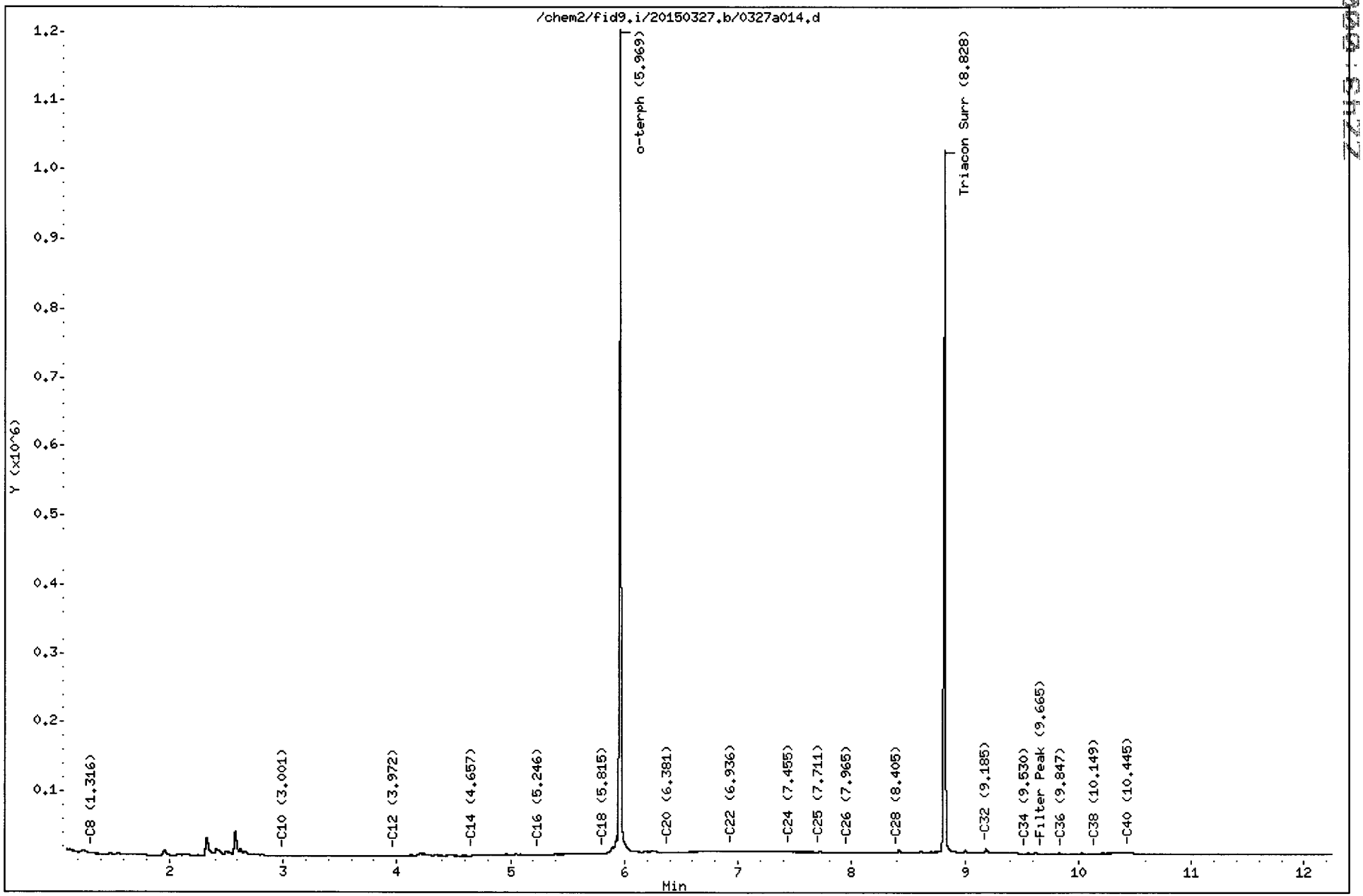
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/31/15

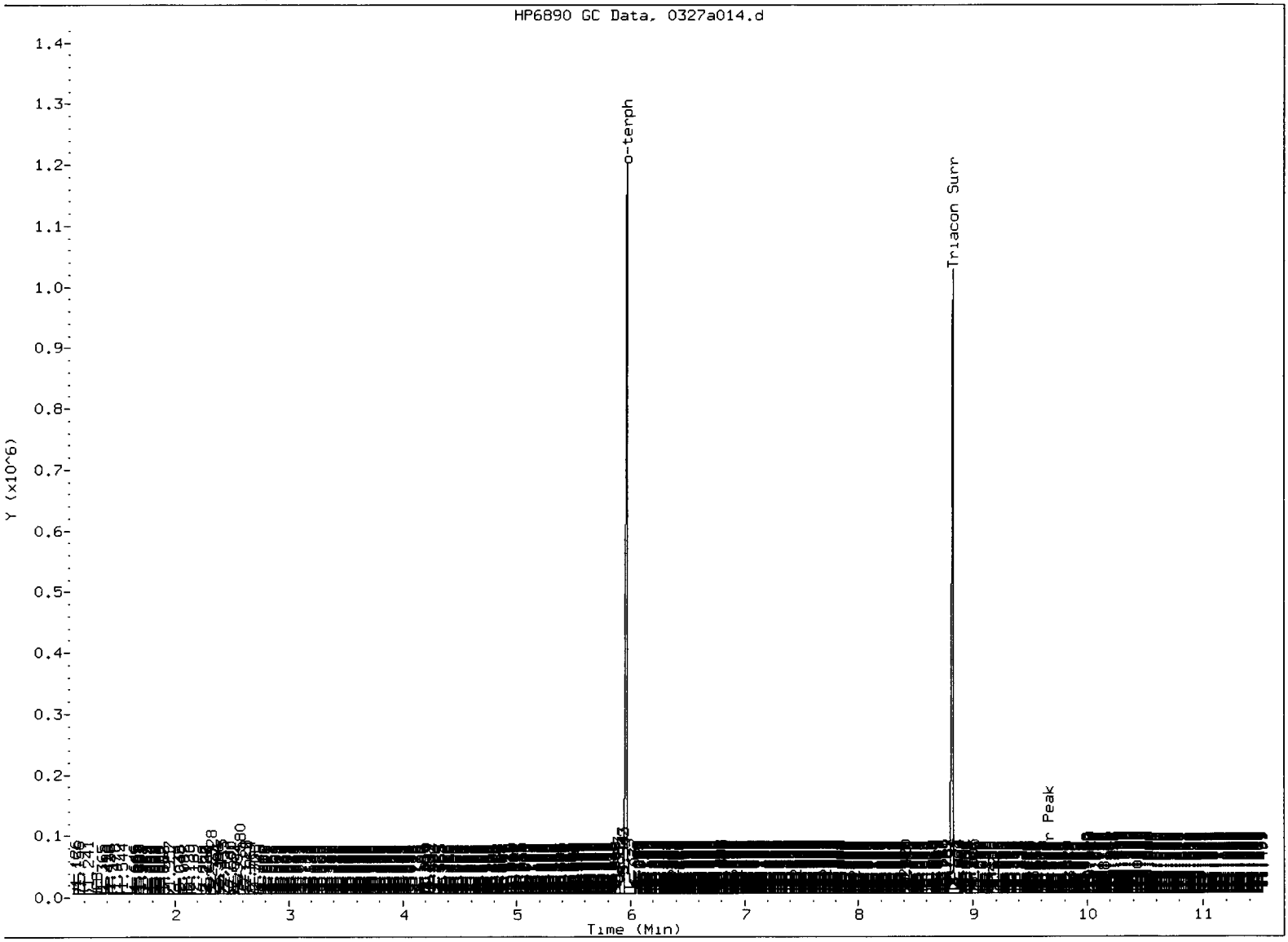
Data File: /chem2/fid9.i/20150327.b/0327a014.d
Date : 27-MAR-2015 13:01
Client ID:
Sample Info: ZZ43C

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ43C FID:9A SIGNAL



MANUAL INTEGRATION

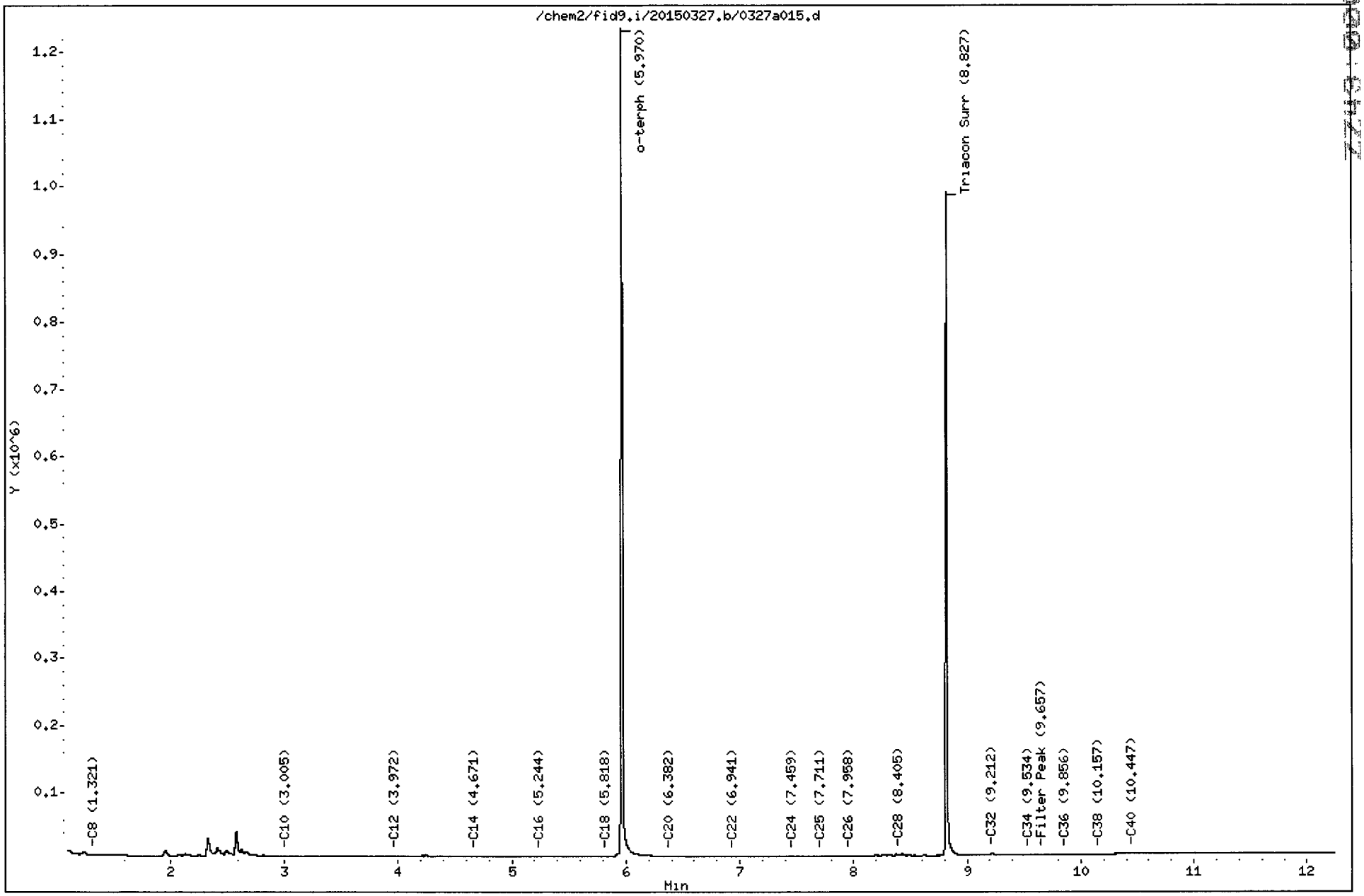
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

Data File: /chem2/fid9.i/20150327.b/0327a015.d
Date : 27-MAR-2015 13:23
Client ID:
Sample Info: ZZ43D

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1

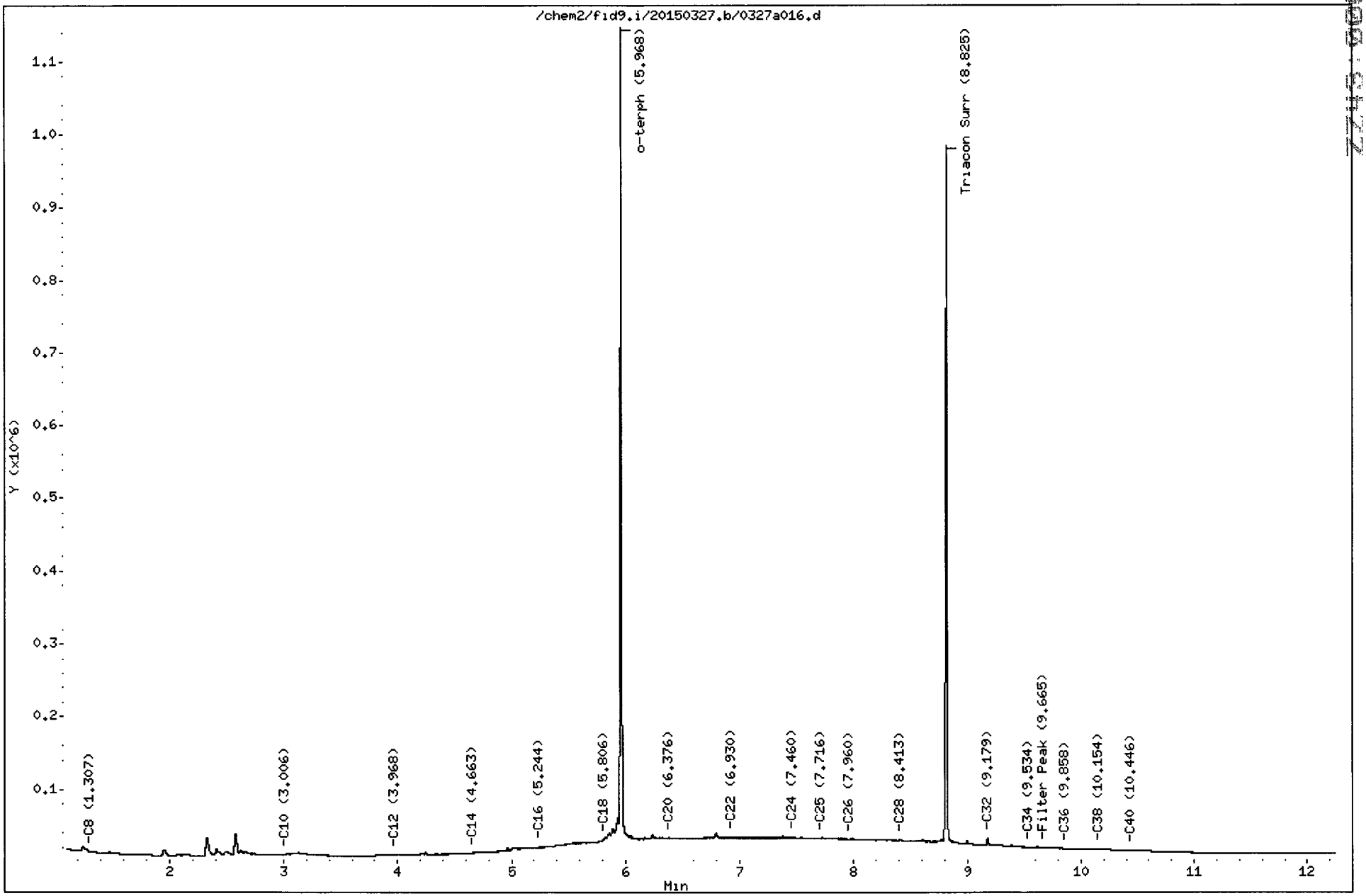


Data File: /chem2/fid9.i/20150327.b/0327a016.d
Date : 27-MAR-2015 13:44
Client ID:
Sample Info: ZZ43E

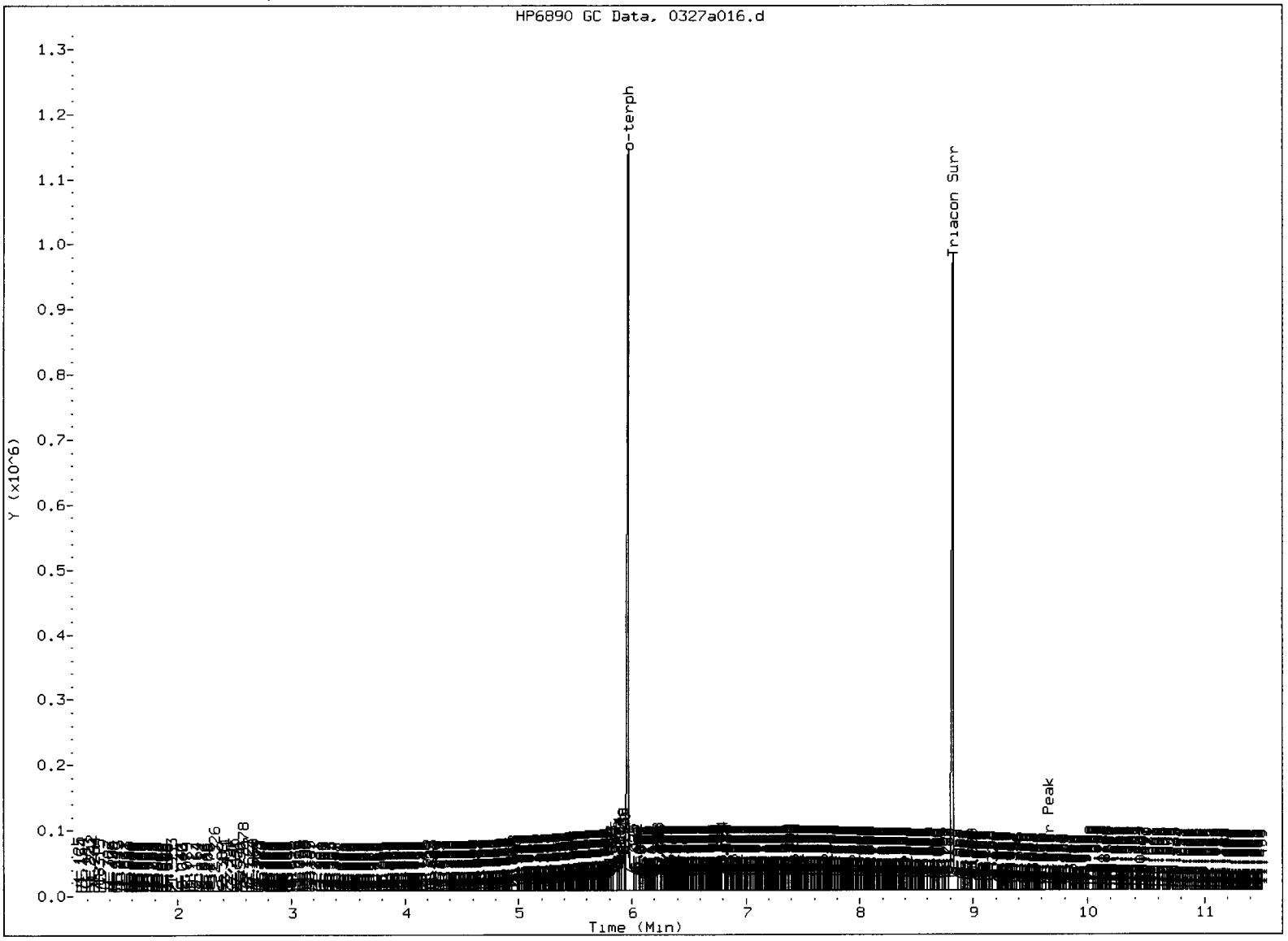
Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ43E FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

SAMPLE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: w 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Client ID: MW10
ARI ID: 15-4355 ZZ43A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	03/09/15 030915#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: LJ 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Client ID: MW9
ARI ID: 15-4356 ZZ43B

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	03/09/15 030915#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: J 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Client ID: MW3
ARI ID: 15-4357 ZZ43C

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	03/09/15 030915#1	SM3500Cr-B	mg/L	0.010	0.022

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CJ 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Client ID: MW1
ARI ID: 15-4358 ZZ43D

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	03/09/15 030915#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

ZZ43:00049

SAMPLE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: U 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Client ID: MW2
ARI ID: 15-4359 ZZ43E

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	03/09/15 030915#1	SM3500Cr-B	mg/L	0.010	0.012

RL Analytical reporting limit
U Undetected at reported detection limit

ZZ43:00050

METHOD BLANK RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: LJ 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	03/09/15	mg/L	< 0.010 U	

ZZ43:00051

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: W 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	SM3500Cr-B	03/09/15	mg/L	1.24	1.25	99.2%

REPLICATE RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: D 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZZ43A Client ID: MW10						
Hexavalent Chromium	SM3500Cr-B	03/09/15	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
ZZ43-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: W 3-10-15
Reported: 03/10/15

Project: Precision Engineering
Event: 1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZZ43A Client ID: MW10							
Hexavalent Chromium	SM3500Cr-B	03/09/15	mg/L	< 0.010	< 0.010 U	0.062	0.0%

ZZ43:00054

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW10
SAMPLE

Lab Sample ID: ZZ43A
LIMS ID: 15-4355
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.5	**21.2**	
200.8	03/11/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**9.0**	
200.8	03/11/15	200.8	03/13/15	**7439-92-1**	**Lead**	0.1	**0.2**	
200.8	03/11/15	200.8	03/17/15	**7782-49-2**	**Selenium**	1	**4**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW9
SAMPLE

Lab Sample ID: ZZ43B
LIMS ID: 15-4356
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.5	**3.0**	
200.8	03/11/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**0.7**	
200.8	03/11/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/11/15	200.8	03/17/15	7782-49-2	Selenium	1	1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW3
SAMPLE

Lab Sample ID: ZZ43C
LIMS ID: 15-4357
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**10.0**	
200.8	03/11/15	200.8	03/17/15	**7440-47-3**	**Chromium**	0.5	**1.1**	
200.8	03/11/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/11/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW1
SAMPLE

Lab Sample ID: ZZ43D
LIMS ID: 15-4358
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**28.3**	
200.8	03/11/15	200.8	03/13/15	7440-47-3	Chromium	0.5	0.5	U
200.8	03/11/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/11/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW2**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ZZ43E
LIMS ID: 15-4359
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: 03/09/15
Date Received: 03/09/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.5	**5.8**	
200.8	03/11/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**5.5**	
200.8	03/11/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/11/15	200.8	03/17/15	**7782-49-2**	**Selenium**	1	**4**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ZZ43MB
LIMS ID: 15-4359
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/11/15	200.8	03/17/15	7440-38-2	Arsenic	0.2	0.2	U
200.8	03/11/15	200.8	03/13/15	7440-47-3	Chromium	0.5	0.5	U
200.8	03/11/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/11/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: ZZ43LCS
LIMS ID: 15-4359
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ43-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024000
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.2	25.0	101%	
Chromium	200.8	20.7	25.0	82.8%	
Lead	200.8	21.4	25.0	85.6%	
Selenium	200.8	70.7	80.0	88.4%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants
30 March 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: ZZ57

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received seven water samples and one trip blank on March 10, 2015. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent difference (%D) for naphthalene was not within control limits for the CCAL that bracketed the VOA analyses of these samples. All positive results for this compound have been flagged with a "Q" to denote the high %D.

Due to a laboratory error, sample MW6 was not analyzed for hexavalent chromium upon receipt. When the error was discovered, this sample was analyzed for hexavalent chromium as quickly as possible. Since this analysis was performed several days outside of the recommended holding time, this result should be considered estimated at best.

Matrix spikes (MSs) were prepared and analyzed for hexavalent chromium in conjunction with samples MW11 and MW6. Hexavalent chromium was not recovered following the analyses of the MSs. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrices were the cause of the low MS recoveries. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: ZZ57

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 7257	Turn-around Requested: STD	Page: 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 3/10/15	Ice Present? Y
Client Contact: Jessica Fasagalli		No. of Coolers: 1	Cooler Temps: 8.6
Client Project Name: Precision Engineering			
Client Project #: 1396024*00	Samplers: C. Joseph		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: NwTPH-Dx	VOCs	Metals (1)	Cl, SO_4^{2-}					Notes/Comments
MW11	3/10/15	0905	W	6	X	X	X	X					(1) Metals = Cr, Pb, Se, As
MW8		1020		6	X	X	X	X					
MW7		1130		6	X	X	X	X					
(3) ~~MW5~~ MW6		1325		6	X	X	X	X					
MW5		1535		6	X	X	X	X					
MW12		1600		6	X	X	X	X					
MW4		1655		6	X	X	X	X					
Trip Blank				1		X							

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: A. Vorgardsen	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 3/10/15 ~~1848~~ 1748 (CJ)	Date & Time: 3/10/15 1748	Date & Time	Date & Time

7257 1506 02

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

Project Name: Precision Engineering

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other.

Assigned ARI Job No: ZZ57

Tracking No. _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry) 8.6

Time 1748

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 3/10/15 Time: 1748

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	(Bubble Wrap) (Wet Ice) Gel Packs Baggies (Foam Block) Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		YES	(NO)
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	3/5/15 & 2/10/15	

Was Sample Split by ARI : (NA) YES Date/Time:_____ Equipment:_____ Split by:_____

Samples Logged by: AV Date: 3/11/15 Time: 1350

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

No Hexchrome bottle received for MW6, used 1500mL AG,
MW11-2PD MW8=2PD MW6=2LG MW4=1LG

By: AV Date: 3/10/15

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#: 1	Temperature(°C): 8.6	
Sample ID	**Bottle Count**	**Bottle Type**
All samples received above 6°C.		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by: AV Date: 3/11/15 Time: 1350

PRESERVATION VERIFICATION 03/11/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ZZ57**

Inquiry Number: NONE
Analysis Requested: 03/11/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 03/10/15

Project #: 1396024-00
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-4470 **ZZ57A**	MW11						TOT															
15-4471 **ZZ57B**	MW8						TOT															
15-4472 **ZZ57C**	MW7						TOT															
15-4473 **ZZ57D**	MW6						TOT															
15-4474 **ZZ57E**	MW5						TOT															
15-4475 **ZZ57F**	MW12						TOT															
15-4476 **ZZ57G**	MW4						TOT															

ZZ57 : 59005

Checked By AL Date 3/11/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ZZ57
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024-00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW11	ZZ57A	15-4470	Water	03/10/15 09:05	03/10/15 17:48
2.	MW8	ZZ57B	15-4471	Water	03/10/15 10:20	03/10/15 17:48
3.	MW7	ZZ57C	15-4472	Water	03/10/15 11:30	03/10/15 17:48
4.	MW6	ZZ57D	15-4473	Water	03/10/15 13:25	03/10/15 17:48
5.	MW5	ZZ57E	15-4474	Water	03/10/15 15:35	03/10/15 17:48
6.	MW12	ZZ57F	15-4475	Water	03/10/15 16:00	03/10/15 17:48
7.	MW4	ZZ57G	15-4476	Water	03/10/15 16:55	03/10/15 17:48
8.	TRIP BLANKS	ZZ57H	15-4477	Water	03/10/15	03/10/15 17:48

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ZZ57 : 00007

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

ZZ57 : 00008

Geotechnical Data

A — The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F — Samples were frozen prior to particle size determination

SM — Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS — Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W — Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-031215A**
 METHOD BLANK

Lab Sample ID: MB-031215A
LIMS ID: 15-4470
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 09:15

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-031215A
METHOD BLANK

Lab Sample ID: MB-031215A
LIMS ID: 15-4470
Matrix: Water
Date Analyzed: 03/12/15 09:15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.9%
Bromofluorobenzene	99.6%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW11**
 SAMPLE

Lab Sample ID: ZZ57A
LIMS ID: 15-4470
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 15:38

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW11**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57A
LIMS ID: 15-4470
Matrix: Water
Date Analyzed: 03/12/15 15:38

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	99.4%
Bromofluorobenzene	97.0%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW8**
 SAMPLE

Lab Sample ID: ZZ57B
LIMS ID: 15-4471
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 16:03

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW8**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57B
LIMS ID: 15-4471
Matrix: Water
Date Analyzed: 03/12/15 16:03

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.5%
Bromofluorobenzene	93.6%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW7**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZZ57C
LIMS ID: 15-4472
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 16:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW7**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57C
LIMS ID: 15-4472
Matrix: Water
Date Analyzed: 03/12/15 16:27

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	101%
Bromofluorobenzene	96.7%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW6**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZZ57D
LIMS ID: 15-4473
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 16:52

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW6**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57D
LIMS ID: 15-4473
Matrix: Water
Date Analyzed: 03/12/15 16:52

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	99.5%
Bromofluorobenzene	96.6%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW5**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZZ57E
LIMS ID: 15-4474
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 17:17

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	**Trichloroethene**	**5.0**	**2.4**	**J**
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW5**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57E
LIMS ID: 15-4474
Matrix: Water
Date Analyzed: 03/12/15 17:17

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	97.9%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW12**
 SAMPLE

Lab Sample ID: ZZ57F
LIMS ID: 15-4475
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 17:41

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	**Trichloroethene**	**5.0**	**2.2**	**J**
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW12**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57F
LIMS ID: 15-4475
Matrix: Water
Date Analyzed: 03/12/15 17:41

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	98.8%
Bromofluorobenzene	96.1%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW4**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ZZ57G
LIMS ID: 15-4476
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 18:06

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MW4**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57G
LIMS ID: 15-4476
Matrix: Water
Date Analyzed: 03/12/15 18:06

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS**
 SAMPLE

Lab Sample ID: ZZ57H
LIMS ID: 15-4477
Matrix: Water
Data Release Authorized: MW
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Instrument/Analyst: NT7/PAB
Date Analyzed: 03/12/15 15:14

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANKS SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: ZZ57H
LIMS ID: 15-4477
Matrix: Water
Date Analyzed: 03/12/15 15:14

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.6%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-031215A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-031215A
LIMS ID: 15-4470
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT7/PAB
LCSD: NT7/PAB
Date Analyzed LCS: 03/12/15 08:25
LCSD: 03/12/15 08:50

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	7.90	10.0	79.0%	7.66	10.0	76.6%	3.1%
Bromomethane	8.53	10.0	85.3%	8.42	10.0	84.2%	1.3%
Vinyl Chloride	8.16	10.0	81.6%	7.73	10.0	77.3%	5.4%
Chloroethane	10.4	10.0	104%	11.3	10.0	113%	8.3%
Methylene Chloride	9.09	10.0	90.9%	8.99	10.0	89.9%	1.1%
Acetone	47.8	50.0	95.6%	47.3	50.0	94.6%	1.1%
Carbon Disulfide	9.53	10.0	95.3%	9.19	10.0	91.9%	3.6%
1,1-Dichloroethene	10.2	10.0	102%	9.87	10.0	98.7%	3.3%
1,1-Dichloroethane	9.98	10.0	99.8%	9.59	10.0	95.9%	4.0%
trans-1,2-Dichloroethene	9.43	10.0	94.3%	9.36	10.0	93.6%	0.7%
cis-1,2-Dichloroethene	9.68	10.0	96.8%	9.50	10.0	95.0%	1.9%
Chloroform	9.74	10.0	97.4%	9.43	10.0	94.3%	3.2%
1,2-Dichloroethane	9.75	10.0	97.5%	9.78	10.0	97.8%	0.3%
2-Butanone	48.6	50.0	97.2%	47.2	50.0	94.4%	2.9%
1,1,1-Trichloroethane	9.69	10.0	96.9%	9.35	10.0	93.5%	3.6%
Carbon Tetrachloride	9.78	10.0	97.8%	9.74	10.0	97.4%	0.4%
Vinyl Acetate	9.82	10.0	98.2%	9.65	10.0	96.5%	1.7%
Bromodichloromethane	9.77	10.0	97.7%	9.73	10.0	97.3%	0.4%
1,2-Dichloropropane	10.1	10.0	101%	9.97	10.0	99.7%	1.3%
cis-1,3-Dichloropropene	10.1	10.0	101%	10.1	10.0	101%	0.0%
Trichloroethene	9.55	10.0	95.5%	9.41	10.0	94.1%	1.5%
Dibromochloromethane	9.52	10.0	95.2%	9.40	10.0	94.0%	1.3%
1,1,2-Trichloroethane	9.83	10.0	98.3%	9.84	10.0	98.4%	0.1%
Benzene	9.80	10.0	98.0%	9.74	10.0	97.4%	0.6%
trans-1,3-Dichloropropene	10.3	10.0	103%	10.3	10.0	103%	0.0%
2-Chloroethylvinylether	10.0	10.0	100%	9.98	10.0	99.8%	0.2%
Bromoform	9.41	10.0	94.1%	9.48	10.0	94.8%	0.7%
4-Methyl-2-Pentanone (MIBK)	54.2	50.0	108%	53.9	50.0	108%	0.6%
2-Hexanone	49.0	50.0	98.0%	48.2	50.0	96.4%	1.6%
Tetrachloroethene	9.51	10.0	95.1%	9.36	10.0	93.6%	1.6%
1,1,2,2-Tetrachloroethane	9.15	10.0	91.5%	9.12	10.0	91.2%	0.3%
Toluene	9.59	10.0	95.9%	9.43	10.0	94.3%	1.7%
Chlorobenzene	9.41	10.0	94.1%	9.23	10.0	92.3%	1.9%
Ethylbenzene	9.84	10.0	98.4%	9.48	10.0	94.8%	3.7%
Styrene	10.5	10.0	105%	10.3	10.0	103%	1.9%
Trichlorofluoromethane	9.40	10.0	94.0%	9.31	10.0	93.1%	1.0%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.66	10.0	96.6%	9.35	10.0	93.5%	3.3%
m,p-Xylene	19.9	20.0	99.5%	19.3	20.0	96.5%	3.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-031215A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-031215A
LIMS ID: 15-4470
Matrix: Water

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.84	10.0	98.4%	9.67	10.0	96.7%	1.7%
1,2-Dichlorobenzene	9.00	10.0	90.0%	9.05	10.0	90.5%	0.6%
1,3-Dichlorobenzene	9.15	10.0	91.5%	9.00	10.0	90.0%	1.7%
1,4-Dichlorobenzene	9.02	10.0	90.2%	8.96	10.0	89.6%	0.7%
Acrolein	51.2	50.0	102%	50.6	50.0	101%	1.2%
Iodomethane	9.95	10.0	99.5%	9.73	10.0	97.3%	2.2%
Bromoethane	9.74	10.0	97.4%	9.43	10.0	94.3%	3.2%
Acrylonitrile	10.0	10.0	100%	9.69	10.0	96.9%	3.1%
1,1-Dichloropropene	9.84	10.0	98.4%	9.75	10.0	97.5%	0.9%
Dibromomethane	9.52	10.0	95.2%	9.68	10.0	96.8%	1.7%
1,1,1,2-Tetrachloroethane	9.28	10.0	92.8%	9.29	10.0	92.9%	0.1%
1,2-Dibromo-3-chloropropane	8.71	10.0	87.1%	8.70	10.0	87.0%	0.1%
1,2,3-Trichloropropane	9.24	10.0	92.4%	9.55	10.0	95.5%	3.3%
trans-1,4-Dichloro-2-butene	9.36	10.0	93.6%	9.19	10.0	91.9%	1.8%
1,3,5-Trimethylbenzene	9.81	10.0	98.1%	9.65	10.0	96.5%	1.6%
1,2,4-Trimethylbenzene	9.68	10.0	96.8%	9.57	10.0	95.7%	1.1%
Hexachlorobutadiene	9.14	10.0	91.4%	8.88	10.0	88.8%	2.9%
1,2-Dibromoethane	10.2	10.0	102%	10.2	10.0	102%	0.0%
Bromochloromethane	8.95	10.0	89.5%	9.59	10.0	95.9%	6.9%
2,2-Dichloropropane	9.98	10.0	99.8%	9.65	10.0	96.5%	3.4%
1,3-Dichloropropane	9.62	10.0	96.2%	9.50	10.0	95.0%	1.3%
Isopropylbenzene	9.66	10.0	96.6%	9.52	10.0	95.2%	1.5%
n-Propylbenzene	9.70	10.0	97.0%	9.62	10.0	96.2%	0.8%
Bromobenzene	9.29	10.0	92.9%	9.31	10.0	93.1%	0.2%
2-Chlorotoluene	9.33	10.0	93.3%	9.25	10.0	92.5%	0.9%
4-Chlorotoluene	9.42	10.0	94.2%	9.26	10.0	92.6%	1.7%
tert-Butylbenzene	9.41	10.0	94.1%	9.19	10.0	91.9%	2.4%
sec-Butylbenzene	9.54	10.0	95.4%	9.32	10.0	93.2%	2.3%
4-Isopropyltoluene	9.65	10.0	96.5%	9.57	10.0	95.7%	0.8%
n-Butylbenzene	9.67	10.0	96.7%	9.28	10.0	92.8%	4.1%
1,2,4-Trichlorobenzene	8.39	10.0	83.9%	8.31	10.0	83.1%	1.0%
Naphthalene	7.97 Q	10.0	79.7%	7.95 Q	10.0	79.5%	0.3%
1,2,3-Trichlorobenzene	9.47	10.0	94.7%	9.48	10.0	94.8%	0.1%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	101%	100%
d8-Toluene	101%	103%
Bromofluorobenzene	101%	100%
d4-1,2-Dichlorobenzene	102%	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-031215A	Method Blank	10	102%	98.9%	99.6%	101%	0
LCS-031215A	Lab Control	10	101%	101%	101%	102%	0
LCSD-031215A	Lab Control Dup	10	100%	103%	100%	101%	0
ZZ57A	MW11	10	110%	99.4%	97.0%	100%	0
ZZ57B	MW8	10	108%	99.5%	93.6%	100%	0
ZZ57C	MW7	10	108%	101%	96.7%	100%	0
ZZ57D	MW6	10	109%	99.5%	96.6%	102%	0
ZZ57E	MW5	10	104%	97.9%	97.2%	101%	0
ZZ57F	MW12	10	108%	98.8%	96.1%	104%	0
ZZ57G	MW4	10	107%	99.2%	98.2%	103%	0
ZZ57H	TRIP BLANKS	10	108%	99.6%	96.8%	101%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-4470 to 15-4477

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 12-MAR-2015 08:01
Lab File ID: cc0312.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0312 Quant Type: ISTD
Method: /chem1/nt7.i/20150312.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.45821	0.29139	0.29139	0.010	-36.40643	20.00000	Averaged	<-
2 Chloromethane	0.51660	0.42650	0.42650	0.100	-17.44119	20.00000	Averaged	
3 Vinyl Chloride	0.61195	0.50718	0.50718	0.100	-17.12201	20.00000	Averaged	
4 Bromomethane	0.36508	0.32053	0.32053	0.100	-12.20283	20.00000	Averaged	
5 Chloroethane	0.31046	0.34779	0.34779	0.010	12.02465	20.00000	Averaged	
6 Trichlorofluoromethane	0.76053	0.80867	0.80867	0.010	6.32935	20.00000	Averaged	
7 1,1-Dichloroethene	0.79500	0.83454	0.83454	0.100	4.97387	20.00000	Averaged	
8 Carbon Disulfide	1.80859	1.78739	1.78739	0.010	-1.17211	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.52885	0.54593	0.54593	0.010	3.22963	20.00000	Averaged	
10 Iodomethane	0.62671	0.65010	0.65010	0.010	3.73327	20.00000	Averaged	
11 Bromoethane	0.38201	0.38301	0.38301	0.100	0.26256	20.00000	Averaged	
12 Acrolein	0.03337	0.03657	0.03657	0.000	9.61122	20.00000	Averaged	
13 Methylene Chloride	9.42340	10.00000	0.58438	0.010	-5.76597	20.00000	Linear	
14 Acetone	49.77489	50.00000	0.08465	0.001	-0.45023	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.60535	0.59769	0.59769	0.010	-1.26546	20.00000	Averaged	
17 Methyl tert butyl ether	1.58455	1.60475	1.60475	0.100	1.27529	20.00000	Averaged	
18 1,1-Dichloroethane	1.03436	1.05580	1.05580	0.200	2.07296	20.00000	Averaged	
19 Acrylonitrile	0.11466	0.11695	0.11695	0.001	1.99237	20.00000	Averaged	
20 Vinyl Acetate	0.78310	0.77975	0.77975	0.010	-0.42800	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.62811	0.62494	0.62494	0.010	-0.50489	20.00000	Averaged	
23 2,2-Dichloropropane	0.94664	0.98740	0.98740	0.010	4.30599	20.00000	Averaged	
24 Bromochloromethane	0.25643	0.22778	0.22778	0.050	-11.17458	20.00000	Averaged	
25 Chloroform	1.03353	1.03634	1.03634	0.200	0.27224	20.00000	Averaged	
26 Carbon Tetrachloride	0.48813	0.48642	0.48642	0.100	-0.34980	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.41932	0.43153	0.43153	0.100	2.91215	20.00000	Averaged	
28 1,1,1-Trichloroethane	0.94647	0.94378	0.94378	0.100	-0.28324	20.00000	Averaged	
29 2-Butanone	0.14166	0.14296	0.14296	0.001	0.91622	20.00000	Averaged	
30 1,1-Dichloropropene	0.55285	0.55286	0.55286	0.010	0.00244	20.00000	Averaged	
31 Benzene	1.60743	1.59215	1.59215	0.500	-0.95007	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.53184	0.53985	0.53985	0.010	1.50709	20.00000	Averaged	
34 1,2-Dichloroethane	0.48018	0.47954	0.47954	0.100	-0.13306	20.00000	Averaged	
36 Trichloroethene	0.38665	0.36879	0.36879	0.100	-4.61925	20.00000	Averaged	
38 Dibromomethane	0.18549	0.17988	0.17988	0.010	-3.02328	20.00000	Averaged	
39 1,2-Dichloropropane	0.36530	0.36997	0.36997	0.100	1.27785	20.00000	Averaged	
40 Bromodichloromethane	0.47247	0.47079	0.47079	0.100	-0.35603	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 12-MAR-2015 08:01
Lab File ID: cc0312.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0312 Quant Type: ISTD
Method: /chem1/nt7.i/20150312.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
41 2-Chloroethyl Vinyl Ether	0.18729	0.18337	0.18337	0.000	-2.09062	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.58968	0.60422	0.60422	0.200	2.46504	20.00000	Averaged
$ 43 d8-Toluene	1.19783	1.20561	1.20561	0.010	0.64975	20.00000	Averaged
44 Toluene	1.03560	1.00037	1.00037	0.400	-3.40219	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.08529	0.09358	0.09358	0.000	9.72727	20.00000	Averaged
46 Tetrachloroethene	0.46897	0.46172	0.46172	0.200	-1.54552	20.00000	Averaged
47 Trans 1,3-Dichloropropene	0.49582	0.50703	0.50703	0.010	2.26092	20.00000	Averaged
48 1,1,2-Trichloroethane	0.27580	0.26853	0.26853	0.100	-2.63567	20.00000	Averaged
49 Chlorodibromomethane	0.34434	0.33356	0.33356	0.100	-3.13055	20.00000	Averaged
50 1,3-Dichloropropane	0.63311	0.62692	0.62692	0.100	-0.97634	20.00000	Averaged
51 1,2-Dibromoethane	0.24974	0.25921	0.25921	0.010	3.78874	20.00000	Averaged
52 2-Hexanone	0.16820	0.16824	0.16824	0.010	0.02279	20.00000	Averaged
54 Chlorobenzene	1.25885	1.20952	1.20952	0.500	-3.91810	20.00000	Averaged
55 Ethyl Benzene	0.68288	0.67575	0.67575	0.100	-1.04511	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	0.39243	0.38395	0.38395	0.010	-2.16130	20.00000	Averaged
57 m,p-xylene	0.81573	0.82340	0.82340	0.300	0.94031	20.00000	Averaged
58 o-Xylene	0.81247	0.81801	0.81801	0.300	0.68237	20.00000	Averaged
59 Styrene	1.16854	1.27406	1.27406	0.300	9.03037	20.00000	Averaged
60 Bromoform	0.39802	0.38418	0.38418	0.010	-3.47547	20.00000	Averaged
61 Isopropyl Benzene	4.37908	4.31786	4.31786	0.010	-1.39799	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.52088	0.51598	0.51598	0.200	-0.94126	20.00000	Averaged
63 Bromobenzene	1.01363	0.96549	0.96549	0.010	-4.74923	20.00000	Averaged
64 N-Propyl Benzene	4.94182	4.91035	4.91035	0.010	-0.63677	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.77084	0.73032	0.73032	0.100	-5.25654	20.00000	Averaged
66 2-Chloro Toluene	3.14121	3.02256	3.02256	0.010	-3.77708	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	3.59234	3.59477	3.59477	0.010	0.06761	20.00000	Averaged
68 1,2,3-Trichloropropane	0.23515	0.22792	0.22792	0.010	-3.07317	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.20747	0.19891	0.19891	0.001	-4.12411	20.00000	Averaged
70 4-Chloro Toluene	3.24956	3.13959	3.13959	0.010	-3.38413	20.00000	Averaged
71 T-Butyl Benzene	3.25561	3.11081	3.11081	0.010	-4.44777	20.00000	Averaged
72 1,2,4-Trimethylbenzene	3.62655	3.60788	3.60788	0.010	-0.51466	20.00000	Averaged
73 S-Butyl Benzene	4.65443	4.55897	4.55897	0.010	-2.05092	20.00000	Averaged
74 4-Isopropyl Toluene	3.79416	3.80739	3.80739	0.010	0.34867	20.00000	Averaged
75 1,3-Dichlorobenzene	1.98455	1.84788	1.84788	0.600	-6.88659	20.00000	Averaged
77 1,4-Dichlorobenzene	2.01488	1.86157	1.86157	0.500	-7.60879	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt7.i Injection Date: 12-MAR-2015 08:01
Lab File ID: cc0312.d Init. Cal. Date(s): 04-MAR-2015 04-MAR-2015
Analysis Type: WATER Init. Cal. Times: 13:40 17:28
Lab Sample ID: CC0312 Quant Type: ISTD
Method: /chem1/nt7.i/20150312.b/82600304L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
78 N-Butyl Benzene	3.57838	3.53074	3.53074	0.010	-1.33131	20.00000	Averaged	
$ 79 d4-1,2-Dichlorobenzene	0.89718	0.92047	0.92047	0.010	2.59546	20.00000	Averaged	
80 1,2-Dichlorobenzene	1.87113	1.71060	1.71060	0.400	-8.57943	20.00000	Averaged	
81 1,2-Dibromo 3-Chloropropane	0.14246	0.12432	0.12432	0.010	-12.73714	20.00000	Averaged	
83 Hexachloro 1,3-Butadiene	9.55263	10.00000	0.66803	0.010	-4.47365	20.00000	Linear	
84 1,2,4-Trichlorobenzene	1.52797	1.31145	1.31145	0.010	-14.17038	20.00000	Averaged	
85 Naphthalene	2.94809	2.30184	2.30184	0.010	-21.92087	20.00000	Averaged	<-
86 1,2,3-Trichlorobenzene	9.27564	10.00000	1.10279	0.010	-7.24356	20.00000	Linear	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C

QC Report No: ZZ57-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024-00

Matrix: Water

Date Received: 03/10/15

Data Release Authorized: MW
Reported: 03/30/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-031315	Method Blank	03/13/15	03/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-4470	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		109%
ZZ57A	MW11	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.23**
15-4470	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.21**
					o-Terphenyl		82.8%
ZZ57B	MW8	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.32**
15-4471	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.22**
					o-Terphenyl		84.1%
ZZ57C	MW7	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.14**
15-4472	HC ID: **DIESEL**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		88.8%
ZZ57D	MW6	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.39**
15-4473	HC ID: **DIESEL/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.33**
					o-Terphenyl		61.2%
ZZ57E	MW5	03/13/15	03/27/15	1.00	**Diesel Range**	**0.10**	**0.10**
15-4474	HC ID: **DRO**		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		102%
ZZ57F	MW12	03/13/15	03/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-4475	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		91.4%
ZZ57G	MW4	03/13/15	03/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-4476	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		92.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

Client ID	OTER	TOT OUT
MB-031315	109%	0
LCS-031315	105%	0
LCSD-031315	106%	0
MW11	82.8%	0
MW8	84.1%	0
MW7	88.8%	0
MW6	61.2%	0
MW5	102%	0
MW12	91.4%	0
MW4	92.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-4470 to 15-4476

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-031315
LCS/LCSD

Lab Sample ID: LCS-031315
LIMS ID: 15-4470
Matrix: Water
Data Release Authorized:
Reported: 03/30/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 03/13/15

Date Analyzed LCS: 03/27/15 10:55
LCSD: 03/27/15 11:16
Instrument/Analyst LCS: FID9/ML
LCSD: FID9/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.69	3.00	89.7%	3.00	3.00	100%	10.9%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	105%	106%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

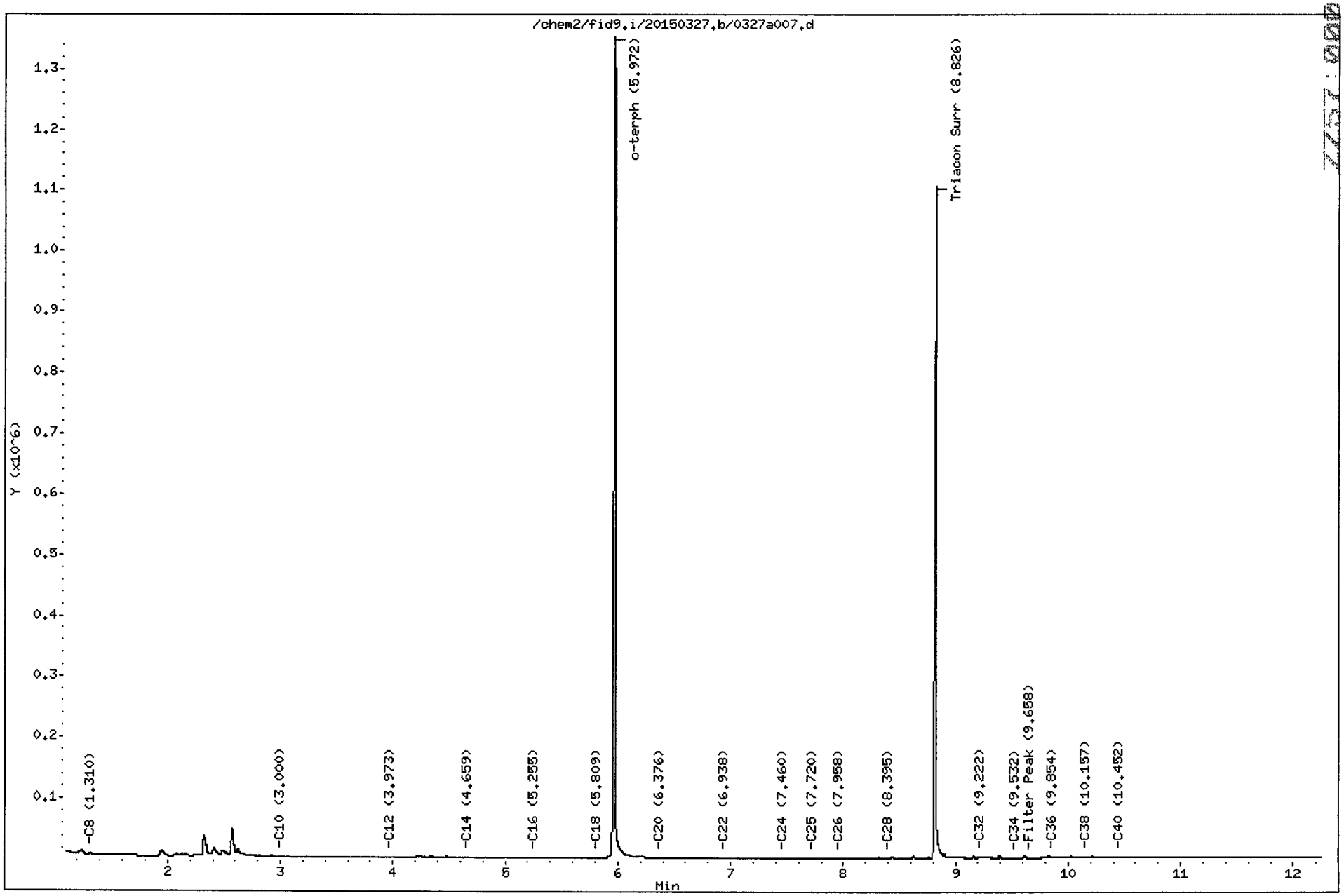
Matrix: Water
Date Received: 03/10/15

ARI Job: ZZ57
Project: Precision Engineering
1396024-00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-4470-031315MB1	Method Blank	500 mL	1.00 mL	03/13/15
15-4470-031315LCS1	Lab Control	500 mL	1.00 mL	03/13/15
15-4470-031315LCSD1	Lab Control Dup	500 mL	1.00 mL	03/13/15
15-4470-ZZ57A	MW11	500 mL	1.00 mL	03/13/15
15-4471-ZZ57B	MW8	500 mL	1.00 mL	03/13/15
15-4472-ZZ57C	MW7	500 mL	1.00 mL	03/13/15
15-4473-ZZ57D	MW6	500 mL	1.00 mL	03/13/15
15-4474-ZZ57E	MW5	500 mL	1.00 mL	03/13/15
15-4475-ZZ57F	MW12	500 mL	1.00 mL	03/13/15
15-4476-ZZ57G	MW4	500 mL	1.00 mL	03/13/15

Data File: /chem2/fid9.i/20150327.b/0327a007.d
Date : 27-MAR-2015 10:33
Client ID: ZZ46MBW1
Sample Info: ZZ46MBW1

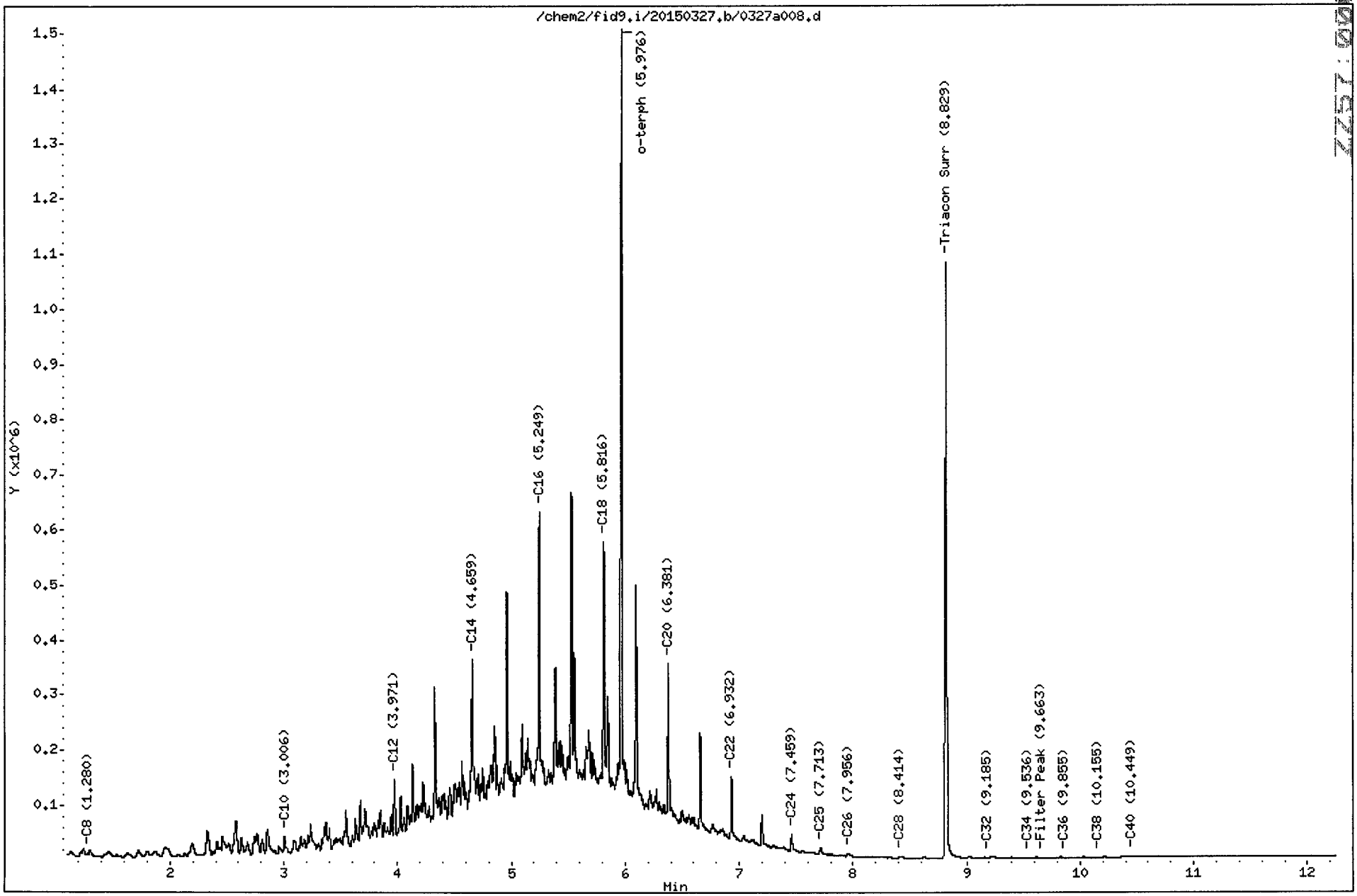
Instrument: fid9.i
Operator: JW
Column phase: RTX-1
Column diameter: 0.25



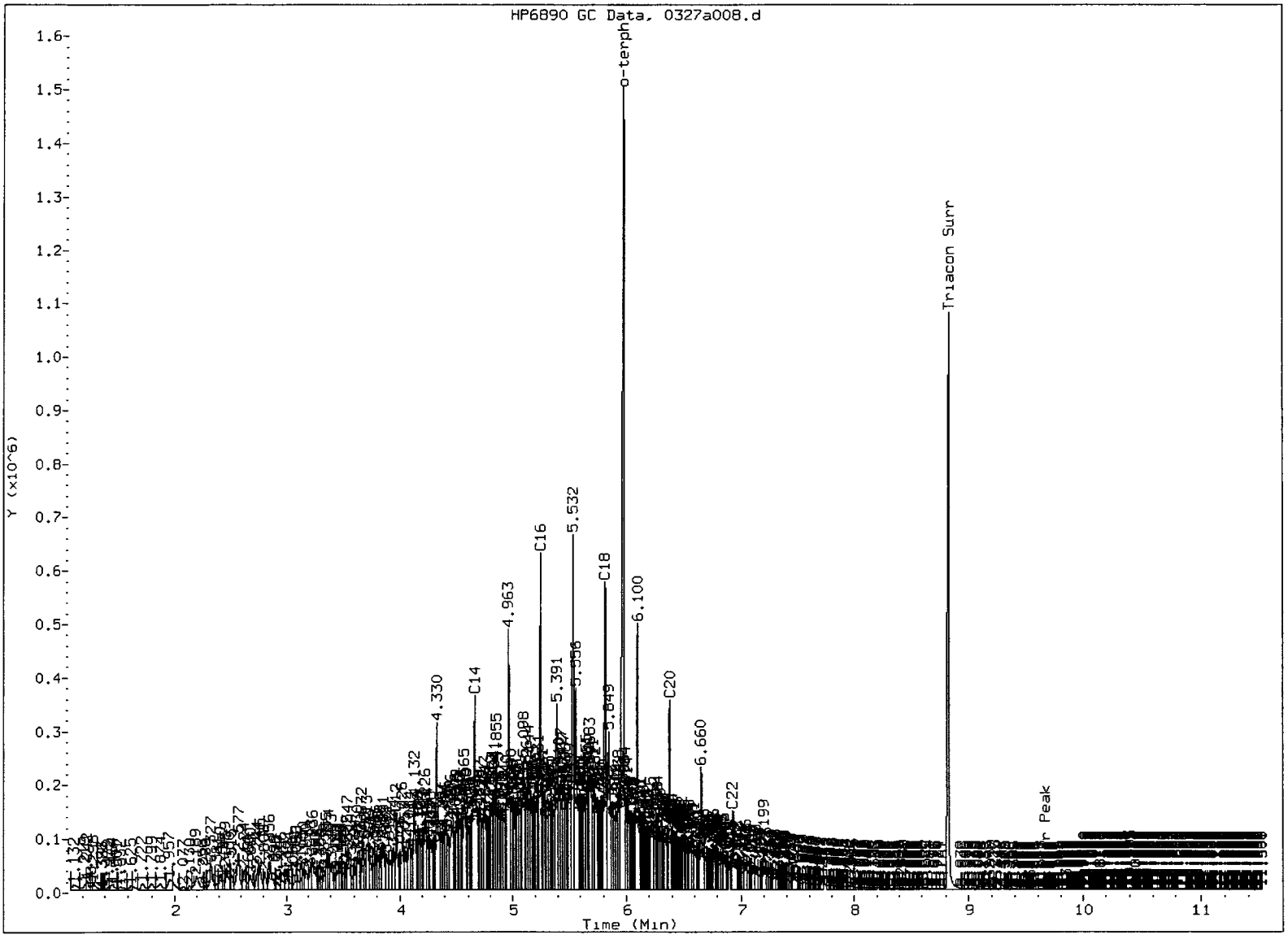
Data File: /chem2/fid9.i/20150327.b/0327a008.d
Date : 27-MAR-2015 10:55
Client ID: ZZ46LCSW1
Sample Info: ZZ46LCSW1

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ46LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

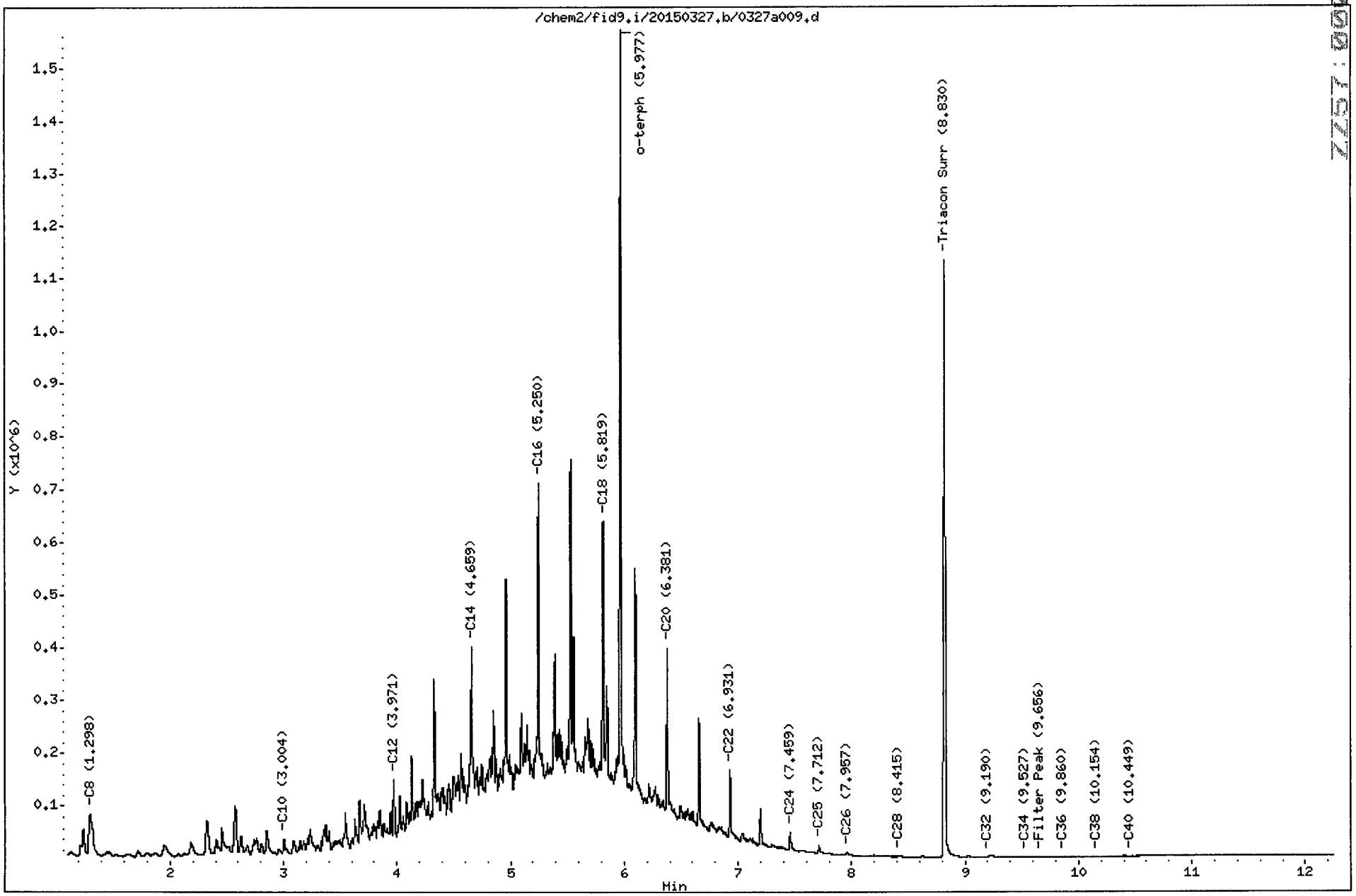
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: ML Date: 3/30/15

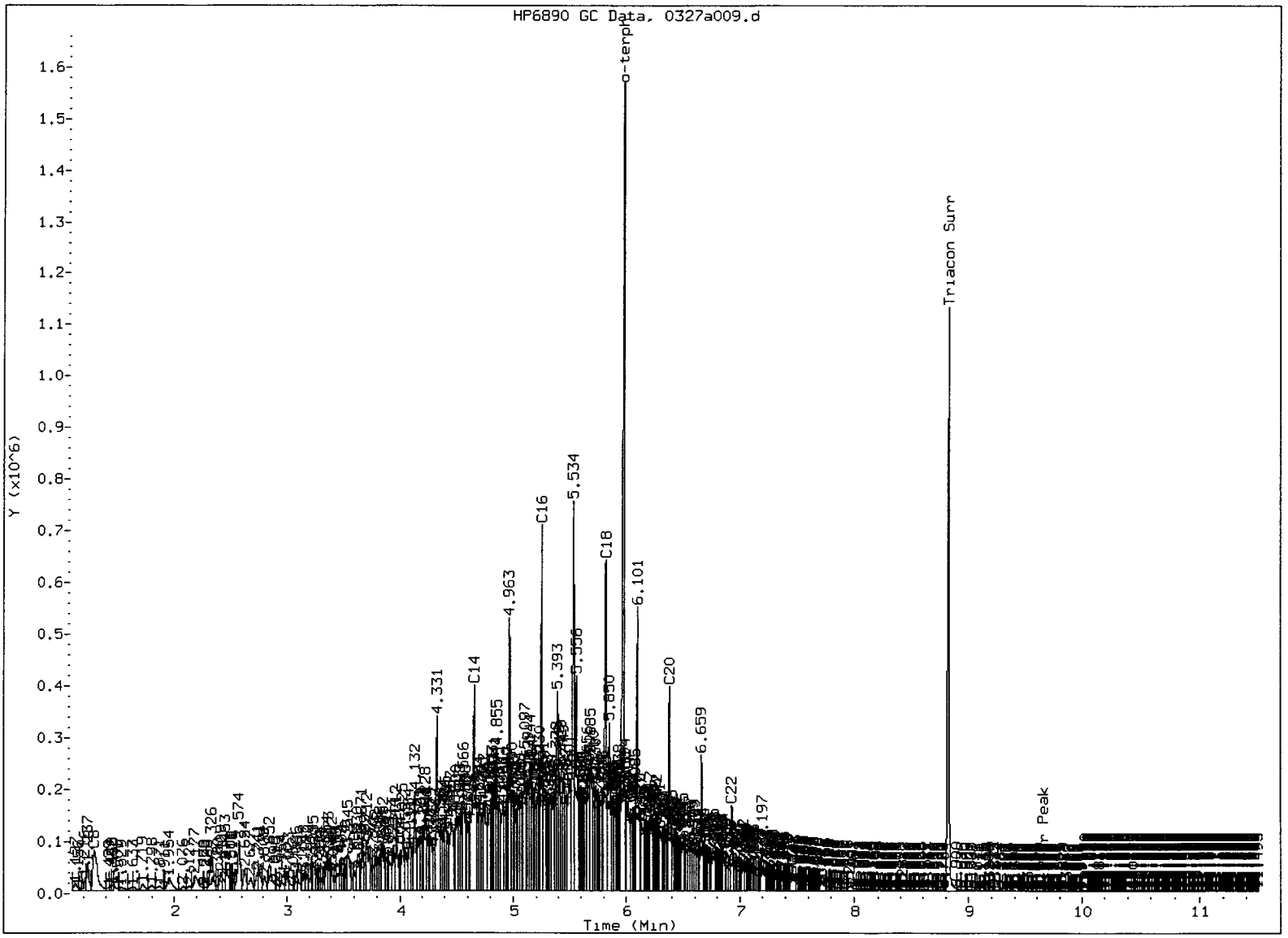
Data File: /chem2/fid9.i/20150327.b/0327a009.d
Date : 27-MAR-2015 11:16
Client ID: ZZ46LCSDW1
Sample Info: ZZ46LCSDW1

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ46LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

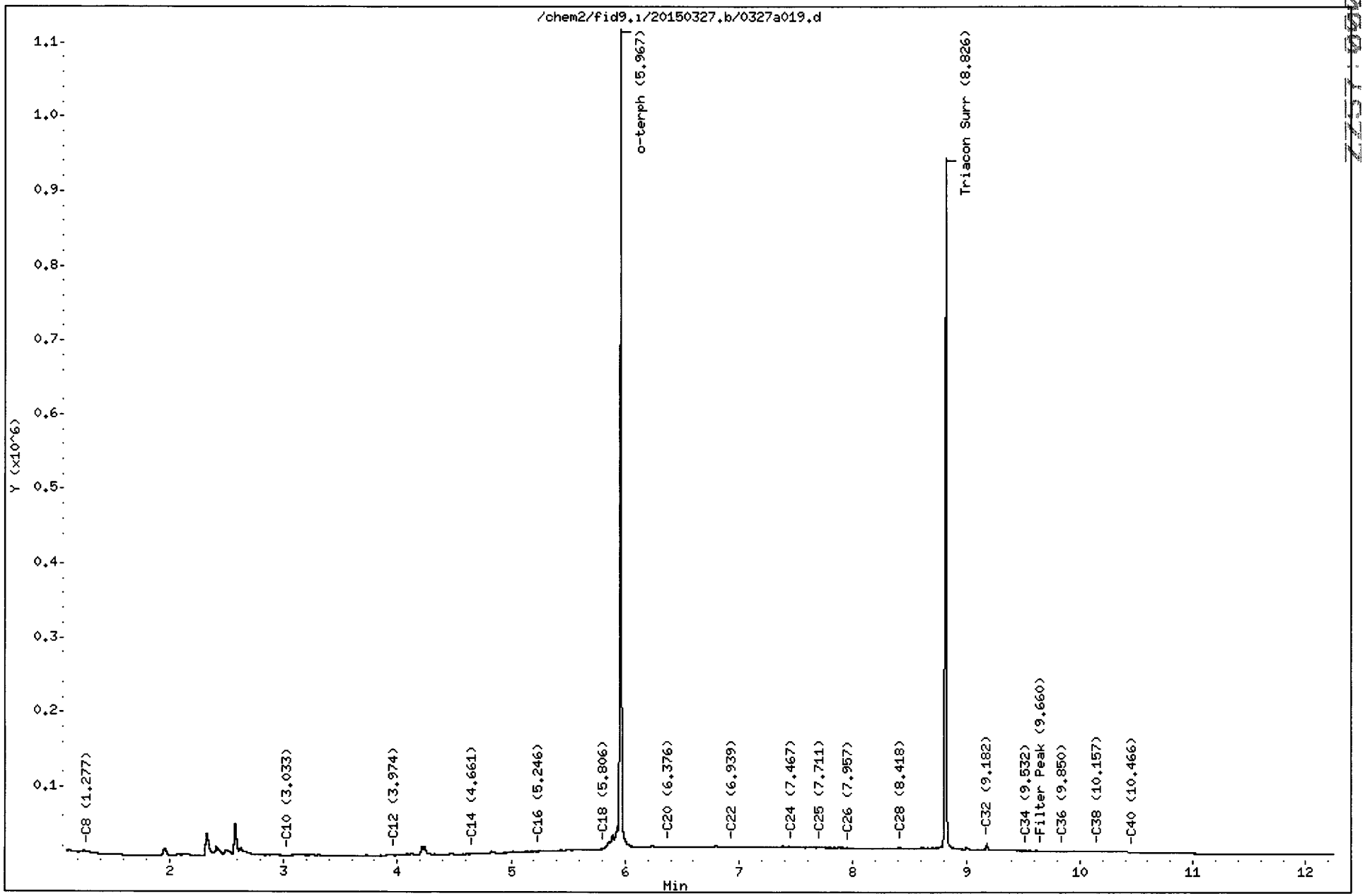
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: ML Date: 3/30/15

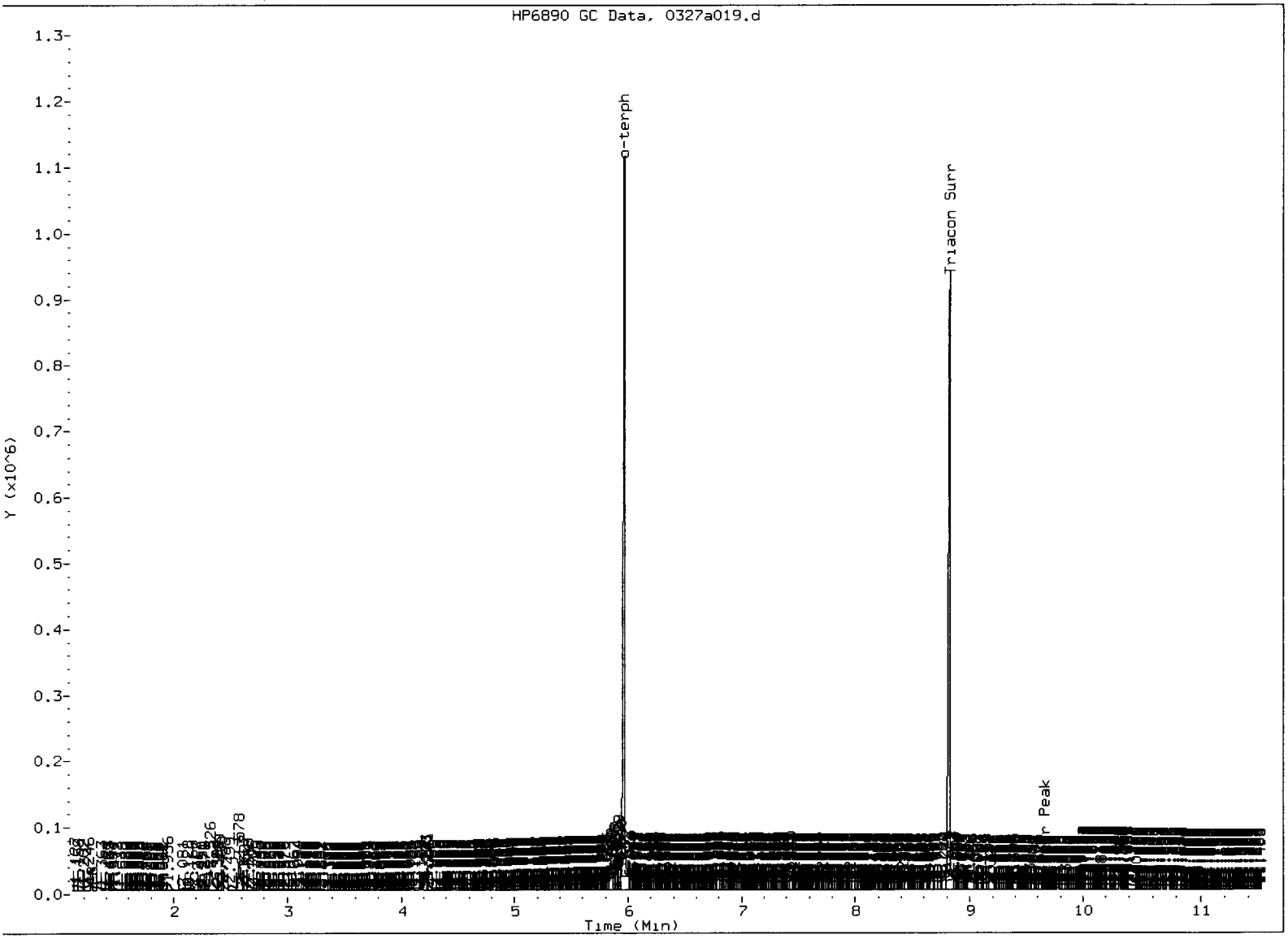
Data File: /chem2/fid9.i/20150327.b/0327a019.d
Date : 27-MAR-2015 14:47
Client ID:
Sample Info: ZZ57A

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ57A FID:9A SIGNAL



MANUAL INTEGRATION

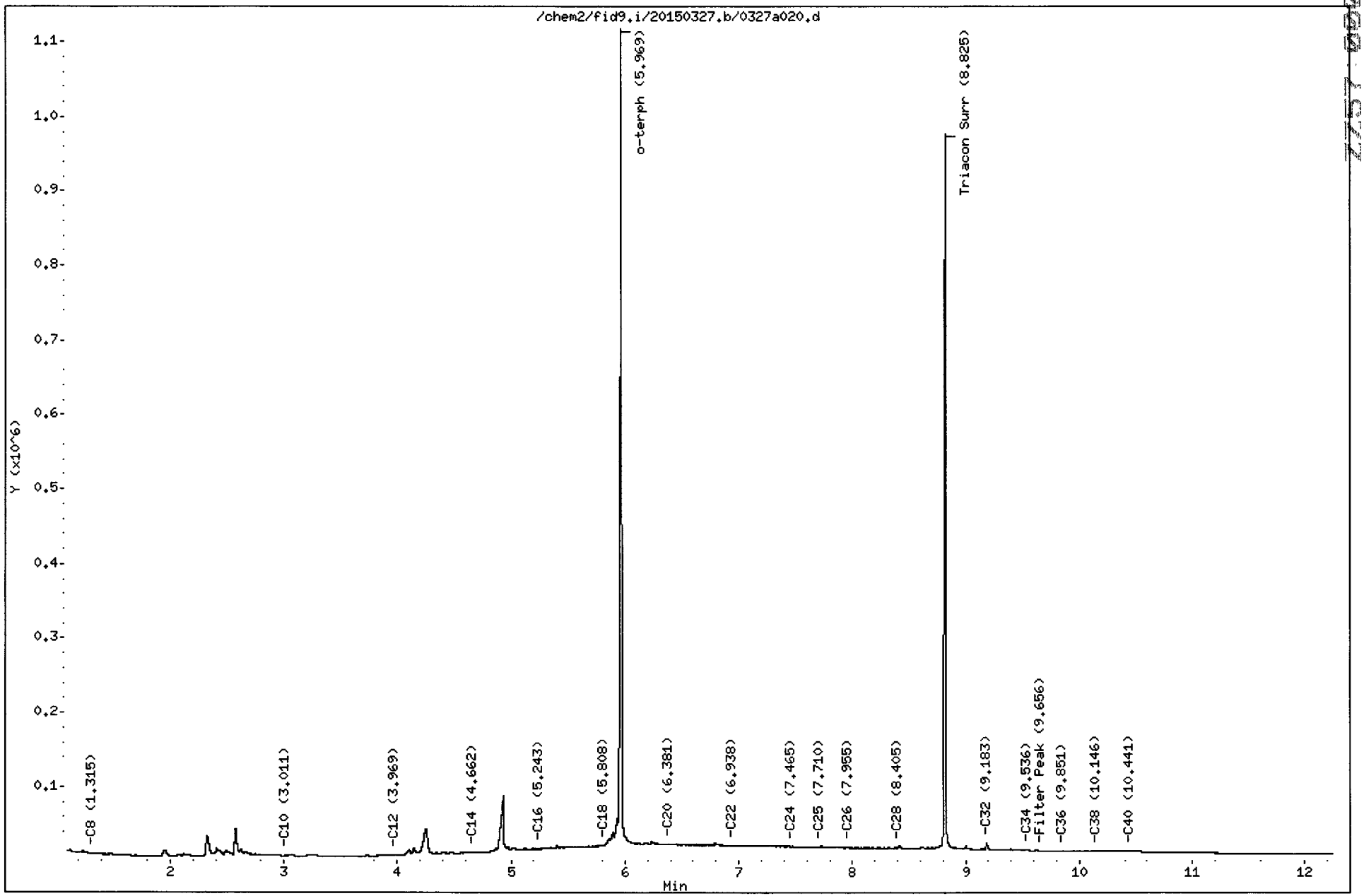
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

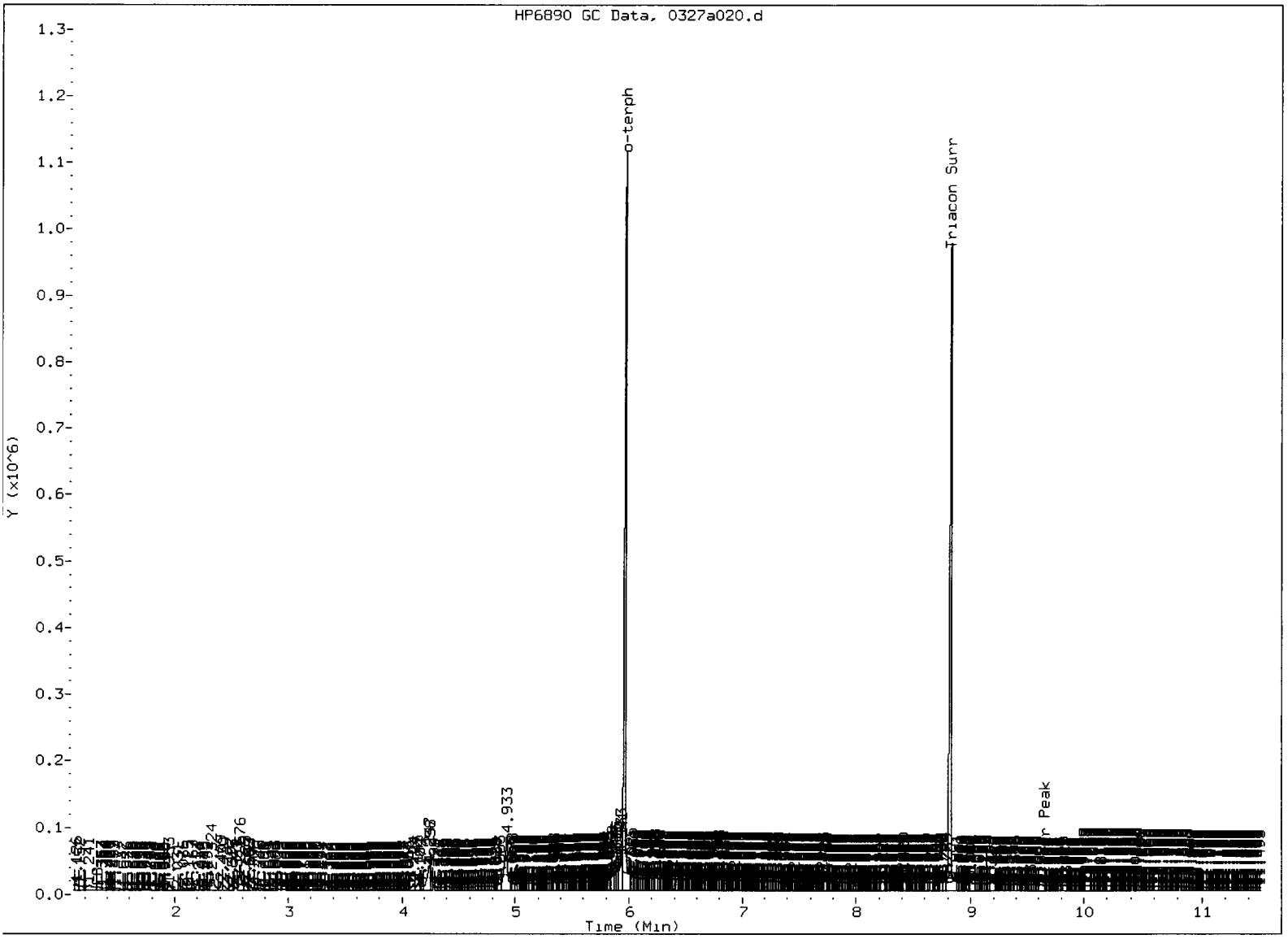
Data File: /chem2/fid9.i/20150327.b/0327a020.d
Date : 27-MAR-2015 15:08
Client ID:
Sample Info: ZZ57B

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ57B FID:9A SIGNAL



MANUAL INTEGRATION

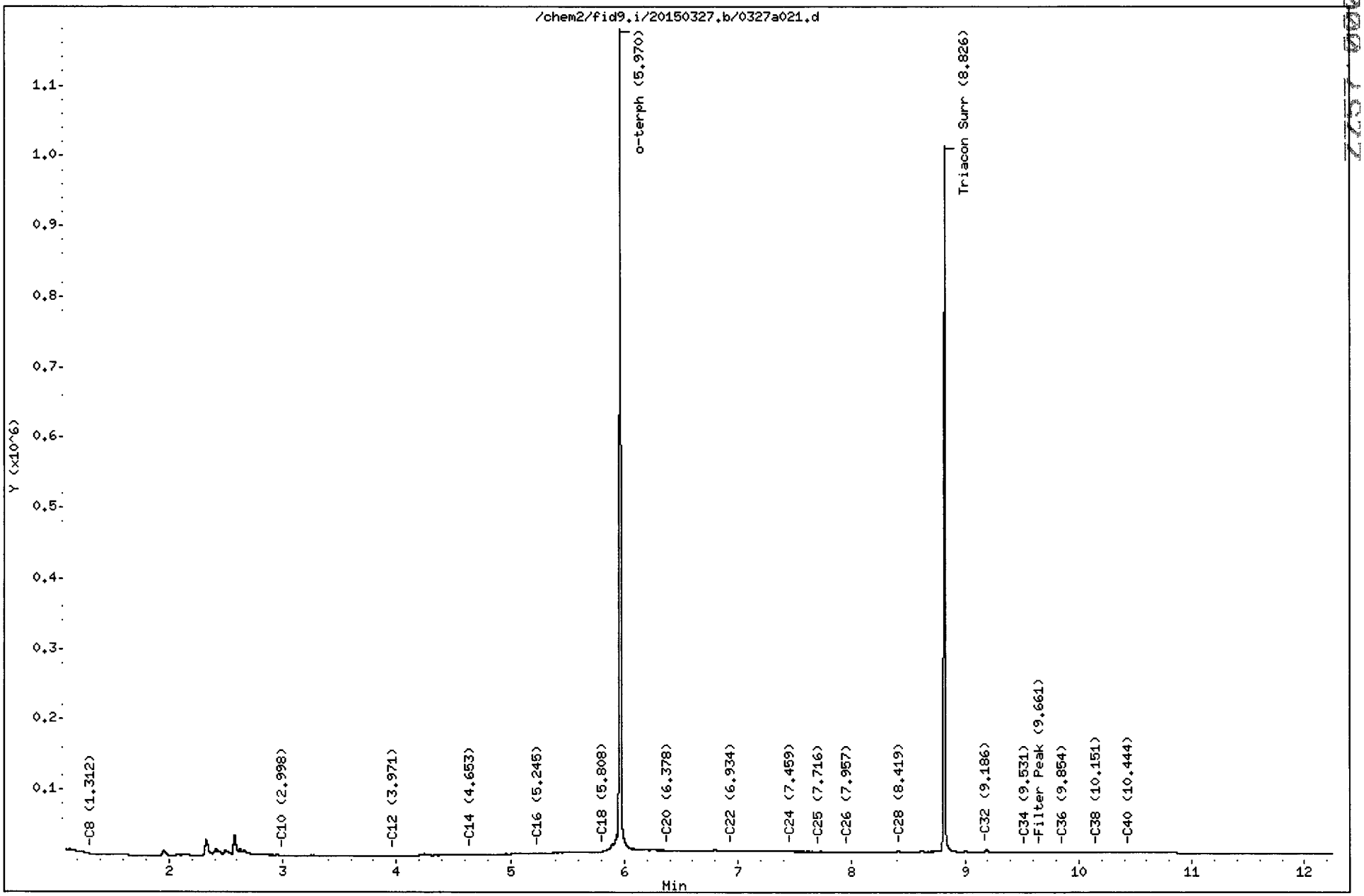
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

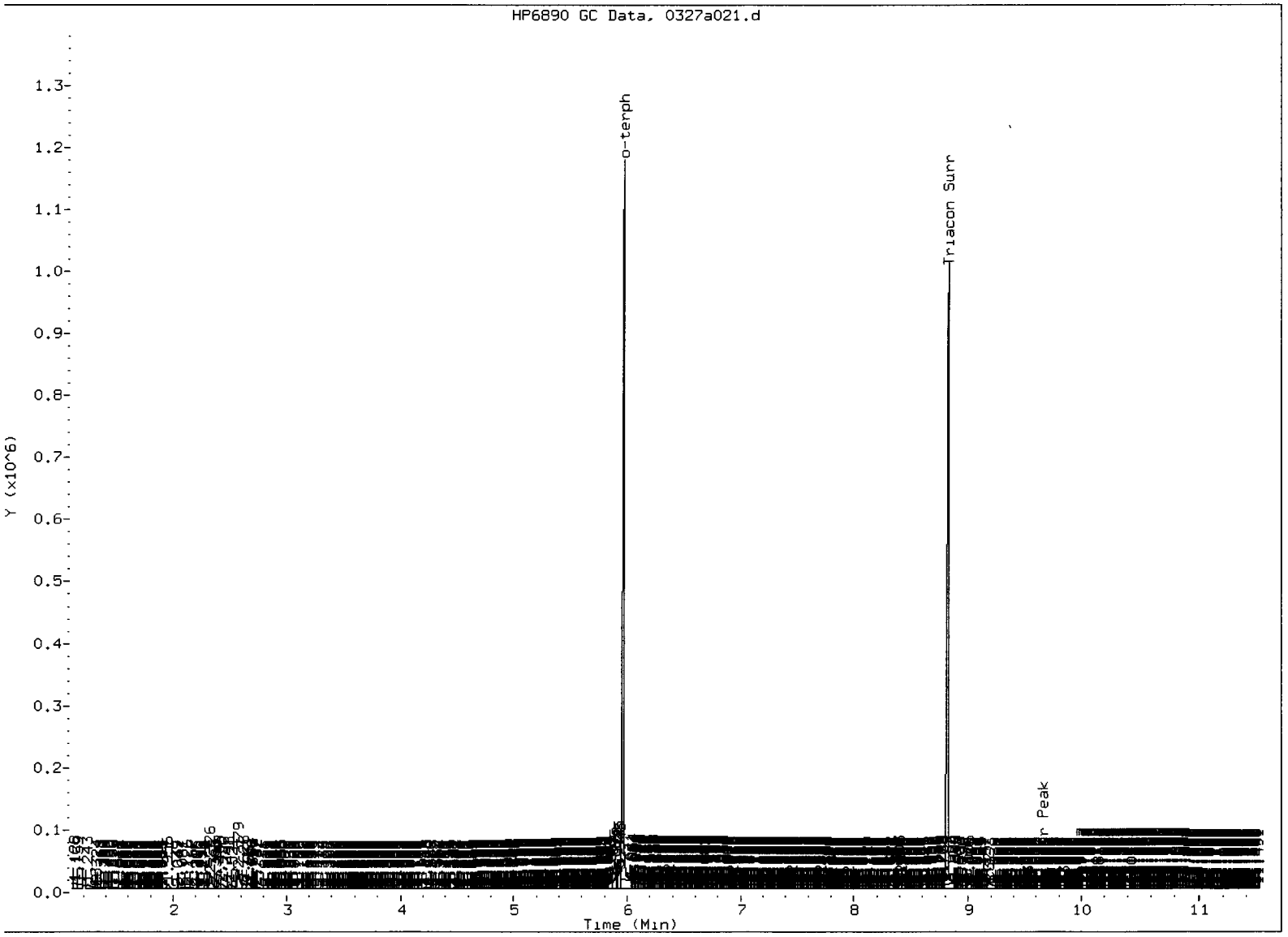
Data File: /chem2/fid9.i/20150327.b/0327a021.d
Date : 27-MAR-2015 15:29
Client ID:
Sample Info: ZZ57C

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ57C FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

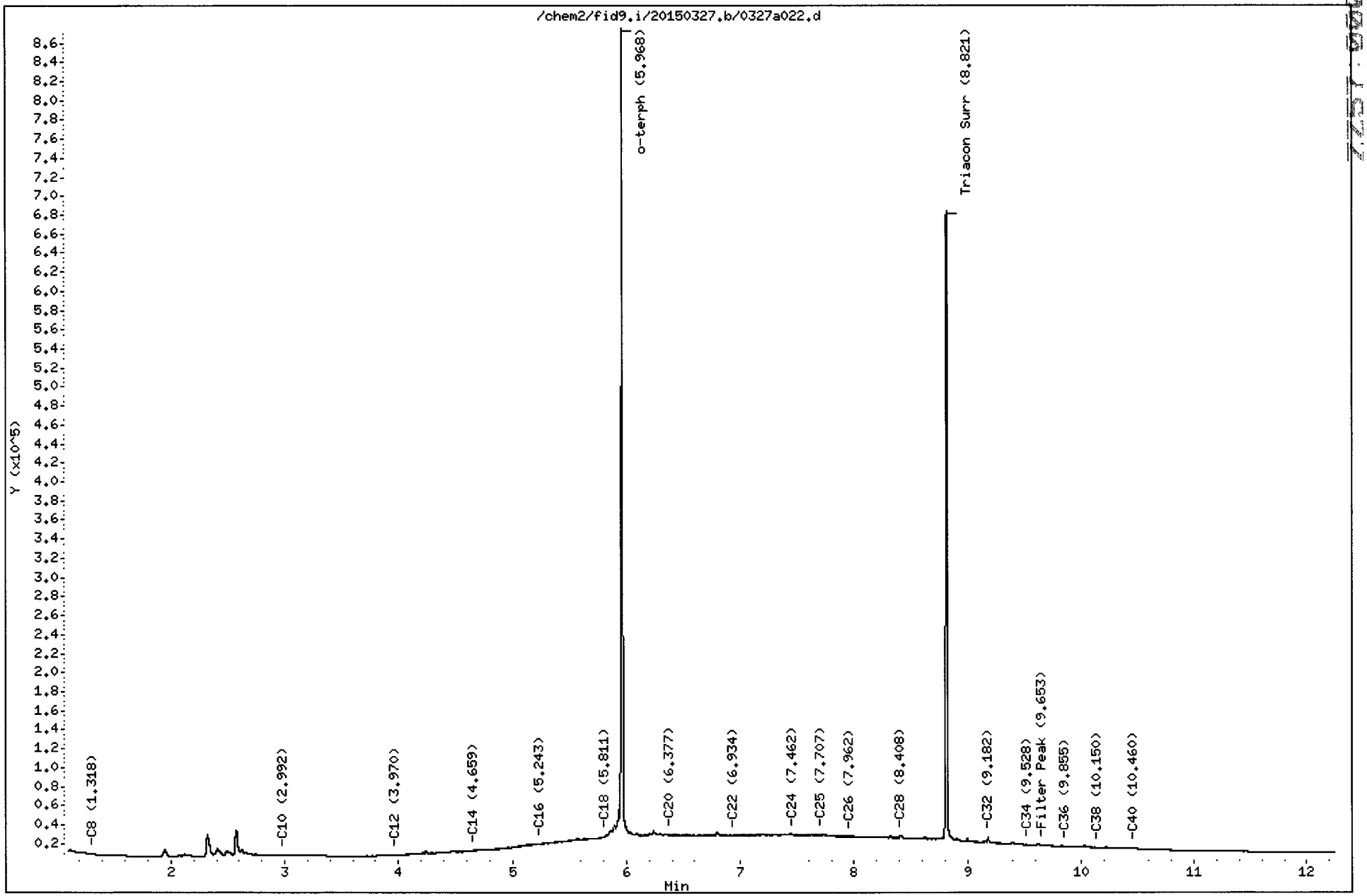
Analyst: ME Date: 3/30/15

Data File: /chem2/fid9.i/20150327.b/0327a022.d
Date : 27-MAR-2015 15:50
Client ID:
Sample Info: ZZ57D

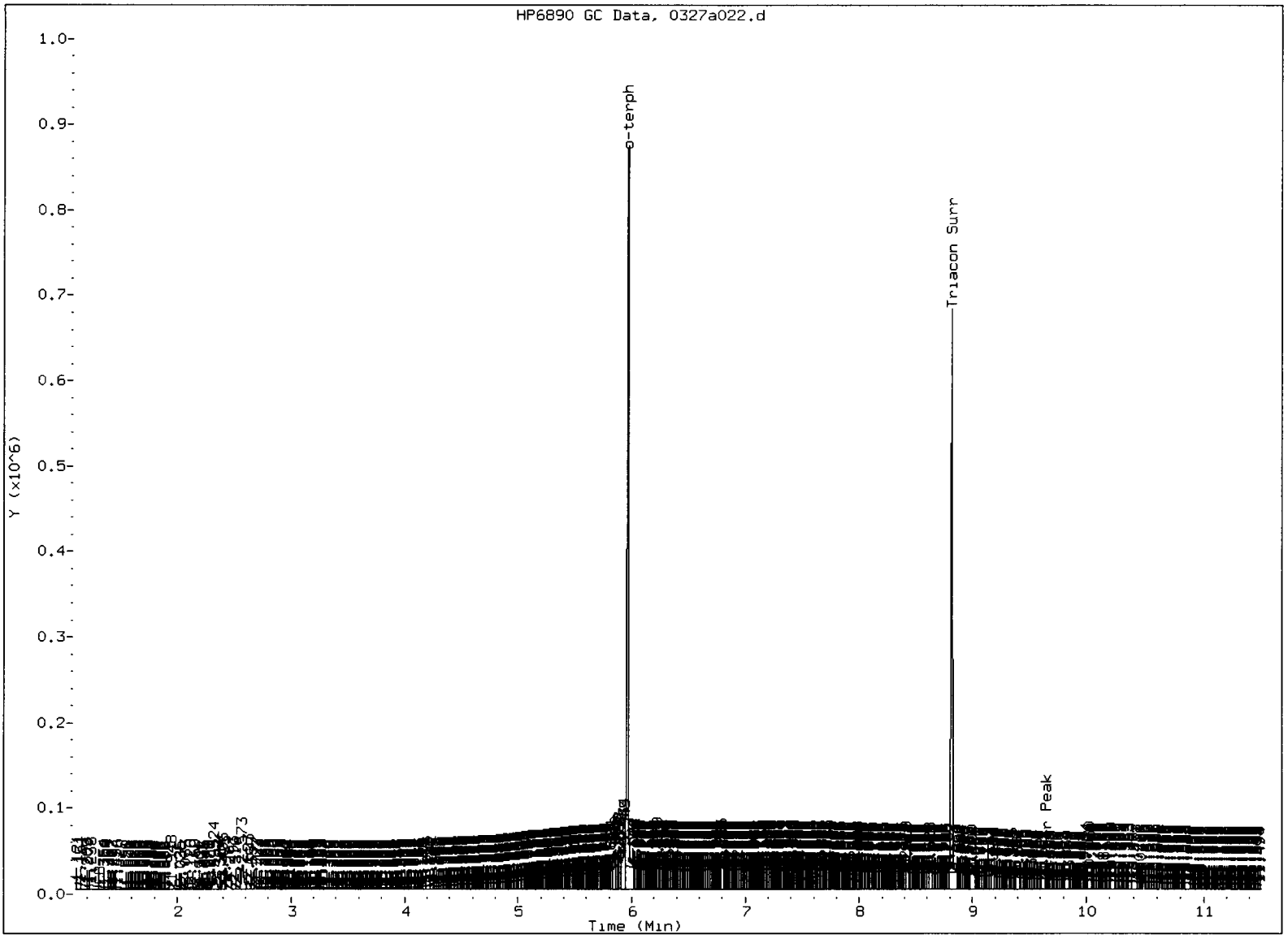
Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 ZZ57D FID:9A SIGNAL



MANUAL INTEGRATION

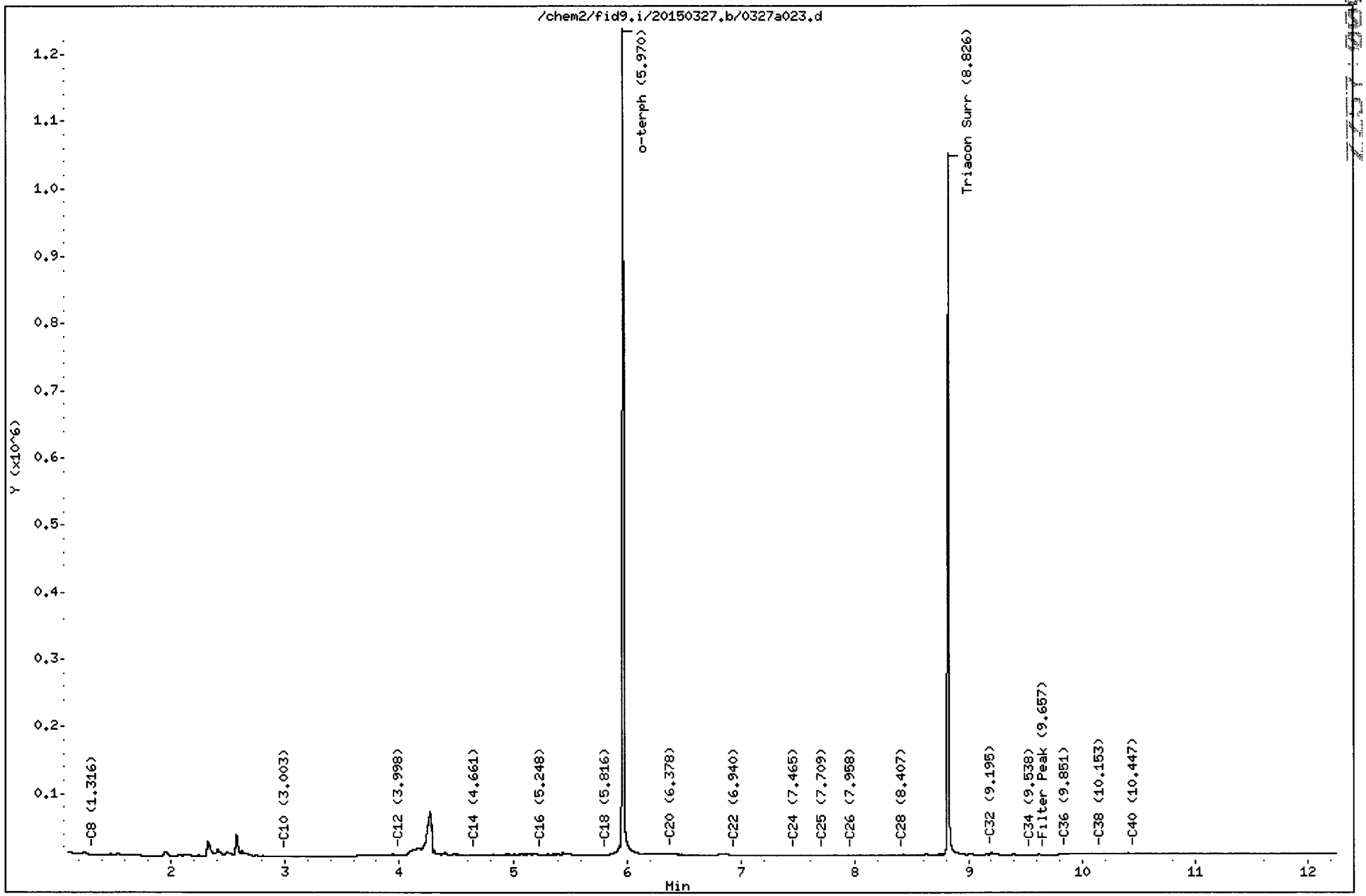
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 3/30/15

Data File: /chem2/fid9.i/20150327.b/0327a023.d
Date : 27-MAR-2015 16:11
Client ID:
Sample Info: ZZ57E

Instrument: fid9.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



Data File: /chem2/fid9.i/20150327.b/0327a024.d

Page 1

Date : 27-MAR-2015 16:32

Client ID:

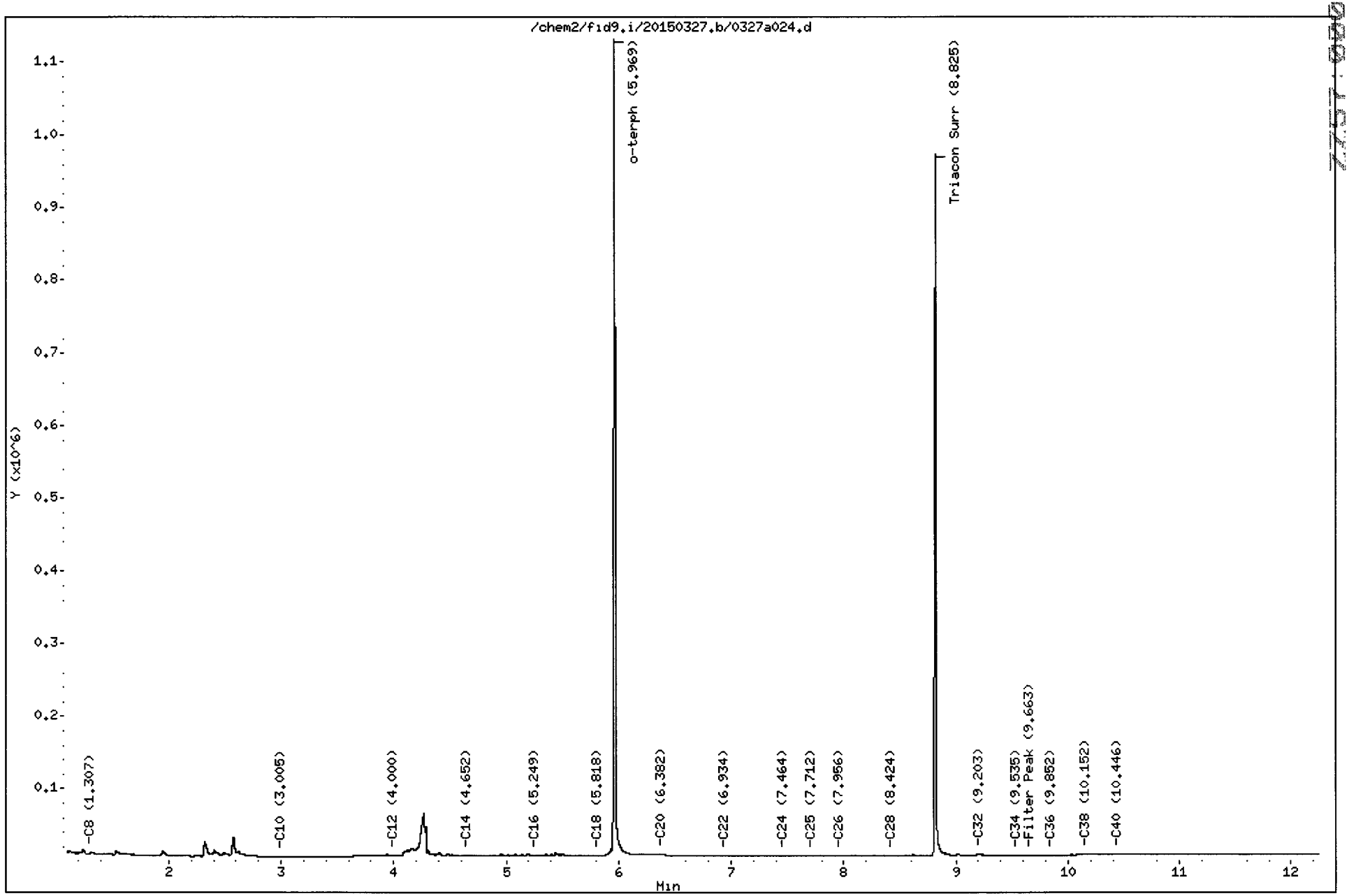
Instrument: fid9.i

Sample Info: ZZ57F

Operator: JW

Column phase: RTX-1

Column diameter: 0.25

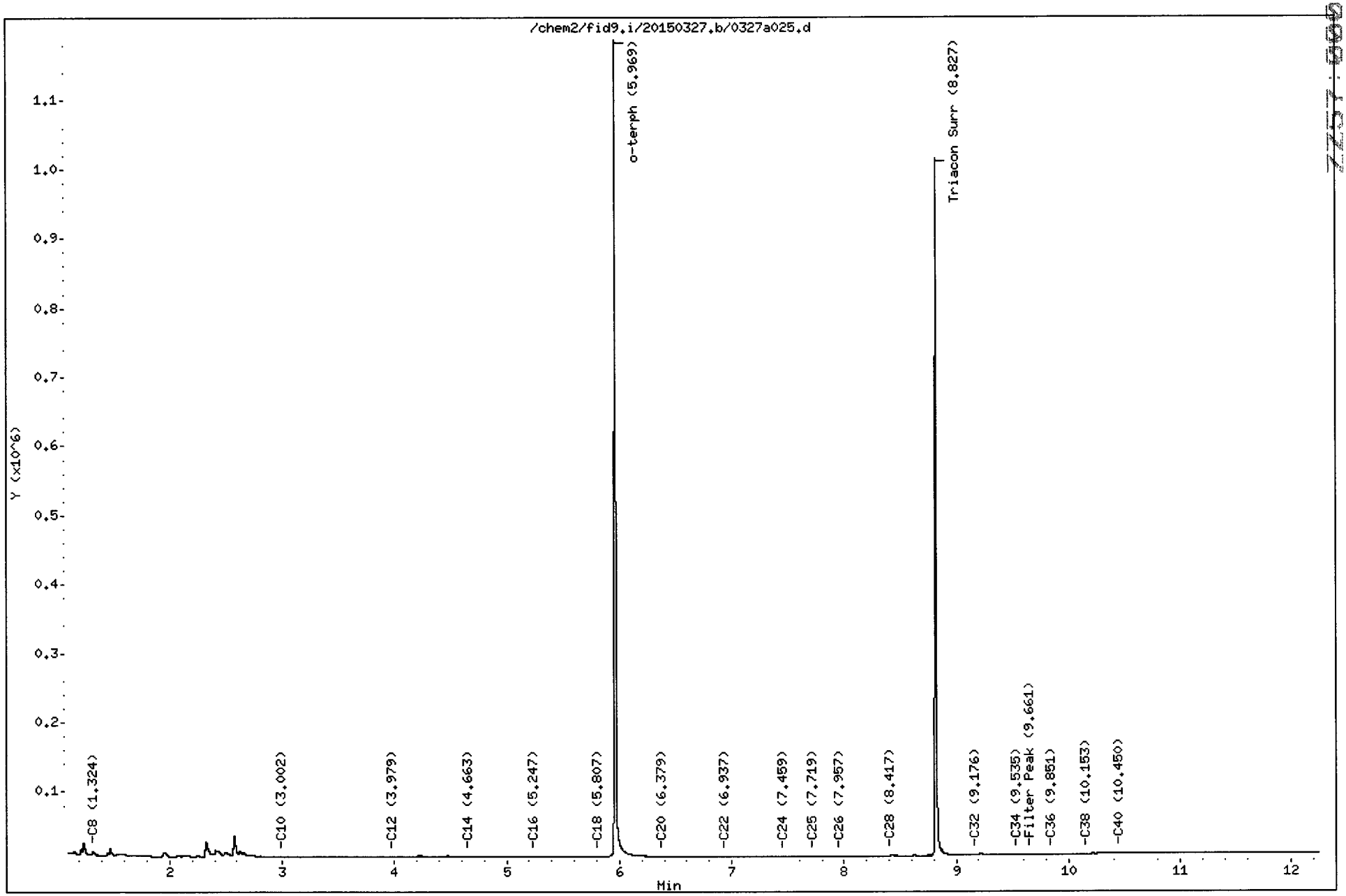


Data File: /chem2/fid9.i/20150327.b/0327a025.d
Date : 27-MAR-2015 16:53
Client ID:
Sample Info: ZZ57G

Instrument: fid9.i

Operator: JW
Column diameter: 0.25

Column phase: RTX-1



INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B

ANALYTICAL RESOURCES INCORPORATED

Data Release Authorized:
Reported: 03/18/15
Date Received: 03/10/15
Page 1 of 1

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW11 ZZ57A 15-4470	03/10/15	Water	03/10/15 031015#1	0.010	< 0.010 U
MW8 ZZ57B 15-4471	03/10/15	Water	03/10/15 031015#1	0.010	< 0.010 U
MW7 ZZ57C 15-4472	03/10/15	Water	03/10/15 031015#1	0.010	< 0.010 U
MW6 ZZ57D 15-4473	03/10/15	Water	03/17/15 031715#1	0.010	< 0.010 U
MW5 ZZ57E 15-4474	03/10/15	Water	03/10/15 031015#1	1.00	55.4
MW12 ZZ57F 15-4475	03/10/15	Water	03/10/15 031015#1	1.00	53.8
MW4 ZZ57G 15-4476	03/10/15	Water	03/10/15 031015#1	0.010	< 0.010 U

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
ZZ57-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/18/15

Project: Precision Engineering
Event: 1396024-00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	03/10/15 18:16	mg/L	< 0.010 U
	03/17/15 12:40		< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
ZZ57-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/18/15

Project: Precision Engineering
Event: 1396024-00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium	03/10/15 18:16	mg/L	1.23	1.25	98.4%
ERA #300614	03/17/15 12:40		0.628	0.620	101.3%

REPLICATE RESULTS-CONVENTIONALS
ZZ57-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/18/15

Project: Precision Engineering
Event: 1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ZZ57A Client ID: MW11					
Hexavalent Chromium	03/10/15	mg/L	< 0.010	< 0.010	NA
ARI ID: ZZ57D Client ID: MW6					
Hexavalent Chromium	03/17/15	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
ZZ57-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/18/15

Project: Precision Engineering
Event: 1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ZZ57A Client ID: MW11						
Hexavalent Chromium	03/10/15	mg/L	< 0.010	< 0.010 U	0.062	NA
ARI ID: ZZ57D Client ID: MW6						
Hexavalent Chromium	03/17/15	mg/L	< 0.010	< 0.010 U	0.062	NA

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW11
SAMPLE

Lab Sample ID: ZZ57A
LIMS ID: 15-4470
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**4.2**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**2.7**	
200.8	03/12/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	**7782-49-2**	**Selenium**	0.5	**1.1**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW8
SAMPLE

Lab Sample ID: ZZ57B
LIMS ID: 15-4471
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**9.2**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**6.8**	
200.8	03/12/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	**7782-49-2**	**Selenium**	0.5	**1.3**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW7
SAMPLE

Lab Sample ID: ZZ57C
LIMS ID: 15-4472
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/13/15	**7440-38-2**	**Arsenic**	0.2	**6.8**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**0.7**	
200.8	03/12/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	**7782-49-2**	**Selenium**	0.5	**3.1**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW6
SAMPLE

Lab Sample ID: ZZ57D
LIMS ID: 15-4473
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**40.5**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	0.5	**19.0**	
200.8	03/12/15	200.8	03/13/15	**7439-92-1**	**Lead**	0.1	**0.2**	
200.8	03/12/15	200.8	03/17/15	**7782-49-2**	**Selenium**	0.5	**7.4**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW5
SAMPLE

Lab Sample ID: ZZ57E
LIMS ID: 15-4474
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**6.3**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	120	**38,700**	
200.8	03/12/15	200.8	03/17/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW12
SAMPLE

Lab Sample ID: ZZ57F
LIMS ID: 15-4475
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	**7440-38-2**	**Arsenic**	0.2	**6.2**	
200.8	03/12/15	200.8	03/13/15	**7440-47-3**	**Chromium**	120	**45,700**	
200.8	03/12/15	200.8	03/17/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW4**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ZZ57G
LIMS ID: 15-4476
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: 03/10/15
Date Received: 03/10/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/13/15	**7440-38-2**	**Arsenic**	0.2	**9.3**	
200.8	03/12/15	200.8	03/17/15	7440-47-3	Chromium	0.5	0.5	U
200.8	03/12/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ZZ57MB
LIMS ID: 15-4476
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	03/12/15	200.8	03/17/15	7440-38-2	Arsenic	0.2	0.2	U
200.8	03/12/15	200.8	03/13/15	7440-47-3	Chromium	0.5	0.5	U
200.8	03/12/15	200.8	03/13/15	7439-92-1	Lead	0.1	0.1	U
200.8	03/12/15	200.8	03/17/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: ZZ57LCS
LIMS ID: 15-4476
Matrix: Water
Data Release Authorized:
Reported: 03/18/15

QC Report No: ZZ57-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024-00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.4	25.0	102%	
Chromium	200.8	21.1	25.0	84.4%	
Lead	200.8	21.8	25.0	87.2%	
Selenium	200.8	69.5	80.0	86.9%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

April 2015

Analytical Resources, Incorporated
Analytical Chemists and Consultants
30 April 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: AEJ4

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received three soil samples and one water sample on April 15, 2015. The samples were analyzed for VOCs, NWTPH-G, NWTPH-Dx, hexavalent chromium and total and dissolved metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample SB15-26. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrices were the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: AEJ4

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

* Send sample receipt to jess.lafarinelli@kennedyjenks.com

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AEJ4	Turn-around Requested: Standard	Page 1 of 1	
ARI Client Company: Kennedy/Jenks	Phone: 253 635 6900	Date: 4/15	Ice Present? YES
Client Contact: Jess. La Farinelli		No of Coolers: 1	Cooler Temps: 3.3
Client Project Name: Precision Engineering			
Client Project #: 1396024	Samplers: J. Sandberg / J. Schmitz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals	NWTPH-Dx	VOCs	VOCs / NWTPH-Gx/BTEX	NWTPH-Gx	Hexavalent Cr	Total Metals	Dissolved Metals	Notes/Comments
SB15-26	4/15	12:10	Soil	10	X	X	X	X	X	X			
SB15-41	4/15	13:00	Soil	6	X	X	X	X		X			
SB15-45	4/15	13:05	Soil	2	X					X			Hold
SB15	4/15	13:45	H_2O	10		X	X		X	X	X	X	Diss metals was F.alt-Filtered

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Joe Sandberg	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 4/15 1500	Date & Time: 4/15/15 1540 ~~1590~~ CA	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program This program meets standards for the industry The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

SEE ATTACHED

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks Project Name: Precision Engineering

COC No(s): _____ (NA) Delivered by Fed-Ex UPS Courier Hand Delivered Other _____

Assigned ARI Job No AEJ4 Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 3.3

Time: 1540

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by: CA Date 4-15-15 Time 1540

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? Bubble Wrap (Wet) Ice Gel Packs Baggies Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA (YES) NO

Were all bottles sealed in individual plastic bags? (YES) NO

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA (YES) NO

Were all VOC vials free of air bubbles? NA (YES) NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI (NA) _____

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment _____ Split by: _____

Samples Logged by AV Date 4/15/15 Time 1640

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	• • •

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 04/15/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AEJ4**

Inquiry Number: NONE
Analysis Requested: 04/16/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 04/15/15

Project #: 1396024
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-7418 **AEJ4A**	SB15						TOT pass															
15-7419 **AEJ4B**	SB15						DIS pass									Y						

Checked By AV Date 4/15/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AEJ4
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB15	AEJ4A	15-7418	Water	04/15/15 13:45	04/15/15 15:40
2.	SB15	AEJ4B	15-7419	Water	04/15/15 13:45	04/15/15 15:40
3.	SB15-26	AEJ4C	15-7420	Soil	04/15/15 12:10	04/15/15 15:40
4.	SB15-41	AEJ4D	15-7421	Soil	04/15/15 13:00	04/15/15 15:40
5.	SB15-45	AEJ4E	15-7422	Soil	04/15/15 13:05	04/15/15 15:40

AEJ4 : 00005

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

AEJ4 00006

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

AEJ4 : 00007

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

AEJ4 . 00008

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15**
 SAMPLE

Lab Sample ID: AEJ4A
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/22/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Instrument/Analyst: NT2/MH
Date Analyzed: 04/21/15 17:30

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15**
 SAMPLE

Lab Sample ID: AEJ4A
LIMS ID: 15-7418
Matrix: Water
Date Analyzed: 04/21/15 17:30

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	98.9%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	106%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042115A**
 METHOD BLANK

Lab Sample ID: MB-042115A
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/22/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/MH
Date Analyzed: 04/21/15 11:34

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042115A**

METHOD BLANK

Lab Sample ID: MB-042115A
LIMS ID: 15-7418
Matrix: Water
Date Analyzed: 04/21/15 11:34

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	98.5%
Bromofluorobenzene	93.9%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042115A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115A
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/22/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/MH
LCSD: NT2/MH
Date Analyzed LCS: 04/21/15 10:53
LCSD: 04/21/15 11:14

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	11.3	10.0	113%	10.4	10.0	104%	8.3%
Bromomethane	10.1	10.0	101%	9.02	10.0	90.2%	11.3%
Vinyl Chloride	11.1	10.0	111%	10.0	10.0	100%	10.4%
Chloroethane	10.3	10.0	103%	9.49	10.0	94.9%	8.2%
Methylene Chloride	10.4	10.0	104%	9.62	10.0	96.2%	7.8%
Acetone	50.0	50.0	100%	45.9	50.0	91.8%	8.6%
Carbon Disulfide	9.17	10.0	91.7%	8.44	10.0	84.4%	8.3%
1,1-Dichloroethene	10.1	10.0	101%	9.27	10.0	92.7%	8.6%
1,1-Dichloroethane	10.3	10.0	103%	9.47	10.0	94.7%	8.4%
trans-1,2-Dichloroethene	9.68	10.0	96.8%	8.88	10.0	88.8%	8.6%
cis-1,2-Dichloroethene	10.3	10.0	103%	9.51	10.0	95.1%	8.0%
Chloroform	10.5	10.0	105%	9.69	10.0	96.9%	8.0%
1,2-Dichloroethane	10.2	10.0	102%	9.27	10.0	92.7%	9.6%
2-Butanone	52.3	50.0	105%	49.0	50.0	98.0%	6.5%
1,1,1-Trichloroethane	10.7	10.0	107%	9.86	10.0	98.6%	8.2%
Carbon Tetrachloride	11.1	10.0	111%	9.97	10.0	99.7%	10.7%
Vinyl Acetate	10.1	10.0	101%	9.44	10.0	94.4%	6.8%
Bromodichloromethane	10.9	10.0	109%	9.90	10.0	99.0%	9.6%
1,2-Dichloropropane	10.4	10.0	104%	9.45	10.0	94.5%	9.6%
cis-1,3-Dichloropropene	11.0	10.0	110%	10.2	10.0	102%	7.5%
Trichloroethene	10.6	10.0	106%	9.43	10.0	94.3%	11.7%
Dibromochloromethane	11.0	10.0	110%	10.1	10.0	101%	8.5%
1,1,2-Trichloroethane	10.4	10.0	104%	9.82	10.0	98.2%	5.7%
Benzene	11.0	10.0	110%	10.1	10.0	101%	8.5%
trans-1,3-Dichloropropene	11.3	10.0	113%	10.2	10.0	102%	10.2%
2-Chloroethylvinylether	10.4	10.0	104%	9.23	10.0	92.3%	11.9%
Bromoform	11.0	10.0	110%	10.2	10.0	102%	7.5%
4-Methyl-2-Pentanone (MIBK)	53.5	50.0	107%	50.3	50.0	101%	6.2%
2-Hexanone	54.7	50.0	109%	51.4	50.0	103%	6.2%
Tetrachloroethene	10.4	10.0	104%	9.30	10.0	93.0%	11.2%
1,1,2,2-Tetrachloroethane	10.1	10.0	101%	9.47	10.0	94.7%	6.4%
Toluene	10.6	10.0	106%	9.72	10.0	97.2%	8.7%
Chlorobenzene	10.5	10.0	105%	9.70	10.0	97.0%	7.9%
Ethylbenzene	10.9	10.0	109%	9.86	10.0	98.6%	10.0%
Styrene	12.1 Q	10.0	121%	11.1 Q	10.0	111%	8.6%
Trichlorofluoromethane	11.9	10.0	119%	10.2	10.0	102%	15.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.4	10.0	104%	9.23	10.0	92.3%	11.9%
m,p-Xylene	23.2	20.0	116%	21.0	20.0	105%	10.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042115A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115A QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
LIMS ID: 15-7418 Project: Precision Engineering
Matrix: Water 1396024

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.4	10.0	114%	10.4	10.0	104%	9.2%
1,2-Dichlorobenzene	10.0	10.0	100%	9.12	10.0	91.2%	9.2%
1,3-Dichlorobenzene	10.0	10.0	100%	9.01	10.0	90.1%	10.4%
1,4-Dichlorobenzene	9.64	10.0	96.4%	8.82	10.0	88.2%	8.9%
Acrolein	50.4	50.0	101%	46.6	50.0	93.2%	7.8%
Iodomethane	9.76	10.0	97.6%	9.19	10.0	91.9%	6.0%
Bromoethane	10.4	10.0	104%	9.50	10.0	95.0%	9.0%
Acrylonitrile	9.60	10.0	96.0%	8.99	10.0	89.9%	6.6%
1,1-Dichloropropene	10.6	10.0	106%	9.66	10.0	96.6%	9.3%
Dibromomethane	9.99	10.0	99.9%	9.26	10.0	92.6%	7.6%
1,1,1,2-Tetrachloroethane	11.0	10.0	110%	10.4	10.0	104%	5.6%
1,2-Dibromo-3-chloropropane	10.2	10.0	102%	9.74	10.0	97.4%	4.6%
1,2,3-Trichloropropane	10.4	10.0	104%	9.35	10.0	93.5%	10.6%
trans-1,4-Dichloro-2-butene	10.2	10.0	102%	9.22	10.0	92.2%	10.1%
1,3,5-Trimethylbenzene	11.8 Q	10.0	118%	10.7 Q	10.0	107%	9.8%
1,2,4-Trimethylbenzene	12.0 Q	10.0	120%	10.9 Q	10.0	109%	9.6%
Hexachlorobutadiene	9.79	10.0	97.9%	8.58	10.0	85.8%	13.2%
1,2-Dibromoethane	10.5	10.0	105%	9.63	10.0	96.3%	8.6%
Bromochloromethane	10.2	10.0	102%	9.33	10.0	93.3%	8.9%
2,2-Dichloropropane	10.7	10.0	107%	9.67	10.0	96.7%	10.1%
1,3-Dichloropropane	10.7	10.0	107%	9.74	10.0	97.4%	9.4%
Isopropylbenzene	12.0 Q	10.0	120%	11.0 Q	10.0	110%	8.7%
n-Propylbenzene	11.5	10.0	115%	10.3	10.0	103%	11.0%
Bromobenzene	10.3	10.0	103%	9.48	10.0	94.8%	8.3%
2-Chlorotoluene	10.9	10.0	109%	9.93	10.0	99.3%	9.3%
4-Chlorotoluene	10.8	10.0	108%	9.84	10.0	98.4%	9.3%
tert-Butylbenzene	11.8 Q	10.0	118%	10.9 Q	10.0	109%	7.9%
sec-Butylbenzene	12.0 Q	10.0	120%	10.8 Q	10.0	108%	10.5%
4-Isopropyltoluene	12.3 Q	10.0	123%	11.0 Q	10.0	110%	11.2%
n-Butylbenzene	11.5	10.0	115%	10.2	10.0	102%	12.0%
1,2,4-Trichlorobenzene	10.3	10.0	103%	9.33	10.0	93.3%	9.9%
Naphthalene	10.7	10.0	107%	9.83	10.0	98.3%	8.5%
1,2,3-Trichlorobenzene	10.6	10.0	106%	9.57	10.0	95.7%	10.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.4%	96.8%
d8-Toluene	101%	100%
Bromofluorobenzene	99.6%	101%
d4-1,2-Dichlorobenzene	98.1%	99.1%

AETI : 000411

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-042115A	Method Blank	10	110%	98.5%	93.9%	104%	0
LCS-042115A	Lab Control	10	94.4%	101%	99.6%	98.1%	0
LCSD-042115A	Lab Control Dup	10	96.8%	100%	101%	99.1%	0
AEJ4A	SB15	10	113%	98.9%	97.2%	106%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-7418 to 15-7418

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 21-APR-2015 10:02
Lab File ID: 15ccv0421.d Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Analysis Type: WATER Init. Cal. Times: 18:29 20:52
Lab Sample ID: CCV0421 Quant Type: ISTD
Method: /chem3/nt2.i/20150421.b/82600420L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.70174	0.85081	0.85081	0.010	21.24360	20.00000	Averaged	<-
2 Chloromethane	0.91191	1.01679	1.01679	0.100	11.50060	20.00000	Averaged	
3 Vinyl Chloride	0.79954	0.89191	0.89191	0.100	11.55255	20.00000	Averaged	
4 Bromomethane	0.48738	0.49090	0.49090	0.100	0.72182	20.00000	Averaged	
5 Chloroethane	0.51592	0.53514	0.53514	0.010	3.72524	20.00000	Averaged	
6 Trichlorofluoromethane	0.80394	0.92676	0.92676	0.010	15.27715	20.00000	Averaged	
7 1,1-Dichloroethene	1.01399	1.04574	1.04574	0.100	3.13130	20.00000	Averaged	
8 Carbon Disulfide	1.68878	1.54978	1.54978	0.010	-8.23057	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.50237	0.53217	0.53217	0 010	5.93117	20.00000	Averaged	
10 Iodomethane	9.61804	10.00000	0.29836	0.010	-3.81957	20.00000	Quadratic	
11 Bromoethane	0.31747	0.34203	0.34203	0.100	7.73688	20.00000	Averaged	
12 Acrolein	0.13291	0.13629	0.13629	0.000	2.53964	20.00000	Averaged	
13 Methylene Chloride	0.59411	0.63377	0.63377	0.010	6.67516	20.00000	Averaged	
14 Acetone	0.18369	0.19680	0.19680	0.001	7.13495	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.62051	0.61182	0.61182	0.010	-1.40042	20.00000	Averaged	
16 n-hexane	0.32090	0.32121	0.32121	0.100	0.09684	20.00000	Averaged	
17 Methyl tert butyl ether	1.06478	1.02947	1.02947	0.100	-3.31628	20.00000	Averaged	
18 1,1-Dichloroethane	1.25616	1.30183	1.30183	0.200	3.63529	20.00000	Averaged	
19 Acrylonitrile	0.26779	0.26924	0.26924	0.001	0.54214	20.00000	Averaged	
20 Vinyl Acetate	1.16346	1.23718	1.23718	0.010	6.33666	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.70023	0.73623	0.73623	0.010	5.14155	20.00000	Averaged	
23 2,2-Dichloropropane	0.93935	1.00553	1.00553	0.010	7.04446	20.00000	Averaged	
24 Bromochloromethane	0.32454	0.33727	0.33727	0.050	3.92151	20.00000	Averaged	
25 Chloroform	1.16250	1.23200	1.23200	0.200	5.97874	20.00000	Averaged	
26 Carbon Tetrachloride	0.48922	0.54473	0.54473	0.100	11.34587	20 00000	Averaged	
$ 27 Dibromofluoromethane	0.50795	0.49919	0.49919	0.100	-1.72494	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.01797	1.10838	1.10838	0.100	8.88141	20 00000	Averaged	
30 1,1-Dichloropropene	0.55542	0.59374	0.59374	0.010	6.89936	20.00000	Averaged	
29 2-Butanone	0.32868	0.36675	0.36675	0.001	11.58146	20 00000	Averaged	
31 Benzene	1.55316	1.73329	1.73329	0.500	11.59784	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.73190	0.70469	0.70469	0.010	-3.71843	20.00000	Averaged	
34 1,2-Dichloroethane	0.66253	0 69002	0.69002	0.100	4.14968	20.00000	Averaged	
36 Trichloroethene	0.38554	0.39872	0.39872	0.100	3.41855	20.00000	Averaged	
38 Dibromomethane	0.25719	0.25822	0.25822	0.010	0.40043	20.00000	Averaged	
39 1,2-Dichloropropane	0.41999	0.44320	0.44320	0.100	5.52540	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 21-APR-2015 10:02
Lab File ID: 15ccv0421.d Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Analysis Type: WATER Init. Cal. Times: 18:29 20:52
Lab Sample ID: CCV0421 Quant Type: ISTD
Method: /chem3/nt2.i/20150421.b/82600420L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 Bromodichloromethane	0.50767	0.56599	0.56599	0.100	11.48855	20.00000	Averaged	
173 2-Pentanone	0.05929	0.06721	0.06721	0.100	13.36336	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.57247	0.64232	0.64232	0.200	12.20042	20.00000	Averaged	
$ 43 d8-Toluene	1.24984	1.26360	1.26360	0.010	1.10054	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.16156	0.16436	0.16436	0.000	1.73321	20.00000	Averaged	
44 Toluene	1.03159	1.12374	1.12374	0.400	8.93324	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.17175	0.19126	0.19126	0.000	11 35983	20.00000	Averaged	
46 Tetrachloroethene	0.40524	0.42241	0.42241	0.200	4.23572	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.56174	0.63334	0.63334	0.010	12.74653	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.36386	0.38734	0.38734	0.100	6 45458	20.00000	Averaged	
49 Chlorodibromomethane	0.34792	0.38326	0.38326	0.100	10.15572	20.00000	Averaged	
50 1,3-Dichloropropane	0.65936	0.69588	0.69588	0.100	5.53848	20 00000	Averaged	
51 1,2-Dibromoethane	0.33748	0.36420	0.36420	0.010	7.91662	20.00000	Averaged	
52 2-Hexanone	0.29587	0.33687	0.33687	0.010	13.85538	20.00000	Averaged	
54 Chlorobenzene	1.06527	1.13887	1.13887	0.500	6 90852	20.00000	Averaged	
55 Ethyl Benzene	0.58463	0.64355	0.64355	0 100	10.07777	20 00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.34552	0.38876	0.38876	0.010	12.51346	20.00000	Averaged	
57 m,p-xylene	0.66952	0.78203	0.78203	0.300	16.80499	20 00000	Averaged	
58 o-Xylene	0.63649	0.73498	0.73498	0.300	15.47302	20 00000	Averaged	
59 Styrene	1.01298	1.23137	1.23137	0.300	21 55912	20 00000	Averaged	<-
60 Bromoform	0.40858	0.46039	0.46039	0.010	12.68133	20.00000	Averaged	
61 Isopropyl Benzene	2.80578	3.43990	3.43990	0.010	22.60049	20 00000	Averaged	<-
$ 62 4-Bromofluorobenzene	0 53942	0.52549	0.52549	0.200	-2.58138	20.00000	Averaged	
63 Bromobenzene	0.80465	0.84560	0.84560	0.010	5.08956	20.00000	Averaged	
64 N-Propyl Benzene	3.67490	4.29566	4.29566	0.010	16.89178	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.91419	0.95860	0.95860	0.100	4.85857	20.00000	Averaged	
66 2-Chloro Toluene	2.61903	2.89232	2.89232	0.010	10.43468	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.50603	3.03754	3.03754	0.010	21.20907	20.00000	Averaged	<-
68 1,2,3-Trichloropropane	0.29644	0.31170	0.31170	0.010	5.14949	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.32858	0.34730	0 34730	0.001	5.69904	20.00000	Averaged	
70 4-Chloro Toluene	2.45845	2.72685	2.72685	0.010	10.91727	20.00000	Averaged	
71 T-Butyl Benzene	2.07040	2.51070	2.51070	0.010	21 26668	20.00000	Averaged	<-
72 1,2,4-Trimethylbenzene	2.46521	3.01460	3.01460	0.010	22.28568	20.00000	Averaged	<-
73 S-Butyl Benzene	3.07720	3.76974	3 76974	0.010	22.50539	20.00000	Averaged	<-
74 4-Isopropyl Toluene	2.50504	3.14107	3 14107	0.010	25.39021	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: 15ccv0421.d
Analysis Type: WATER
Lab Sample ID: CCV0421
Method: /chem3/nt2.i/20150421.b/82600420L.m

Injection Date: 21-APR-2015 10:02
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
75 1,3-Dichlorobenzene	1.55411	1.59117	1.59117	0.600	2.38461	20.00000	Averaged
77 1,4-Dichlorobenzene	1.60680	1.59202	1.59202	0.500	-0.92005	20.00000	Averaged
78 N-Butyl Benzene	2.53563	2.97786	2.97786	0.010	17.44048	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92329	0.91468	0.91468	0.010	-0.93282	20.00000	Averaged
80 1,2-Dichlorobenzene	1.47741	1.51412	1.51412	0.400	2.48490	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.16612	0.17685	0.17685	0.010	6.46160	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.57498	0 58270	0.58270	0.010	1.34099	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.98696	1.03797	1.03797	0.010	5.16899	20.00000	Averaged
85 Naphthalene	10.80875	10.00000	2.74087	0.010	8 08746	20.00000	Linear
86 1,2,3-Trichlorobenzene	0.99315	1 06090	1.06090	0.010	6.82232	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-041615A**
 METHOD BLANK

Lab Sample ID: MB-041615A
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/16/15 13:04

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**2.0**	**5.1**	
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

AEJ4:0015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-041615A**

METHOD BLANK

Lab Sample ID: MB-041615A
LIMS ID: 15-7420
Matrix: Soil
Date Analyzed: 04/16/15 13:04

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	100%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

AEJ4 - 000029

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15-26**
 SAMPLE

Lab Sample ID: AEJ4C
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized: MW
Reported: 04/24/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/16/15 17:35

Sample Amount: 3.75 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 26.4%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.3	< 1.3	U
74-83-9	Bromomethane	1.3	< 1.3	U
75-01-4	Vinyl Chloride	1.3	< 1.3	U
75-00-3	Chloroethane	1.3	< 1.3	U
75-09-2	Methylene Chloride	2.7	< 2.7	U
67-64-1	Acetone	6.7	< 6.7	U
75-15-0	**Carbon Disulfide**	**1.3**	**2.8**	
75-35-4	1,1-Dichloroethene	1.3	< 1.3	U
75-34-3	1,1-Dichloroethane	1.3	< 1.3	U
156-60-5	trans-1,2-Dichloroethene	1.3	< 1.3	U
156-59-2	cis-1,2-Dichloroethene	1.3	< 1.3	U
67-66-3	Chloroform	1.3	< 1.3	U
107-06-2	1,2-Dichloroethane	1.3	< 1.3	U
78-93-3	2-Butanone	6.7	< 6.7	U
71-55-6	1,1,1-Trichloroethane	1.3	< 1.3	U
56-23-5	Carbon Tetrachloride	1.3	< 1.3	U
108-05-4	Vinyl Acetate	6.7	< 6.7	U
75-27-4	Bromodichloromethane	1.3	< 1.3	U
78-87-5	1,2-Dichloropropane	1.3	< 1.3	U
10061-01-5	cis-1,3-Dichloropropene	1.3	< 1.3	U
79-01-6	Trichloroethene	1.3	< 1.3	U
124-48-1	Dibromochloromethane	1.3	< 1.3	U
79-00-5	1,1,2-Trichloroethane	1.3	< 1.3	U
71-43-2	Benzene	1.3	< 1.3	U
10061-02-6	trans-1,3-Dichloropropene	1.3	< 1.3	U
110-75-8	2-Chloroethylvinylether	6.7	< 6.7	U
75-25-2	Bromoform	1.3	< 1.3	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.7	< 6.7	U
591-78-6	2-Hexanone	6.7	< 6.7	U
127-18-4	Tetrachloroethene	1.3	< 1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.3	< 1.3	U
108-88-3	Toluene	1.3	< 1.3	U
108-90-7	Chlorobenzene	1.3	< 1.3	U
100-41-4	Ethylbenzene	1.3	< 1.3	U
100-42-5	Styrene	1.3	< 1.3	U
75-69-4	Trichlorofluoromethane	1.3	< 1.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.7	< 2.7	U
179601-23-1	m,p-Xylene	1.3	< 1.3	U
95-47-6	o-Xylene	1.3	< 1.3	U
95-50-1	1,2-Dichlorobenzene	1.3	< 1.3	U
541-73-1	1,3-Dichlorobenzene	1.3	< 1.3	U
106-46-7	1,4-Dichlorobenzene	1.3	< 1.3	U
107-02-8	Acrolein	67	< 67	U
74-88-4	Iodomethane	1.3	< 1.3	U
74-96-4	Bromoethane	2.7	< 2.7	U
107-13-1	Acrylonitrile	6.7	< 6.7	U
563-58-6	1,1-Dichloropropene	1.3	< 1.3	U
74-95-3	Dibromomethane	1.3	< 1.3	U
630-20-6	1,1,1,2-Tetrachloroethane	1.3	< 1.3	U
96-12-8	1,2-Dibromo-3-chloropropane	6.7	< 6.7	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.7	< 6.7	U
108-67-8	1,3,5-Trimethylbenzene	1.3	< 1.3	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15-26**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEJ4C
LIMS ID: 15-7420
Matrix: Soil
Date Analyzed: 04/16/15 17:35

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.3	< 1.3	U
87-68-3	Hexachlorobutadiene	6.7	< 6.7	U
106-93-4	1,2-Dibromoethane	1.3	< 1.3	U
74-97-5	Bromochloromethane	1.3	< 1.3	U
594-20-7	2,2-Dichloropropane	1.3	< 1.3	U
142-28-9	1,3-Dichloropropane	1.3	< 1.3	U
98-82-8	Isopropylbenzene	1.3	< 1.3	U
103-65-1	n-Propylbenzene	1.3	< 1.3	U
108-86-1	Bromobenzene	1.3	< 1.3	U
95-49-8	2-Chlorotoluene	1.3	< 1.3	U
106-43-4	4-Chlorotoluene	1.3	< 1.3	U
98-06-6	tert-Butylbenzene	1.3	< 1.3	U
135-98-8	sec-Butylbenzene	1.3	< 1.3	U
99-87-6	4-Isopropyltoluene	1.3	< 1.3	U
104-51-8	n-Butylbenzene	1.3	< 1.3	U
120-82-1	1,2,4-Trichlorobenzene	6.7	< 6.7	U
91-20-3	Naphthalene	6.7	< 6.7	U
87-61-6	1,2,3-Trichlorobenzene	6.7	< 6.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	109%
d8-Toluene	102%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15-41**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AEJ4D
LIMS ID: 15-7421
Matrix: Soil
Data Release Authorized: MW
Reported: 04/24/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/16/15 17:59

Sample Amount: 4.13 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 19.1%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.2	< 1.2	U
74-83-9	Bromomethane	1.2	< 1.2	U
75-01-4	Vinyl Chloride	1.2	< 1.2	U
75-00-3	Chloroethane	1.2	< 1.2	U
75-09-2	Methylene Chloride	2.4	< 2.4	U
67-64-1	Acetone	6.0	< 6.0	U
75-15-0	Carbon Disulfide	1.2	< 1.2	U
75-35-4	1,1-Dichloroethene	1.2	< 1.2	U
75-34-3	1,1-Dichloroethane	1.2	< 1.2	U
156-60-5	trans-1,2-Dichloroethene	1.2	< 1.2	U
156-59-2	cis-1,2-Dichloroethene	1.2	< 1.2	U
67-66-3	Chloroform	1.2	< 1.2	U
107-06-2	1,2-Dichloroethane	1.2	< 1.2	U
78-93-3	2-Butanone	6.0	< 6.0	U
71-55-6	1,1,1-Trichloroethane	1.2	< 1.2	U
56-23-5	Carbon Tetrachloride	1.2	< 1.2	U
108-05-4	Vinyl Acetate	6.0	< 6.0	U
75-27-4	Bromodichloromethane	1.2	< 1.2	U
78-87-5	1,2-Dichloropropane	1.2	< 1.2	U
10061-01-5	cis-1,3-Dichloropropene	1.2	< 1.2	U
79-01-6	Trichloroethene	1.2	< 1.2	U
124-48-1	Dibromochloromethane	1.2	< 1.2	U
79-00-5	1,1,2-Trichloroethane	1.2	< 1.2	U
71-43-2	Benzene	1.2	< 1.2	U
10061-02-6	trans-1,3-Dichloropropene	1.2	< 1.2	U
110-75-8	2-Chloroethylvinylether	6.0	< 6.0	U
75-25-2	Bromoform	1.2	< 1.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.0	< 6.0	U
591-78-6	2-Hexanone	6.0	< 6.0	U
127-18-4	Tetrachloroethene	1.2	< 1.2	U
79-34-5	1,1,2,2-Tetrachloroethane	1.2	< 1.2	U
108-88-3	Toluene	1.2	< 1.2	U
108-90-7	Chlorobenzene	1.2	< 1.2	U
100-41-4	Ethylbenzene	1.2	< 1.2	U
100-42-5	Styrene	1.2	< 1.2	U
75-69-4	Trichlorofluoromethane	1.2	< 1.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.4	< 2.4	U
179601-23-1	m,p-Xylene	1.2	< 1.2	U
95-47-6	o-Xylene	1.2	< 1.2	U
95-50-1	1,2-Dichlorobenzene	1.2	< 1.2	U
541-73-1	1,3-Dichlorobenzene	1.2	< 1.2	U
106-46-7	1,4-Dichlorobenzene	1.2	< 1.2	U
107-02-8	Acrolein	60	< 60	U
74-88-4	Iodomethane	1.2	< 1.2	U
74-96-4	Bromoethane	2.4	< 2.4	U
107-13-1	Acrylonitrile	6.0	< 6.0	U
563-58-6	1,1-Dichloropropene	1.2	< 1.2	U
74-95-3	Dibromomethane	1.2	< 1.2	U
630-20-6	1,1,1,2-Tetrachloroethane	1.2	< 1.2	U
96-12-8	1,2-Dibromo-3-chloropropane	6.0	< 6.0	U
96-18-4	1,2,3-Trichloropropane	2.4	< 2.4	U
110-57-6	trans-1,4-Dichloro-2-butene	6.0	< 6.0	U
108-67-8	1,3,5-Trimethylbenzene	1.2	< 1.2	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB15-41**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEJ4D
LIMS ID: 15-7421
Matrix: Soil
Date Analyzed: 04/16/15 17:59

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.2	< 1.2	U
87-68-3	Hexachlorobutadiene	6.0	< 6.0	U
106-93-4	1,2-Dibromoethane	1.2	< 1.2	U
74-97-5	Bromochloromethane	1.2	< 1.2	U
594-20-7	2,2-Dichloropropane	1.2	< 1.2	U
142-28-9	1,3-Dichloropropane	1.2	< 1.2	U
98-82-8	Isopropylbenzene	1.2	< 1.2	U
103-65-1	n-Propylbenzene	1.2	< 1.2	U
108-86-1	Bromobenzene	1.2	< 1.2	U
95-49-8	2-Chlorotoluene	1.2	< 1.2	U
106-43-4	4-Chlorotoluene	1.2	< 1.2	U
98-06-6	tert-Butylbenzene	1.2	< 1.2	U
135-98-8	sec-Butylbenzene	1.2	< 1.2	U
99-87-6	4-Isopropyltoluene	1.2	< 1.2	U
104-51-8	n-Butylbenzene	1.2	< 1.2	U
120-82-1	1,2,4-Trichlorobenzene	6.0	< 6.0	U
91-20-3	Naphthalene	6.0	< 6.0	U
87-61-6	1,2,3-Trichlorobenzene	6.0	< 6.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-041615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-041615A
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized: MW
Reported: 04/24/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 04/16/15 12:14
LCSD: 04/16/15 12:39

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	51.8	50.0	104%	51.1	50.0	102%	1.4%
Bromomethane	50.5	50.0	101%	51.2	50.0	102%	1.4%
Vinyl Chloride	53.3	50.0	107%	53.2	50.0	106%	0.2%
Chloroethane	51.6	50.0	103%	54.9	50.0	110%	6.2%
Methylene Chloride	56.7 B	50.0	113%	59.4 B	50.0	119%	4.7%
Acetone	242	250	96.8%	234	250	93.6%	3.4%
Carbon Disulfide	53.7	50.0	107%	54.8	50.0	110%	2.0%
1,1-Dichloroethene	52.5	50.0	105%	53.0	50.0	106%	0.9%
1,1-Dichloroethane	51.4	50.0	103%	54.0	50.0	108%	4.9%
trans-1,2-Dichloroethene	50.2	50.0	100%	53.2	50.0	106%	5.8%
cis-1,2-Dichloroethene	50.4	50.0	101%	52.1	50.0	104%	3.3%
Chloroform	52.5	50.0	105%	54.1	50.0	108%	3.0%
1,2-Dichloroethane	51.0	50.0	102%	50.9	50.0	102%	0.2%
2-Butanone	239	250	95.6%	245	250	98.0%	2.5%
1,1,1-Trichloroethane	53.1	50.0	106%	54.1	50.0	108%	1.9%
Carbon Tetrachloride	51.5	50.0	103%	52.4	50.0	105%	1.7%
Vinyl Acetate	54.4	50.0	109%	55.0	50.0	110%	1.1%
Bromodichloromethane	51.1	50.0	102%	51.7	50.0	103%	1.2%
1,2-Dichloropropane	50.0	50.0	100%	50.7	50.0	101%	1.4%
cis-1,3-Dichloropropene	52.3	50.0	105%	54.5	50.0	109%	4.1%
Trichloroethene	50.9	50.0	102%	50.7	50.0	101%	0.4%
Dibromochloromethane	50.4	50.0	101%	50.3	50.0	101%	0.2%
1,1,2-Trichloroethane	47.4	50.0	94.8%	48.5	50.0	97.0%	2.3%
Benzene	49.5	50.0	99.0%	49.8	50.0	99.6%	0.6%
trans-1,3-Dichloropropene	52.5	50.0	105%	53.3	50.0	107%	1.5%
2-Chloroethylvinylether	47.4	50.0	94.8%	48.1	50.0	96.2%	1.5%
Bromoform	50.1	50.0	100%	50.8	50.0	102%	1.4%
4-Methyl-2-Pentanone (MIBK)	238	250	95.2%	239	250	95.6%	0.4%
2-Hexanone	247	250	98.8%	245	250	98.0%	0.8%
Tetrachloroethene	48.5	50.0	97.0%	49.2	50.0	98.4%	1.4%
1,1,2,2-Tetrachloroethane	49.2	50.0	98.4%	47.9	50.0	95.8%	2.7%
Toluene	49.4	50.0	98.8%	51.1	50.0	102%	3.4%
Chlorobenzene	50.1	50.0	100%	49.8	50.0	99.6%	0.6%
Ethylbenzene	50.5	50.0	101%	50.4	50.0	101%	0.2%
Styrene	52.2	50.0	104%	52.2	50.0	104%	0.0%
Trichlorofluoromethane	54.7	50.0	109%	56.3	50.0	113%	2.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	53.7	50.0	107%	55.0	50.0	110%	2.4%

AEJ4 : 00025

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-041615A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-041615A
LIMS ID: 15-7420
Matrix: Soil

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	101	100	101%	102	100	102%	1.0%
o-Xylene	50.9	50.0	102%	51.6	50.0	103%	1.4%
1,2-Dichlorobenzene	48.8	50.0	97.6%	49.1	50.0	98.2%	0.6%
1,3-Dichlorobenzene	51.1	50.0	102%	52.4	50.0	105%	2.5%
1,4-Dichlorobenzene	49.9	50.0	99.8%	50.4	50.0	101%	1.0%
Acrolein	263	250	105%	264	250	106%	0.4%
Iodomethane	44.9	50.0	89.8%	45.4	50.0	90.8%	1.1%
Bromoethane	55.3	50.0	111%	56.5	50.0	113%	2.1%
Acrylonitrile	50.1	50.0	100%	50.7	50.0	101%	1.2%
1,1-Dichloropropene	51.1	50.0	102%	51.6	50.0	103%	1.0%
Dibromomethane	49.3	50.0	98.6%	50.2	50.0	100%	1.8%
1,1,1,2-Tetrachloroethane	50.1	50.0	100%	51.4	50.0	103%	2.6%
1,2-Dibromo-3-chloropropane	47.3	50.0	94.6%	49.2	50.0	98.4%	3.9%
1,2,3-Trichloropropane	48.3	50.0	96.6%	48.1	50.0	96.2%	0.4%
trans-1,4-Dichloro-2-butene	50.9	50.0	102%	50.9	50.0	102%	0.0%
1,3,5-Trimethylbenzene	51.5	50.0	103%	52.3	50.0	105%	1.5%
1,2,4-Trimethylbenzene	52.2	50.0	104%	52.9	50.0	106%	1.3%
Hexachlorobutadiene	50.6	50.0	101%	52.0	50.0	104%	2.7%
1,2-Dibromoethane	48.7	50.0	97.4%	50.1	50.0	100%	2.8%
Bromochloromethane	50.3	50.0	101%	51.4	50.0	103%	2.2%
2,2-Dichloropropane	55.8	50.0	112%	57.3	50.0	115%	2.7%
1,3-Dichloropropane	49.0	50.0	98.0%	48.7	50.0	97.4%	0.6%
Isopropylbenzene	50.9	50.0	102%	51.8	50.0	104%	1.8%
n-Propylbenzene	51.9	50.0	104%	52.6	50.0	105%	1.3%
Bromobenzene	48.6	50.0	97.2%	49.0	50.0	98.0%	0.8%
2-Chlorotoluene	50.8	50.0	102%	51.2	50.0	102%	0.8%
4-Chlorotoluene	50.9	50.0	102%	51.9	50.0	104%	1.9%
tert-Butylbenzene	50.0	50.0	100%	51.5	50.0	103%	3.0%
sec-Butylbenzene	51.1	50.0	102%	52.0	50.0	104%	1.7%
4-Isopropyltoluene	53.2	50.0	106%	53.7	50.0	107%	0.9%
n-Butylbenzene	54.1	50.0	108%	54.3	50.0	109%	0.4%
1,2,4-Trichlorobenzene	54.0	50.0	108%	53.9	50.0	108%	0.2%
Naphthalene	49.9	50.0	99.8%	49.6	50.0	99.2%	0.6%
1,2,3-Trichlorobenzene	51.4	50.0	103%	50.7	50.0	101%	1.4%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	111%
d8-Toluene	100%	105%
Bromofluorobenzene	102%	104%
d4-1,2-Dichlorobenzene	99.6%	101%

AET : 0806

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-041615A	Method Blank	Low	113%	100%	102%	102%	0
LCS-041615A	Lab Control	Low	107%	100%	102%	99.6%	0
LCSD-041615A	Lab Control Dup	Low	111%	105%	104%	101%	0
AEJ4C	SB15-26	Low	109%	102%	100%	103%	0
AEJ4D	SB15-41	Low	113%	100%	100%	106%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 15-7420 to 15-7421

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Water

ANALYTICAL RESOURCES INCORPORATED

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-042115	Method Blank	04/21/15	1.0	Gasoline	< 0.25 U
15-7418		PID1		HC ID	---
				Trifluorotoluene	92.6%
				Bromobenzene	95.6%
AEJ4A	SB15	04/21/15	1.0	Gasoline	< 0.25 U
15-7418		PID1		HC ID	---
				Trifluorotoluene	82.7%
				Bromobenzene	84.1%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized:
Reported: 04/27/15

ARI ID	Client ID	Analysis Date	Basis	Range	Result
AEJ4C	SB15-26	04/21/15	Dry	Gasoline	< 9.5 U
15-7420		PID1		HC ID	---
				Trifluorotoluene	91.1%
				Bromobenzene	103%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG

Sample ID: LCS-042115
LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 04/21/15 11:45
LCSD: 04/21/15 12:17
Instrument/Analyst LCS: PID1/ML
LCSD: PID1/ML

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.07	1.00	107%	1.07	1.00	107%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.0%	90.5%
Bromobenzene	98.8%	91.3%

AEJ4 00038

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: AEJ4
Matrix: Water

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	TFT	BBZ	TOT OUT
MB-042115	92.6%	95.6%	0
LCS-042115	95.0%	98.8%	0
LCSD-042115	90.5%	91.3%	0
SB15	82.7%	84.1%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 15-7418 to 15-7418

FORM II TPHG

AEJ4:00031

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: AEJ4
Matrix: Soil

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	BFB	TFT	BBZ	TOT OUT
SB15-26	NA	91.1%	103%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(65-128)
(BBZ) = Bromobenzene	(80-120)	(52-149)

Log Number Range: 15-7420 to 15-7420

FORM II TPHG

AEJ4:00032

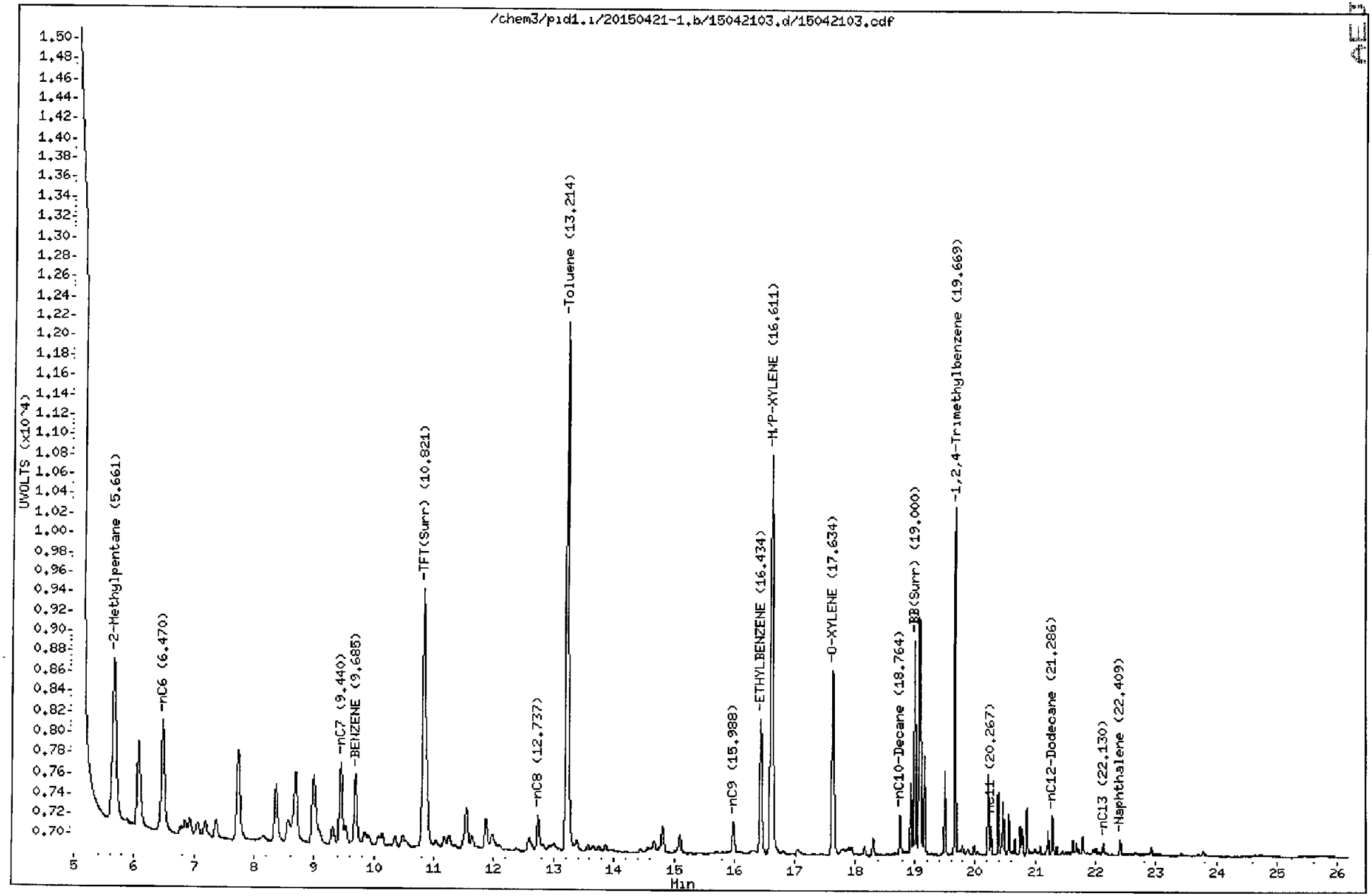
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Sample Info: LCS0421

Instrument: pid1.1

Operator: ML
Column diameter: 0.18

Column phase: RTX 502-2 FID

AET14:00039



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Sample Info: LCSD0421

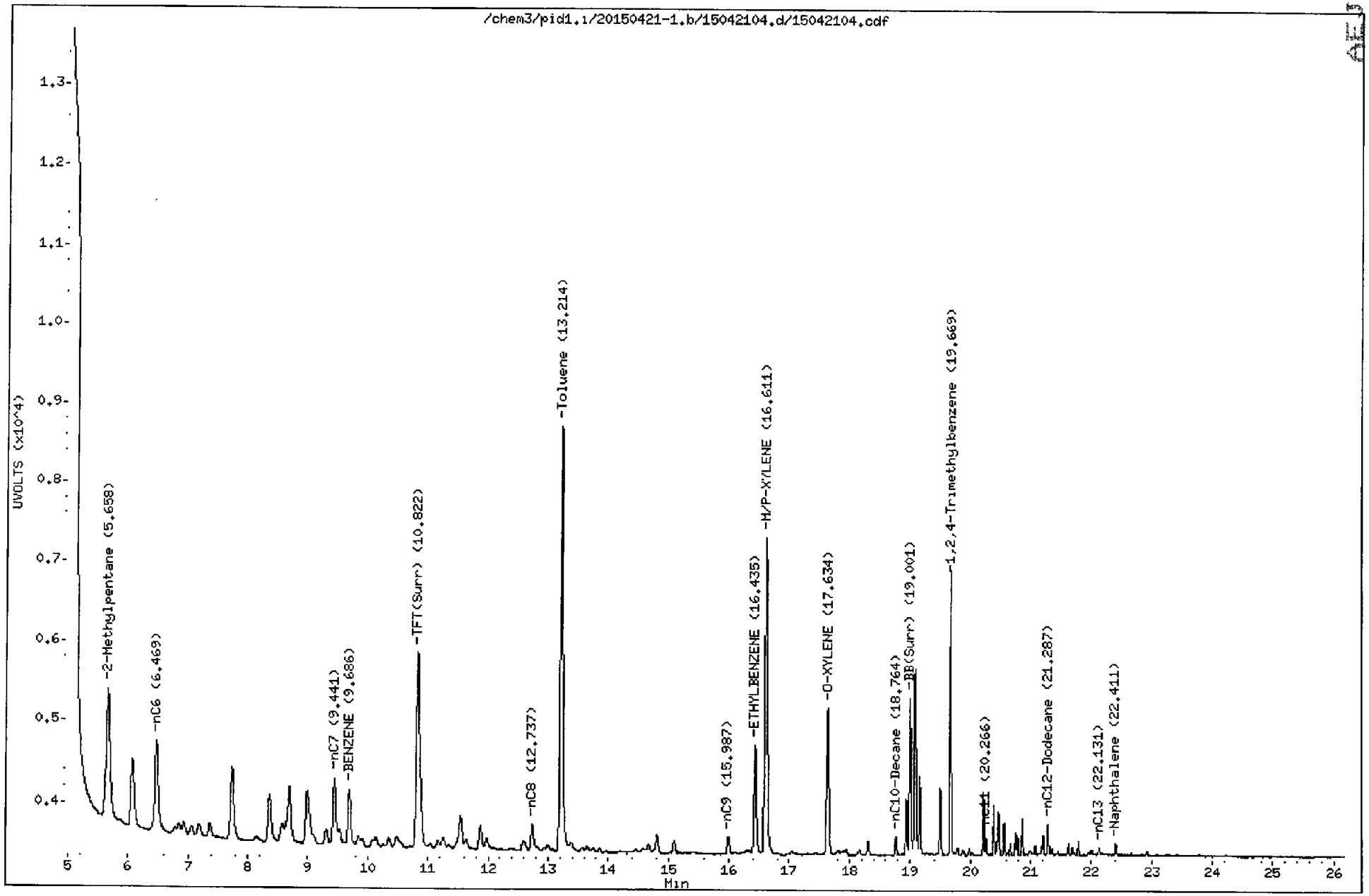
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Instrument: pid1.i

Operator: ML
Column diameter: 0.18

AFI 14-0803

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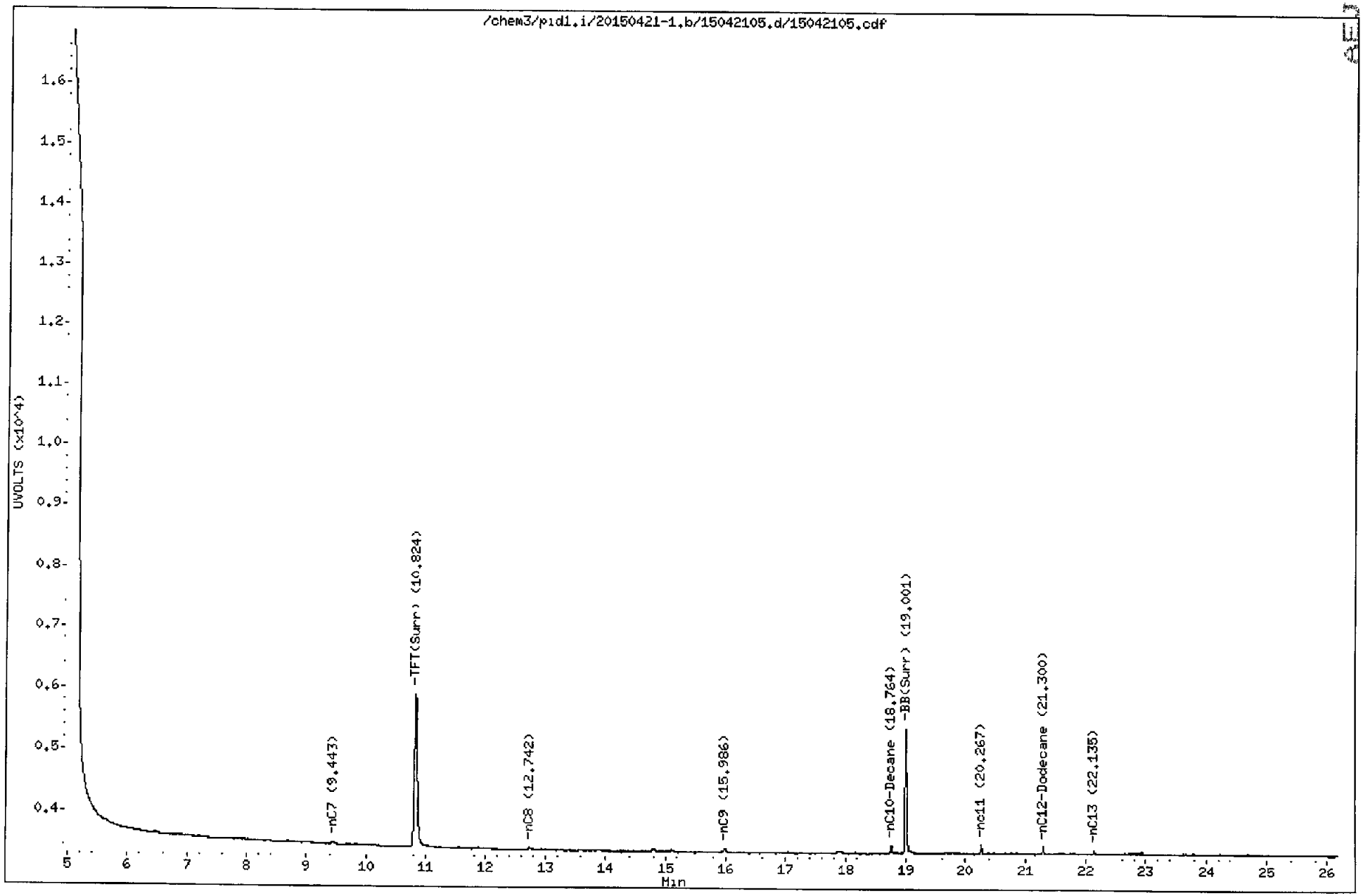


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Client ID:
Sample Info: MB0421

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML
Column diameter: 0.18



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Date : 21-APR-2015 15:42

Client ID: SB15

Sample Info: AEJ4A

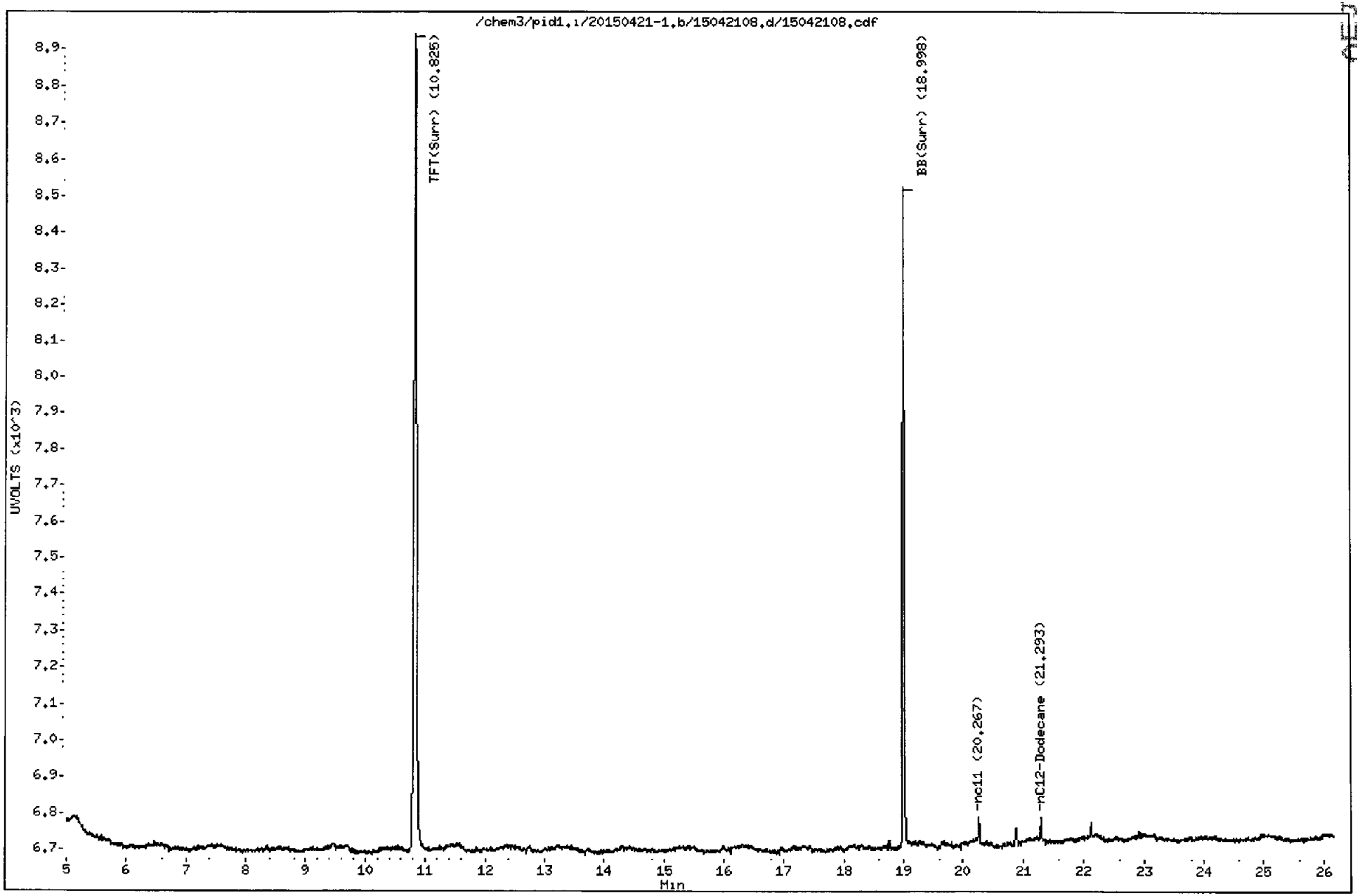
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Instrument: pid1.i

Operator: ML

Column diameter: 0.18

AEJ4: 60935



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Date : 21-APR-2015 20:56

Client ID: SB15-26

Sample Info: AEJ4C

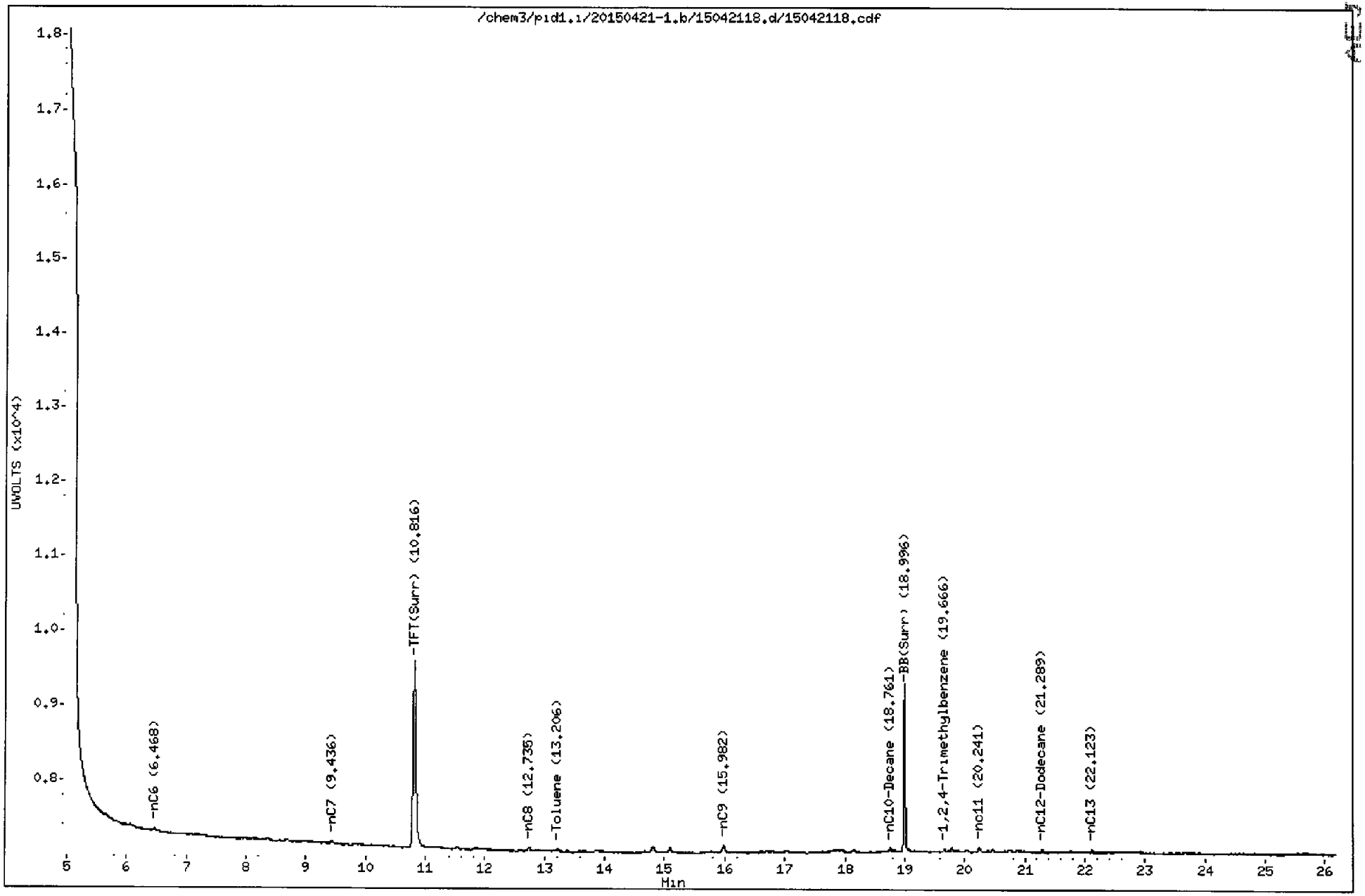
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Instrument: pid1.1

Operator: ML

Column diameter: 0.18

AFI 1: 000937



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AEJ4-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Water

Date Received: 04/15/15

Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042015	Method Blank	04/20/15	04/20/15	1.00	Diesel Range	0.10	< 0.10 U
15-7418	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		94.4%
AEJ4A	SB15	04/20/15	04/20/15	1.00	Diesel Range	0.10	< 0.10 U
15-7418	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		52.5%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-042015	94.4%	0
LCS-042015	98.3%	0
SB15	52.5%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-7418 to 15-7418

FORM-II TPHD

AEJ4:00039

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-042015
LAB CONTROL

Lab Sample ID: LCS-042015
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Date Extracted: 04/20/15
Date Analyzed: 04/20/15 19:28
Instrument/Analyst: FID9/ML

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	3.00	3.00	100%

TPHD Surrogate Recovery

o-Terphenyl	98.3%

Results reported in mg/L

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 04/15/15

ARI Job: AEJ4
Project: Precision Engineering
1396024

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-7418-042015MB1	Method Blank	500 mL	1.00 mL	04/20/15
15-7418-042015LCS1	Lab Control	500 mL	1.00 mL	04/20/15
15-7418-AEJ4A	SB15	500 mL	1.00 mL	04/20/15

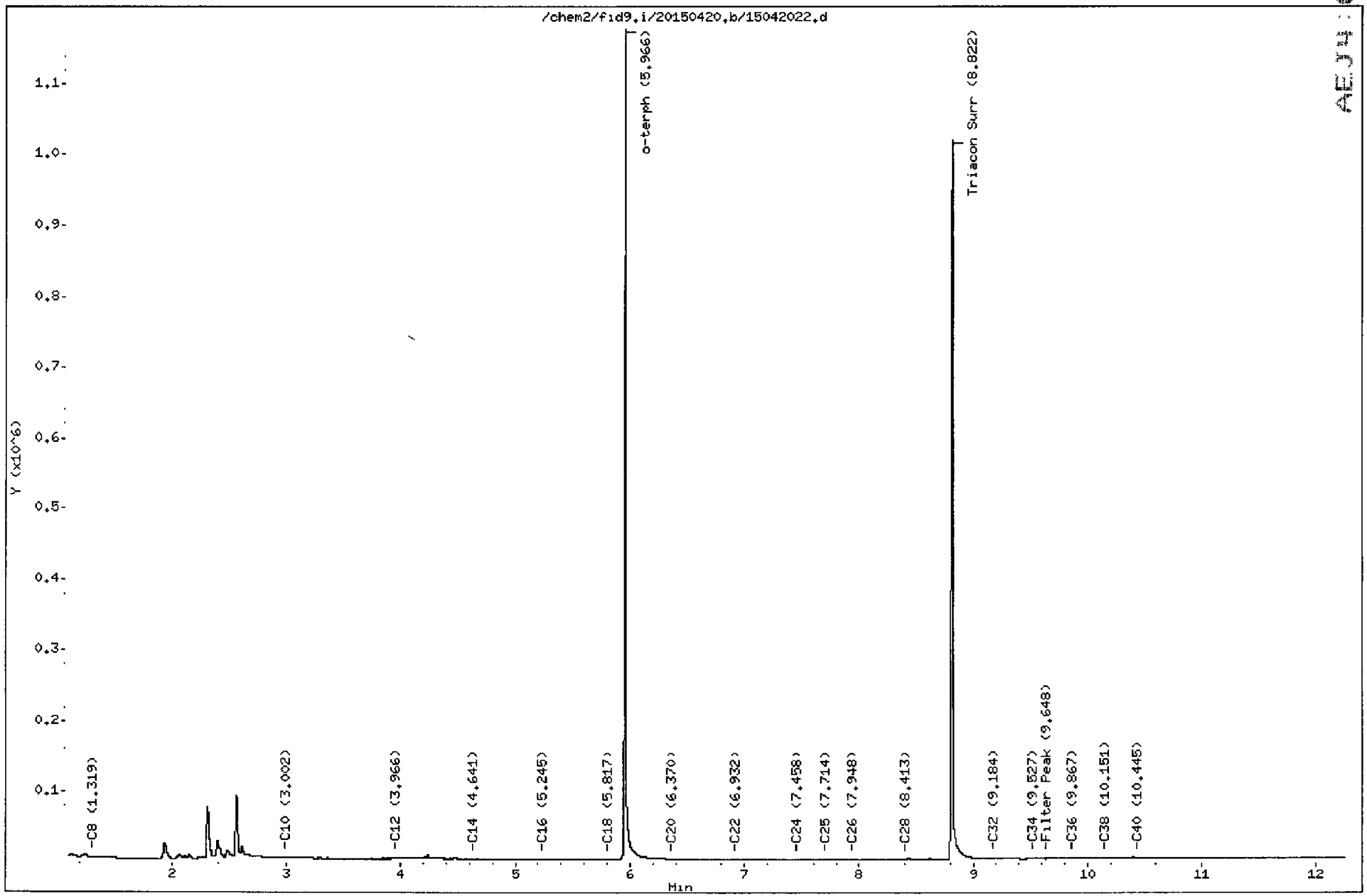
AEJ4:00041

Data File: /chem2/fid9.i/20150420.b/15042022.d
Date : 20-APR-2015 19:07
Client ID: AEJ3MBW1
Sample Info: AEJ3MBW1

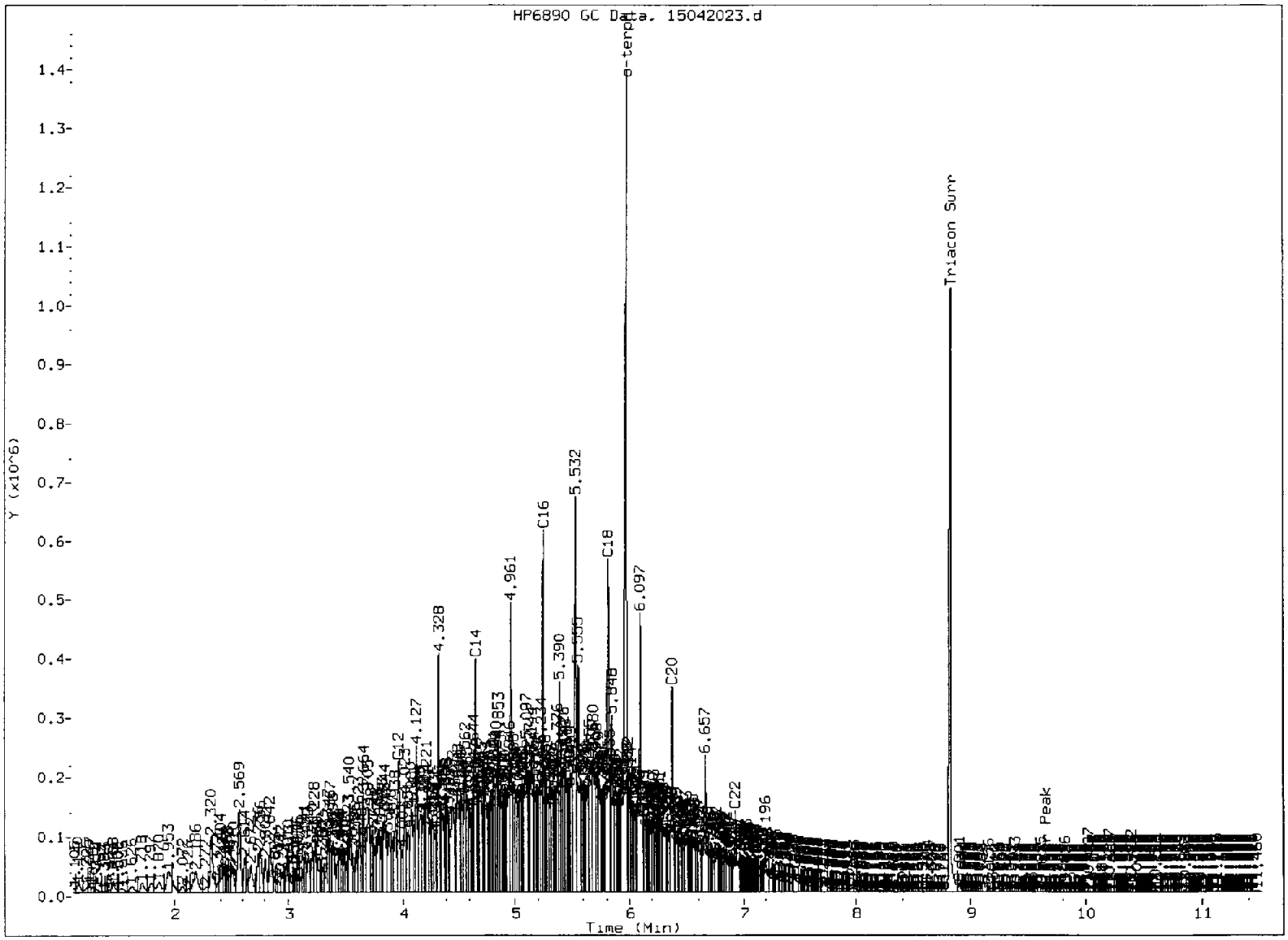
Instrument: fid9.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1

AEJ1150122



FID:9A-2C/RTX-1 AEJ3LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

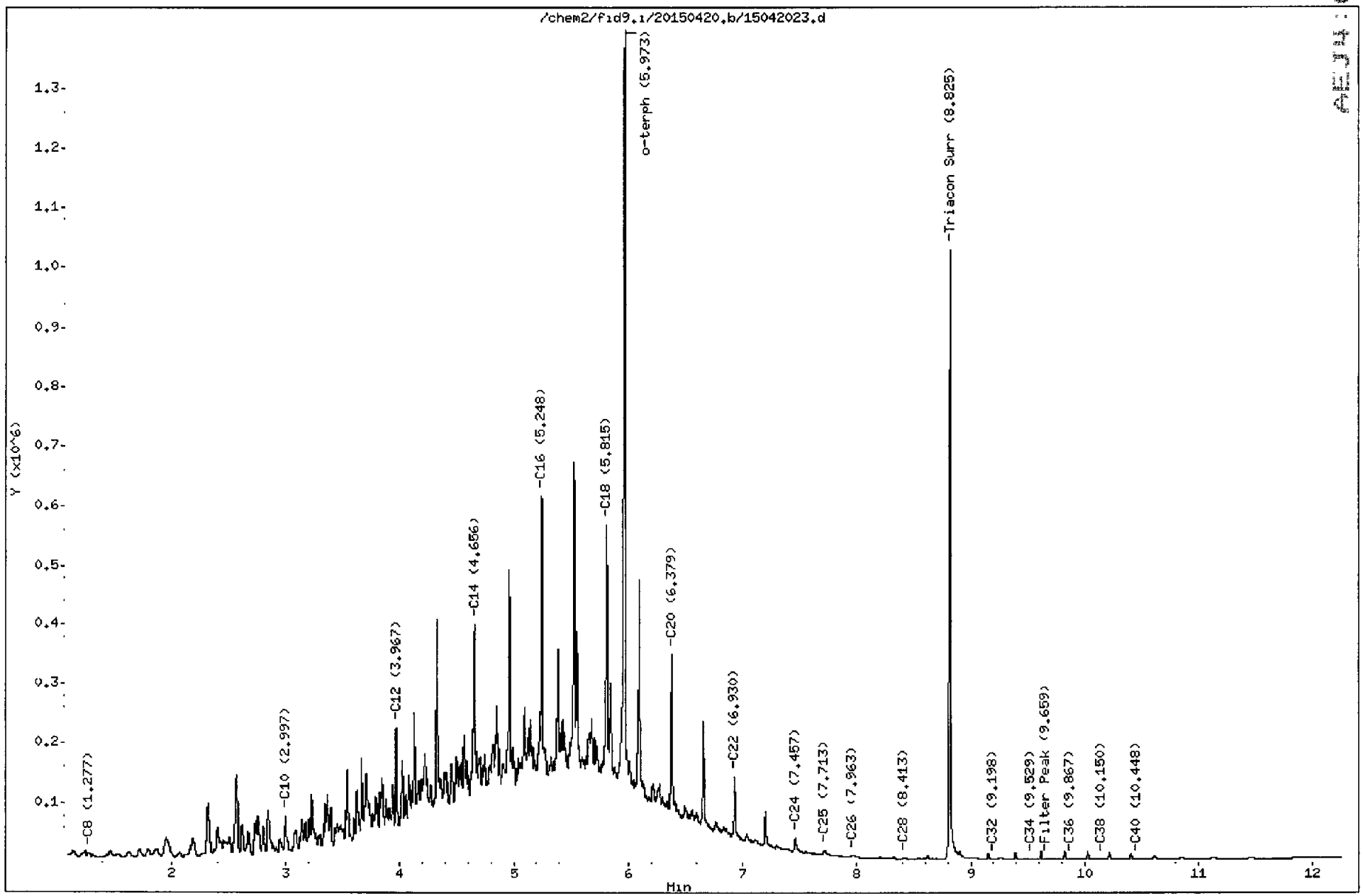
Analyst: MC Date: 4/24/15

Data File: /chem2/fid9.i/20150420.b/15042023.d
Date : 20-APR-2015 19:28
Client ID: AEJ3LCSW1
Sample Info: AEJ3LCSW1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Data File: /chem2/fid9.i/20150420.b/15042027.d

Date : 20-APR-2015 20:53

Client ID: SB15

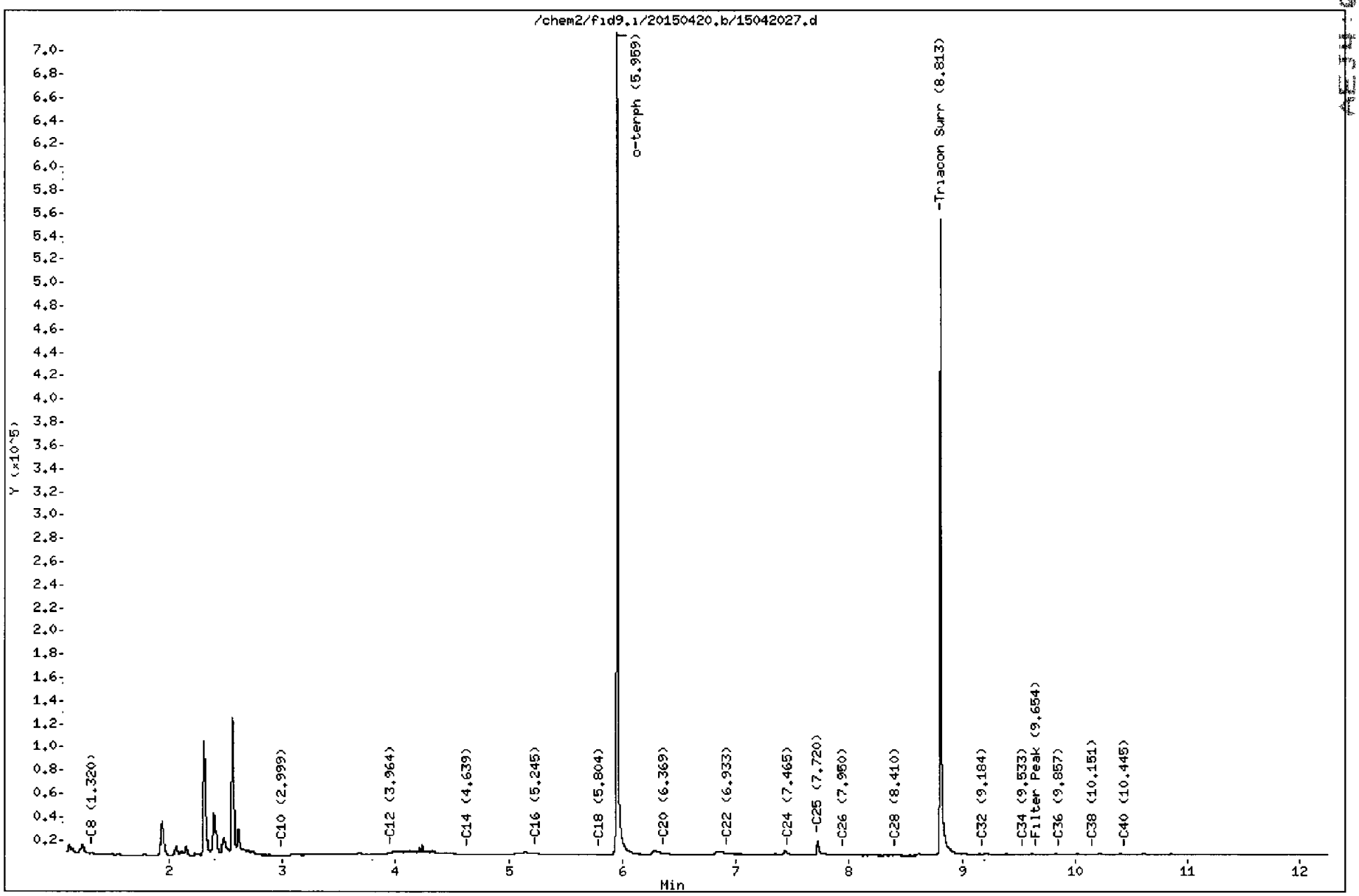
Sample Info: AEJ4A

Column phase: RTX-1

Instrument: fid9.i

Operator: ML

Column diameter: 0.25



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method: SW3546
Page 1 of 1

QC Report No: AEJ4-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-041615	Method Blank	04/16/15	04/23/15	1.00	Diesel Range	5.0	< 5.0 U
15-7420	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		101%
AEJ4C	SB15-26	04/16/15	04/23/15	1.00	Diesel Range	6.7	< 6.7 U
15-7420	HC ID: ---		FID4A	1.0	Motor Oil Range	13	< 13 U
					o-Terphenyl		75.9%
AEJ4D	SB15-41	04/16/15	04/23/15	1.00	Diesel Range	5.8	< 5.8 U
15-7421	HC ID: ---		FID4A	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		78.4%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-041615	101%	0
LCS-041615	101%	0
SB15-26	75.9%	0
SB15-41	78.4%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-7420 to 15-7421

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-041615**
 LAB CONTROL

Lab Sample ID: LCS-041615
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Date Extracted: 04/16/15
Date Analyzed: 04/23/15 18:44
Instrument/Analyst: FID/JLW

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	125	150	83.3%

TPHD Surrogate Recovery

o-Terphenyl	101%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 04/15/15

ARI Job: AEJ4
Project: Precision Engineering 1396024

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-7420-041615MB1	Method Blank	10.0 g	1.00 mL	-	04/16/15
15-7420-041615LCS1	Lab Control	10.0 g	1.00 mL	-	04/16/15
15-7420-AEJ4C	SB15-26	7.49 g	1.00 mL	D	04/16/15
15-7421-AEJ4D	SB15-41	8.54 g	1.00 mL	D	04/16/15

Basis: D=Dry Weight W=As Received

Data File: /chem3/fid4a.i/20150423.b/15042314.d

Date : 23-APR-2015 18:20

Client ID: AEJ4MBS1

Sample Info: AEJ4MBS1

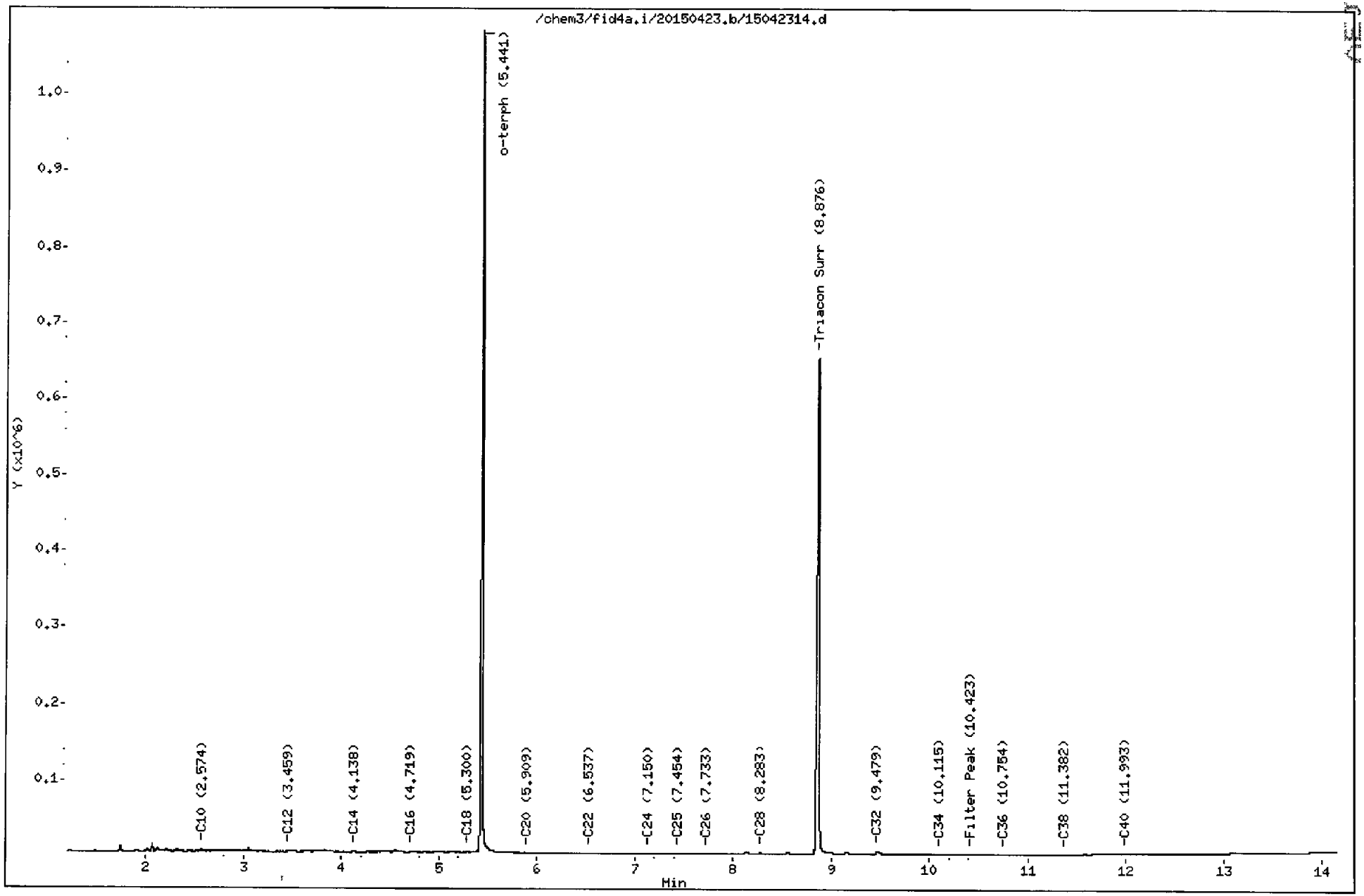
Column phase: RTX-1

Instrument: fid4a.i

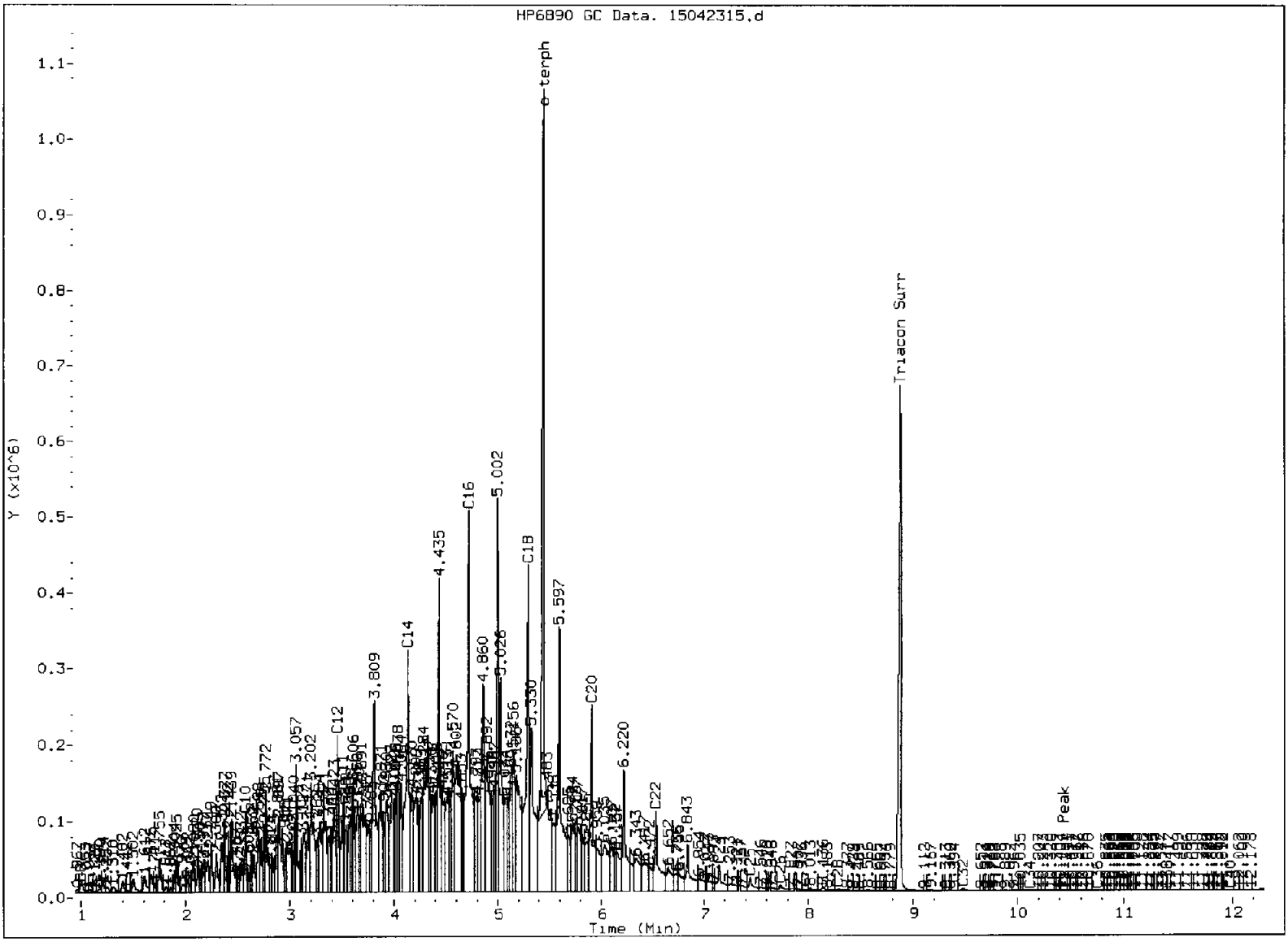
Operator: ML

Column diameter: 0.25

AEJ4 : 00059



FID:4A-2C/RTX-1 AEJ4LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 4/24/15

Data File: /chem3/fid4a.i/20150423.b/15042315.d

Date : 23-APR-2015 18:44

Client ID: AEJ4LCSS1

Sample Info: AEJ4LCSS1

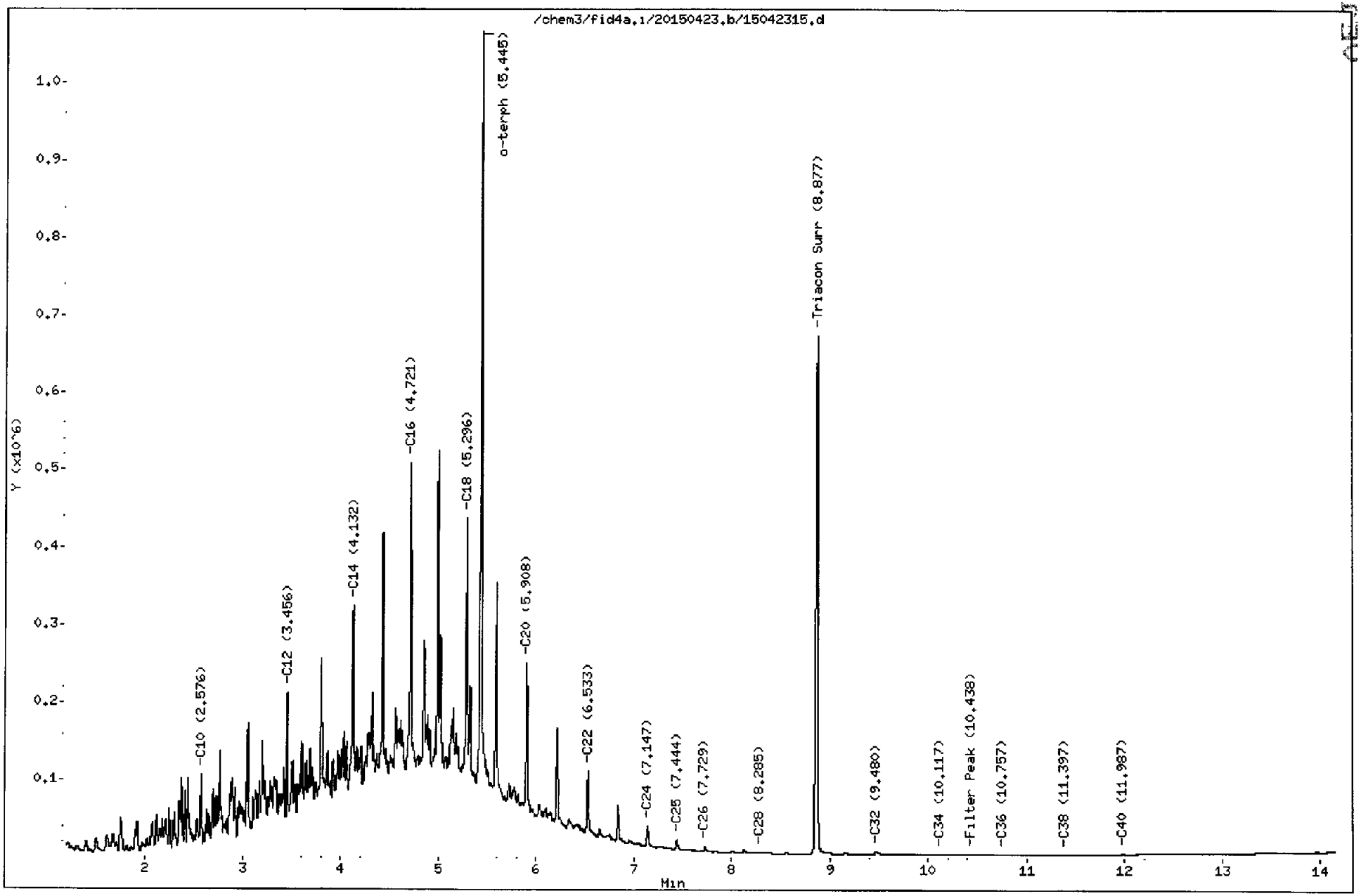
Instrument: fid4a.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25

AEJ4:060552



Data File: /chem3/fid4a.i/20150423.b/15042319.d

Date : 23-APR-2015 20:18

Client ID: SB15-26

Sample Info: AEJ4C

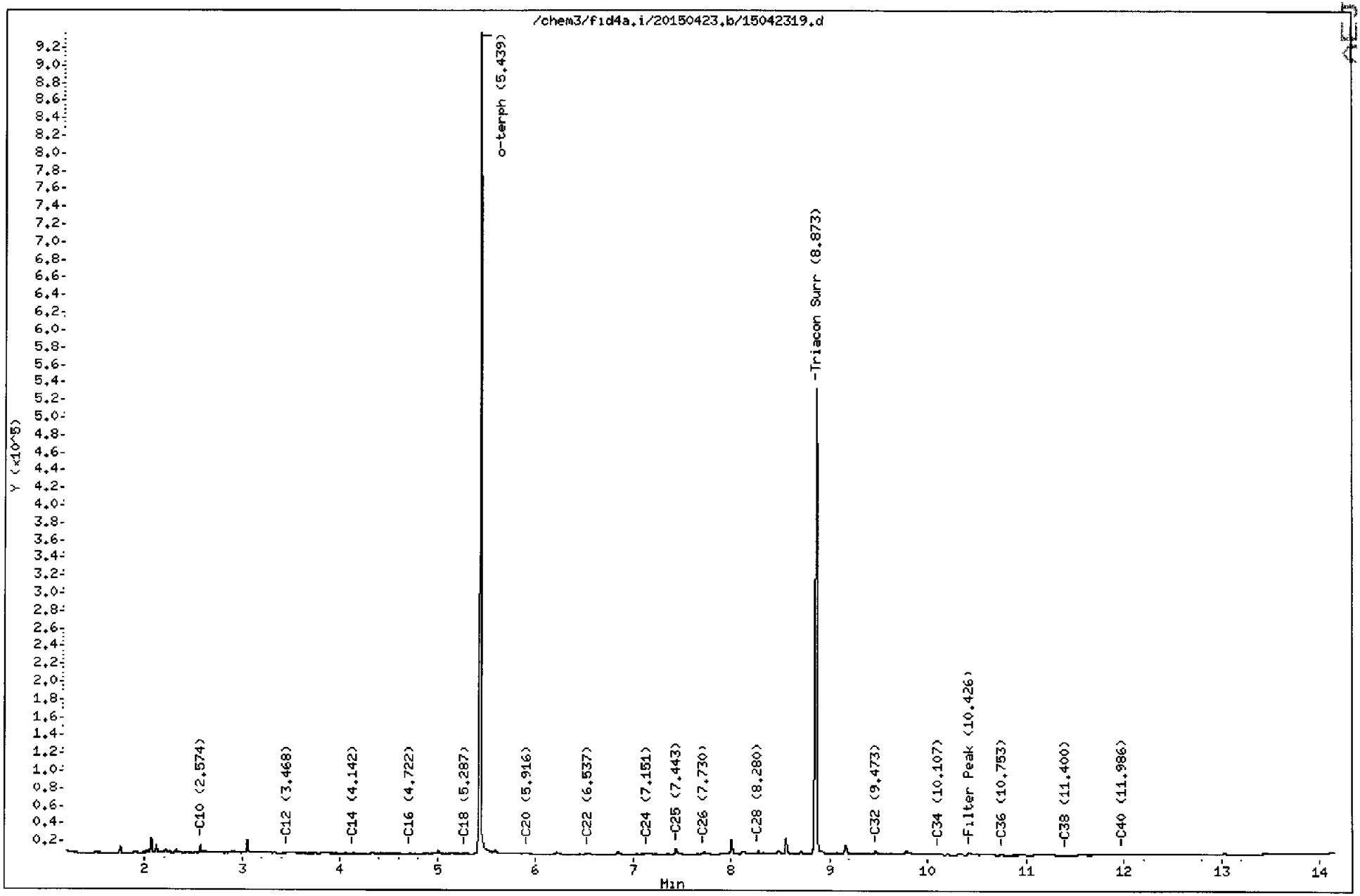
Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25

AEJ4: 20053



Data File: /chem3/fid4a.i/20150423.b/15042320.d

Date : 23-APR-2015 20:42

Client ID: SB15-41

Sample Info: AEJ4D

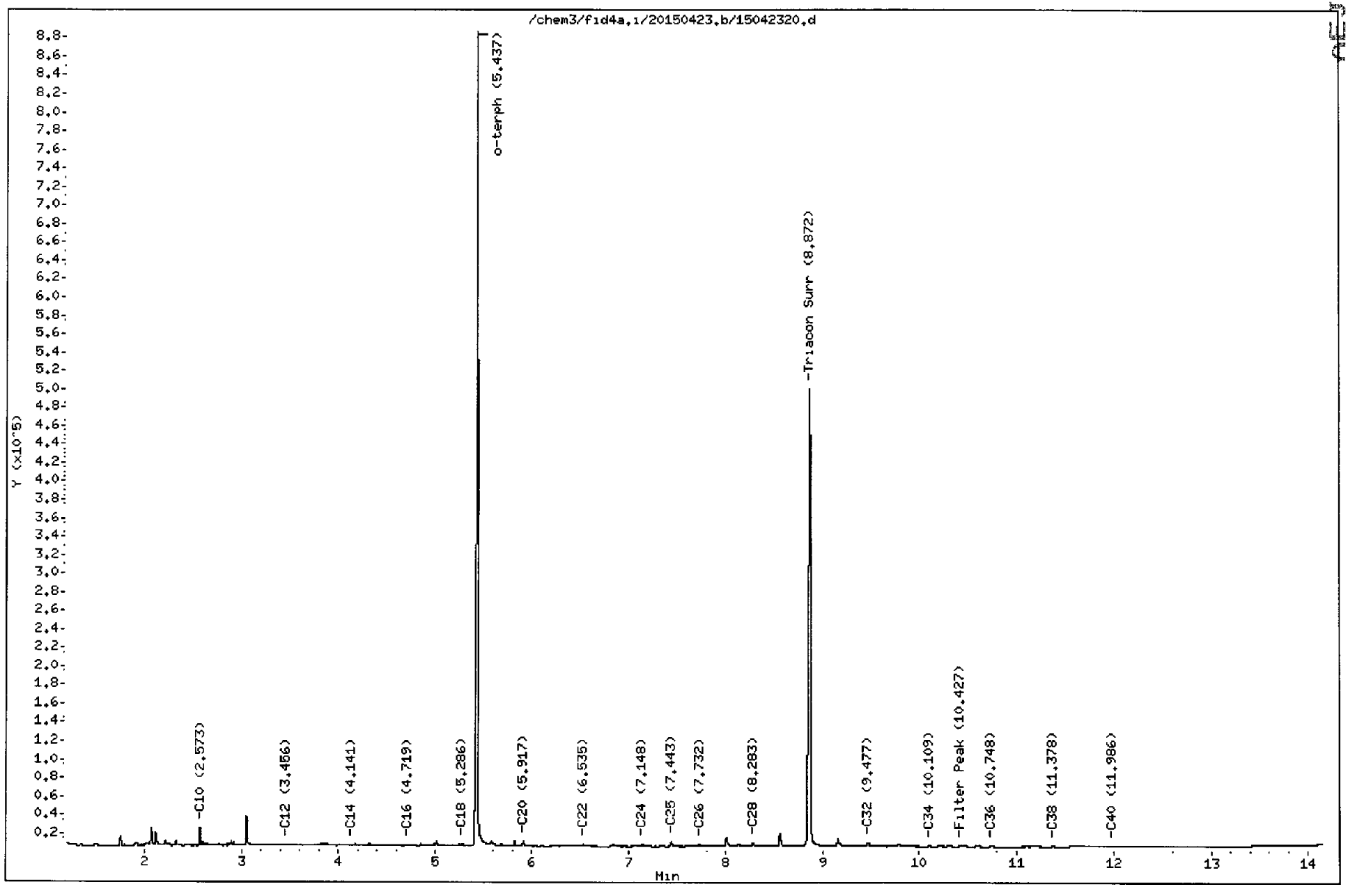
Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25

AEJ4D:00051



SAMPLE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Client ID: SB15
ARI ID: 15-7418 AEJ4A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	04/15/15 041515#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	04/15/15	mg/L	< 0.010 U	

AEJ4:00056

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	SM3500Cr-B	04/15/15	mg/L	0.632	0.560	112.9%

REPLICATE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEJ4A Client ID: SB15						
Hexavalent Chromium	SM3500Cr-B	04/15/15	mg/L	< 0.010	< 0.010	NA

AEJ4:00058

MS/MSD RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AEJ4A Client ID: SB15							
Hexavalent Chromium	SM3500Cr-B	04/15/15	mg/L	< 0.010	0.060	0.062	96.8%

AEJ4 : 000559

SAMPLE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Client ID: SB15-26
ARI ID: 15-7420 AEJ4C

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.519	< 0.519 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	75.55

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

AEJ4:00060

SAMPLE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Client ID: SB15-41
ARI ID: 15-7421 AEJ4D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.502	< 0.502 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	80.65

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	04/21/15	mg/kg	< 0.398 U	PREP
Total Solids	04/17/15	Percent	< 0.01 U	ICB

AEJ4:00062

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	04/21/15	mg/kg	20.5	20.0	102.5%
Insoluble Hexavalent Chromiu	04/21/15	mg/kg	631	669	94.3%
ERA #300614					

REPLICATE RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEJ4C Client ID: SB15-26					
Hexavalent Chromium	04/21/15	mg/kg	< 0.519	< 0.517	NA

AEJ4:0006H

MS/MSD RESULTS-CONVENTIONALS
AEJ4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AEJ4C Client ID: SB15-26						
Hexavalent Chromium	04/21/15	mg/kg	< 0.519	< 0.521 U	26.1	NA
Hexavalent Chromium	04/21/15	mg/kg	< 0.519	111	1,050	10.6%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB15
SAMPLE

Lab Sample ID: AEJ4A
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/17/15	200.8	04/27/15	**7440-38-2**	**Arsenic**	0.002	**0.071**	
200.8	04/17/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.002	**0.189**	
200.8	04/17/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.0005	**0.0294**	
200.8	04/17/15	200.8	04/27/15	**7782-49-2**	**Selenium**	0.005	**0.007**	

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

AEJ4:00065

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: SB15
SAMPLE

Lab Sample ID: AEJ4B
LIMS ID: 15-7419
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/17/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.0002	**0.0256**	
200.8	04/17/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.0005	**0.0010**	
200.8	04/17/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.0001	**0.0003**	
200.8	04/17/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB15-26
SAMPLE

Lab Sample ID: AEJ4C
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Percent Total Solids: 68.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.3	**5.6**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.7	**17.9**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.9**	
3050B	04/22/15	200.8	04/24/15	**7782-49-2**	**Selenium**	0.7	**0.9**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB15-26
DUPLICATE

Lab Sample ID: AEJ4C
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	5.6	5.7	1.8%	+/- 20%	
Chromium	200.8	17.9	21.3	17.3%	+/- 20%	
Lead	200.8	2.9	3.2	9.8%	+/- 20%	
Selenium	200.8	0.9	0.8	11.8%	+/- 0.7	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB15-26
MATRIX SPIKE

Lab Sample ID: AEJ4C
LIMS ID: 15-7420
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	5.6	40.4	35.4	98.3%	
Chromium	200.8	17.9	54.1	35.4	102%	
Lead	200.8	2.9	37.1	35.4	96.6%	
Selenium	200.8	0.9	110	113	96.5%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB15-41
SAMPLE

Lab Sample ID: AEJ4D
LIMS ID: 15-7421
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/15/15
Date Received: 04/15/15

Percent Total Solids: 80.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**4.9**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.6	**43.4**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**4.0**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AEJ4MB
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/17/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/17/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/17/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/17/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

AEJ4:00072

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: AEJ4LCS
LIMS ID: 15-7418
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0244	0.0250	97.6%	
Chromium	200.8	0.0253	0.0250	101%	
Lead	200.8	0.0241	0.0250	96.4%	
Selenium	200.8	0.0724	0.0800	90.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: METHOD BLANK

Lab Sample ID: AEJ4MB
LIMS ID: 15-7419
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/17/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/17/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/17/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/17/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEJ4LCS
LIMS ID: 15-7419
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0250	0.0250	100%	
Chromium	200.8	0.0263	0.0250	105%	
Lead	200.8	0.0244	0.0250	97.6%	
Selenium	200.8	0.0714	0.0800	89.2%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

AEJ4:000075

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: AEJ4MB
LIMS ID: 15-7421
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	7440-38-2	Arsenic	0.2	0.2	U
3050B	04/22/15	200.8	04/23/15	7440-47-3	Chromium	0.5	0.5	U
3050B	04/22/15	200.8	04/23/15	7439-92-1	Lead	0.1	0.1	U
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEJ4LCS
LIMS ID: 15-7421
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEJ4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	26.4	25.0	106%	
Chromium	200.8	27.9	25.0	112%	
Lead	200.8	26.5	25.0	106%	
Selenium	200.8	77.4	80.0	96.8%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

30 April 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: AEL8

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received four soil samples, two water samples and one trip blank on April 16, 2015. The samples were analyzed for VOCs, NWTPH-G, NWTPH-Dx, hexavalent chromium and total and dissolved metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

The RPD for chloroethane was high following the analyses of the LCS/LCSD associated with the VOC analyses of the soil samples. Since the individual percent recoveries for chloroethane were within established QC limits, no corrective actions were taken.

The percent recoveries for the surrogates, bromobenzene and trifluorotoluene, were low following the initial NWTPHG analysis of sample SB16. It was observed that this sample contained a significant amount of sediment. Since the percent recoveries for both surrogates were within established QC limits for the corresponding MB, LCS and LCSD, it was concluded that the sample matrix was the cause of the low surrogate recoveries. No corrective actions were taken.

The percent recovery for the surrogate, o-terphenyl, was low following the initial NWTPH-Dx analysis of sample SB16. Since the percent recoveries for o-terphenyl were within established QC limits for the corresponding MB and LCS, it was concluded that the sample matrix was the cause of the low surrogate recovery. No corrective actions were taken.

A small amount of contamination was detected in the method blank associated with the dissolved metals analysis of sample SB16. Dissolved lead was detected in this sample. Since the concentration of dissolved lead measured in sample SB16 was significantly greater than the amount found in the blank, no corrective actions were taken.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Faragalli, KJC
Precision Engineering
AEL8
Soil/Water
30 April 2015

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: AEL8

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AELS	Turn-around Requested: Standard	Page:	of
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400	Date:	Ice Present? Y
Client Contact: Jessica Farquhar		No of Coolers: 1	Cooler Temps 6.0
Client Project Name: Precision Engineering			
Client Project #: 1316024	Samplers: JRS JRS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals	NWTPH-Dx	VOCs	VOCs / NWTPH-G	NWTPH-G	Hex. Chrom.	Total Metals	Dissolved Metals	Notes/Comments
SB16-26	4/16	10:00	Soil	10	X	X	X	X	X	X			
SB16-40		10:40			X					X			
SB16-46		11:10			X					X			
SB16		11:20				X	X		X	X	X	X	Dissolved not field filtered
SB17-26		14:30			X	X	X	X	X	X			

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Joe Sunday	Printed Name: Lesley Simmons	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 4/16 15:30	Date & Time: 4-16-13 1532	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: CJC Project Name: Precision Engineering

COC No(s): _____ (NA) Delivered by Fed-Ex UPS Courier Hand Delivered Other _____

Assigned ARI Job No AELS Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2 0-6.0 °C for chemistry) 6.0

Time 1530

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90197952

Cooler Accepted by: TS Date: 4-16-15 Time: 1530

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA (YES) NO

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA (YES) NO

Were all VOC vials free of air bubbles? NA (YES) NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI NA 4/11/15

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment _____ Split by _____

Samples Logged by: AV Date: 4/16/15 Time: 1545

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Bottle Count and matrix sections not fully filled out

date.

By AV Date 4/16/15

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 04/16/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AEL8**

Inquiry Number: NONE
Analysis Requested: 04/17/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-490
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 04/16/15

Project #: 1396024
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-7515 **AEL8A**	SB16						TOT Fail															
15-7516 **AEL8B**	SB16						DIS Fail									N						

Checked By AV Date 4/16/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AEL8
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB16	AEL8A	15-7515	Water	04/16/15 11:20	04/16/15 15:30
2.	SB16	AEL8B	15-7516	Water	04/16/15 11:20	04/16/15 15:30
3.	TRIP BLANK	AEL8C	15-7517	Water	04/16/15	04/16/15 15:30
4.	SB16-26	AEL8D	15-7518	Soil	04/16/15 10:00	04/16/15 15:30
5.	SB17-26	AEL8E	15-7519	Soil	04/16/15 14:30	04/16/15 15:30
6.	SB16-40	AEL8F	15-7520	Soil	04/16/15 10:40	04/16/15 15:30
7.	SB16-46	AEL8G	15-7521	Soil	04/16/15 11:10	04/16/15 15:30

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB16**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AEL8A
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/23/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/21/15 18:51

Sample Amount: 5.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	2.0	< 2.0	U
75-01-4	Vinyl Chloride	0.40	< 0.40	U
75-00-3	Chloroethane	0.40	< 0.40	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	**Acetone**	**10**	**18**	
75-15-0	Carbon Disulfide	0.40	< 0.40	U
75-35-4	1,1-Dichloroethene	0.40	< 0.40	U
75-34-3	1,1-Dichloroethane	0.40	< 0.40	U
156-60-5	trans-1,2-Dichloroethene	0.40	< 0.40	U
156-59-2	cis-1,2-Dichloroethene	0.40	< 0.40	U
67-66-3	Chloroform	0.40	< 0.40	U
107-06-2	1,2-Dichloroethane	0.40	< 0.40	U
78-93-3	2-Butanone	10	< 10	U
71-55-6	1,1,1-Trichloroethane	0.40	< 0.40	U
56-23-5	Carbon Tetrachloride	0.40	< 0.40	U
108-05-4	Vinyl Acetate	0.40	< 0.40	U
75-27-4	Bromodichloromethane	0.40	< 0.40	U
78-87-5	1,2-Dichloropropane	0.40	< 0.40	U
10061-01-5	cis-1,3-Dichloropropene	0.40	< 0.40	U
79-01-6	Trichloroethene	0.40	< 0.40	U
124-48-1	Dibromochloromethane	0.40	< 0.40	U
79-00-5	1,1,2-Trichloroethane	0.40	< 0.40	U
71-43-2	Benzene	0.40	< 0.40	U
10061-02-6	trans-1,3-Dichloropropene	0.40	< 0.40	U
110-75-8	2-Chloroethylvinylether	2.0	< 2.0	U
75-25-2	Bromoform	0.40	< 0.40	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10	< 10	U
591-78-6	2-Hexanone	10	< 10	U
127-18-4	Tetrachloroethene	0.40	< 0.40	U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	< 0.40	U
108-88-3	Toluene	0.40	< 0.40	U
108-90-7	Chlorobenzene	0.40	< 0.40	U
100-41-4	**Ethylbenzene**	**0.40**	**1.4**	
100-42-5	Styrene	0.40	< 0.40	U
75-69-4	Trichlorofluoromethane	0.40	< 0.40	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.40	< 0.40	U
179601-23-1	**m,p-Xylene**	**0.80**	**10**	
95-47-6	o-Xylene	0.40	< 0.40	U
95-50-1	1,2-Dichlorobenzene	0.40	< 0.40	U
541-73-1	1,3-Dichlorobenzene	0.40	< 0.40	U
106-46-7	1,4-Dichlorobenzene	0.40	< 0.40	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB16**
 SAMPLE

Lab Sample ID: AEL8A
LIMS ID: 15-7515
Matrix: Water
Date Analyzed: 04/21/15 18:51

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	2.0	< 2.0	U
74-96-4	Bromoethane	0.40	< 0.40	U
107-13-1	Acrylonitrile	2.0	< 2.0	U
563-58-6	1,1-Dichloropropene	0.40	< 0.40	U
74-95-3	Dibromomethane	0.40	< 0.40	U
630-20-6	1,1,1,2-Tetrachloroethane	0.40	< 0.40	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	< 1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	< 1.0	U
110-57-6	trans-1,4-Dichloro-2-butene	2.0	< 2.0	U
108-67-8	**1,3,5-Trimethylbenzene**	**0.40**	**5.2**	
95-63-6	**1,2,4-Trimethylbenzene**	**0.40**	**18**	
87-68-3	Hexachlorobutadiene	1.0	< 1.0	U
106-93-4	1,2-Dibromoethane	0.40	< 0.40	U
74-97-5	Bromochloromethane	0.40	< 0.40	U
594-20-7	2,2-Dichloropropane	0.40	< 0.40	U
142-28-9	1,3-Dichloropropane	0.40	< 0.40	U
98-82-8	**Isopropylbenzene**	**0.40**	**0.46**	
103-65-1	**n-Propylbenzene**	**0.40**	**1.7**	
108-86-1	Bromobenzene	0.40	< 0.40	U
95-49-8	**2-Chlorotoluene**	**0.40**	**0.56**	
106-43-4	4-Chlorotoluene	0.40	< 0.40	U
98-06-6	tert-Butylbenzene	0.40	< 0.40	U
135-98-8	sec-Butylbenzene	0.40	< 0.40	U
99-87-6	4-Isopropyltoluene	0.40	< 0.40	U
104-51-8	**n-Butylbenzene**	**0.40**	**0.52**	
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0	U
91-20-3	Naphthalene	1.0	< 1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	< 1.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.0%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042115A**
 METHOD BLANK

Lab Sample ID: MB-042115A
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/23/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/21/15 11:34

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042115A**

METHOD BLANK

Lab Sample ID: MB-042115A
LIMS ID: 15-7515
Matrix: Water
Date Analyzed: 04/21/15 11:34

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	98.5%
Bromofluorobenzene	93.9%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042115A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115A
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/23/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/MMH
LCSD: NT2/MMH
Date Analyzed LCS: 04/21/15 10:53
LCSD: 04/21/15 11:14

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	11.3	10.0	113%	10.4	10.0	104%	8.3%
Bromomethane	10.1	10.0	101%	9.02	10.0	90.2%	11.3%
Vinyl Chloride	11.1	10.0	111%	10.0	10.0	100%	10.4%
Chloroethane	10.3	10.0	103%	9.49	10.0	94.9%	8.2%
Methylene Chloride	10.4	10.0	104%	9.62	10.0	96.2%	7.8%
Acetone	50.0	50.0	100%	45.9	50.0	91.8%	8.6%
Carbon Disulfide	9.17	10.0	91.7%	8.44	10.0	84.4%	8.3%
1,1-Dichloroethene	10.1	10.0	101%	9.27	10.0	92.7%	8.6%
1,1-Dichloroethane	10.3	10.0	103%	9.47	10.0	94.7%	8.4%
trans-1,2-Dichloroethene	9.68	10.0	96.8%	8.88	10.0	88.8%	8.6%
cis-1,2-Dichloroethene	10.3	10.0	103%	9.51	10.0	95.1%	8.0%
Chloroform	10.5	10.0	105%	9.69	10.0	96.9%	8.0%
1,2-Dichloroethane	10.2	10.0	102%	9.27	10.0	92.7%	9.6%
2-Butanone	52.3	50.0	105%	49.0	50.0	98.0%	6.5%
1,1,1-Trichloroethane	10.7	10.0	107%	9.86	10.0	98.6%	8.2%
Carbon Tetrachloride	11.1	10.0	111%	9.97	10.0	99.7%	10.7%
Vinyl Acetate	10.1	10.0	101%	9.44	10.0	94.4%	6.8%
Bromodichloromethane	10.9	10.0	109%	9.90	10.0	99.0%	9.6%
1,2-Dichloropropane	10.4	10.0	104%	9.45	10.0	94.5%	9.6%
cis-1,3-Dichloropropene	11.0	10.0	110%	10.2	10.0	102%	7.5%
Trichloroethene	10.6	10.0	106%	9.43	10.0	94.3%	11.7%
Dibromochloromethane	11.0	10.0	110%	10.1	10.0	101%	8.5%
1,1,2-Trichloroethane	10.4	10.0	104%	9.82	10.0	98.2%	5.7%
Benzene	11.0	10.0	110%	10.1	10.0	101%	8.5%
trans-1,3-Dichloropropene	11.3	10.0	113%	10.2	10.0	102%	10.2%
2-Chloroethylvinylether	10.4	10.0	104%	9.23	10.0	92.3%	11.9%
Bromoform	11.0	10.0	110%	10.2	10.0	102%	7.5%
4-Methyl-2-Pentanone (MIBK)	53.5	50.0	107%	50.3	50.0	101%	6.2%
2-Hexanone	54.7	50.0	109%	51.4	50.0	103%	6.2%
Tetrachloroethene	10.4	10.0	104%	9.30	10.0	93.0%	11.2%
1,1,2,2-Tetrachloroethane	10.1	10.0	101%	9.47	10.0	94.7%	6.4%
Toluene	10.6	10.0	106%	9.72	10.0	97.2%	8.7%
Chlorobenzene	10.5	10.0	105%	9.70	10.0	97.0%	7.9%
Ethylbenzene	10.9	10.0	109%	9.86	10.0	98.6%	10.0%
Styrene	12.1 Q	10.0	121%	11.1 Q	10.0	111%	8.6%
Trichlorofluoromethane	11.9	10.0	119%	10.2	10.0	102%	15.4%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.4	10.0	104%	9.23	10.0	92.3%	11.9%
m,p-Xylene	23.2	20.0	116%	21.0	20.0	105%	10.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042115A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115A
LIMS ID: 15-7515
Matrix: Water

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.4		10.0	114%	10.4		10.0	104%	9.2%
1,2-Dichlorobenzene	10.0		10.0	100%	9.12		10.0	91.2%	9.2%
1,3-Dichlorobenzene	10.0		10.0	100%	9.01		10.0	90.1%	10.4%
1,4-Dichlorobenzene	9.64		10.0	96.4%	8.82		10.0	88.2%	8.9%
Acrolein	50.4		50.0	101%	46.6		50.0	93.2%	7.8%
Iodomethane	9.76		10.0	97.6%	9.19		10.0	91.9%	6.0%
Bromoethane	10.4		10.0	104%	9.50		10.0	95.0%	9.0%
Acrylonitrile	9.60		10.0	96.0%	8.99		10.0	89.9%	6.6%
1,1-Dichloropropene	10.6		10.0	106%	9.66		10.0	96.6%	9.3%
Dibromomethane	9.99		10.0	99.9%	9.26		10.0	92.6%	7.6%
1,1,1,2-Tetrachloroethane	11.0		10.0	110%	10.4		10.0	104%	5.6%
1,2-Dibromo-3-chloropropane	10.2		10.0	102%	9.74		10.0	97.4%	4.6%
1,2,3-Trichloropropane	10.4		10.0	104%	9.35		10.0	93.5%	10.6%
trans-1,4-Dichloro-2-butene	10.2		10.0	102%	9.22		10.0	92.2%	10.1%
1,3,5-Trimethylbenzene	11.8	Q	10.0	118%	10.7	Q	10.0	107%	9.8%
1,2,4-Trimethylbenzene	12.0	Q	10.0	120%	10.9	Q	10.0	109%	9.6%
Hexachlorobutadiene	9.79		10.0	97.9%	8.58		10.0	85.8%	13.2%
1,2-Dibromoethane	10.5		10.0	105%	9.63		10.0	96.3%	8.6%
Bromochloromethane	10.2		10.0	102%	9.33		10.0	93.3%	8.9%
2,2-Dichloropropane	10.7		10.0	107%	9.67		10.0	96.7%	10.1%
1,3-Dichloropropane	10.7		10.0	107%	9.74		10.0	97.4%	9.4%
Isopropylbenzene	12.0	Q	10.0	120%	11.0	Q	10.0	110%	8.7%
n-Propylbenzene	11.5		10.0	115%	10.3		10.0	103%	11.0%
Bromobenzene	10.3		10.0	103%	9.48		10.0	94.8%	8.3%
2-Chlorotoluene	10.9		10.0	109%	9.93		10.0	99.3%	9.3%
4-Chlorotoluene	10.8		10.0	108%	9.84		10.0	98.4%	9.3%
tert-Butylbenzene	11.8	Q	10.0	118%	10.9	Q	10.0	109%	7.9%
sec-Butylbenzene	12.0	Q	10.0	120%	10.8	Q	10.0	108%	10.5%
4-Isopropyltoluene	12.3	Q	10.0	123%	11.0	Q	10.0	110%	11.2%
n-Butylbenzene	11.5		10.0	115%	10.2		10.0	102%	12.0%
1,2,4-Trichlorobenzene	10.3		10.0	103%	9.33		10.0	93.3%	9.9%
Naphthalene	10.7		10.0	107%	9.83		10.0	98.3%	8.5%
1,2,3-Trichlorobenzene	10.6		10.0	106%	9.57		10.0	95.7%	10.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.4%	96.8%
d8-Toluene	101%	100%
Bromofluorobenzene	99.6%	101%
d4-1,2-Dichlorobenzene	98.1%	99.1%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-042115A	Method Blank	10	110%	98.5%	93.9%	104%	0
LCS-042115A	Lab Control	10	94.4%	101%	99.6%	98.1%	0
LCSD-042115A	Lab Control Dup	10	96.8%	100%	101%	99.1%	0
AEL8A	SB16	10	104%	99.0%	98.6%	103%	0

	LCS/MB LIMITS	QC LIMITS
SW8260C		
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-7515 to 15-7515

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 21-APR-2015 10:02
Lab File ID: 15ccv0421.d Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Analysis Type: WATER Init. Cal. Times: 18:29 20:52
Lab Sample ID: CCV0421 Quant Type: ISTD
Method: /chem3/nt2.i/20150421.b/82600420L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.70174	0.85081	0.85081	0.010	21.24360	20.00000	Averaged	<-
2 Chloromethane	0.91191	1.01679	1.01679	0.100	11.50060	20.00000	Averaged	
3 Vinyl Chloride	0.79954	0.89191	0.89191	0.100	11.55255	20.00000	Averaged	
4 Bromomethane	0.48738	0.49090	0.49090	0.100	0.72182	20.00000	Averaged	
5 Chloroethane	0.51592	0.53514	0.53514	0.010	3.72524	20.00000	Averaged	
6 Trichlorofluoromethane	0.80394	0.92676	0.92676	0.010	15.27715	20.00000	Averaged	
7 1,1-Dichloroethene	1.01399	1.04574	1.04574	0.100	3.13130	20.00000	Averaged	
8 Carbon Disulfide	1.68878	1.54978	1.54978	0.010	-8.23057	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.50237	0.53217	0.53217	0.010	5.93117	20.00000	Averaged	
10 Iodomethane	9.61804	10.00000	0.29836	0.010	-3.81957	20.00000	Quadratic	
11 Bromoethane	0.31747	0.34203	0.34203	0.100	7.73688	20.00000	Averaged	
12 Acrolein	0.13291	0.13629	0.13629	0.000	2.53964	20.00000	Averaged	
13 Methylene Chloride	0.59411	0.63377	0.63377	0.010	6.67516	20.00000	Averaged	
14 Acetone	0.18369	0.19680	0.19680	0.001	7.13495	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.62051	0.61182	0.61182	0.010	-1.40042	20.00000	Averaged	
16 n-hexane	0.32090	0.32121	0.32121	0.100	0.09684	20.00000	Averaged	
17 Methyl tert butyl ether	1.06478	1.02947	1.02947	0.100	-3.31628	20.00000	Averaged	
18 1,1-Dichloroethane	1.25616	1.30183	1.30183	0.200	3.63529	20 00000	Averaged	
19 Acrylonitrile	0.26779	0.26924	0.26924	0.001	0.54214	20 00000	Averaged	
20 Vinyl Acetate	1.16346	1.23718	1.23718	0.010	6.33666	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.70023	0.73623	0.73623	0.010	5.14155	20.00000	Averaged	
23 2,2-Dichloropropane	0.93935	1.00553	1.00553	0.010	7.04446	20.00000	Averaged	
24 Bromochloromethane	0.32454	0.33727	0.33727	0.050	3.92151	20.00000	Averaged	
25 Chloroform	1.16250	1.23200	1.23200	0.200	5.97874	20.00000	Averaged	
26 Carbon Tetrachloride	0.48922	0.54473	0.54473	0.100	11.34587	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.50795	0.49919	0.49919	0.100	-1.72494	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.01797	1.10838	1.10838	0.100	8.88141	20.00000	Averaged	
30 1,1-Dichloropropene	0.55542	0.59374	0.59374	0.010	6.89936	20.00000	Averaged	
29 2-Butanone	0.32868	0.36675	0.36675	0.001	11.58146	20.00000	Averaged	
31 Benzene	1.55316	1.73329	1.73329	0.500	11.59784	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.73190	0.70469	0.70469	0.010	-3.71843	20.00000	Averaged	
34 1,2-Dichloroethane	0.66253	0.69002	0.69002	0.100	4.14968	20.00000	Averaged	
36 Trichloroethene	0.38554	0.39872	0.39872	0.100	3.41855	20.00000	Averaged	
38 Dibromomethane	0.25719	0.25822	0.25822	0.010	0.40043	20.00000	Averaged	
39 1,2-Dichloropropane	0.41999	0.44320	0.44320	0.100	5.52540	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 21-APR-2015 10:02
Lab File ID: 15ccv0421.d Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Analysis Type: WATER Init. Cal. Times: 18:29 20:52
Lab Sample ID: CCV0421 Quant Type: ISTD
Method: /chem3/nt2.i/20150421.b/82600420L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 Bromodichloromethane	0.50767	0.56599	0.56599	0.100	11.48855	20.00000	Averaged	
173 2-Pentanone	0.05929	0.06721	0.06721	0.100	13.36336	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.57247	0.64232	0.64232	0.200	12.20042	20.00000	Averaged	
$ 43 d8-Toluene	1.24984	1.26360	1.26360	0.010	1.10054	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.16156	0.16436	0.16436	0.000	1.73321	20.00000	Averaged	
44 Toluene	1.03159	1.12374	1.12374	0.400	8.93324	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.17175	0.19126	0.19126	0.000	11.35983	20.00000	Averaged	
46 Tetrachloroethene	0.40524	0.42241	0.42241	0.200	4.23572	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.56174	0.63334	0.63334	0.010	12.74653	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.36386	0.38734	0.38734	0.100	6.45458	20.00000	Averaged	
49 Chlorodibromomethane	0.34792	0.38326	0.38326	0.100	10.15572	20.00000	Averaged	
50 1,3-Dichloropropane	0.65936	0.69588	0.69588	0.100	5.53848	20.00000	Averaged	
51 1,2-Dibromoethane	0.33748	0.36420	0.36420	0.010	7.91662	20.00000	Averaged	
52 2-Hexanone	0.29587	0.33687	0.33687	0.010	13.85538	20.00000	Averaged	
54 Chlorobenzene	1.06527	1.13887	1.13887	0.500	6.90852	20.00000	Averaged	
55 Ethyl Benzene	0.58463	0.64355	0.64355	0.100	10.07777	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.34552	0.38876	0.38876	0.010	12.51346	20.00000	Averaged	
57 m,p-xylene	0.66952	0.78203	0.78203	0.300	16.80499	20.00000	Averaged	
58 o-Xylene	0.63649	0.73498	0.73498	0.300	15.47302	20.00000	Averaged	
59 Styrene	1.01298	1.23137	1.23137	0.300	21.55912	20.00000	Averaged	<-
60 Bromoform	0.40858	0.46039	0.46039	0.010	12.68133	20.00000	Averaged	
61 Isopropyl Benzene	2.80578	3.43990	3.43990	0.010	22.60049	20.00000	Averaged	<-
$ 62 4-Bromofluorobenzene	0.53942	0.52549	0.52549	0.200	-2.58138	20.00000	Averaged	
63 Bromobenzene	0.80465	0.84560	0.84560	0.010	5.08956	20.00000	Averaged	
64 N-Propyl Benzene	3.67490	4.29566	4.29566	0.010	16.89178	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.91419	0.95860	0.95860	0.100	4.85857	20.00000	Averaged	
66 2-Chloro Toluene	2.61903	2.89232	2.89232	0.010	10.43468	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.50603	3.03754	3.03754	0.010	21.20907	20.00000	Averaged	<-
68 1,2,3-Trichloropropane	0.29644	0.31170	0.31170	0.010	5.14949	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.32858	0.34730	0.34730	0.001	5.69904	20.00000	Averaged	
70 4-Chloro Toluene	2.45845	2.72685	2.72685	0.010	10.91727	20.00000	Averaged	
71 T-Butyl Benzene	2.07040	2.51070	2.51070	0.010	21.26668	20.00000	Averaged	<-
72 1,2,4-Trimethylbenzene	2.46521	3.01460	3.01460	0.010	22.28568	20.00000	Averaged	<-
73 S-Butyl Benzene	3.07720	3.76974	3.76974	0.010	22.50539	20.00000	Averaged	<-
74 4-Isopropyl Toluene	2.50504	3.14107	3.14107	0.010	25.39021	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: 15ccv0421.d
Analysis Type: WATER
Lab Sample ID: CCV0421
Method: /chem3/nt2.i/20150421.b/82600420L.m

Injection Date: 21-APR-2015 10:02
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
75 1,3-Dichlorobenzene	1.55411	1.59117	1.59117	0.600	2.38461	20.00000	Averaged
77 1,4-Dichlorobenzene	1.60680	1.59202	1.59202	0.500	-0.92005	20.00000	Averaged
78 N-Butyl Benzene	2.53563	2.97786	2.97786	0.010	17.44048	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92329	0.91468	0.91468	0.010	-0.93282	20.00000	Averaged
80 1,2-Dichlorobenzene	1.47741	1.51412	1.51412	0.400	2.48490	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.16612	0.17685	0.17685	0.010	6.46160	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.57498	0.58270	0.58270	0.010	1.34099	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.98696	1.03797	1.03797	0.010	5.16899	20.00000	Averaged
85 Naphthalene	10.80875	10.00000	2.74087	0.010	8.08746	20.00000	Linear
86 1,2,3-Trichlorobenzene	0.99315	1.06090	1.06090	0.010	6.82232	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
 METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7518
Matrix: Soil
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 10:51

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**

METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7518
Matrix: Soil
Date Analyzed: 04/22/15 10:51

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	121%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.8%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB16-26**
Page 1 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEL8D
LIMS ID: 15-7518
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 14:49

Sample Amount: 3.41 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 25.3%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	**Methylene Chloride**	**2.9**	**4.9**	
67-64-1	**Acetone**	**7.3**	**29**	
75-15-0	**Carbon Disulfide**	**1.5**	**6.9**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.3	< 7.3	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.3	< 7.3	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.3	< 7.3	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.3	< 7.3	U
591-78-6	2-Hexanone	7.3	< 7.3	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.9	< 2.9	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	73	< 73	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	2.9	< 2.9	U
107-13-1	Acrylonitrile	7.3	< 7.3	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.3	< 7.3	U
96-18-4	1,2,3-Trichloropropane	2.9	< 2.9	U
110-57-6	trans-1,4-Dichloro-2-butene	7.3	< 7.3	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

AEL8:08828

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB16-26**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEL8D
LIMS ID: 15-7518
Matrix: Soil
Date Analyzed: 04/22/15 14:49

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.3	< 7.3	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.3	< 7.3	U
91-20-3	Naphthalene	7.3	< 7.3	U
87-61-6	1,2,3-Trichlorobenzene	7.3	< 7.3	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	121%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	98.8%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17-26**
 SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEL8E
LIMS ID: 15-7519
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 15:14

Sample Amount: 3.34 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 24.8%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	**Methylene Chloride**	**3.0**	**3.0**	
67-64-1	**Acetone**	**7.5**	**34**	
75-15-0	**Carbon Disulfide**	**1.5**	**3.2**	**Q**
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.5	< 7.5	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.5	< 7.5	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.5	< 7.5	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.5	< 7.5	U
591-78-6	2-Hexanone	7.5	< 7.5	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.0	< 3.0	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	75	< 75	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.0	< 3.0	U
107-13-1	Acrylonitrile	7.5	< 7.5	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.5	< 7.5	U
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0	U
110-57-6	trans-1,4-Dichloro-2-butene	7.5	< 7.5	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17-26**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEL8E
LIMS ID: 15-7519
Matrix: Soil
Date Analyzed: 04/22/15 15:14

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.5	< 7.5	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.5	< 7.5	U
91-20-3	Naphthalene	7.5	< 7.5	U
87-61-6	1,2,3-Trichlorobenzene	7.5	< 7.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%
d8-Toluene	102%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215A
LIMS ID: 15-7518
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 04/22/15 10:02
LCSD: 04/22/15 10:27

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	48.5	50.0	97.0%	47.4	50.0	94.8%	2.3%
Bromomethane	45.0	50.0	90.0%	41.1	50.0	82.2%	9.1%
Vinyl Chloride	50.2	50.0	100%	49.8	50.0	99.6%	0.8%
Chloroethane	62.8	50.0	126%	46.1	50.0	92.2%	30.7%
Methylene Chloride	47.0	50.0	94.0%	51.0	50.0	102%	8.2%
Acetone	225	250	90.0%	211	250	84.4%	6.4%
Carbon Disulfide	50.9 Q	50.0	102%	58.2 Q	50.0	116%	13.4%
1,1-Dichloroethene	49.0 Q	50.0	98.0%	56.6 Q	50.0	113%	14.4%
1,1-Dichloroethane	50.1	50.0	100%	51.7	50.0	103%	3.1%
trans-1,2-Dichloroethene	46.5	50.0	93.0%	48.5	50.0	97.0%	4.2%
cis-1,2-Dichloroethene	47.6	50.0	95.2%	48.9	50.0	97.8%	2.7%
Chloroform	52.6	50.0	105%	52.3	50.0	105%	0.6%
1,2-Dichloroethane	52.6	50.0	105%	50.9	50.0	102%	3.3%
2-Butanone	244	250	97.6%	240	250	96.0%	1.7%
1,1,1-Trichloroethane	55.0	50.0	110%	54.6	50.0	109%	0.7%
Carbon Tetrachloride	54.7	50.0	109%	51.8	50.0	104%	5.4%
Vinyl Acetate	51.2	50.0	102%	52.7	50.0	105%	2.9%
Bromodichloromethane	50.2	50.0	100%	50.0	50.0	100%	0.4
1,2-Dichloropropane	46.3	50.0	92.6%	47.5	50.0	95.0%	2.6%
cis-1,3-Dichloropropene	50.7	50.0	101%	50.1	50.0	100%	1.2%
Trichloroethene	50.5	50.0	101%	49.2	50.0	98.4%	2.6
Dibromochloromethane	48.4	50.0	96.8%	47.2	50.0	94.4%	2.5
1,1,2-Trichloroethane	45.4	50.0	90.8%	46.4	50.0	92.8%	2.2%
Benzene	48.9	50.0	97.8%	47.8	50.0	95.6%	2.3%
trans-1,3-Dichloropropene	50.3	50.0	101%	51.1	50.0	102%	1.6%
2-Chloroethylvinylether	43.5	50.0	87.0%	42.7	50.0	85.4%	1.9
Bromoform	51.3	50.0	103%	47.7	50.0	95.4%	7.3%
4-Methyl-2-Pentanone (MIBK)	237	250	94.8%	223	250	89.2%	6.1%
2-Hexanone	253	250	101%	227	250	90.8%	10.8%
Tetrachloroethene	50.1	50.0	100%	46.0	50.0	92.0%	8.5%
1,1,2,2-Tetrachloroethane	47.7	50.0	95.4%	45.7	50.0	91.4%	4.3%
Toluene	48.3	50.0	96.6%	47.7	50.0	95.4%	1.2%
Chlorobenzene	49.0	50.0	98.0%	46.4	50.0	92.8%	5.5%
Ethylbenzene	50.9	50.0	102%	47.2	50.0	94.4%	7.5%
Styrene	50.1	50.0	100%	48.4	50.0	96.8%	3.5%
Trichlorofluoromethane	67.2	50.0	134%	54.8	50.0	110%	20.3%
1,1,2-Trichloro-1,2,2-trifluoroetha	52.0 Q	50.0	104%	58.6 Q	50.0	117%	11.9%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**

LAB CONTROL SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: LCS-042215A
LIMS ID: 15-7518
Matrix: Soil

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	101	100	101%	95.7	100	95.7%	5.4%
o-Xylene	49.9	50.0	99.8%	47.4	50.0	94.8%	5.1%
1,2-Dichlorobenzene	48.1	50.0	96.2%	46.4	50.0	92.8%	3.6%
1,3-Dichlorobenzene	52.4	50.0	105%	49.1	50.0	98.2%	6.5
1,4-Dichlorobenzene	50.9	50.0	102%	47.4	50.0	94.8%	7.1%
Acrolein	211	250	84.4%	243	250	97.2%	14.1%
Iodomethane	42.8	50.0	85.6%	52.1	50.0	104%	19.6%
Bromoethane	48.2	50.0	96.4%	57.1	50.0	114%	16.9%
Acrylonitrile	47.4	50.0	94.8%	50.2	50.0	100%	5.7%
1,1-Dichloropropene	52.9	50.0	106%	50.3	50.0	101%	5.0%
Dibromomethane	48.2	50.0	96.4%	48.6	50.0	97.2	0.8%
1,1,1,2-Tetrachloroethane	51.0	50.0	102%	48.8	50.0	97.6%	4.4%
1,2-Dibromo-3-chloropropane	49.2	50.0	98.4%	47.2	50.0	94.4%	4.1%
1,2,3-Trichloropropane	50.9	50.0	102%	44.5	50.0	89.0%	13.4%
trans-1,4-Dichloro-2-butene	53.7	50.0	107%	47.7	50.0	95.4%	11.8%
1,3,5-Trimethylbenzene	53.0	50.0	106%	49.2	50.0	98.4%	7.4%
1,2,4-Trimethylbenzene	52.8	50.0	106%	49.3	50.0	98.6%	6.9%
Hexachlorobutadiene	51.7	50.0	103%	48.6	50.0	97.2%	6.2%
1,2-Dibromoethane	46.8	50.0	93.6%	46.3	50.0	92.6%	1.1%
Bromochloromethane	46.7	50.0	93.4%	49.0	50.0	98.0%	4.8%
2,2-Dichloropropane	57.2	50.0	114%	55.4	50.0	111%	3.2%
1,3-Dichloropropane	46.4	50.0	92.8%	45.1	50.0	90.2%	2.8%
Isopropylbenzene	53.3	50.0	107%	48.5	50.0	97.0%	9.4%
n-Propylbenzene	54.1	50.0	108%	49.7	50.0	99.4%	8.5%
Bromobenzene	48.6	50.0	97.2%	45.8	50.0	91.6%	5.9%
2-Chlorotoluene	52.4	50.0	105%	48.0	50.0	96.0%	8.8%
4-Chlorotoluene	52.1	50.0	104%	48.8	50.0	97.6%	6.5%
tert-Butylbenzene	52.1	50.0	104%	47.5	50.0	95.0%	9.2%
sec-Butylbenzene	53.9	50.0	108%	49.0	50.0	98.0%	9.5%
4-Isopropyltoluene	55.0	50.0	110%	50.8	50.0	102%	7.9%
n-Butylbenzene	56.6	50.0	113%	52.4	50.0	105%	7.7%
1,2,4-Trichlorobenzene	51.4	50.0	103%	51.2	50.0	102%	0.4%
Naphthalene	49.0	50.0	98.0%	46.7	50.0	93.4%	4.8%
1,2,3-Trichlorobenzene	49.6	50.0	99.2%	48.6	50.0	97.2	2.0%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	115%	118%
d8-Toluene	103%	102%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	101%	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-042215A	Method Blank	Low	121%	101%	100%	99.8%	0
LCS-042215A	Lab Control	Low	115%	103%	101%	101%	0
LCSD-042215A	Lab Control Dup	Low	118%	102%	101%	101%	0
AEL8D	SB16-26	Low	121%	101%	100%	98.8%	0
AEL8E	SB17-26	Low	127%	102%	101%	101%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 15-7518 to 15-7519

AEL8-00026

Data File: /chem1/nt5.i/20150422.b/15cc0422.d
Report Date: 22-Apr-2015 10:31

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.52690	0.63278	0.63278	0.100	20.09534	20.00000	Averaged	<- ir14
2 Chloromethane	0.82753	0.83811	0.83811	0.100	1.27862	20.00000	Averaged	
3 Vinyl Chloride	0.80107	0.82557	0.82557	0.100	3.05813	20.00000	Averaged	
4 Bromomethane	0.46367	0.42189	0.42189	0.100	-9.01133	20.00000	Averaged	
5 Chloroethane	0.49441	0.47049	0.47049	0.100	-4.83840	20.00000	Averaged	
6 Trichlorofluoromethane	0.97964	1.16063	1.16063	0.100	18.47489	20.00000	Averaged	
7 1,1-Dichloroethene	0.65179	0.81759	0.81759	0.100	25.43768	20.00000	Averaged	<-
8 Carbon Disulfide	1.99979	2.56308	2.56308	0.010	28.16702	20.00000	Averaged	<-
9 112Trichloro122Trifluoroeth	0.59931	0 74675	0.74675	0.010	24.60244	20.00000	Averaged	<-
10 Iodomethane	47.03639	50.00000	0.57068	0.010	-5.92722	20.00000	Linear	
11 Bromoethane	0.40095	0.45895	0.45895	0.010	14.46456	20.00000	Averaged	
12 Acrolein	0.12306	0.11454	0.11454	0.000	-6.92180	20.00000	Averaged	
13 Methylene Chloride	0.64347	0 67066	0.67066	0.010	4.22624	20.00000	Averaged	
14 Acetone	235	250	0.17764	0.001	-6.04696	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.71825	0.72863	0.72863	0.010	1.44605	20.00000	Averaged	
16 Methyl tert butyl ether	1.86711	1.93948	1.93948	0.100	3.87625	20.00000	Averaged	
17 1,1-Dichloroethane	1.23721	1.34163	1.34163	0.100	8.44018	20.00000	Averaged	
18 Acrylonitrile	0.20674	0 20175	0.20175	0.001	-2.41411	20.00000	Averaged	
19 Vinyl Acetate	1.17137	1.30758	1.30758	0.010	11.62803	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.72862	0 76558	0.76558	0.010	5.07250	20.00000	Averaged	
22 2,2-Dichloropropane	1.03490	1 22622	1.22622	0.010	18.48713	20.00000	Averaged	
23 Bromochloromethane	0.30145	0.31114	0.31114	0.050	3.21562	20.00000	Averaged	
24 Chloroform	1.11801	1.21340	1.21340	0.100	8.53259	20.00000	Averaged	
25 Carbon Tetrachloride	0.39338	0.42894	0.42894	0.100	9 04042	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.72245	0.84598	0.84598	0.100	17.09969	20.00000	Averaged	
26 1,1,1-Trichloroethane	1.05397	1.20597	1.20597	0.100	14.42100	20.00000	Averaged	
28 1,1-Dichloropropene	0.42433	0.43944	0.43944	0.010	3.56279	20.00000	Averaged	
29 2-Butanone	0.07081	0.06769	0.06769	0.001	-4.41147	20.00000	Averaged	
30 Benzene	1.18185	1.15527	1.15527	0.100	-2.24928	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.76941	0.90646	0.90646	0.010	17.81250	20.00000	Averaged	
33 1,2-Dichloroethane	0.35968	0.38445	0 38445	0.100	6.88507	20.00000	Averaged	
34 Trichloroethene	0.29303	0.29734	0.29734	0.100	1 46886	20.00000	Averaged	
37 Dibromomethane	0.15100	0.14806	0.14806	0.010	-1.94617	20.00000	Averaged	
38 1,2-Dichloropropane	0.29381	0 28032	0.28032	0.100	-4.59069	20.00000	Averaged	
39 Bromodichloromethane	0.36604	0.37509	0 37509	0.100	2.47297	20.00000	Averaged	
172 2-Pentanone	0.03971	0.03228	0.03228	0.500	-18.70959	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.15856	0.13709	0.13709	0.000	-13.54477	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.44353	0.45200	0.45200	0.100	1.91154	20.00000	Averaged
$ 42 d8-Toluene	1.25642	1.25440	1.25440	0.010	-0.16028	20.00000	Averaged
43 Toluene	0.72111	0.68846	0.68846	0.100	-4.52756	20.00000	Averaged
44 Tetrachloroethene	0.29028	0.26853	0.26853	0.100	-7.49214	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.10567	0.09611	0.09611	0.000	-9.05154	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.41067	0.43306	0.43306	0.010	5.45257	20.00000	Averaged
47 1,1,2-Trichloroethane	0.21888	0.20871	0.20871	0.100	-4.64383	20.00000	Averaged
48 Chlorodibromomethane	0.25669	0.25684	0.25684	0.100	0.05783	20.00000	Averaged
49 1,3-Dichloropropane	0.41905	0.39136	0.39136	0.100	-6.60703	20.00000	Averaged
50 1,2-Dibromoethane	0.21367	0.20362	0.20362	0.010	-4.70742	20.00000	Averaged
51 2-Hexanone	0.18542	0.17138	0.17138	0.010	-7.57345	20.00000	Averaged
53 Chlorobenzene	0.80685	0.77016	0.77016	0.300	-4.54795	20.00000	Averaged
54 Ethyl Benzene	1.46772	1.43915	1.43915	0.100	-1.94629	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.28582	0.28780	0.28780	0.010	0.69129	20.00000	Averaged
56 m,p-xylene	0.56366	0.54907	0.54907	0.100	-2 58876	20.00000	Averaged
57 o-Xylene	0.51550	0.50417	0.50417	0.100	-2.19738	20.00000	Averaged
58 Styrene	0.85309	0.84536	0.84536	0.100	-0.90643	20.00000	Averaged
59 Bromoform	0.31069	0.32001	0.32001	0.100	3.00050	20.00000	Averaged
60 Isopropyl Benzene	2.63699	2.64240	2.64240	0.010	0.20515	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.49717	0.49878	0.49878	0.200	0.32418	20.00000	Averaged
63 Bromobenzene	0.59256	0.57516	0.57516	0.010	-2.93633	20.00000	Averaged
64 N-Propyl Benzene	3.15081	3.22319	3.22319	0.010	2.29732	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.55806	0.52743	0.52743	0.300	-5.48762	20.00000	Averaged
66 2-Chloro Toluene	1.81234	1.79635	1.79635	0.010	-0.88252	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.21544	2.22153	2.22153	0.010	0.27493	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18436	0.17861	0.17861	0.010	-3.11569	20 00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.19116	0.18736	0 18736	0.001	-1.98504	20.00000	Averaged
70 4-Chloro Toluene	1 88459	1.89970	1.89970	0.010	0.80172	20.00000	Averaged
71 T-Butyl Benzene	1.89706	1.88188	1.88188	0.010	-0.80014	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.15841	2.19582	2.19582	0.010	1.73356	20.00000	Averaged
73 S-Butyl Benzene	2.90640	2.94142	2.94142	0.010	1.20483	20.00000	Averaged
74 4-Isopropyl Toluene	2.31427	2.39909	2.39909	0.010	3.66514	20.00000	Averaged
75 1,3-Dichlorobenzene	1.17810	1.18031	1.18031	0.100	0.18827	20 00000	Averaged
77 1,4-Dichlorobenzene	1.22542	1.18625	1.18625	0.100	-3.19623	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	2.24218	2.35857	2.35857	0.010	5.19081	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.95424	0.93732	0.93732	0.010	-1.77316	20.00000	Averaged
80 1,2-Dichlorobenzene	1.16556	1.11263	1.11263	0.100	-4.54130	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.11049	0.10459	0.10459	0.010	-5.34474	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.34683	0.33651	0.33651	0.010	-2.97505	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.68446	0.69410	0.69410	0.010	1.40962	20.00000	Averaged
84 Naphthalene	1.74008	1.60916	1.60916	0.010	-7.52385	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.63954	0.62068	0.62068	0.010	-2.94824	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Water

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-042115	Method Blank	04/21/15	1.0	Gasoline	< 0.25 U
15-7515		PID1		HC ID	---
				Trifluorotoluene	92.6%
				Bromobenzene	95.6%
AEL8A	SB16	04/21/15	1.0	**Gasoline**	**0.30**
15-7515		PID1		HC ID	GAS
				Trifluorotoluene	77.4%
				Bromobenzene	78.4%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Client ID	Analysis Date	Basis	Range	Result
AEL8D 15-7518	SB16-26	04/21/15 PID1	Dry	Gasoline	< 8.8 U
				HC ID	---
				Trifluorotoluene	89.4%
				Bromobenzene	99.3%
AEL8E 15-7519	SB17-26	04/21/15 PID1	Dry	Gasoline	< 8.6 U
				HC ID	---
				Trifluorotoluene	93.6%
				Bromobenzene	103%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

AEL8 - 000003

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG

Sample ID: LCS-042115
LAB CONTROL SAMPLE

Lab Sample ID: LCS-042115
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 04/21/15 11:45
LCSD: 04/21/15 12:17
Instrument/Analyst LCS: PID1/ML
LCSD: PID1/ML

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.07	1.00	107%	1.07	1.00	107%	0.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.0%	90.5%
Bromobenzene	98.8%	91.3%

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: AEL8
Matrix: Water

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	TFT	BBZ	TOT OUT
MB-042115	92.6%	95.6%	0
LCS-042115	95.0%	98.8%	0
LCSD-042115	90.5%	91.3%	0
SB16	77.4%*	78.4%*	2

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 15-7515 to 15-7515

FORM II TPHG

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: AEL8
Matrix: Soil

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	BFB	TFT	BBZ	TOT OUT
SB16-26	NA	89.4%	99.3%	0
SB17-26	NA	93.6%	103%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(65-128)
(BBZ) = Bromobenzene	(80-120)	(52-149)

Log Number Range: 15-7518 to 15-7519

FORM II TPHG

Data File: /chem3/pid1.i/20150421-1.b/15042103.d

Date : 21-APR-2015 11:45

Client ID:

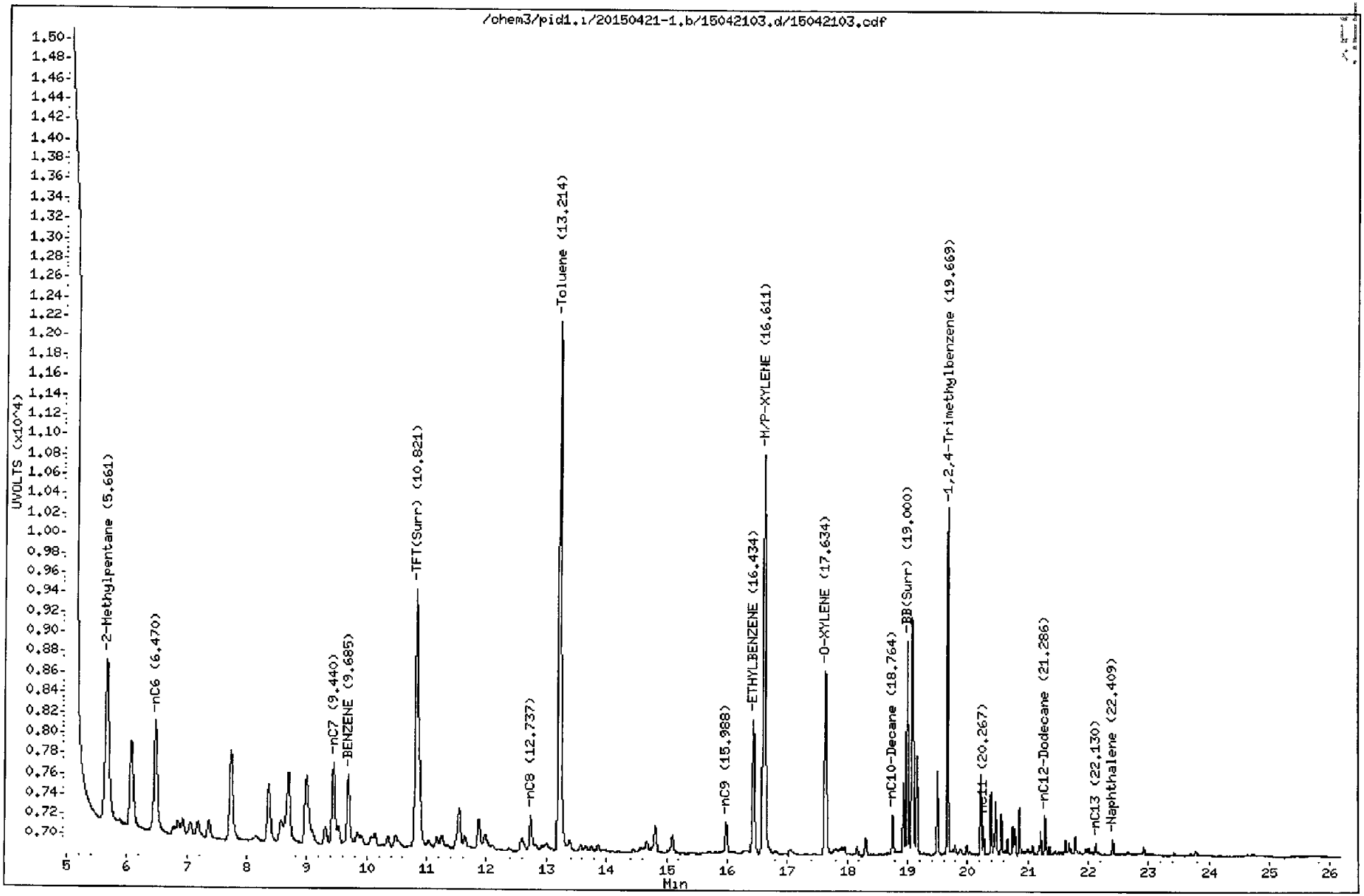
Sample Info: LCS0421

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML

Column diameter: 0.18



Data File: /chem3/pid1.i/20150421-1.b/15042104.d

Date : 21-APR-2015 12:17

Client ID:

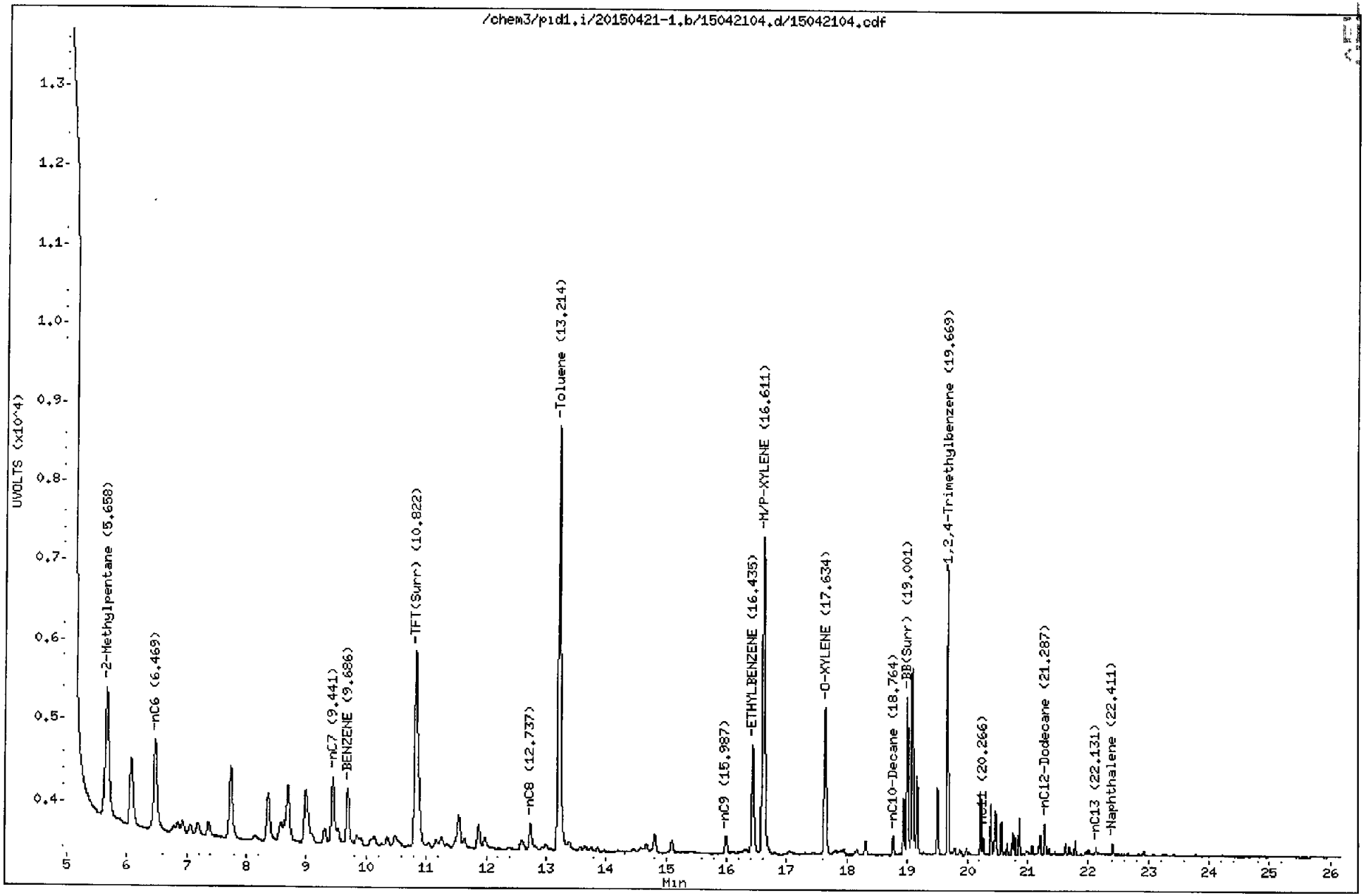
Sample Info: LCSD0421

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML

Column diameter: 0.18

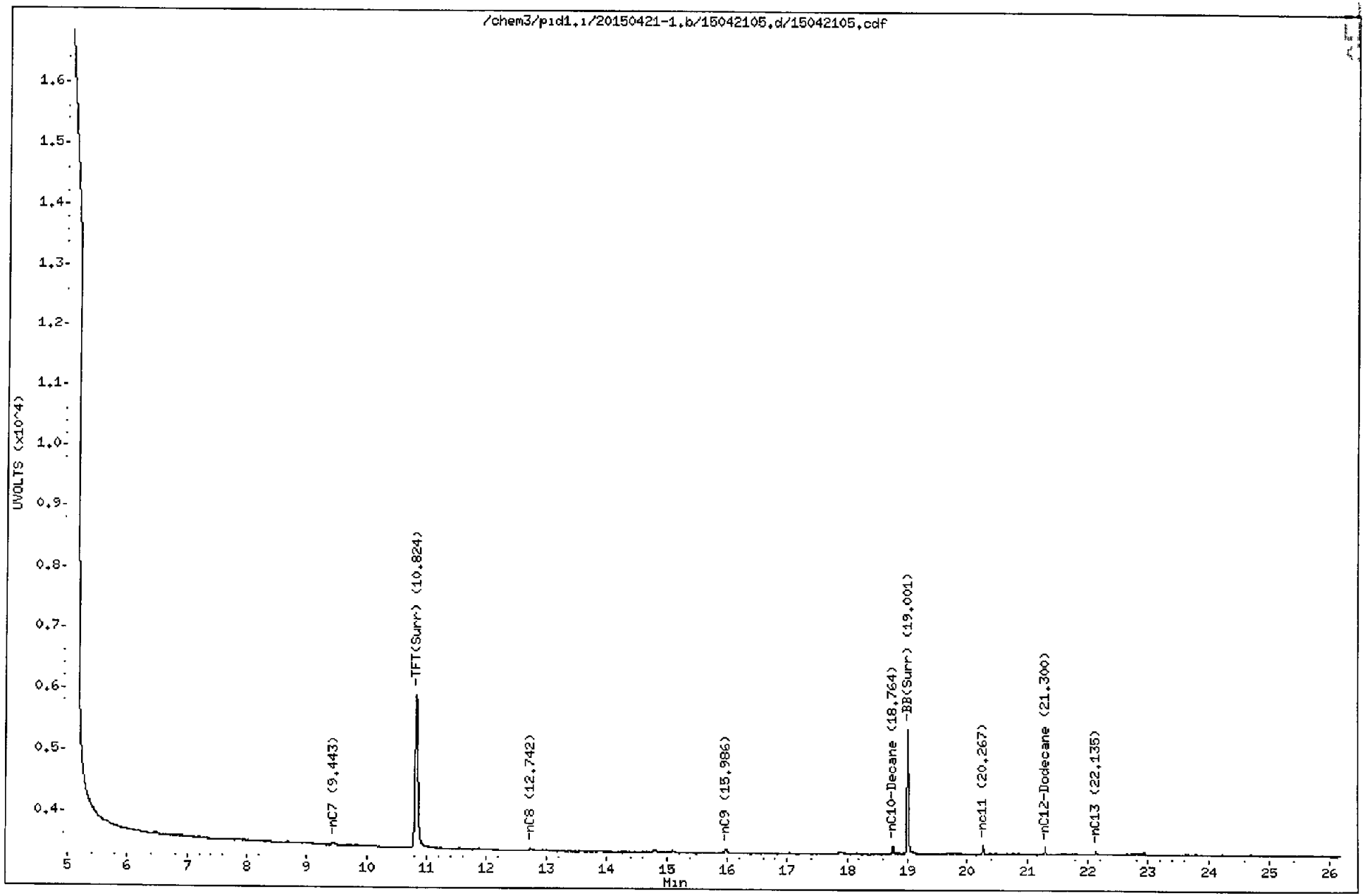


Data File: /chem3/pid1.i/20150421-1.b/15042105.d
Date : 21-APR-2015 12:48
Client ID:
Sample Info: MB0421

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML
Column diameter: 0.18



Data File: /chem3/pid1.i/20150421-1.b/15042107.d

Date : 21-APR-2015 15:10

Client ID: SB16

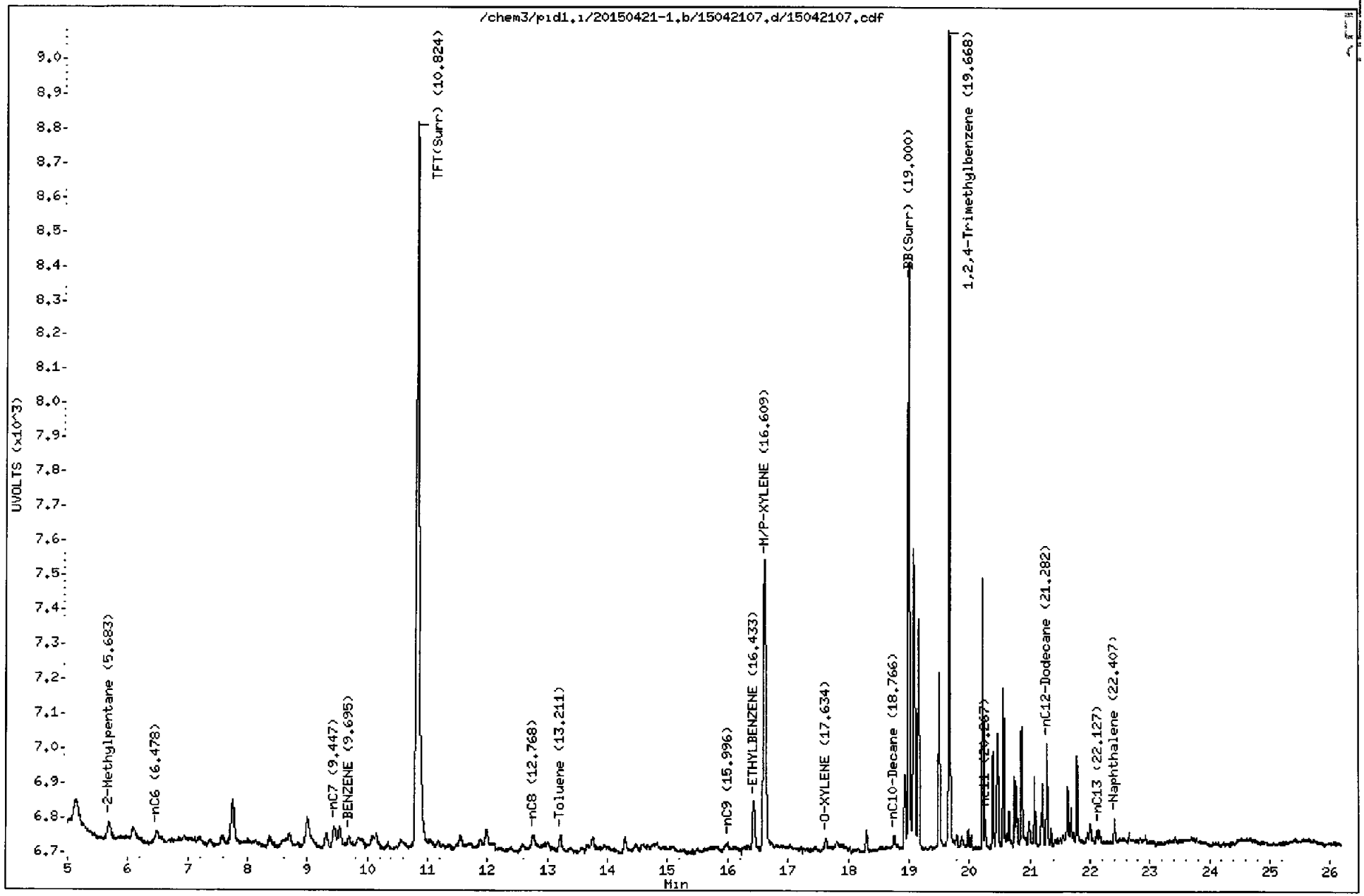
Sample Info: AEL8A

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML

Column diameter: 0.18



Data File: /chem3/pid1.1/20150421-1.b/15042115.d

Date : 21-APR-2015 19:22

Client ID: SB16-26

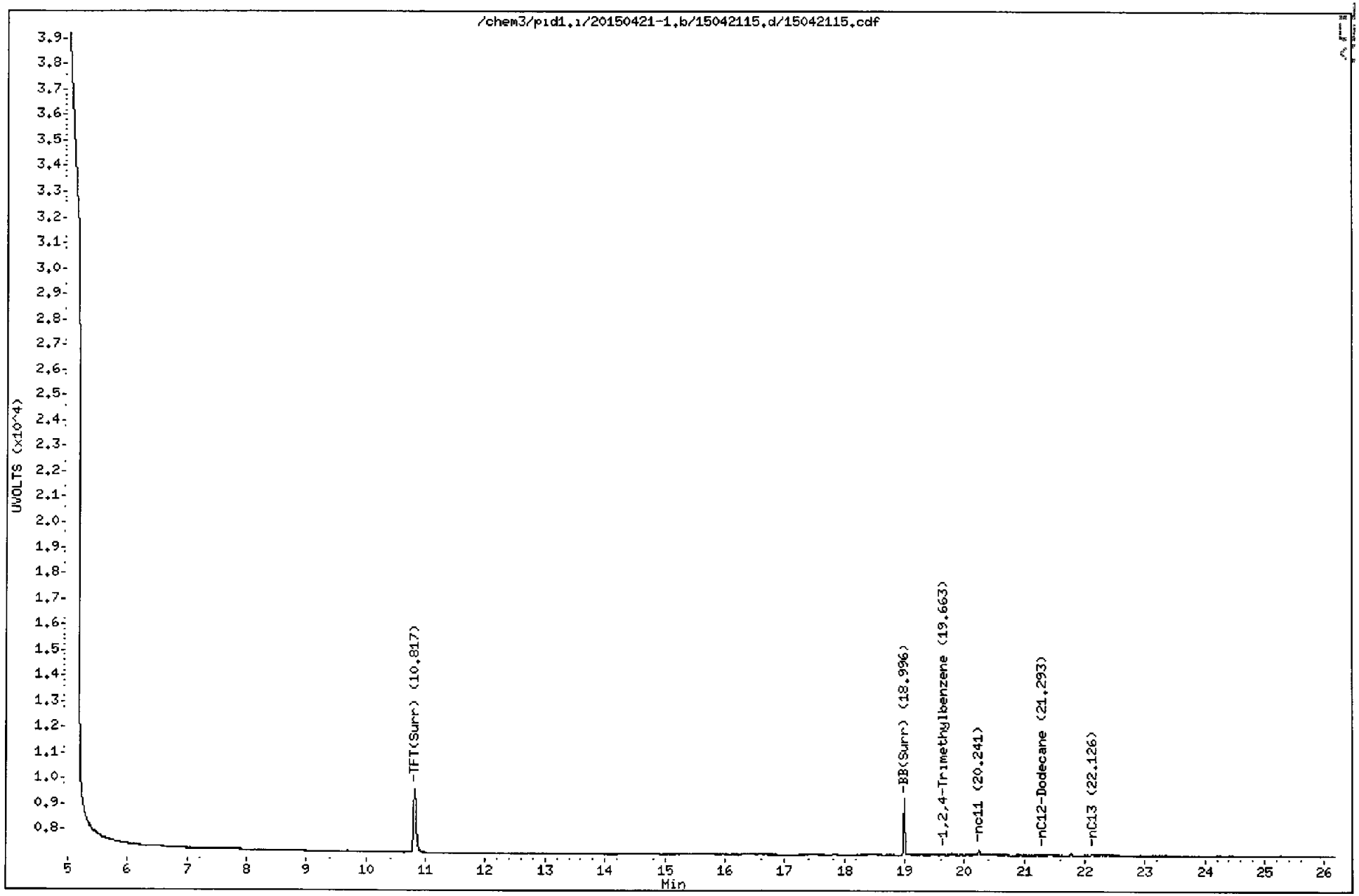
Sample Info: AEL8D

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: ML

Column diameter: 0.18



Data File: /chem3/pid1.i/20150421-1.b/15042116.d

Date : 21-APR-2015 19:53

Client ID: SB17-26

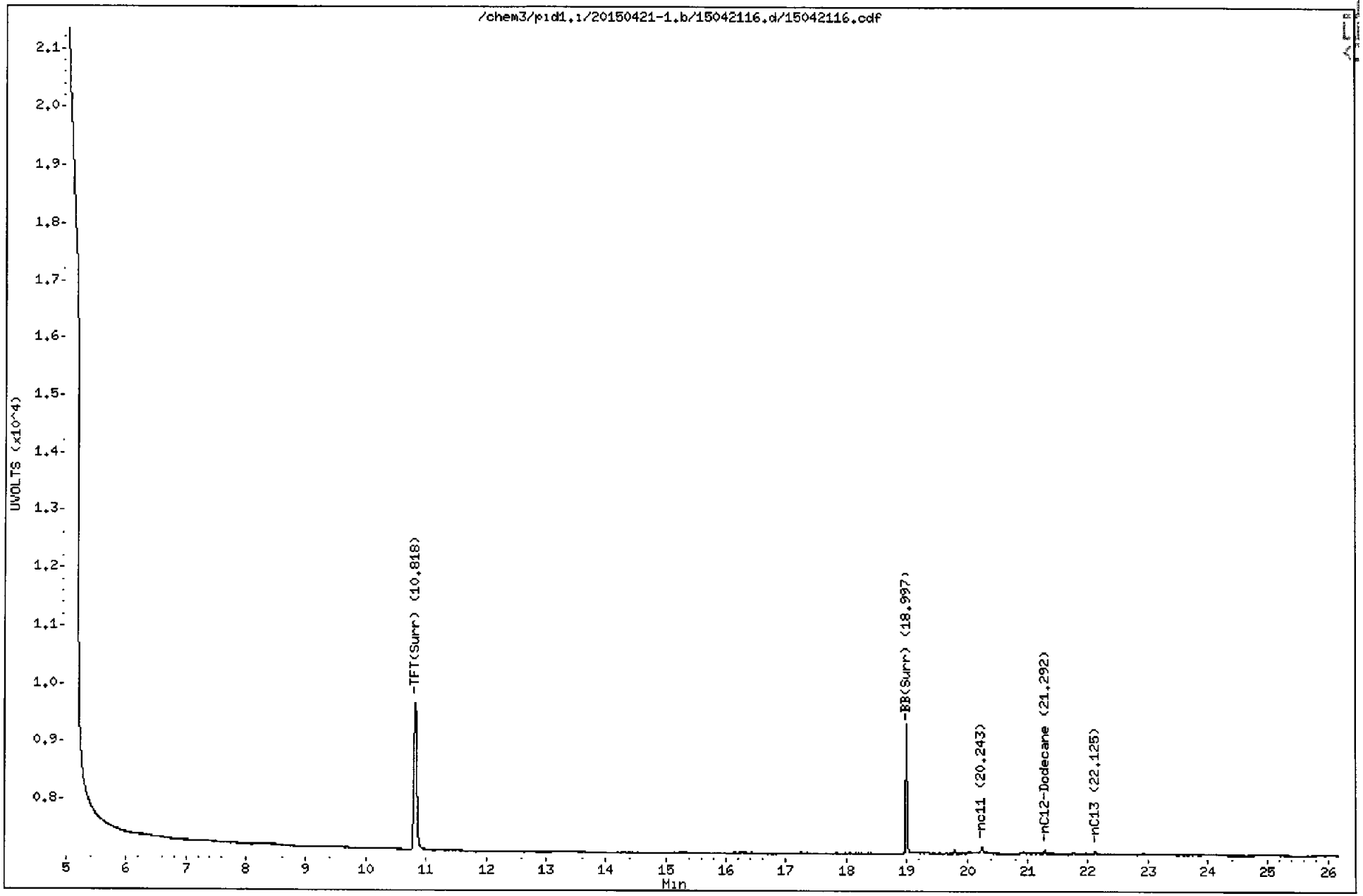
Sample Info: AEL8E

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML

Column diameter: 0.18



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AEL8-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Water

Date Received: 04/16/15

Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042015	Method Blank	04/20/15	04/20/15	1.00	Diesel Range	0.10	< 0.10 U
15-7515	HC ID: ---		FID9	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		94.4%
AEL8A	SB16	04/20/15	04/20/15	1.00	**Diesel Range**	**0.10**	**0.26**
15-7515	HC ID: **DRO/MOTOR OIL**		FID9	1.0	**Motor Oil Range**	**0.20**	**0.25**
					o-Terphenyl		27.8%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ARI Organics

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-042015	94.4%	0
LCS-042015	98.3%	0
SB16	27.8%*	1

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-7515 to 15-7515

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-042015
LAB CONTROL

Lab Sample ID: LCS-042015
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Date Extracted: 04/20/15
Date Analyzed: 04/20/15 19:28
Instrument/Analyst: FID9/ML

Sample Amount: 500 mL
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	3.00	3.00	100%

TPHD Surrogate Recovery

o-Terphenyl	98.3%

Results reported in mg/L

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 04/16/15

ARI Job: AEL8
Project: Precision Engineering
1396024

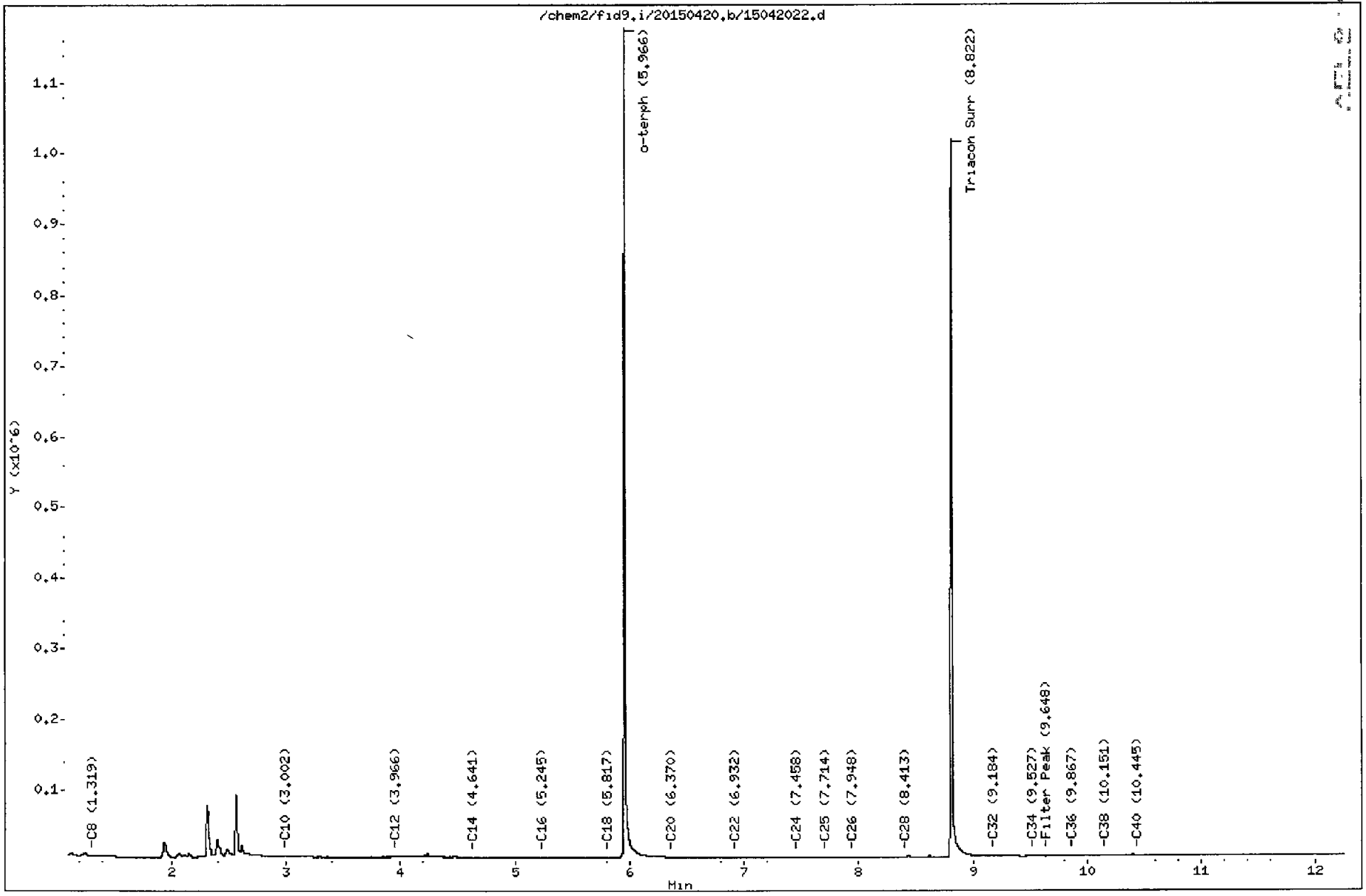
ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-7515-042015MB1	Method Blank	500 mL	1.00 mL	04/20/15
15-7515-042015LCS1	Lab Control	500 mL	1.00 mL	04/20/15
15-7515-AEL8A	SB16	500 mL	1.00 mL	04/20/15

Data File: /chem2/fid9.i/20150420.b/15042022.d
Date : 20-APR-2015 19:07
Client ID: AEJ3MBW1
Sample Info: AEJ3MBW1

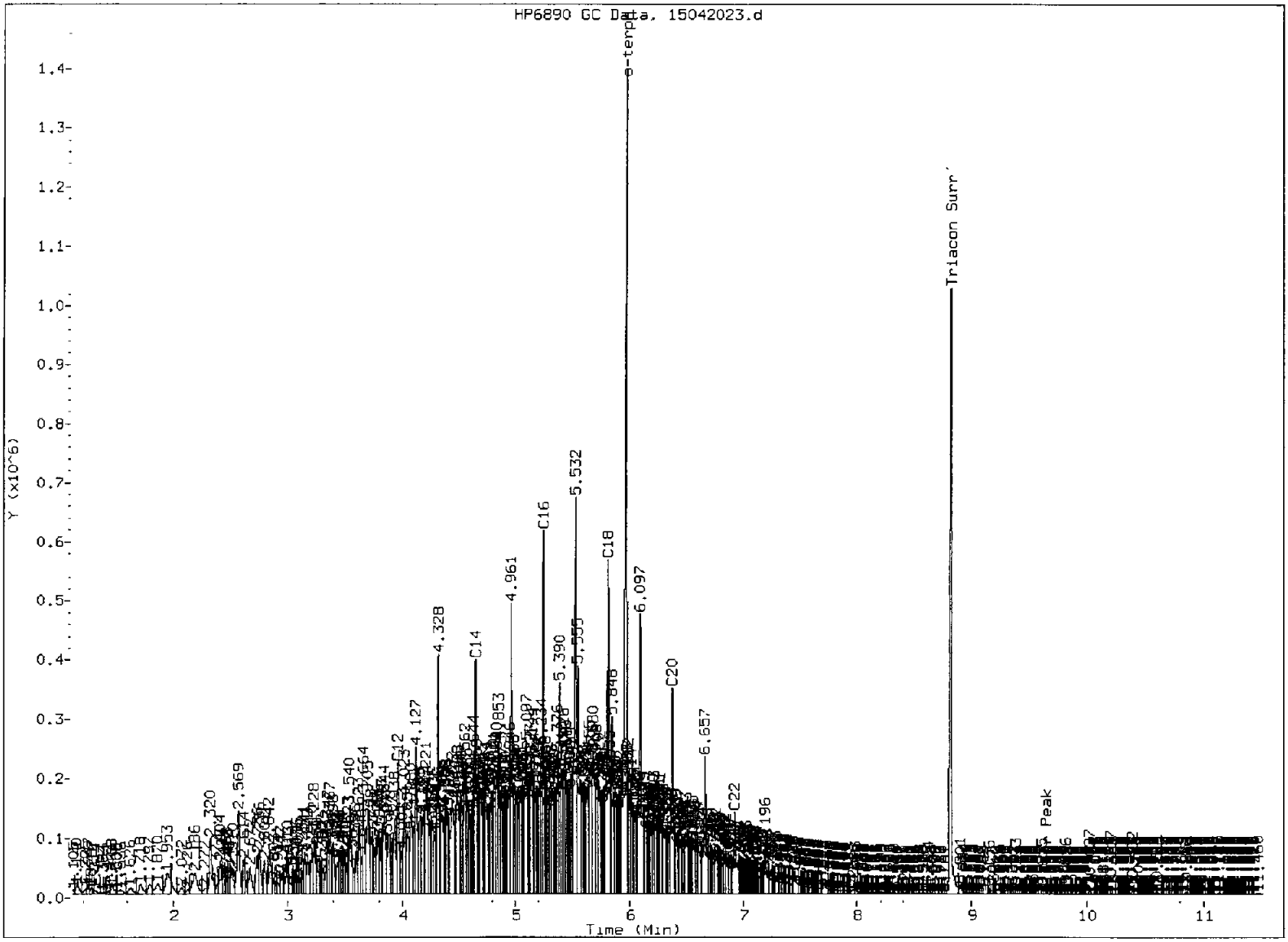
Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 AEJ3LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: ML Date: 4/24/15

Data File: /chem2/fid9.i/20150420.b/15042023.d

Date : 20-APR-2015 19:28

Client ID: AEJ3LCSW1

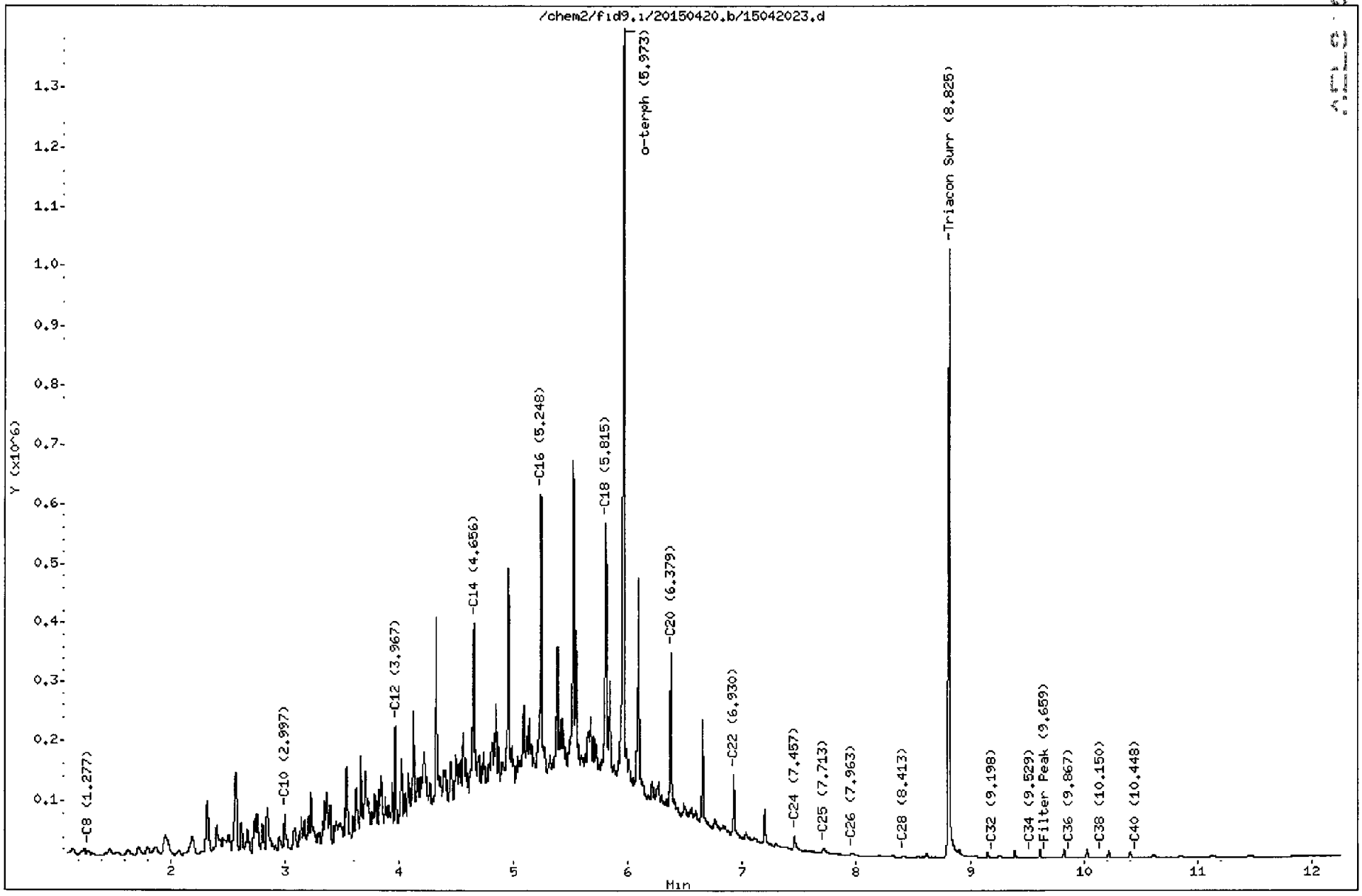
Sample Info: AEJ3LCSW1

Instrument: fid9.i

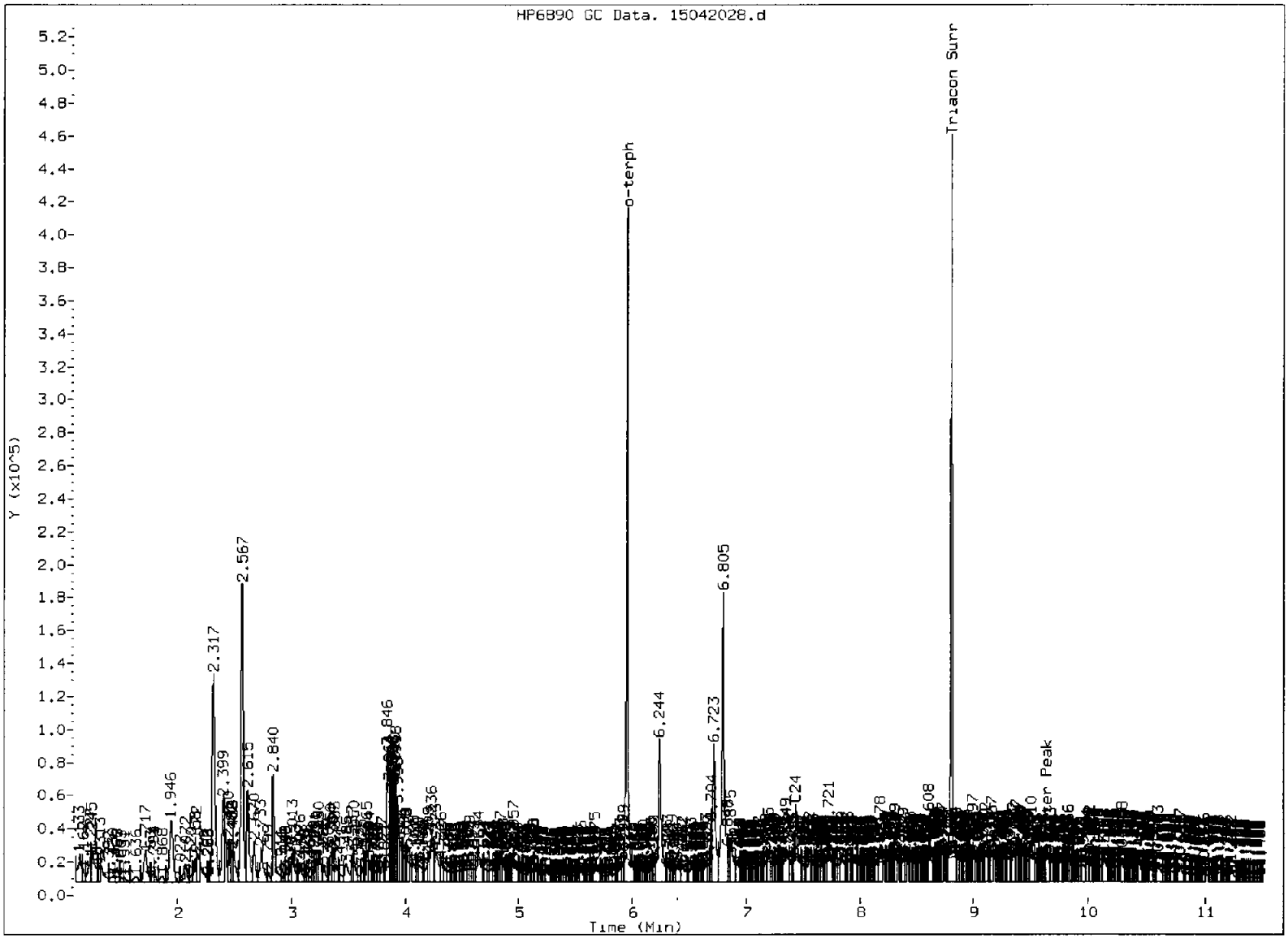
Operator: ML

Column phase: RTX-1

Column diameter: 0.25



FID:9A-2C/RTX-1 AEL8A FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

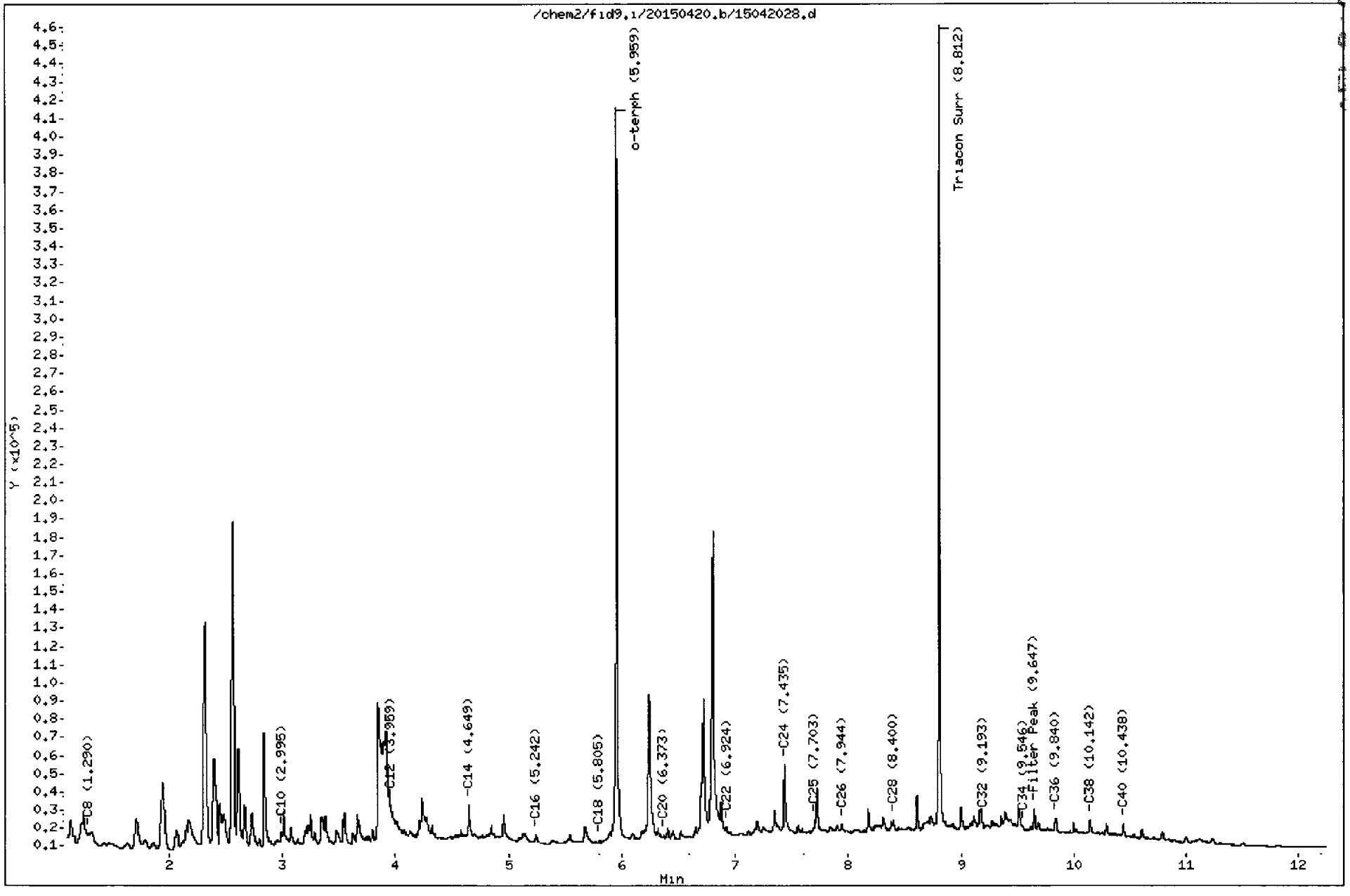
Analyst: MC Date: 4/24/15

Data File: /chem2/fid9.1/20150420.b/15042028.d
Date : 20-APR-2015 21:14
Client ID: SB16
Sample Info: AEL8A

Instrument: fid9.1

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method: SW3546

QC Report No: AEL8-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Soil
Data Release Authorized: MW
Reported: 04/27/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042015	Method Blank	04/20/15	04/23/15	1.00	Diesel Range	5.0	< 5.0 U
15-7518	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		94.6%
AEL8D	SB16-26	04/20/15	04/23/15	1.00	Diesel Range	7.3	< 7.3 U
15-7518	HC ID: ---		FID4A	1.0	Motor Oil Range	15	< 15 U
					o-Terphenyl		83.3%
AEL8E	SB17-26	04/20/15	04/23/15	1.00	Diesel Range	6.5	< 6.5 U
15-7519	HC ID: ---		FID4A	1.0	Motor Oil Range	13	< 13 U
					o-Terphenyl		88.9%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-042015	94.6%	0
LCS-042015	104%	0
SB16-26	83.3%	0
SB17-26	88.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-7518 to 15-7519

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-042015**
 LAB CONTROL

Lab Sample ID: LCS-042015
LIMS ID: 15-7518
Matrix: Soil
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Date Extracted: 04/20/15
Date Analyzed: 04/23/15 21:28
Instrument/Analyst: FID/JLW

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	120	150	80.0%

TPHD Surrogate Recovery

o-Terphenyl	104%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 04/16/15

ARI Job: AEL8
Project: Precision Engineering 1396024

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-7518-042015MB1	Method Blank	10.0 g	1.00 mL	-	04/20/15
15-7518-042015LCS1	Lab Control	10.0 g	1.00 mL	-	04/20/15
15-7518-AEL8D	SB16-26	6.87 g	1.00 mL	D	04/20/15
15-7519-AEL8E	SB17-26	7.72 g	1.00 mL	D	04/20/15

Basis: D=Dry Weight W=As Received

Data File: /chem3/fid4a.i/20150423.b/15042321.d

Date : 23-APR-2015 21:05

Client ID: AEL8MBS1

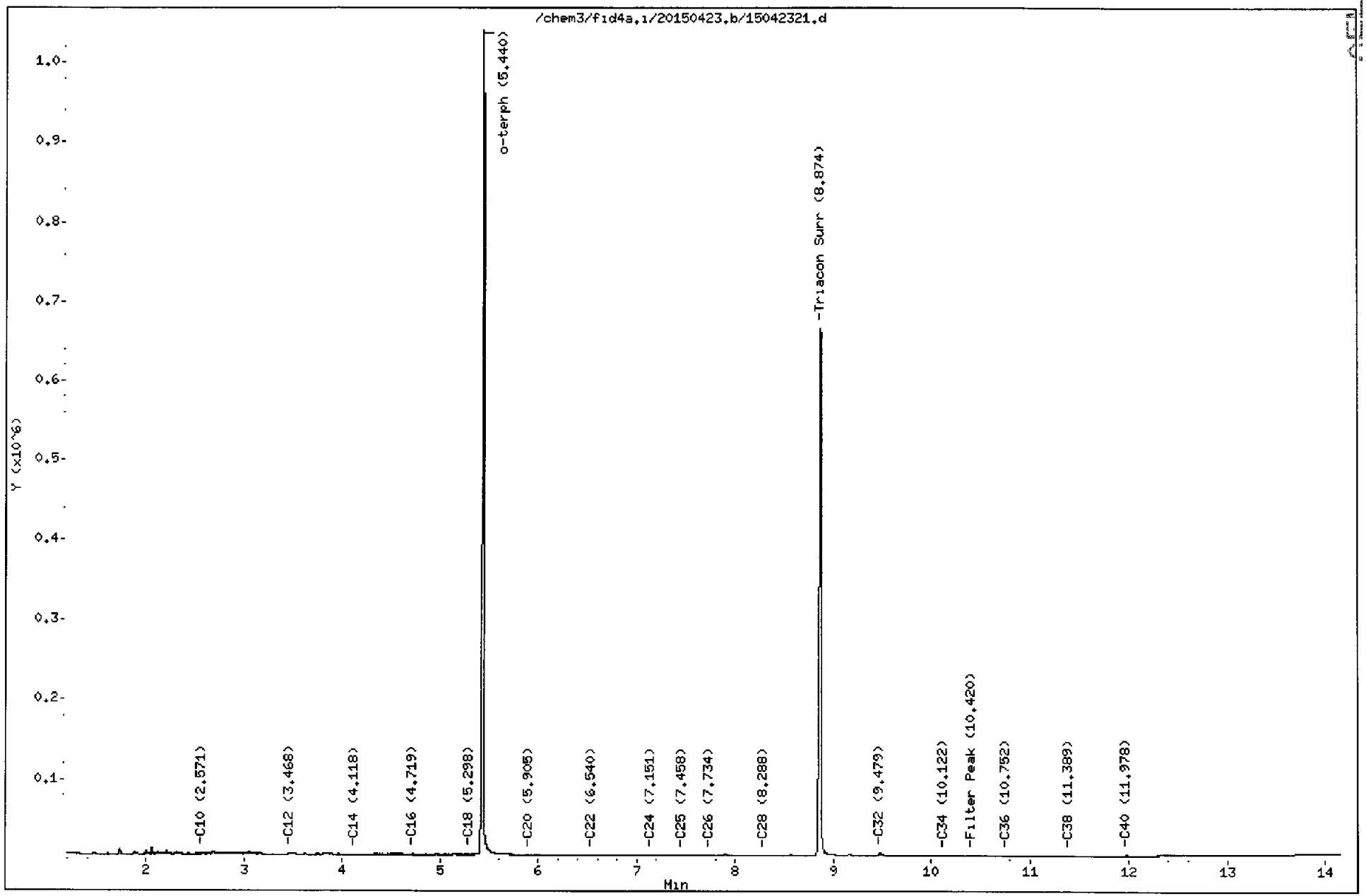
Sample Info: AEL8MBS1

Column phase: RTX-1

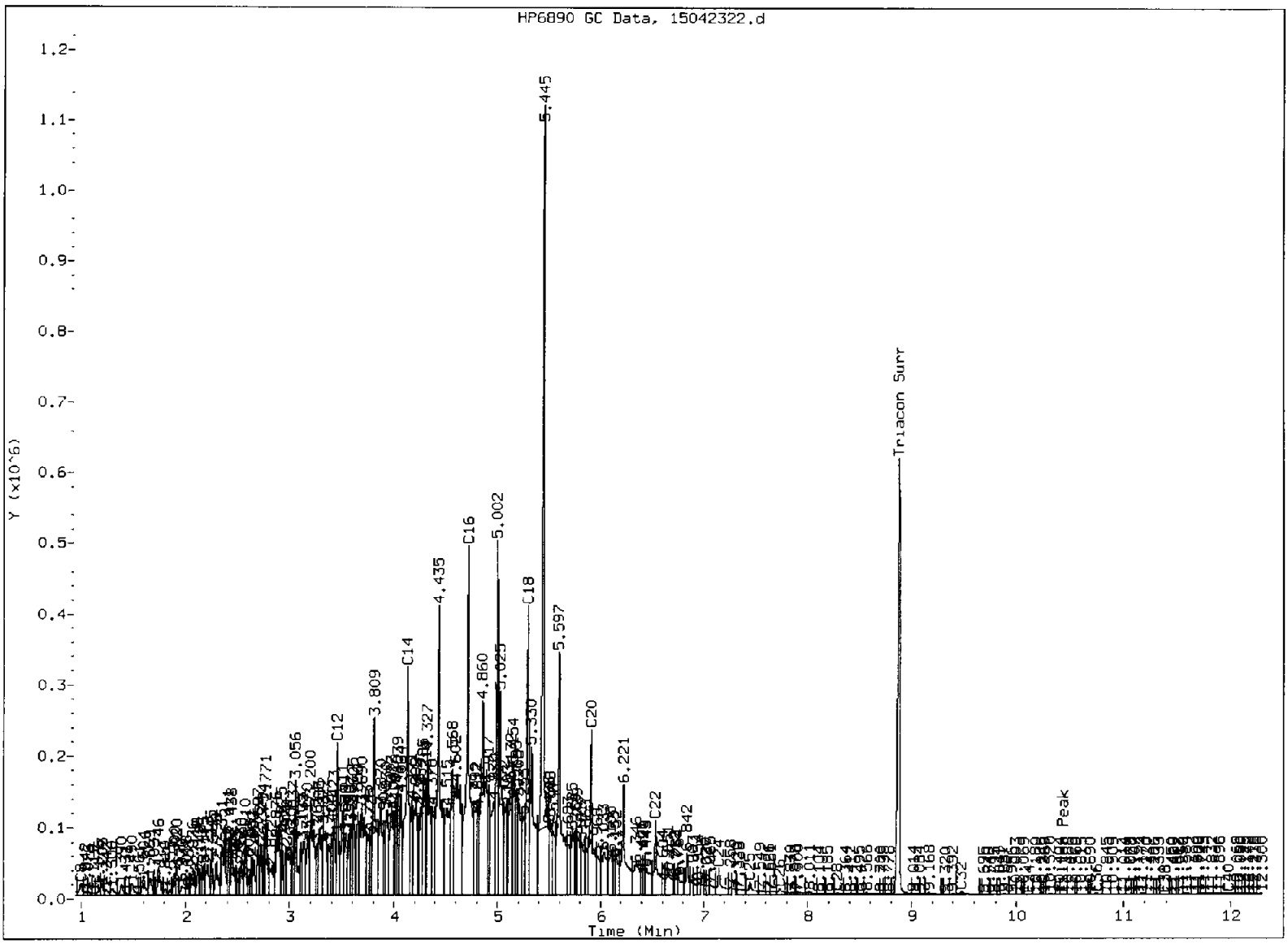
Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



FID:4A-2C/RTX-1 AEL8LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: 4/24/15

Data File: /chem3/fid4a.i/20150423.b/15042322.d

Date : 23-APR-2015 21:28

Client ID: AEL8LCSS1

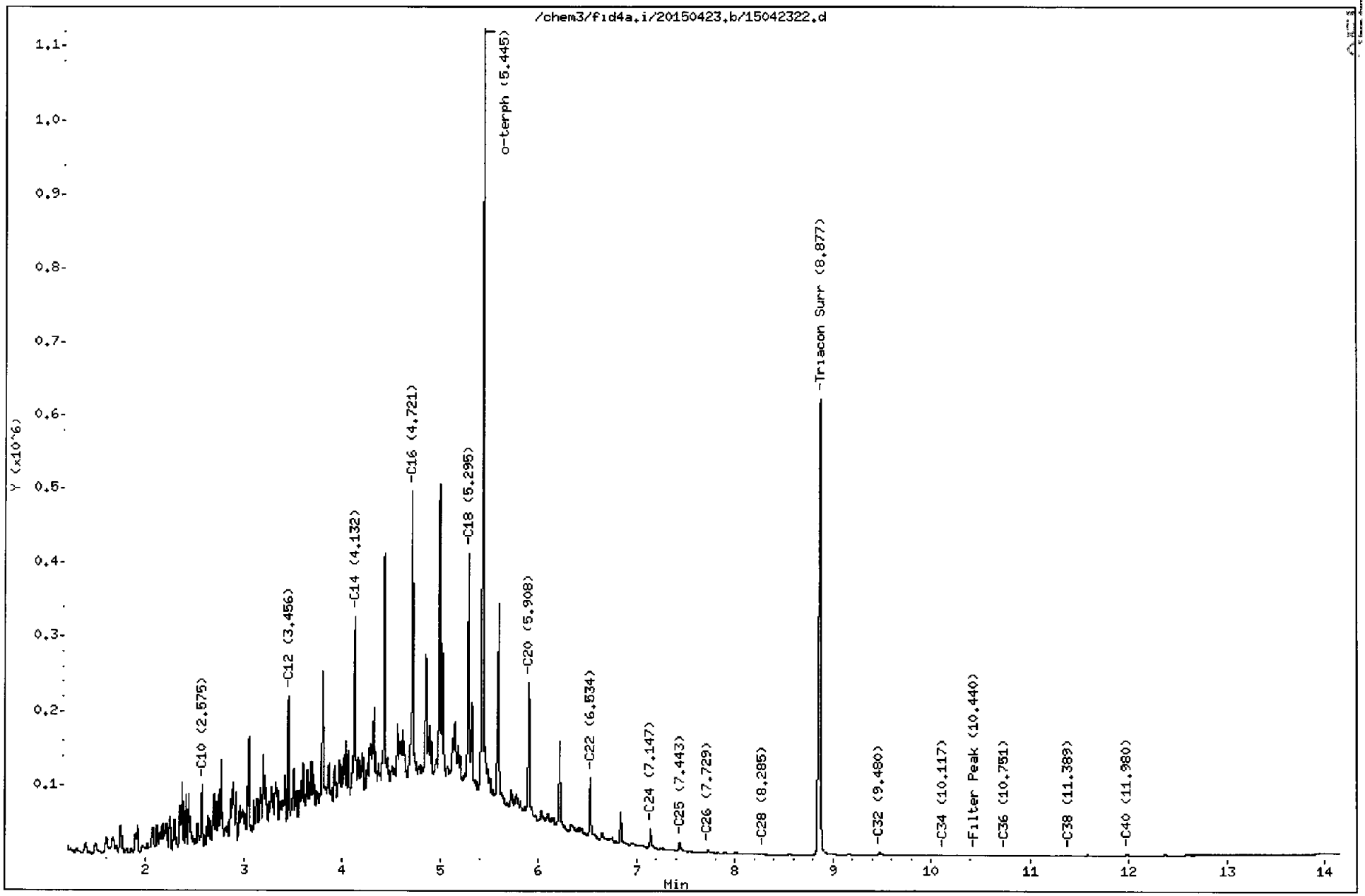
Sample Info: AEL8LCSS1

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.1/20150423.b/15042323.d

Date : 23-APR-2015 21:52

Client ID: SB16-26

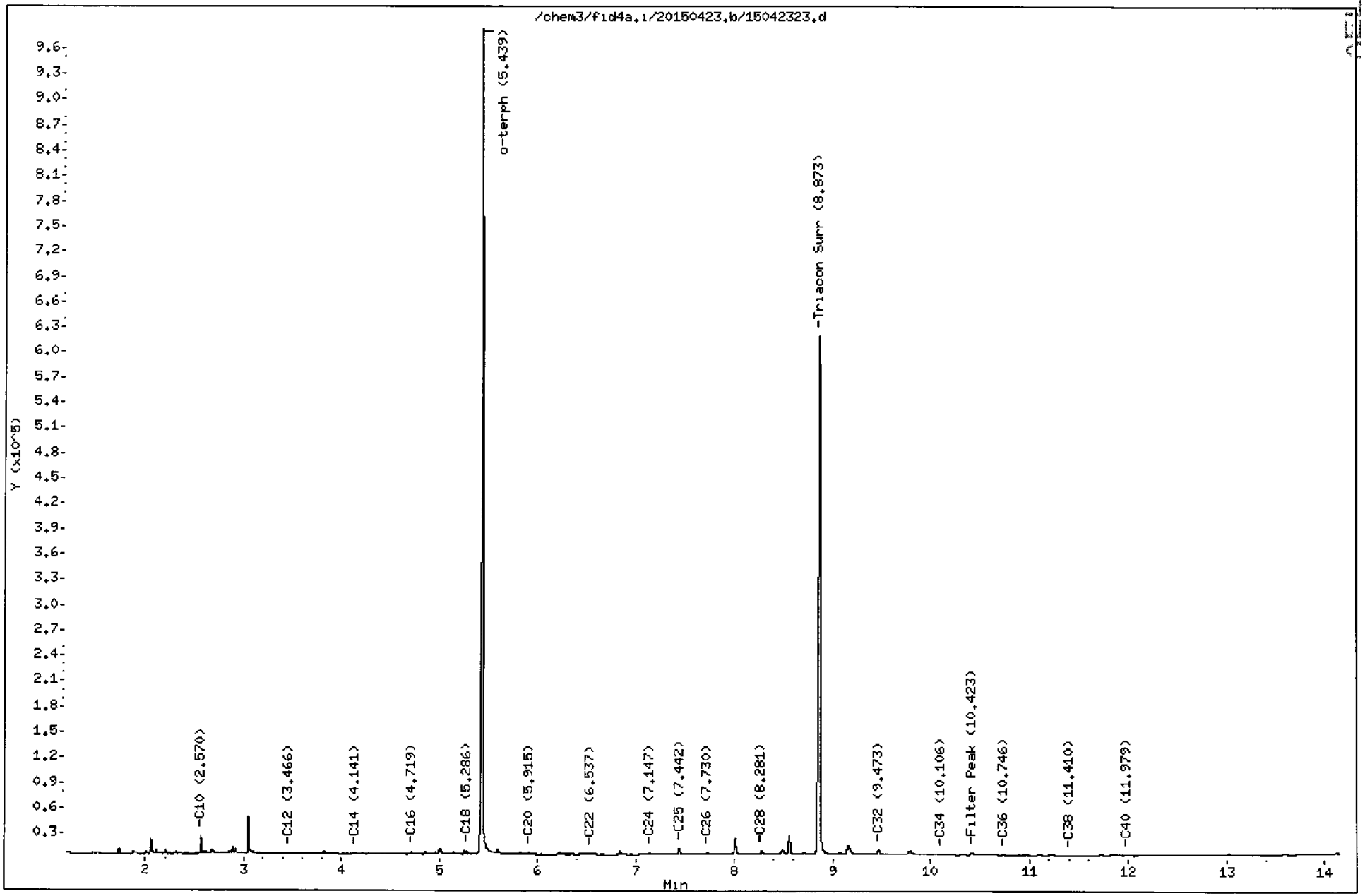
Sample Info: AEL8D

Column phase: RTX-1

Instrument: fid4a.1

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.1/20150423.b/15042324.d

Date : 23-APR-2015 22:15

Client ID: SB17-26

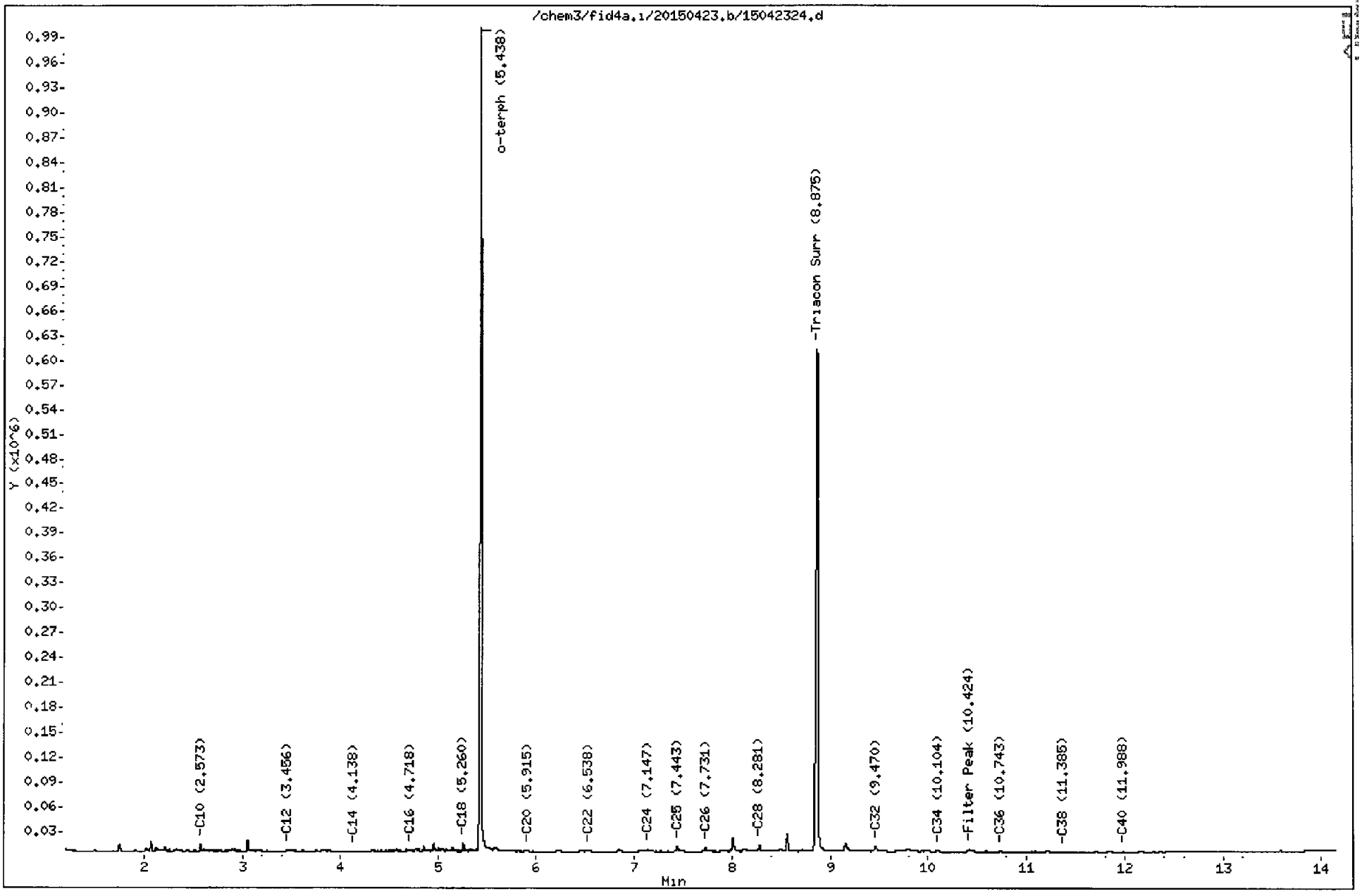
Sample Info: AEL8E

Column phase: RTX-1

Instrument: fid4a.1

Operator: ML

Column diameter: 0.25



SAMPLE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Client ID: SB16
ARI ID: 15-7515 AEL8A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	04/16/15 041615#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	04/16/15	mg/L	< 0.010 U	

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	SM3500Cr-B	04/16/15	mg/L	0.620	0.620	100.0%

REPLICATE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEL8A Client ID: SB16						
Hexavalent Chromium	SM3500Cr-B	04/16/15	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AEL8A Client ID: SB16							
Hexavalent Chromium	SM3500Cr-B	04/16/15	mg/L	< 0.010	0.055	0.062	88.7%

SAMPLE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Client ID: SB16-26
ARI ID: 15-7518 AEL8D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.525	< 0.525 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	74.98

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Client ID: SB17-26
ARI ID: 15-7519 AEL8E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.499	< 0.499 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	78.97

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Client ID: SB16-40
ARI ID: 15-7520 AEL8F

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.476	< 0.476 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	83.63

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

AEL8:88808

SAMPLE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Client ID: SB16-46
ARI ID: 15-7521 AEL8G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.441	< 0.441 U
Total Solids	04/17/15 041715#1	SM2540G	Percent	0.01	90.03

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	04/21/15	mg/kg	< 0.398 U	PREP
Total Solids	04/17/15	Percent	< 0.01 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEL8-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	04/21/15	mg/kg	20.5	20.0	102.5%
Insoluble Hexavalent Chromiu	04/21/15	mg/kg	631	669	94.3%

ERA #300614

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB16
SAMPLE

Lab Sample ID: AEL8A
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/20/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.01	**0.15**	
200.8	04/20/15	200.8	04/24/15	**7440-47-3**	**Chromium**	0.02	**2.42**	
200.8	04/20/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.002	**0.247**	
200.8	04/20/15	200.8	04/24/15	7782-49-2	Selenium	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: SB16
SAMPLE

Lab Sample ID: AEL8B
LIMS ID: 15-7516
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/20/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.0002	**0.0087**	
200.8	04/20/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.0005	**0.0013**	
200.8	04/20/15	200.8	04/27/15	**7439-92-1**	**Lead**	0.0001	**0.0012**	
200.8	04/20/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

AEL8:000076

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB16-26
SAMPLE

Lab Sample ID: AEL8D
LIMS ID: 15-7518
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Percent Total Solids: 74.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.3	**5.6**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.6	**18.6**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.6**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB17-26
SAMPLE

Lab Sample ID: AEL8E
LIMS ID: 15-7519
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Percent Total Solids: 75.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.3	**4.8**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.6	**18.4**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.1**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

AEL 000835

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB16-40
SAMPLE

Lab Sample ID: AEL8F
LIMS ID: 15-7520
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Percent Total Solids: 88.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**3.1**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.5	**26.1**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.3**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB16-46
SAMPLE

Lab Sample ID: AEL8G
LIMS ID: 15-7521
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/16/15
Date Received: 04/16/15

Percent Total Solids: 90.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**2.9**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.5	**24.5**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.4**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

AEL8:00077

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AEL8MB
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/20/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/20/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/20/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/20/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

AEL8-000070

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEL8LCS
LIMS ID: 15-7515
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0246	0.0250	98.4%	
Chromium	200.8	0.0252	0.0250	101%	
Lead	200.8	0.0245	0.0250	98.0%	
Selenium	200.8	0.0720	0.0800	90.0%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AEL8MB
LIMS ID: 15-7516
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/20/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/20/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/20/15	200.8	04/27/15	**7439-92-1**	**Lead**	0.0001	**0.0001**	
200.8	04/20/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: LAB CONTROL

Lab Sample ID: AEL8LCS
LIMS ID: 15-7516
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0236	0.0250	94.4%	
Chromium	200.8	0.0257	0.0250	103%	
Lead	200.8	0.0244	0.0250	97.6%	
Selenium	200.8	0.0668	0.0800	83.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AEL8MB
LIMS ID: 15-7521
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	7440-38-2	Arsenic	0.2	0.2	U
3050B	04/22/15	200.8	04/23/15	7440-47-3	Chromium	0.5	0.5	U
3050B	04/22/15	200.8	04/23/15	7439-92-1	Lead	0.1	0.1	U
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

AEL8:000003

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEL8LCS
LIMS ID: 15-7521
Matrix: Soil
Data Release Authorized:
Reported: 04/28/15

QC Report No: AEL8-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.3	25.0	101%	
Chromium	200.8	26.4	25.0	106%	
Lead	200.8	25.1	25.0	100%	
Selenium	200.8	76.0	80.0	95.0%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

AEL8:0060

Analytical Resources, Incorporated
Analytical Chemists and Consultants

1 May 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: AEQ1

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received three soil samples, one water sample and one trip blank on April 20, 2015. The samples were analyzed for VOCs, NWTPH-G, NWTPH-Dx, hexavalent chromium and total and dissolved metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds

The RPDs for chloroethane were high following the analyses of the LCSs/LCSDs associated with the VOC analyses of these samples. Since the individual percent recoveries for chloroethane were within established QC limits, no corrective actions were taken.

The percent recoveries for the surrogates, bromobenzene and trifluorotoluene, were low following the initial NWTPHG analysis of sample SB19. It was observed that this sample contained a significant amount of sediment. Since the percent recoveries for both surrogates were within established QC limits for the corresponding MB, LCS and LCSD, it was concluded that the sample matrix was the cause of the low surrogate recoveries. No corrective actions were taken.

A matrix spike (MS) was prepared and analyzed for total metals in conjunction with sample SB19. The percent recovery for chromium was high following the analysis of the MS. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was conclude that the sample matrix was the cause of the high MS recovery. No corrective actions were taken.

A matrix duplicate (MD) was prepared and analyzed for total metals in conjunction with sample SB19. The RPDs for arsenic, chromium and lead were high following the analysis of the MD. Since the percent recoveries for all elements within acceptable QC limits for the corresponding LCS, it was conclude that a lack of sample homogeneity was the cause of the high RPDs No corrective actions were taken.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Faragalli, KJC
Precision Engineering
AEQ1
Soil/Water
1 May 2015

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: AEQ1

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: ~~PBQ~~ AE21	Turn-around Requested: Standard	Page	of
ARI Client Company: Kennedy/Jenks	Phone 253 835 6400	Date	Ice Present? Y
Client Contact. Jessica Farnquist		No of Coolers 1	Cooler Temps 3.5
Client Project Name: Precision Engineering			
Client Project # 1596024*00	Samplers: JRS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals	Hex. Chrom	Nitrate-N	Nitrite-N	VOCs	VOA/BTEX Nitrate-N TS	Total Metals	Dissolved Metals	Notes/Comments
SB19-35	4/20	1115	Soil	10	X	X	X	X	X	X			
SB19-45		1150			X	X		X	X	X			
SB19-50		1200			X	X		X	X	X			
SB19		1230	H_2O			X	X	X	X		X	X	Diss. Metals Sample not field filtered

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name Joe Sambataro	Printed Name Taylor Stapleton	Printed Name	Printed Name
	Company Kennedy/Jenks	Company ARI	Company	Company
	Date & Time 4/20 1340	Date & Time 4-20 15 1540	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program This program meets standards for the industry The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

COC 10/05/04

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client KSC Project Name: Precision Engineering

COC No(s) _____ (NA) Delivered by Fed-Ex UPS Courier Hand Delivered Other _____

Assigned ARI Job No AEQ1 Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry)
Time 1340

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877953

Cooler Accepted by TS Date 4.20.15 Time 13 40

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	*(NO)
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	4/14/15	

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment: _____ Split by _____

Samples Logged by AV Date 4/20/15 Time 1615

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

*Bottle counts not listed on COC. TripBlank fully submerged in ice water

By AV Date. 4/20/15

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• •	• • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

AEQ1 0404

PRESERVATION VERIFICATION 04/20/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AEQ1**

Inquiry Number: NONE
Analysis Requested: 04/20/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: AV
Sample Set Used: Yes-490
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 04/20/15

Project #: 1396024.00
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-7827 **AEQ1A**	SB19						TOT Pass															
15-7828 **AEQ1B**	SB19						DIS Fail									N						

Checked By AV Date 4/20/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AEQ1
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024.00
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB19	AEQ1A	15-7827	Water	04/20/15 12:30	04/20/15 13:40
2.	SB19	AEQ1B	15-7828	Water	04/20/15 12:30	04/20/15 13:40
3.	TRIP BLANK	AEQ1C	15-7829	Water	04/20/15	04/20/15 13:40
4.	SB19-35	AEQ1D	15-7830	Soil	04/20/15 11:15	04/20/15 13:40
5.	SB19-45	AEQ1E	15-7831	Soil	04/20/15 11:50	04/20/15 13:40
6.	SB19-50	AEQ1F	15-7832	Soil	04/20/15 12:00	04/20/15 13:40

AEQ1 00065

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

ARI 00007

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

AEG1 · 00068

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

AE01 · 0003

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
 METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 09:25

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroetnene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
METHOD BLANK

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: MB-042215A
LIMS ID: 15-7827
Matrix: Water
Date Analyzed: 04/22/15 09:25

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.0%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AEQ1A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 13:23

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	**Acetone**	**5.0**	**7.3**	
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19**
Page 2 of 2 **SAMPLE**

Lab Sample ID: AEQ1A
LIMS ID: 15-7827
Matrix: Water
Date Analyzed: 04/22/15 13:23

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	99.7%
Bromofluorobenzene	95.1%
d4-1,2-Dichlorobenzene	106%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK SAMPLE**

Lab Sample ID: AEQ1C
LIMS ID: 15-7829
Matrix: Water
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 11:41

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 1.0	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: TRIP BLANK SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1C
LIMS ID: 15-7829
Matrix: Water
Date Analyzed: 04/22/15 11:41

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	99.6%
Bromofluorobenzene	91.4%
d4-1,2-Dichlorobenzene	107%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/MMH
LCSD: NT2/MMH
Date Analyzed LCS: 04/22/15 08:44
LCSD: 04/22/15 09:04

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	11.5	10.0	115%	11.6	10.0	116%	0.9%
Bromomethane	11.2	10.0	112%	11.1	10.0	111%	0.9%
Vinyl Chloride	11.3	10.0	113%	11.3	10.0	113%	0.0%
Chloroethane	10.6 Q	10.0	106%	7.18 Q	10.0	71.8%	38.5%
Methylene Chloride	10.6	10.0	106%	10.3	10.0	103%	2.9%
Acetone	56.1	50.0	112%	54.2	50.0	108%	3.4%
Carbon Disulfide	9.18	10.0	91.8%	9.19	10.0	91.9%	0.1%
1,1-Dichloroethene	10.3	10.0	103%	10.3	10.0	103%	0.0%
1,1-Dichloroethane	10.4	10.0	104%	10.3	10.0	103%	1.0%
trans-1,2-Dichloroethene	9.92	10.0	99.2%	9.89	10.0	98.9%	0.3%
cis-1,2-Dichloroethene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Chloroform	10.6	10.0	106%	10.5	10.0	105%	0.9%
1,2-Dichloroethane	10.2	10.0	102%	10.2	10.0	102%	0.0%
2-Butanone	57.8	50.0	116%	56.4	50.0	113%	2.5%
1,1,1-Trichloroethane	10.9	10.0	109%	10.9	10.0	109%	0.0%
Carbon Tetrachloride	11.3	10.0	113%	11.1	10.0	111%	1.8%
Vinyl Acetate	10.4	10.0	104%	10.3	10.0	103%	1.0%
Bromodichloromethane	10.8	10.0	108%	10.9	10.0	109%	0.9%
1,2-Dichloropropane	10.5	10.0	105%	10.2	10.0	102%	2.9%
cis-1,3-Dichloropropene	11.7	10.0	117%	11.5	10.0	115%	1.7%
Trichloroethene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Dibromochloromethane	11.1	10.0	111%	10.9	10.0	109%	1.8%
1,1,2-Trichloroethane	10.6	10.0	106%	10.8	10.0	108%	1.9%
Benzene	11.2	10.0	112%	11.1	10.0	111%	0.9%
trans-1,3-Dichloropropene	11.4	10.0	114%	11.3	10.0	113%	0.9%
2-Chloroethylvinylether	10.3	10.0	103%	10.2	10.0	102%	1.0%
Bromoform	10.9	10.0	109%	10.8	10.0	108%	0.9%
4-Methyl-2-Pentanone (MIBK)	57.4	50.0	115%	56.6	50.0	113%	1.4%
2-Hexanone	59.2	50.0	118%	57.8	50.0	116%	2.4%
Tetrachloroethene	10.7	10.0	107%	10.5	10.0	105%	1.9%
1,1,2,2-Tetrachloroethane	10.2	10.0	102%	10.0	10.0	100%	2.0%
Toluene	10.7	10.0	107%	10.8	10.0	108%	0.9%
Chlorobenzene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Ethylbenzene	10.9	10.0	109%	10.8	10.0	108%	0.9%
Styrene	12.3 Q	10.0	123%	12.1 Q	10.0	121%	1.6%
Trichlorofluoromethane	10.6 Q	10.0	106%	12.3 Q	10.0	123%	14.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.4	10.0	104%	10.3	10.0	103%	1.0%
m,p-Xylene	23.4	20.0	117%	23.3	20.0	116%	0.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215A
LIMS ID: 15-7827
Matrix: Water

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.7	10.0	117%	11.3	10.0	113%	3.5%
1,2-Dichlorobenzene	9.91	10.0	99.1%	9.87	10.0	98.7%	0.4%
1,3-Dichlorobenzene	9.97	10.0	99.7%	9.91	10.0	99.1%	0.6%
1,4-Dichlorobenzene	9.59	10.0	95.9%	9.56	10.0	95.6%	0.3%
Acrolein	51.2	50.0	102%	50.4	50.0	101%	1.6%
Iodomethane	9.49	10.0	94.9%	10.4	10.0	104%	9.2%
Bromoethane	10.6	10.0	106%	10.6	10.0	106%	0.0%
Acrylonitrile	10.3	10.0	103%	10.3	10.0	103%	0.0%
1,1-Dichloropropene	10.9	10.0	109%	10.8	10.0	108%	0.9%
Dibromomethane	10.1	10.0	101%	9.97	10.0	99.7%	1.3%
1,1,1,2-Tetrachloroethane	11.2	10.0	112%	11.1	10.0	111%	0.9%
1,2-Dibromo-3-chloropropane	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2,3-Trichloropropane	10.1	10.0	101%	10.1	10.0	101%	0.0%
trans-1,4-Dichloro-2-butene	10.6	10.0	106%	10.5	10.0	105%	0.9%
1,3,5-Trimethylbenzene	11.9 Q	10.0	119%	11.8 Q	10.0	118%	0.8%
1,2,4-Trimethylbenzene	12.1 Q	10.0	121%	12.0 Q	10.0	120%	0.8%
Hexachlorobutadiene	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,2-Dibromoethane	10.8	10.0	108%	10.7	10.0	107%	0.9%
Bromochloromethane	10.5	10.0	105%	10.4	10.0	104%	1.0%
2,2-Dichloropropane	11.1	10.0	111%	11.2	10.0	112%	0.9%
1,3-Dichloropropane	10.8	10.0	108%	10.6	10.0	106%	1.9%
Isopropylbenzene	12.1 Q	10.0	121%	12.0 Q	10.0	120%	0.8%
n-Propylbenzene	11.5	10.0	115%	11.4	10.0	114%	0.9%
Bromobenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
2-Chlorotoluene	10.9	10.0	109%	10.8	10.0	108%	0.9%
4-Chlorotoluene	10.9	10.0	109%	10.8	10.0	108%	0.9%
tert-Butylbenzene	11.9 Q	10.0	119%	11.7 Q	10.0	117%	1.7%
sec-Butylbenzene	12.0 Q	10.0	120%	12.0 Q	10.0	120%	0.0%
4-Isopropyltoluene	12.6 Q	10.0	126%	12.4 Q	10.0	124%	1.6%
n-Butylbenzene	11.9	10.0	119%	11.8	10.0	118%	0.8%
1,2,4-Trichlorobenzene	10.8	10.0	108%	10.8	10.0	108%	0.0%
Naphthalene	11.0	10.0	110%	11.1	10.0	111%	0.9%
1,2,3-Trichlorobenzene	10.7	10.0	107%	10.7	10.0	107%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.3%	95.7%
d8-Toluene	99.6%	100%
Bromofluorobenzene	100%	100%
d4-1,2-Dichlorobenzene	97.7%	99.3%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-042215A	Method Blank	10	108%	99.0%	94.5%	104%	0
LCS-042215A	Lab Control	10	95.3%	99.6%	100%	97.7%	0
LCSD-042215A	Lab Control Dup	10	95.7%	100%	100%	99.3%	0
AEQ1A	SB19	10	115%	99.7%	95.1%	106%	0
AEQ1C	TRIP BLANK	10	114%	99.6%	91.4%	107%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-7827 to 15-7829

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.70174	0.78628	0.78628	0.010	12.04732	20.00000	Averaged	
2 Chloromethane	0.91191	1.07759	1.07759	0.100	18.16781	20.00000	Averaged	
3 Vinyl Chloride	0.79954	0.92522	0.92522	0.100	15.71932	20.00000	Averaged	
4 Bromomethane	0.48738	0.56465	0.56465	0.100	15.85276	20.00000	Averaged	
5 Chloroethane	0.51592	0.36871	0.36871	0.010	-28.53279	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.80394	1.01985	1.01985	0.010	26.85721	20.00000	Averaged	<-
7 1,1-Dichloroethene	1.01399	1.04648	1.04648	0.100	3.20434	20.00000	Averaged	
8 Carbon Disulfide	1.68878	1.56139	1.56139	0.010	-7.54319	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.50237	0.52765	0.52765	0.010	5.03183	20.00000	Averaged	
10 Iodomethane	9.17849	10.00000	0.28438	0.010	-8.21508	20.00000	Quadratic	
11 Bromoethane	0.31747	0.34806	0.34806	0.100	9.63665	20.00000	Averaged	
12 Acrolein	0.13291	0.13708	0.13708	0.000	3.13342	20.00000	Averaged	
13 Methylene Chloride	0.59411	0.64672	0.64672	0.010	8.85487	20.00000	Averaged	
14 Acetone	0.18369	0.20434	0.20434	0.001	11.23947	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.62051	0.61557	0.61557	0.010	-0.79639	20.00000	Averaged	
16 n-hexane	0.32090	0.30058	0.30058	0.100	-6.33398	20.00000	Averaged	
17 Methyl tert butyl ether	1.06478	0.92733	0.92733	0.100	-12.90891	20.00000	Averaged	
18 1,1-Dichloroethane	1.25616	1.32167	1.32167	0.200	5.21519	20.00000	Averaged	
19 Acrylonitrile	0.26779	0.27519	0.27519	0.001	2.76591	20.00000	Averaged	
20 Vinyl Acetate	1.16346	1.19453	1.19453	0.010	2.67041	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.70023	0.75367	0.75367	0.010	7.63217	20.00000	Averaged	
23 2,2-Dichloropropane	0.93935	1.04390	1.04390	0.010	11.12958	20.00000	Averaged	
24 Bromochloromethane	0.32454	0.34756	0.34756	0.050	7.09185	20.00000	Averaged	
25 Chloroform	1.16250	1.25692	1.25692	0.200	8.12219	20.00000	Averaged	
26 Carbon Tetrachloride	0.48922	0.56000	0.56000	0.100	14.46836	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.50795	0.49377	0.49377	0.100	-2.79106	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.01797	1.13608	1.13608	0.100	11.60319	20.00000	Averaged	
30 1,1-Dichloropropene	0.55542	0.61833	0.61833	0.010	11.32522	20.00000	Averaged	
29 2-Butanone	0.32868	0.38008	0.38008	0.001	15.63712	20.00000	Averaged	
31 Benzene	1.55316	1.77546	1.77546	0.500	14.31254	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.73190	0.70666	0.70666	0.010	-3.44920	20.00000	Averaged	
34 1,2-Dichloroethane	0.66253	0.69068	0.69068	0.100	4.24897	20.00000	Averaged	
36 Trichloroethene	0.38554	0.41443	0.41443	0.100	7.49358	20.00000	Averaged	
38 Dibromomethane	0.25719	0.26645	0.26645	0.010	3.60032	20.00000	Averaged	
39 1,2-Dichloropropane	0.41999	0.44163	0.44163	0.100	5.15338	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 Bromodichloromethane	0.50767	0.57038	0.57038	0.100	12.35257	20.00000	Averaged	
173 2-Pentanone	0.05929	0.07036	0.07036	0.100	18.67469	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.57247	0.67501	0.67501	0.200	17.91096	20.00000	Averaged	
$ 43 d8-Toluene	1.24984	1.25521	1.25521	0.010	0.42981	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.16156	0.16810	0.16810	0.000	4.04838	20.00000	Averaged	
44 Toluene	1.03159	1.13139	1.13139	0.400	9.67463	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.17175	0 19891	0.19891	0.000	15.81186	20.00000	Averaged	
46 Tetrachloroethene	0.40524	0.43821	0.43821	0.200	8.13464	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.56174	0.65002	0.65002	0.010	15.71605	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.36386	0.39239	0.39239	0.100	7.84316	20.00000	Averaged	
49 Chlorodibromomethane	0.34792	0.39649	0.39649	0.100	13.95968	20.00000	Averaged	
50 1,3-Dichloropropane	0.65936	0 72719	0.72719	0.100	10.28810	20.00000	Averaged	
51 1,2-Dibromoethane	0.33748	0 36504	0.36504	0.010	8.16628	20.00000	Averaged	
52 2-Hexanone	0.29587	0.35433	0.35433	0.010	19.75844	20.00000	Averaged	
54 Chlorobenzene	1.06527	1.17527	1.17527	0.500	10 32587	20.00000	Averaged	
55 Ethyl Benzene	0.58463	0.65705	0.65705	0.100	12.38703	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.34552	0.39795	0.39795	0.010	15.17314	20.00000	Averaged	
57 m,p-xylene	0.66952	0.79822	0.79822	0.300	19.22344	20.00000	Averaged	
58 o-Xylene	0.63649	0.75087	0.75087	0.300	17.97018	20.00000	Averaged	
59 Styrene	1.01298	1.27032	1.27032	0.300	25.40470	20 00000	Averaged	<-
60 Bromoform	0.40858	0.46449	0.46449	0.010	13.68404	20.00000	Averaged	
61 Isopropyl Benzene	2.80578	3.46328	3.46328	0 010	23.43375	20.00000	Averaged	<-
$ 62 4-Bromofluorobenzene	0.53942	0.53470	0.53470	0.200	-0.87468	20.00000	Averaged	
63 Bromobenzene	0.80465	0.83864	0.83864	0.010	4.22365	20.00000	Averaged	
64 N-Propyl Benzene	3.67490	4.29029	4.29029	0.010	16.74574	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.91419	0.94990	0.94990	0.100	3.90629	20.00000	Averaged	
66 2-Chloro Toluene	2.61903	2.90890	2.90890	0.010	11.06770	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.50603	3.04547	3.04547	0.010	21.52570	20.00000	Averaged	<-
68 1,2,3-Trichloropropane	0.29644	0.31644	0.31644	0.010	6.74824	20 00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.32858	0.35584	0.35584	0.001	8.29786	20.00000	Averaged	
70 4-Chloro Toluene	2.45845	2.72592	2.72592	0.010	10.87944	20.00000	Averaged	
71 T-Butyl Benzene	2 07040	2.52357	2.52357	0.010	21.88818	20.00000	Averaged	<-
72 1,2,4-Trimethylbenzene	2.46521	3.02992	3.02992	0.010	22.90688	20.00000	Averaged	<-
73 S-Butyl Benzene	3.07720	3.78447	3.78447	0.010	22.98413	20.00000	Averaged	<-
74 4-Isopropyl Toluene	2.50504	3.16714	3.16714	0.010	26.43069	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
75 1,3-Dichlorobenzene	1.55411	1.60490	1 60490	0.600	3.26808	20.00000	Averaged
77 1,4-Dichlorobenzene	1.60680	1.58037	1.58037	0.500	-1.64507	20 00000	Averaged
78 N-Butyl Benzene	2.53563	3.03937	3.03937	0.010	19.86622	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92329	0.90669	0.90669	0.010	-1.79814	20.00000	Averaged
80 1,2-Dichlorobenzene	1.47741	1.50645	1.50645	0.400	1.96562	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.16612	0.18204	0.18204	0.010	9.58447	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0 57498	0.58798	0.58798	0.010	2.25974	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.98696	1.07543	1.07543	0.010	8.96432	20.00000	Averaged
85 Naphthalene	11.22970	10.00000	2.84761	0.010	12.29697	20.00000	Linear
86 1,2,3-Trichlorobenzene	0.99315	1.10021	1.10021	0.010	10.78013	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 10:51

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
METHOD BLANK

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: MB-042215A
LIMS ID: 15-7830
Matrix: Soil
Date Analyzed: 04/22/15 10:51

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	121%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.8%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-35**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1D
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 18:30

Sample Amount: 3.23 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 21.9%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.1	< 3.1	U
67-64-1	**Acetone**	**7.7**	**34**	
75-15-0	Carbon Disulfide	1.5	< 1.5	U
75-35-4	1,1-Dichloroethene	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.7	< 7.7	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.7	< 7.7	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.7	< 7.7	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.7	< 7.7	U
591-78-6	2-Hexanone	7.7	< 7.7	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.1	< 3.1	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	77	< 77	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.1	< 3.1	U
107-13-1	Acrylonitrile	7.7	< 7.7	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.7	< 7.7	U
96-18-4	1,2,3-Trichloropropane	3.1	< 3.1	U
110-57-6	trans-1,4-Dichloro-2-butene	7.7	< 7.7	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-35**

SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1D
LIMS ID: 15-7830
Matrix: Soil
Date Analyzed: 04/22/15 18:30

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.7	< 7.7	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.7	< 7.7	U
91-20-3	Naphthalene	7.7	< 7.7	U
87-61-6	1,2,3-Trichlorobenzene	7.7	< 7.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	128%
d8-Toluene	102%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-45**
Page 1 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1E
LIMS ID: 15-7831
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 18:55

Sample Amount: 5.19 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 16.2%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**1.9**	**2.4**	
67-64-1	Acetone	4.8	< 4.8	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.8	< 4.8	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.8	< 4.8	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.8	< 4.8	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.8	< 4.8	U
591-78-6	2-Hexanone	4.8	< 4.8	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	48	< 48	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.8	< 4.8	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.8	< 4.8	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.8	< 4.8	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-45**
Page 2 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1E
LIMS ID: 15-7831
Matrix: Soil
Date Analyzed: 04/22/15 18:55

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.8	< 4.8	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.8	< 4.8	U
91-20-3	Naphthalene	4.8	< 4.8	U
87-61-6	1,2,3-Trichlorobenzene	4.8	< 4.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	134%
d8-Toluene	103%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	102%

AEQ1 · 00027

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-50**
Page 1 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEQ1F
LIMS ID: 15-7832
Matrix: Soil
Data Release Authorized: MW
Reported: 04/27/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/22/15 19:20

Sample Amount: 4.62 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 21.2%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	**Methylene Chloride**	**2.2**	**2.6**	
67-64-1	Acetone	5.4	< 5.4	U
75-15-0	Carbon Disulfide	1.1	< 1.1	U
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.4	< 5.4	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.4	< 5.4	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.4	< 5.4	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.4	< 5.4	U
591-78-6	2-Hexanone	5.4	< 5.4	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	54	< 54	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.4	< 5.4	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.4	< 5.4	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.4	< 5.4	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB19-50**
 SAMPLE

Lab Sample ID: AEQ1F
LIMS ID: 15-7832
Matrix: Soil
Date Analyzed: 04/22/15 19:20

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.4	< 5.4	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.4	< 5.4	U
91-20-3	Naphthalene	5.4	< 5.4	U
87-61-6	1,2,3-Trichlorobenzene	5.4	< 5.4	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	137%
d8-Toluene	104%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**

LAB CONTROL SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: LCS-042215A
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 04/22/15 10:02
LCSD: 04/22/15 10:27

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	48.5	50.0	97.0%	47.4	50.0	94.8%	2.3%
Bromomethane	45.0	50.0	90.0%	41.1	50.0	82.2%	9.1%
Vinyl Chloride	50.2	50.0	100%	49.8	50.0	99.6%	0.8%
Chloroethane	62.8	50.0	126%	46.1	50.0	92.2%	30.7%
Methylene Chloride	47.0	50.0	94.0%	51.0	50.0	102%	8.2%
Acetone	225	250	90.0%	211	250	84.4%	6.4%
Carbon Disulfide	50.9 Q	50.0	102%	58.2 Q	50.0	116%	13.4%
1,1-Dichloroethene	49.0 Q	50.0	98.0%	56.6 Q	50.0	113%	14.4%
1,1-Dichloroethane	50.1	50.0	100%	51.7	50.0	103%	3.1%
trans-1,2-Dichloroethene	46.5	50.0	93.0%	48.5	50.0	97.0%	4.2%
cis-1,2-Dichloroethene	47.6	50.0	95.2%	48.9	50.0	97.8%	2.7%
Chloroform	52.6	50.0	105%	52.3	50.0	105%	0.6%
1,2-Dichloroethane	52.6	50.0	105%	50.9	50.0	102%	3.3%
2-Butanone	244	250	97.6%	240	250	96.0%	1.7%
1,1,1-Trichloroethane	55.0	50.0	110%	54.6	50.0	109%	0.7%
Carbon Tetrachloride	54.7	50.0	109%	51.8	50.0	104%	5.4%
Vinyl Acetate	51.2	50.0	102%	52.7	50.0	105%	2.9%
Bromodichloromethane	50.2	50.0	100%	50.0	50.0	100%	0.4%
1,2-Dichloropropane	46.3	50.0	92.6%	47.5	50.0	95.0%	2.6%
cis-1,3-Dichloropropene	50.7	50.0	101%	50.1	50.0	100%	1.2%
Trichloroethene	50.5	50.0	101%	49.2	50.0	98.4%	2.6%
Dibromochloromethane	48.4	50.0	96.8%	47.2	50.0	94.4%	2.5%
1,1,2-Trichloroethane	45.4	50.0	90.8%	46.4	50.0	92.8%	2.2%
Benzene	48.9	50.0	97.8%	47.8	50.0	95.6%	2.3%
trans-1,3-Dichloropropene	50.3	50.0	101%	51.1	50.0	102%	1.6%
2-Chloroethylvinylether	43.5	50.0	87.0%	42.7	50.0	85.4%	1.9
Bromoform	51.3	50.0	103%	47.7	50.0	95.4%	7.3%
4-Methyl-2-Pentanone (MIBK)	237	250	94.8%	223	250	89.2%	6.1
2-Hexanone	253	250	101%	227	250	90.8%	10.8%
Tetrachloroethene	50.1	50.0	100%	46.0	50.0	92.0%	8.5%
1,1,2,2-Tetrachloroethane	47.7	50.0	95.4%	45.7	50.0	91.4%	4.3
Toluene	48.3	50.0	96.6%	47.7	50.0	95.4%	1.2
Chlorobenzene	49.0	50.0	98.0%	46.4	50.0	92.8%	5.5%
Ethylbenzene	50.9	50.0	102%	47.2	50.0	94.4%	7.5%
Styrene	50.1	50.0	100%	48.4	50.0	96.8%	3.5%
Trichlorofluoromethane	67.2	50.0	134%	54.8	50.0	110%	20.3%
1,1,2-Trichloro-1,2,2-trifluoroetha	52.0 Q	50.0	104%	58.6 Q	50.0	117%	11.9%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**

LAB CONTROL SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: LCS-042215A
LIMS ID: 15-7830
Matrix: Soil

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	101	100	101%	95.7	100	95.7%	5.4%
o-Xylene	49.9	50.0	99.8%	47.4	50.0	94.8%	5.1%
1,2-Dichlorobenzene	48.1	50.0	96.2%	46.4	50.0	92.8%	3.6%
1,3-Dichlorobenzene	52.4	50.0	105%	49.1	50.0	98.2%	6.5%
1,4-Dichlorobenzene	50.9	50.0	102%	47.4	50.0	94.8%	7.1%
Acrolein	211	250	84.4%	243	250	97.2	14.1%
Iodomethane	42.8	50.0	85.6%	52.1	50.0	104%	19.6%
Bromoethane	48.2	50.0	96.4%	57.1	50.0	114%	16.9%
Acrylonitrile	47.4	50.0	94.8%	50.2	50.0	100%	5.7%
1,1-Dichloropropene	52.9	50.0	106%	50.3	50.0	101%	5.0%
Dibromomethane	48.2	50.0	96.4%	48.6	50.0	97.2%	0.8%
1,1,1,2-Tetrachloroethane	51.0	50.0	102%	48.8	50.0	97.6%	4.4%
1,2-Dibromo-3-chloropropane	49.2	50.0	98.4%	47.2	50.0	94.4%	4.1%
1,2,3-Trichloropropane	50.9	50.0	102%	44.5	50.0	89.0%	13.4%
trans-1,4-Dichloro-2-butene	53.7	50.0	107%	47.7	50.0	95.4%	11.8%
1,3,5-Trimethylbenzene	53.0	50.0	106%	49.2	50.0	98.4%	7.4%
1,2,4-Trimethylbenzene	52.8	50.0	106%	49.3	50.0	98.6%	6.9%
Hexachlorobutadiene	51.7	50.0	103%	48.6	50.0	97.2%	6.2%
1,2-Dibromoethane	46.8	50.0	93.6%	46.3	50.0	92.6%	1.1%
Bromochloromethane	46.7	50.0	93.4%	49.0	50.0	98.0%	4.8%
2,2-Dichloropropane	57.2	50.0	114%	55.4	50.0	111%	3.2%
1,3-Dichloropropane	46.4	50.0	92.8%	45.1	50.0	90.2%	2.8%
Isopropylbenzene	53.3	50.0	107%	48.5	50.0	97.0%	9.4%
n-Propylbenzene	54.1	50.0	108%	49.7	50.0	99.4%	8.5%
Bromobenzene	48.6	50.0	97.2%	45.8	50.0	91.6%	5.9%
2-Chlorotoluene	52.4	50.0	105%	48.0	50.0	96.0%	8.8%
4-Chlorotoluene	52.1	50.0	104%	48.8	50.0	97.6%	6.5%
tert-Butylbenzene	52.1	50.0	104%	47.5	50.0	95.0%	9.2%
sec-Butylbenzene	53.9	50.0	108%	49.0	50.0	98.0%	9.5%
4-Isopropyltoluene	55.0	50.0	110%	50.8	50.0	102%	7.9%
n-Butylbenzene	56.6	50.0	113%	52.4	50.0	105%	7.7%
1,2,4-Trichlorobenzene	51.4	50.0	103%	51.2	50.0	102%	0.4%
Naphthalene	49.0	50.0	98.0%	46.7	50.0	93.4%	4.8%
1,2,3-Trichlorobenzene	49.6	50.0	99.2%	48.6	50.0	97.2%	2.0%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	115%	118%
d8-Toluene	103%	102%
Bromofluorobenzene	101%	101%
d4-1,2-Dichlorobenzene	101%	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-042215A	Method Blank	Low	121%	101%	100%	99.8%	0
LCS-042215A	Lab Control	Low	115%	103%	101%	101%	0
LCSD-042215A	Lab Control Dup	Low	118%	102%	101%	101%	0
AEQ1D	SB19-35	Low	128%	102%	102%	102%	0
AEQ1E	SB19-45	Low	134%	103%	104%	102%	0
AEQ1F	SB19-50	Low	137%	104%	102%	104%	0

SW8260C	LCS/MB LIMITS Low	LCS/MB LIMITS Med	QC LIMITS Low	QC LIMITS Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Lcg Number Range: 15-7830 to 15-7832

Data File: /chem1/nt5.i/20150422.b/15cc0422.d
Report Date: 22-Apr-2015 10:31

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.52690	0.63278	0.63278	0.100	20.09534	20.00000	Averaged	<- irlq
2 Chloromethane	0.82753	0.83811	0.83811	0.100	1.27862	20.00000	Averaged	
3 Vinyl Chloride	0.80107	0 82557	0.82557	0.100	3.05813	20.00000	Averaged	
4 Bromomethane	0.46367	0.42189	0.42189	0.100	-9.01133	20.00000	Averaged	
5 Chloroethane	0.49441	0.47049	0.47049	0.100	-4.83840	20.00000	Averaged	
6 Trichlorofluoromethane	0.97964	1.16063	1.16063	0.100	18.47489	20.00000	Averaged	
7 1,1-Dichloroethene	0.65179	0.81759	0.81759	0.100	25.43768	20.00000	Averaged	<-
8 Carbon Disulfide	1.99979	2.56308	2.56308	0.010	28.16702	20.00000	Averaged	<-
9 112Trichloro122Trifluoroeth	0.59931	0.74675	0.74675	0.010	24.60244	20.00000	Averaged	<-
10 Iodomethane	47.03639	50.00000	0.57068	0.010	-5.92722	20.00000	Linear	
11 Bromoethane	0.40095	0.45895	0.45895	0.010	14.46456	20.00000	Averaged	
12 Acrolein	0.12306	0.11454	0.11454	0.000	-6.92180	20.00000	Averaged	
13 Methylene Chloride	0.64347	0.67066	0.67066	0.010	4.22624	20.00000	Averaged	
14 Acetone	235	250	0.17764	0.001	-6.04696	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.71825	0.72863	0.72863	0.010	1.44605	20.00000	Averaged	
16 Methyl tert butyl ether	1.86711	1 93948	1.93948	0.100	3.87625	20.00000	Averaged	
17 1,1-Dichloroethane	1.23721	1.34163	1.34163	0 100	8.44018	20.00000	Averaged	
18 Acrylonitrile	0.20674	0.20175	0.20175	0.001	-2.41411	20.00000	Averaged	
19 Vinyl Acetate	1.17137	1.30758	1.30758	0.010	11.62803	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.72862	0.76558	0.76558	0.010	5.07250	20.00000	Averaged	
22 2,2-Dichloropropane	1.03490	1.22622	1.22622	0.010	18.48713	20.00000	Averaged	
23 Bromochloromethane	0.30145	0.31114	0.31114	0.050	3.21562	20.00000	Averaged	
24 Chloroform	1.11801	1.21340	1.21340	0.100	8.53259	20.00000	Averaged	
25 Carbon Tetrachloride	0.39338	0.42894	0.42894	0.100	9.04042	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.72245	0 84598	0.84598	0.100	17.09969	20.00000	Averaged	
26 1,1,1-Trichloroethane	1.05397	1.20597	1.20597	0.100	14 42100	20.00000	Averaged	
28 1,1-Dichloropropene	0.42433	0.43944	0.43944	0.010	3.56279	20.00000	Averaged	
29 2-Butanone	0.07081	0.06769	0.06769	0.001	-4.41147	20.00000	Averaged	
30 Benzene	1.18185	1.15527	1.15527	0.100	-2.24928	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.76941	0.90646	0.90646	0.010	17.81250	20.00000	Averaged	
33 1,2-Dichloroethane	0.35968	0.38445	0.38445	0.100	6.88507	20.00000	Averaged	
34 Trichloroethene	0.29303	0.29734	0.29734	0.100	1.46886	20.00000	Averaged	
37 Dibromomethane	0.15100	0.14806	0.14806	0.010	-1.94617	20.00000	Averaged	
38 1,2-Dichloropropane	0.29381	0.28032	0.28032	0.100	-4.59069	20.00000	Averaged	
39 Bromodichloromethane	0.36604	0.37509	0.37509	0.100	2.47297	20.00000	Averaged	
172 2-Pentanone	0.03971	0.03228	0.03228	0.500	-18.70959	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.15856	0.13709	0.13709	0.000	-13.54477	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.44353	0.45200	0.45200	0.100	1.91154	20.00000	Averaged
$ 42 d8-Toluene	1.25642	1.25440	1.25440	0.010	-0.16028	20.00000	Averaged
43 Toluene	0.72111	0.68846	0.68846	0.100	-4.52756	20.00000	Averaged
44 Tetrachloroethene	0.29028	0.26853	0.26853	0.100	-7.49214	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.10567	0.09611	0.09611	0.000	-9.05154	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.41067	0.43306	0.43306	0.010	5.45257	20.00000	Averaged
47 1,1,2-Trichloroethane	0.21888	0.20871	0.20871	0.100	-4.64383	20.00000	Averaged
48 Chlorodibromomethane	0.25669	0.25684	0 25684	0.100	0.05783	20.00000	Averaged
49 1,3-Dichloropropane	0.41905	0.39136	0.39136	0.100	-6.60703	20.00000	Averaged
50 1,2-Dibromoethane	0.21367	0.20362	0.20362	0.010	-4.70742	20 00000	Averaged
51 2-Hexanone	0.18542	0.17138	0.17138	0.010	-7.57345	20.00000	Averaged
53 Chlorobenzene	0.80685	0.77016	0 77016	0.300	-4.54795	20.00000	Averaged
54 Ethyl Benzene	1.46772	1.43915	1.43915	0.100	-1.94629	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.28582	0.28780	0.28780	0.010	0.69129	20.00000	Averaged
56 m,p-xylene	0.56366	0.54907	0.54907	0.100	-2.58876	20.00000	Averaged
57 o-Xylene	0.51550	0.50417	0.50417	0.100	-2.19738	20.00000	Averaged
58 Styrene	0.85309	0.84536	0.84536	0.100	-0.90643	20.00000	Averaged
59 Bromoform	0.31069	0.32001	0.32001	0.100	3.00050	20.00000	Averaged
60 Isopropyl Benzene	2.63699	2.64240	2.64240	0.010	0.20515	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.49717	0.49878	0.49878	0.200	0.32418	20.00000	Averaged
63 Bromobenzene	0.59256	0.57516	0 57516	0.010	-2.93633	20.00000	Averaged
64 N-Propyl Benzene	3.15081	3.22319	3.22319	0.010	2.29732	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.55806	0.52743	0.52743	0.300	-5.48762	20.00000	Averaged
66 2-Chloro Toluene	1.81234	1.79635	1.79635	0.010	-0.88252	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.21544	2.22153	2.22153	0.010	0.27493	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18436	0.17861	0.17861	0.010	-3.11569	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.19116	0.18736	0.18736	0.001	-1.98504	20.00000	Averaged
70 4-Chloro Toluene	1.88459	1.89970	1.89970	0.010	0.80172	20.00000	Averaged
71 T-Butyl Benzene	1.89706	1.88188	1.88188	0.010	-0.80014	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.15841	2.19582	2.19582	0.010	1.73356	20.00000	Averaged
73 S-Butyl Benzene	2.90640	2.94142	2.94142	0.010	1.20483	20.00000	Averaged
74 4-Isopropyl Toluene	2.31427	2.39909	2.39909	0.010	3.66514	20.00000	Averaged
75 1,3-Dichlorobenzene	1.17810	1.18031	1.18031	0.100	0.18827	20.00000	Averaged
77 1,4-Dichlorobenzene	1.22542	1.18625	1.18625	0.100	-3.19623	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0422.d
Analysis Type: SOIL
Lab Sample ID: CC0422
Method: /chem1/nt5.i/20150422.b/VO051314S.m

Injection Date: 22-APR-2015 09:21
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	2.24218	2.35857	2.35857	0.010	5.19081	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.95424	0.93732	0.93732	0.010	-1.77316	20.00000	Averaged
80 1,2-Dichlorobenzene	1.16556	1.11263	1.11263	0.100	-4.54130	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.11049	0.10459	0.10459	0.010	-5.34474	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.34683	0.33651	0.33651	0.010	-2.97505	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.68446	0.69410	0.69410	0.010	1.40962	20.00000	Averaged
84 Naphthalene	1.74008	1.60916	1.60916	0.010	-7.52385	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.63954	0.62068	0.62068	0.010	-2.94824	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Water

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024.00

Data Release Authorized: MW
Reported: 04/30/15

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-042215	Method Blank	04/22/15	1.0	Gasoline	< 0.25 U
15-7827		PID1		HC ID	---
				Trifluorotoluene	91.1%
				Bromobenzene	98.2%
AEQ1A	SB19	04/22/15	1.0	Gasoline	< 0.25 U
15-7827		PID1		HC ID	---
				Trifluorotoluene	72.0%
				Bromobenzene	74.6%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

AEQ1 00036

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024.00

Data Release Authorized: MW
Reported: 04/30/15

ARI ID	Client ID	Analysis Date	Basis	Range	Result
AEQ1D 15-7830	SB19-35	04/22/15 PID1	Dry	Gasoline HC ID Trifluorotoluene Bromobenzene	< 7.7 U --- 93.4% 104%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Page 1 of 1

Sample ID: LCS-042215
LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/30/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 04/22/15 12:37
LCSD: 04/22/15 13:08
Instrument/Analyst LCS: PID1/ML
LCSD: PID1/ML

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.07	1.00	107%	1.06	1.00	106%	0.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.7%	94.0%
Bromobenzene	101%	96.6%

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: AEQ1
Matrix: Water

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024.00

Client ID	TFT	BBZ	TOT OUT
MB-042215	91.1%	98.2%	0
LCS-042215	95.7%	101%	0
LCSD-042215	94.0%	96.6%	0
SB19	72.0%*	74.6%*	2

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 15-7827 to 15-7827

FORM II TPHG

AEQ1 00039

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: AEQ1
Matrix: Soil

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024.00

Client ID	BFB	TFT	BBZ	TOT OUT
SB19-35	NA	93.4%	104%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(65-128)
(BBZ) = Bromobenzene	(80-120)	(52-149)

Log Number Range: 15-7830 to 15-7830

FORM II TPHG

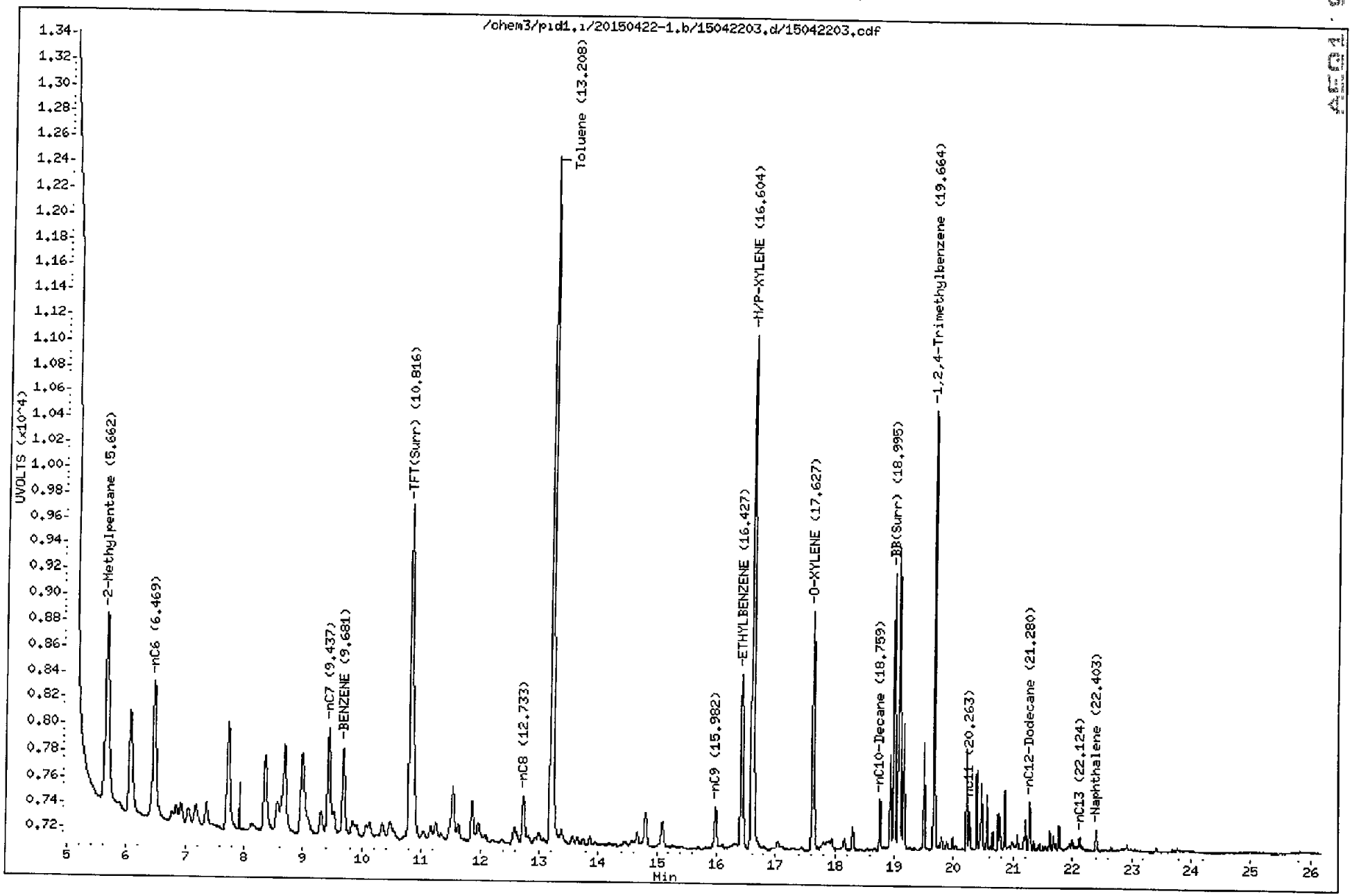
AEQ1 00019

Data File: /chem3/pid1.i/20150422-1.b/15042203.d
Date : 22-APR-2015 12:37
Client ID:
Sample Info: LCS0422

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML
Column diameter: 0.18



Data File: /chem3/pid1.1/20150422-1.b/15042204.d

Date : 22-APR-2015 13:08

Client ID:

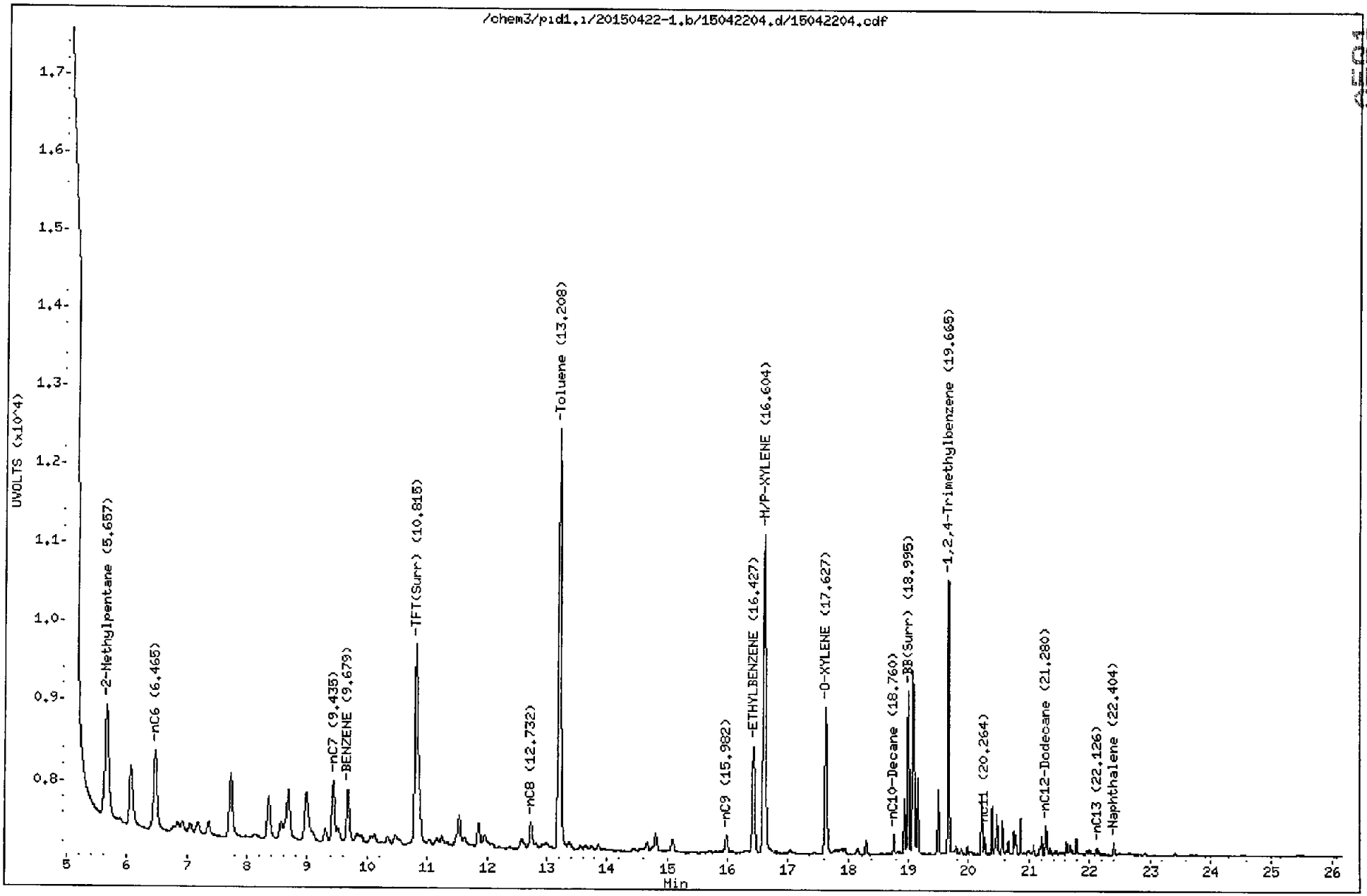
Sample Info: LCSD0422

Column phase: RTX 502-2 FID

Instrument: pid1.1

Operator: ML

Column diameter: 0.18

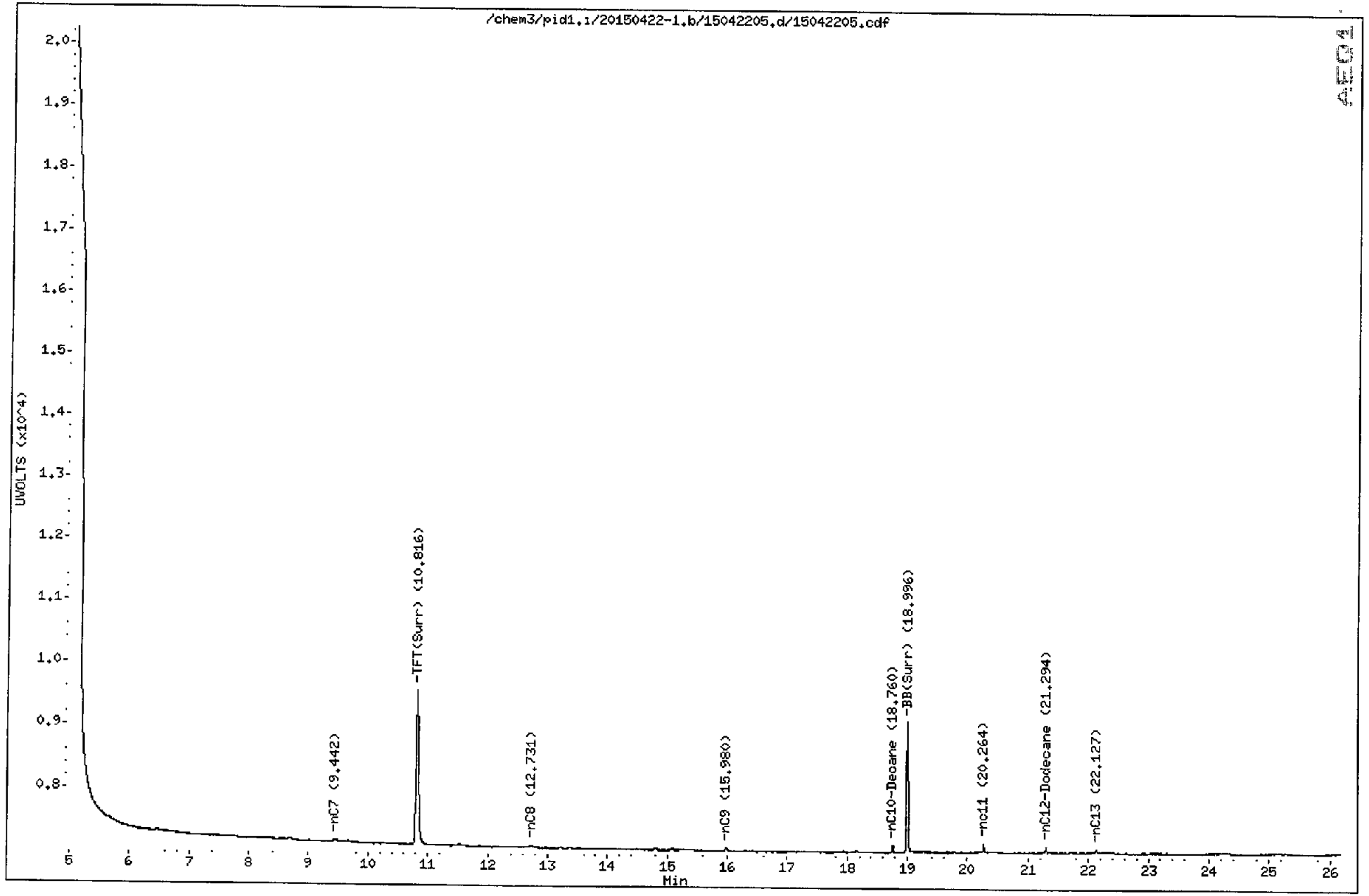


Data File: /chem3/pid1.i/20150422-1.b/15042205.d
Date : 22-APR-2015 13:40
Client ID:
Sample Info: MB0422

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML
Column diameter: 0.18



Data File: /chem3/pid1.i/20150422-1.b/15042209.d

Date : 22-APR-2015 17:50

Client ID:

Sample Info: AEQ1A

Column phase: RTX 502-2 FID

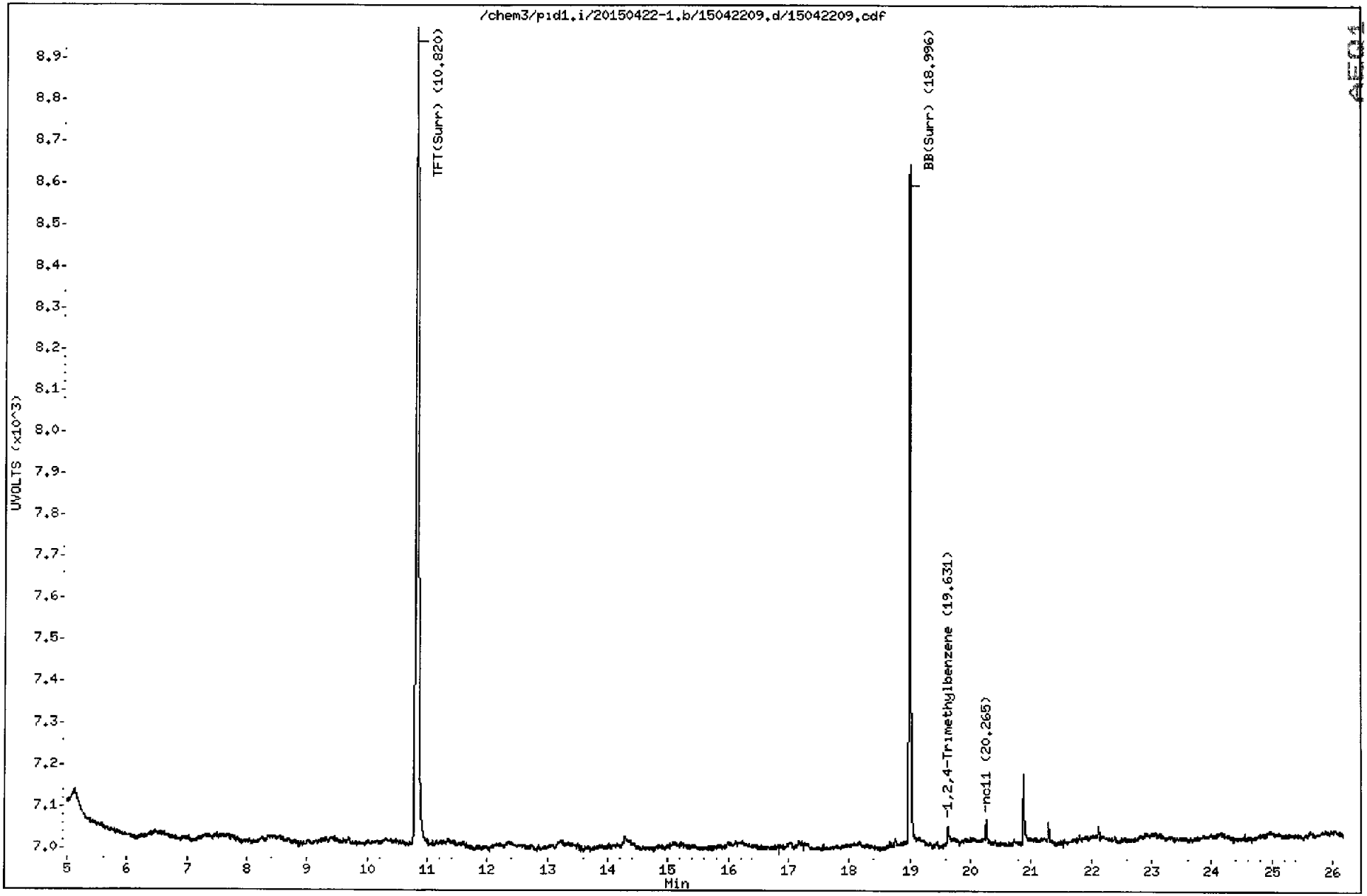
Instrument: pid1.i

Operator: ML

Column diameter: 0.18

AEQ1A 20150422-1.b 15042209.d

/chem3/pid1.i/20150422-1.b/15042209.d/15042209.cdf



Data File: /chem3/pid1.i/20150422-1.b/15042212.d

Date : 22-APR-2015 19:25

Client ID:

Sample Info: AEQ1D

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: ML

Column diameter: 0.18

AEQ1

/chem3/pid1.i/20150422-1.b/15042212.d/15042212.cdf

UVOLTS (x10^4)

-TFT(Surr) (10.818)

-BB(Surr) (18.996)

-nc11 (20.239)

-nC12-Dodecane (21.290)

-nC13 (22.123)

Min

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AEQ1-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024.00

Matrix: Water

Date Received: 04/20/15

Data Release Authorized:
Reported: 04/30/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042315	Method Blank	04/23/15	04/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-7827	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		100%
AEQ1A	SB19	04/23/15	04/27/15	1.00	**Diesel Range**	**0.10**	**0.22**
15-7827	HC ID: **DRO**		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		97.4%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-042315
LCS/LCSD

Lab Sample ID: LCS-042315
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/30/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 04/23/15

Date Analyzed LCS: 04/27/15 19:31
LCSD: 04/27/15 19:55
Instrument/Analyst LCS: FID4A/ML
LCSD: FID4A/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.75	3.00	91.7%	2.71	3.00	90.3%	1.5%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	105%	102%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

AEQ1 00047

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 04/20/15

ARI Job: AEQ1
Project: Precision Engineering
1396024.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-7827-042315MB1	Method Blank	500 mL	1.00 mL	04/23/15
15-7827-042315LCS1	Lab Control	500 mL	1.00 mL	04/23/15
15-7827-042315LCSD1	Lab Control Dup	500 mL	1.00 mL	04/23/15
15-7827-AEQ1A	SB19	500 mL	1.00 mL	04/23/15

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client ID	OTER	TOT OUT
MB-042315	100%	0
LCS-042315	105%	0
LCSD-042315	102%	0
SB19	97.4%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-7827 to 15-7827

Data File: /chem3/fid4a.i/20150427.b/15042719.d

Date : 27-APR-2015 19:08

Client ID: AEM1MBW1

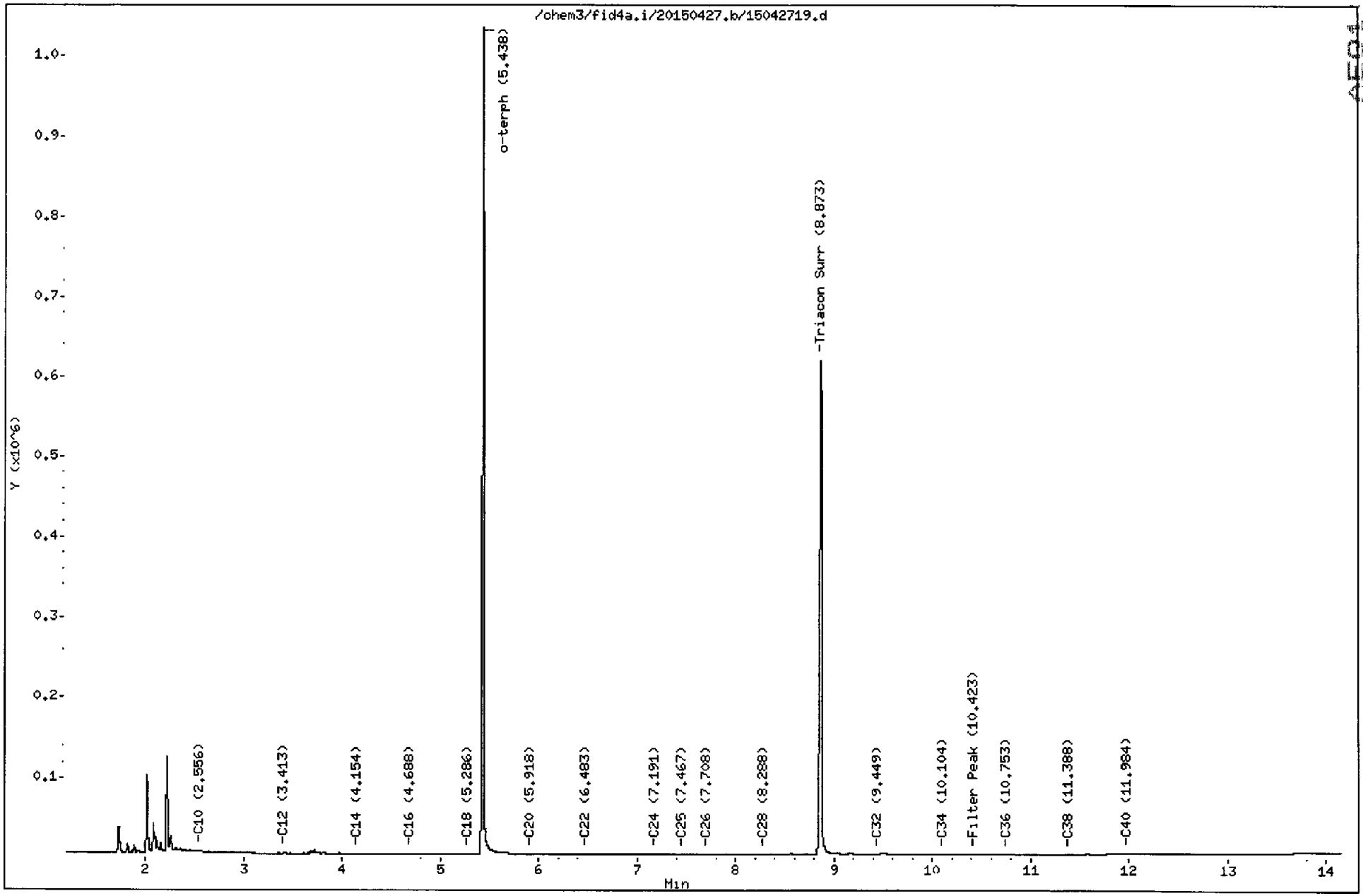
Sample Info: AEM1MBW1

Column phase: RTX-1

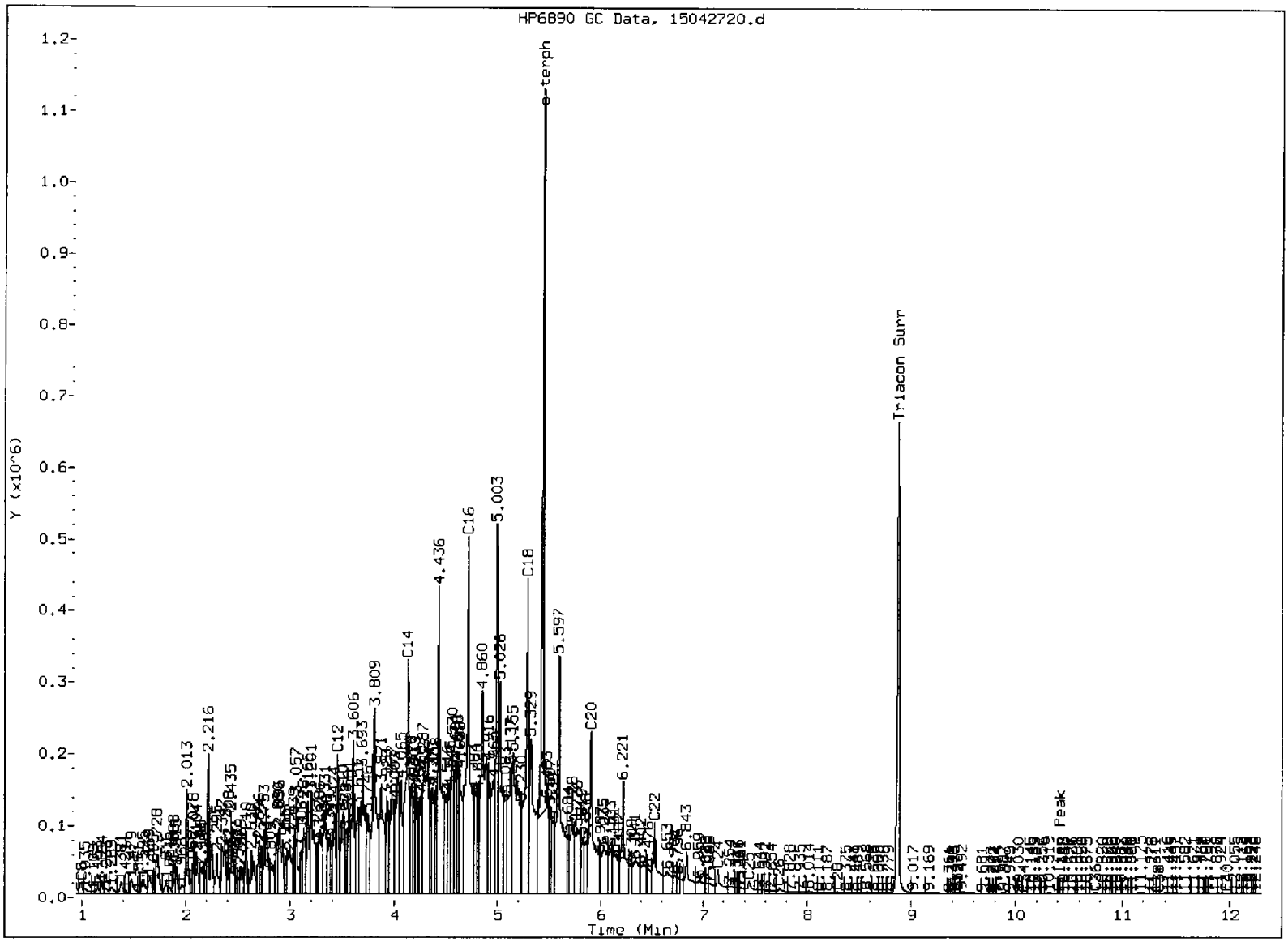
Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



FID:4A-2C/RTX-1 AEM1LCSW1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 4/24/15

Data File: /chem3/fid4a.i/20150427.b/15042720.d

Date : 27-APR-2015 19:31

Client ID: AEM1LCSW1

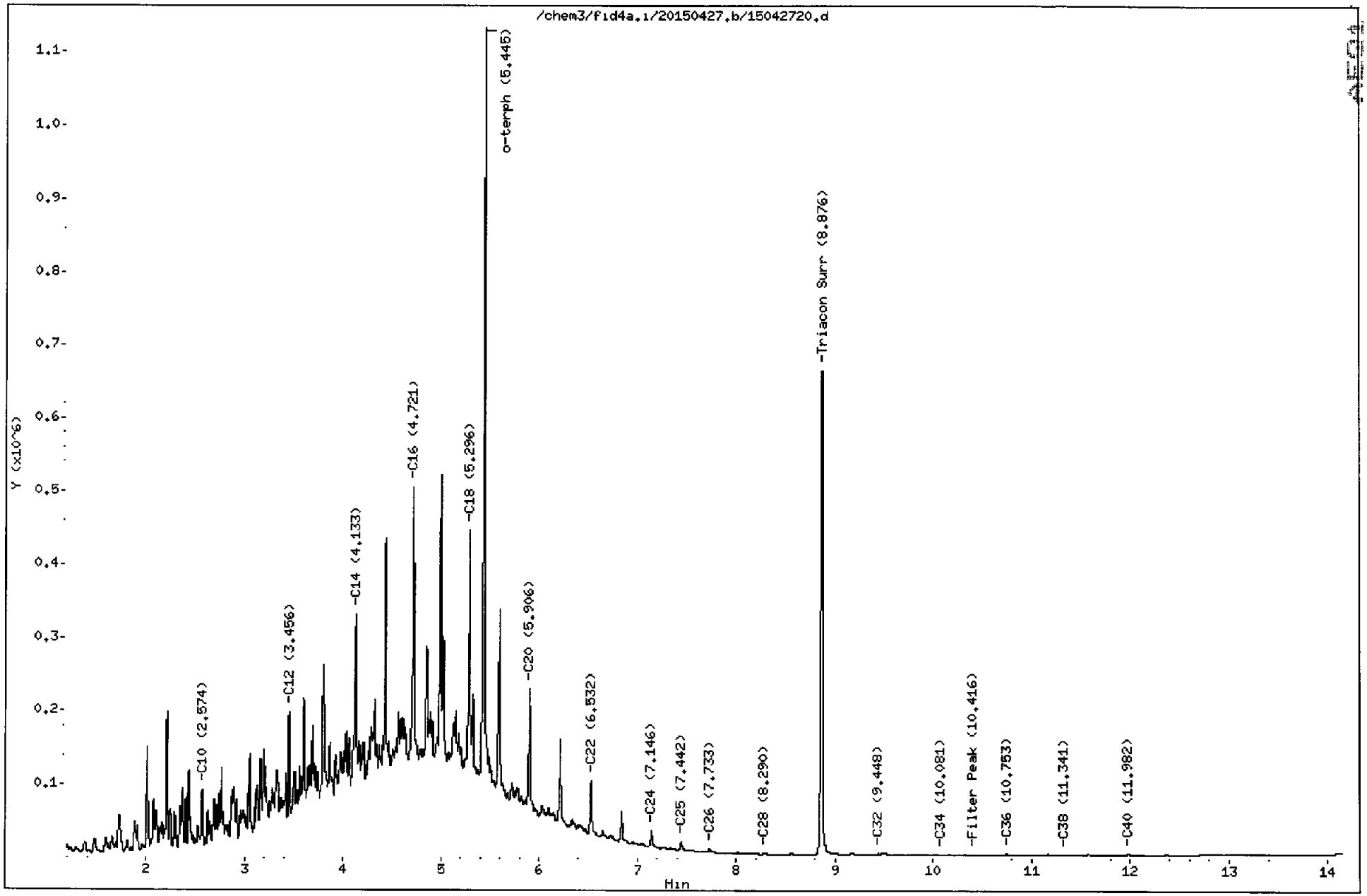
Sample Info: AEM1LCSW1

Column phase: RTX-1

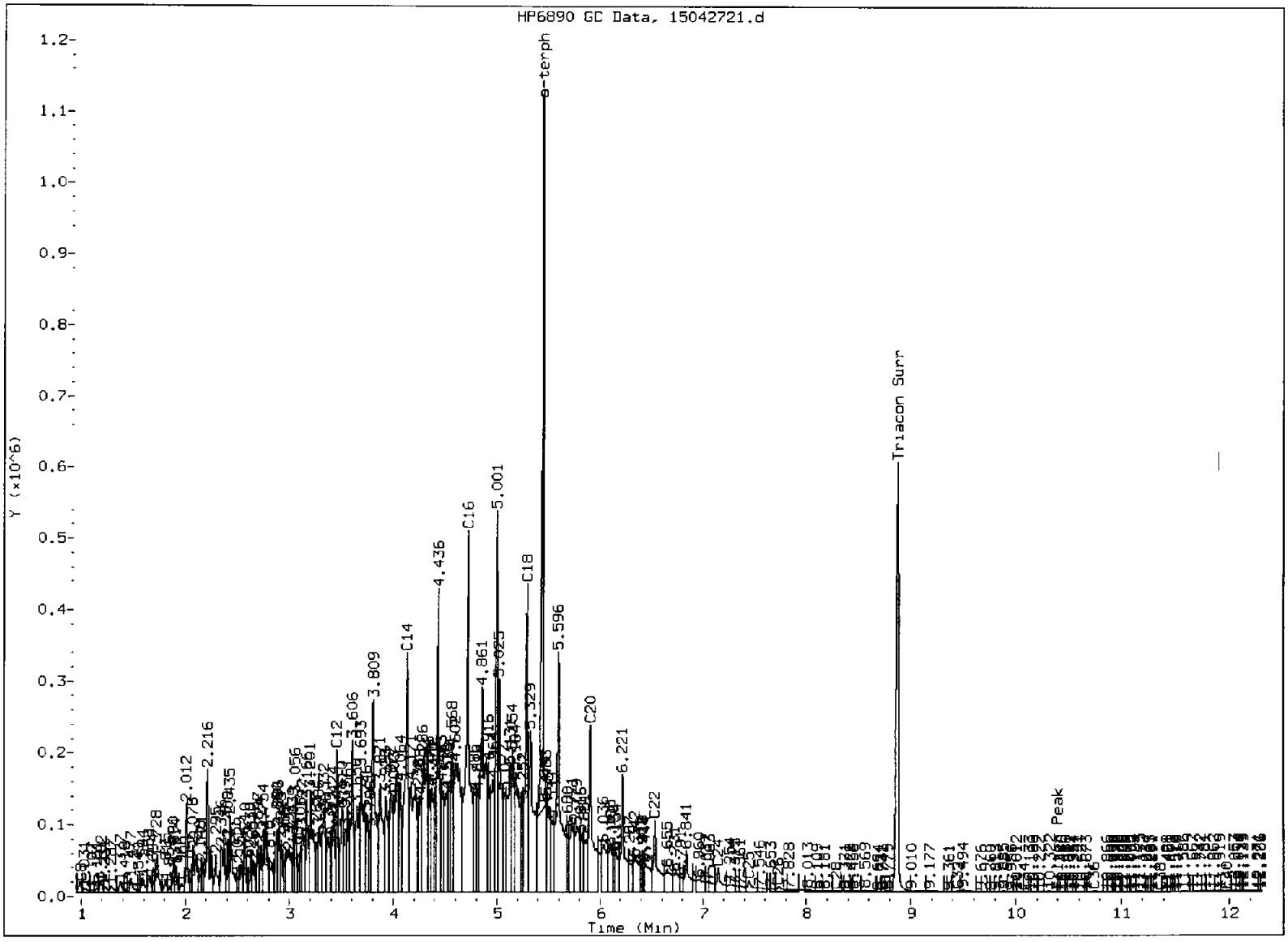
Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



FID:4A-2C/RTX-1 AEM1LCSDW1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: ML Date: 4/28/15

Data File: /chem3/fid4a.i/20150427.b/15042721.d

Date : 27-APR-2015 19:55

Client ID: AEM1LCSDW1

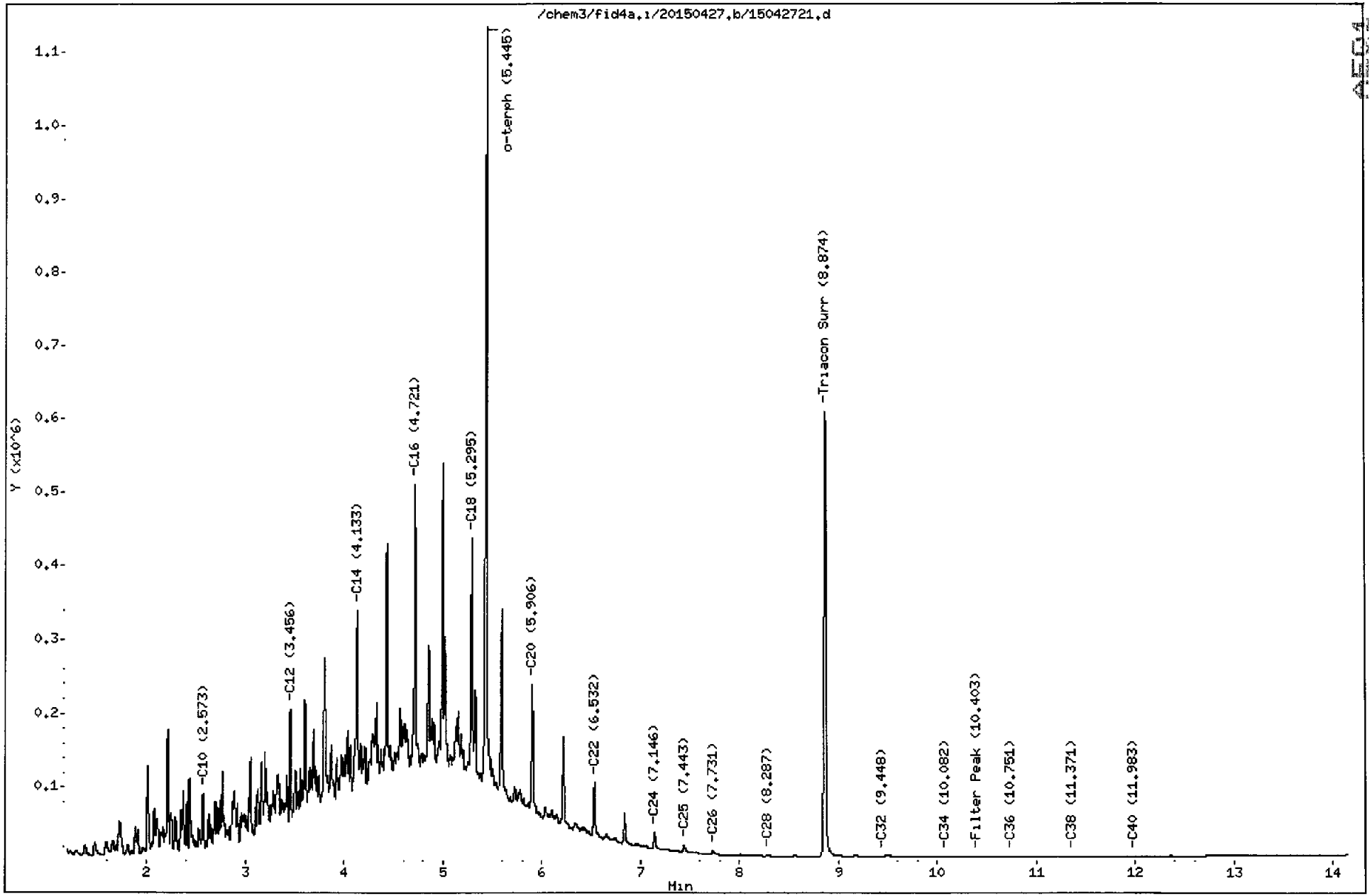
Sample Info: AEM1LCSDW1

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.i/20150427.b/15042726.d

Date : 27-APR-2015 21:52

Client ID: SB19

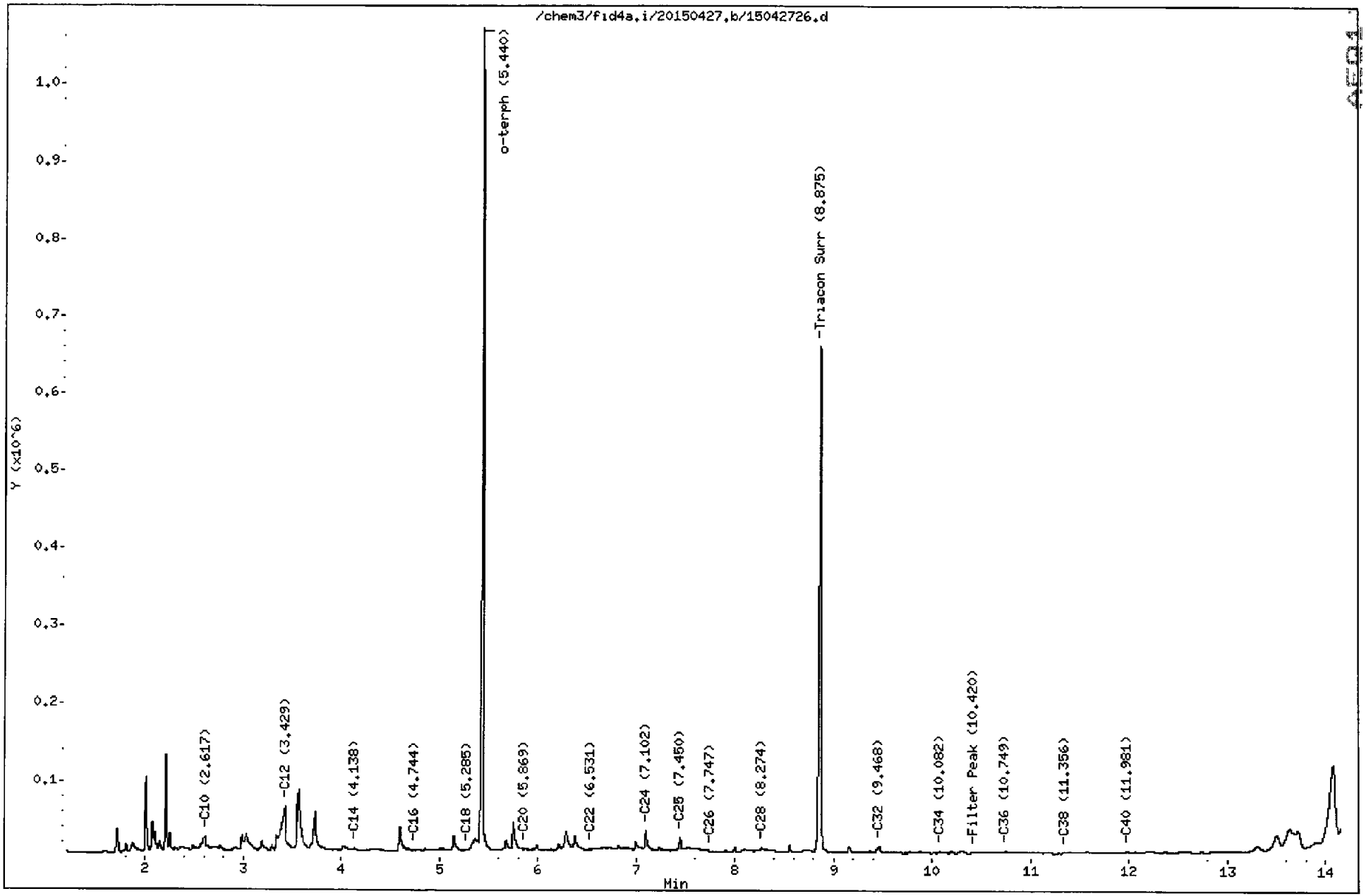
Sample Info: AEQ1A

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method: SW3546
Page 1 of 1

QC Report No: AEQ1-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024.00

Matrix: Soil
Data Release Authorized:
Reported: 04/30/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042215	Method Blank	04/22/15	04/28/15	1.00	Diesel Range	5.0	< 5.0 U
15-7830	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		86.8%
AEQ1D	SB19-35	04/22/15	04/28/15	1.00	Diesel Range	6.4	< 6.4 U
15-7830	HC ID: ---		FID4A	1.0	Motor Oil Range	13	< 13 U
					o-Terphenyl		82.8%
AEQ1E	SB19-45	04/22/15	04/28/15	1.00	Diesel Range	6.0	< 6.0 U
15-7831	HC ID: ---		FID4A	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		93.9%
AEQ1F	SB19-50	04/22/15	04/28/15	1.00	Diesel Range	6.3	< 6.3 U
15-7832	HC ID: ---		FID4A	1.0	Motor Oil Range	13	< 13 U
					o-Terphenyl		86.1%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

AEQ1 · 00056

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-042215**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-042215
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/30/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Date Extracted LCS/LCSD: 04/22/15

Date Analyzed LCS: 04/28/15 13:24
LCSD: 04/28/15 13:47
Instrument/Analyst LCS: FID/ML
LCSD: FID/ML

Sample Amount LCS: 10.0 g
LCSD: 10.0 g
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.0
LCSD: 1.0

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	112	150	74.7%	110	150	73.3%	1.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	92.3%	99.4%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: AEQ1
Matrix: Soil Project: Precision Engineering
Date Received: 04/20/15 1396024.00

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-7830-042215MB1	Method Blank	10.0 g	1.00 mL	-	04/22/15
15-7830-042215LCS1	Lab Control	10.0 g	1.00 mL	-	04/22/15
15-7830-042215LCSD1	Lab Control Dup	10.0 g	1.00 mL	-	04/22/15
15-7830-AEQ1D	SB19-35	7.86 g	1.00 mL	D	04/22/15
15-7831-AEQ1E	SB19-45	8.41 g	1.00 mL	D	04/22/15
15-7832-AEQ1F	SB19-50	7.92 g	1.00 mL	D	04/22/15

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00

Client ID	OTER	TOT OUT
MB-042215	86.8%	0
LCS-042215	92.3%	0
LCSD-042215	99.4%	0
SB19-35	82.8%	0
SB19-45	93.9%	0
SB19-50	86.1%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-7830 to 15-7832

FORM-II TPHD

AEQ1 : 00055

Data File: /chem3/fid4a.i/20150428.b/15042808.d

Page 1

Date : 28-APR-2015 13:00

Client ID: AEQ1MBS1

Instrument: fid4a.i

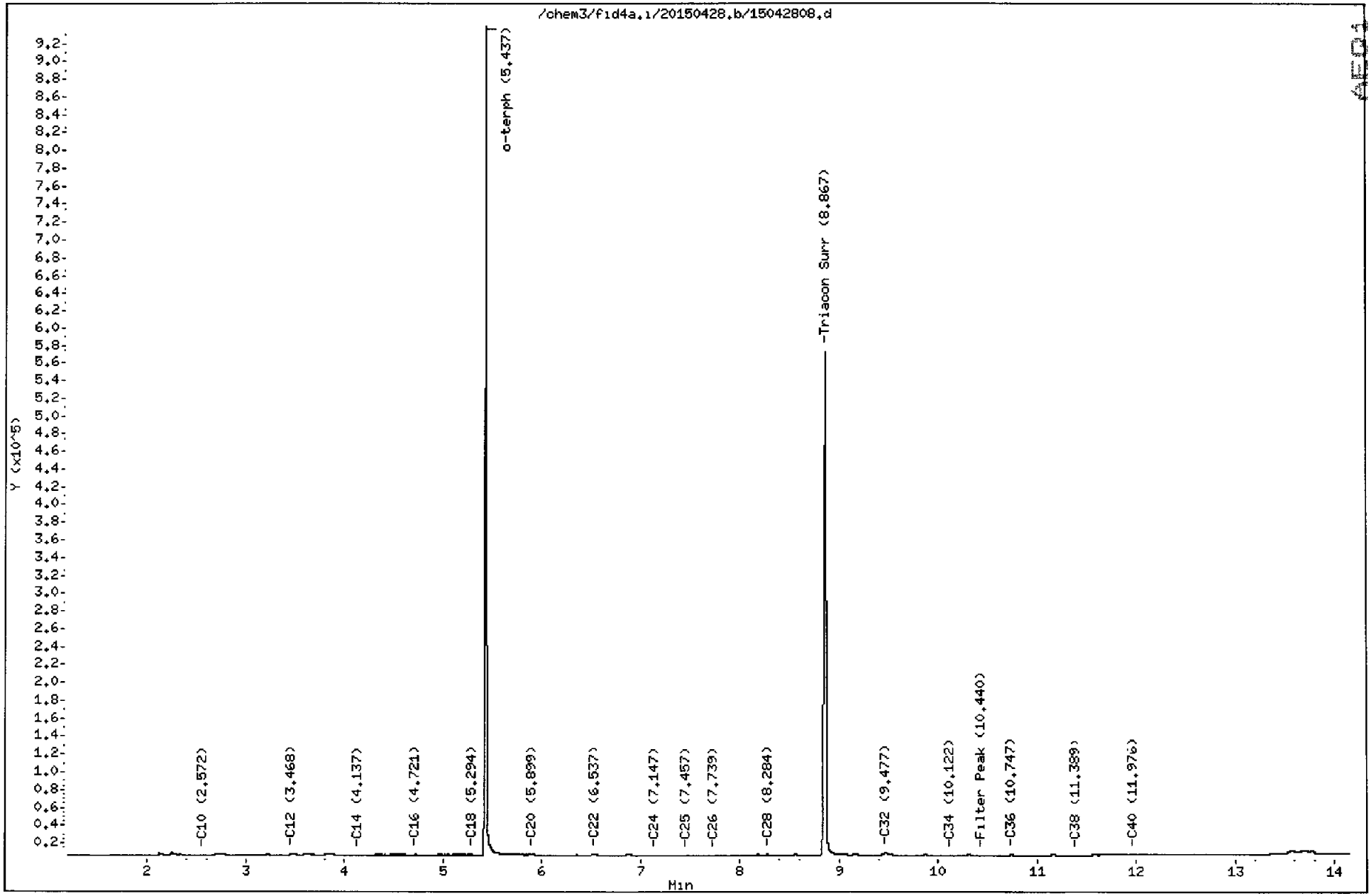
Sample Info: AEQ1MBS1

Operator: ML

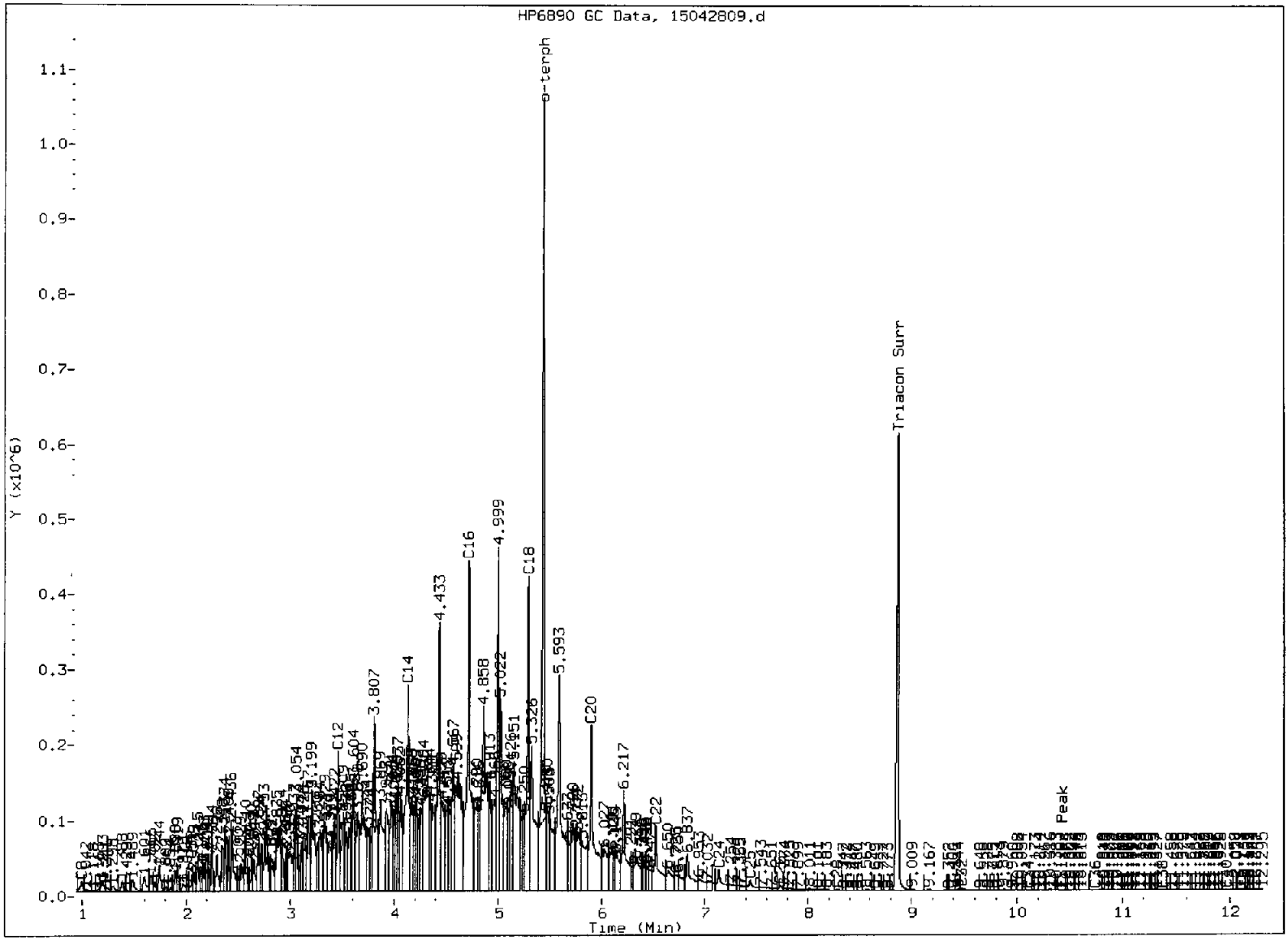
Column phase: RTX-1

Column diameter: 0.25

AEQ1 040968



FID:4A-2C/RTX-1 AEQ1LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: ML Date: 4/29/15

Data File: /chem3/fid4a.i/20150428.b/15042809.d

Date : 28-APR-2015 13:24

Client ID: AEQ1LCSS1

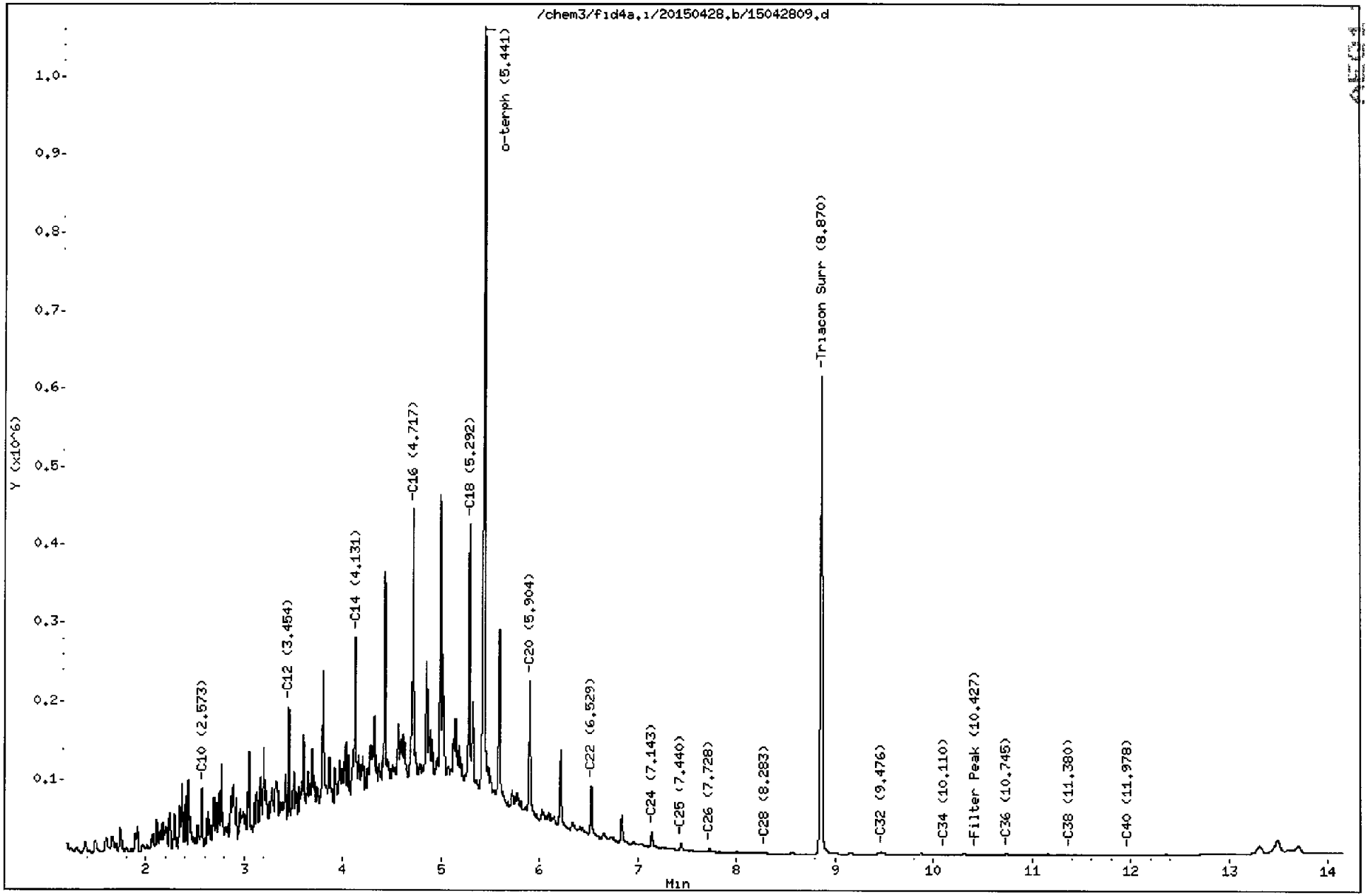
Sample Info: AEQ1LCSS1

Column phase: RTX-1

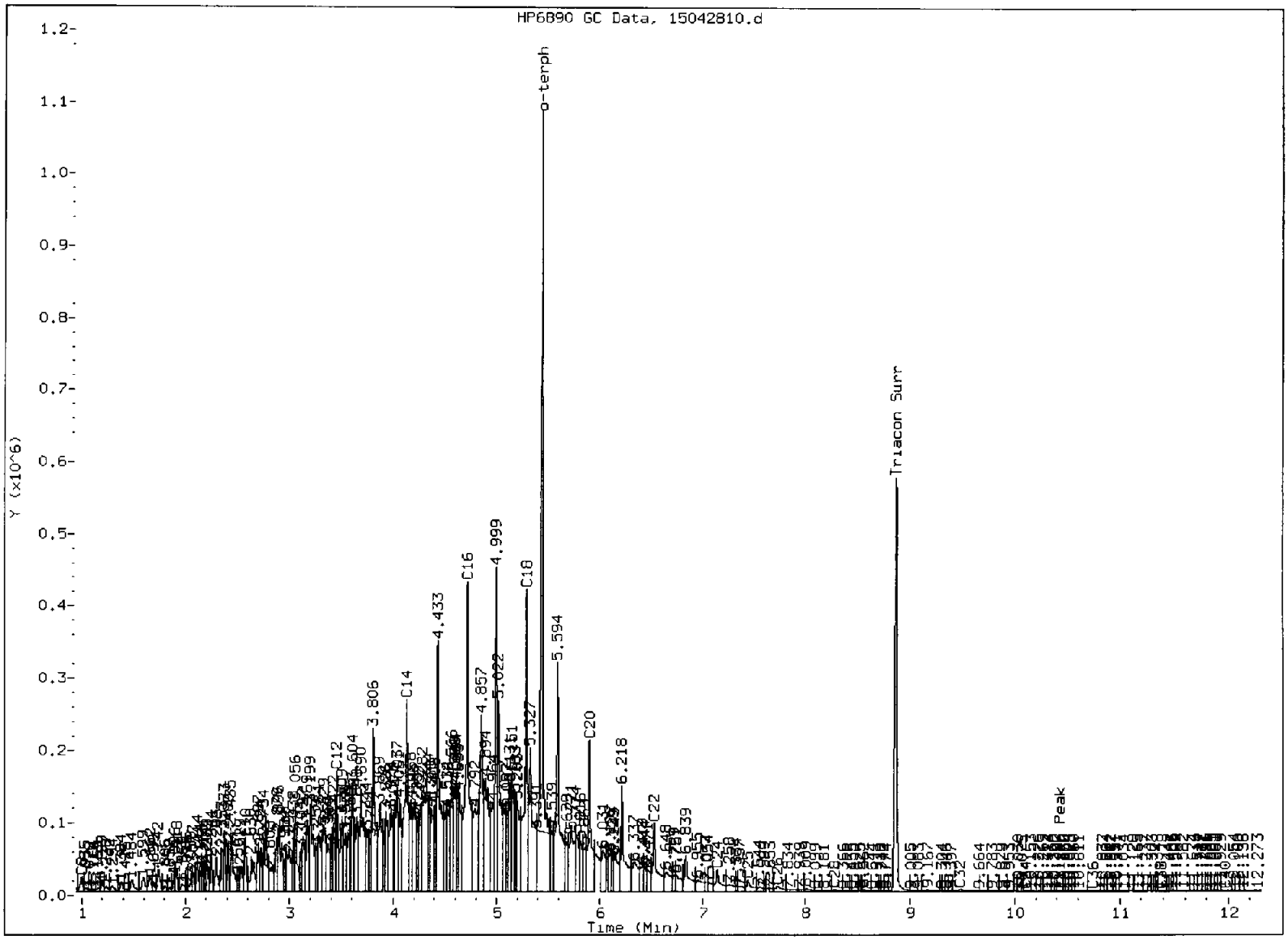
Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



FID:4A-2C/RTX-1 AEQ1LCSDS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: ML Date: 4/29/15

AE01 : 0065

Data File: /chem3/fid4a.i/20150428.b/15042810.d

Date : 28-APR-2015 13:47

Client ID: AEQ1LCSDS1

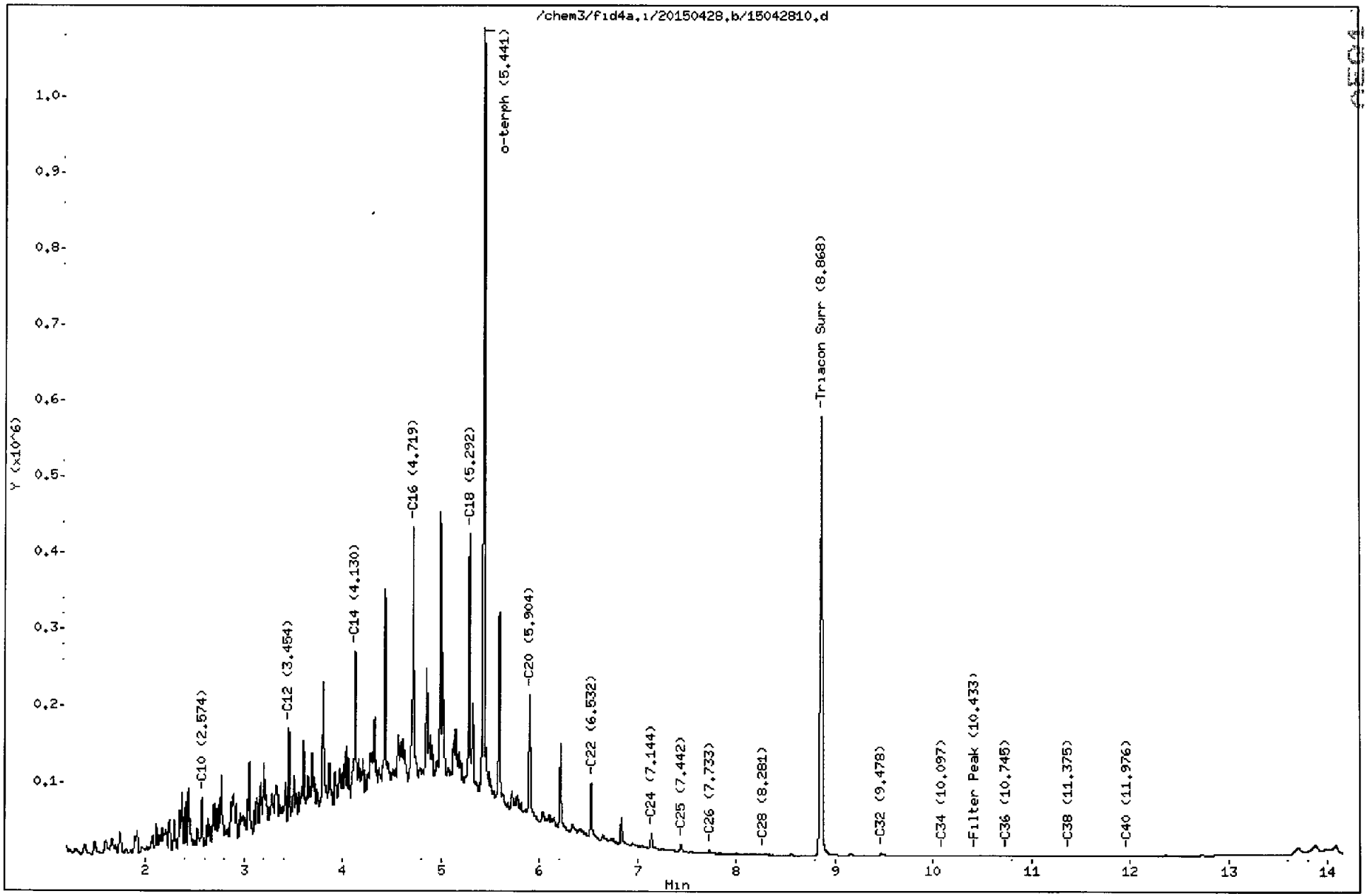
Sample Info: AEQ1LCSDS1

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.i/20150428.b/15042811.d

Date : 28-APR-2015 14:11

Client ID: SB19-35

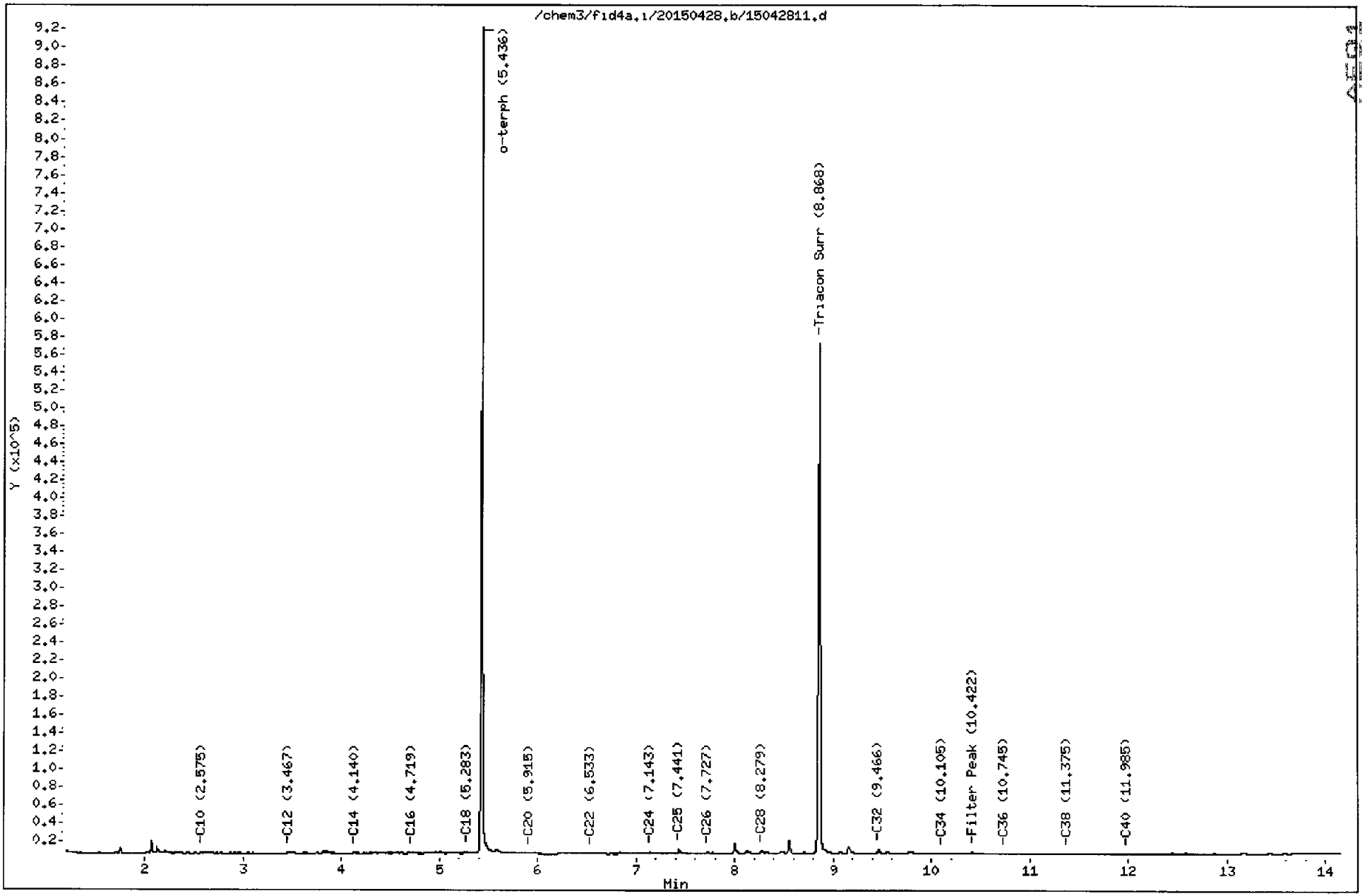
Sample Info: AEQ1D

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.i/20150428.b/15042812.d

Date : 28-APR-2015 14:35

Client ID: SB19-45

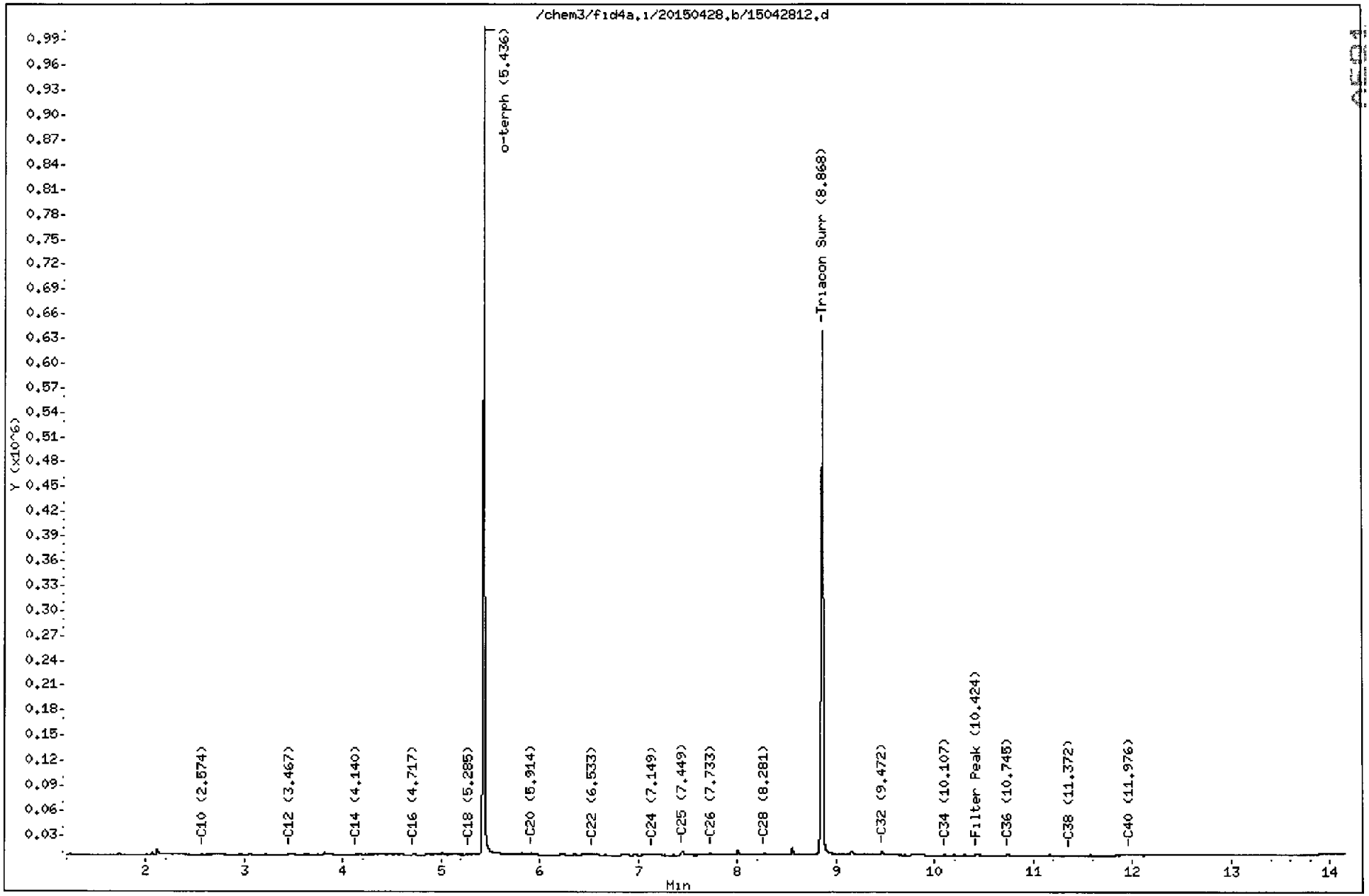
Sample Info: AEQ1E

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Data File: /chem3/fid4a.i/20150428.b/15042813.d

Date : 28-APR-2015 14:58

Client ID: SB19-50

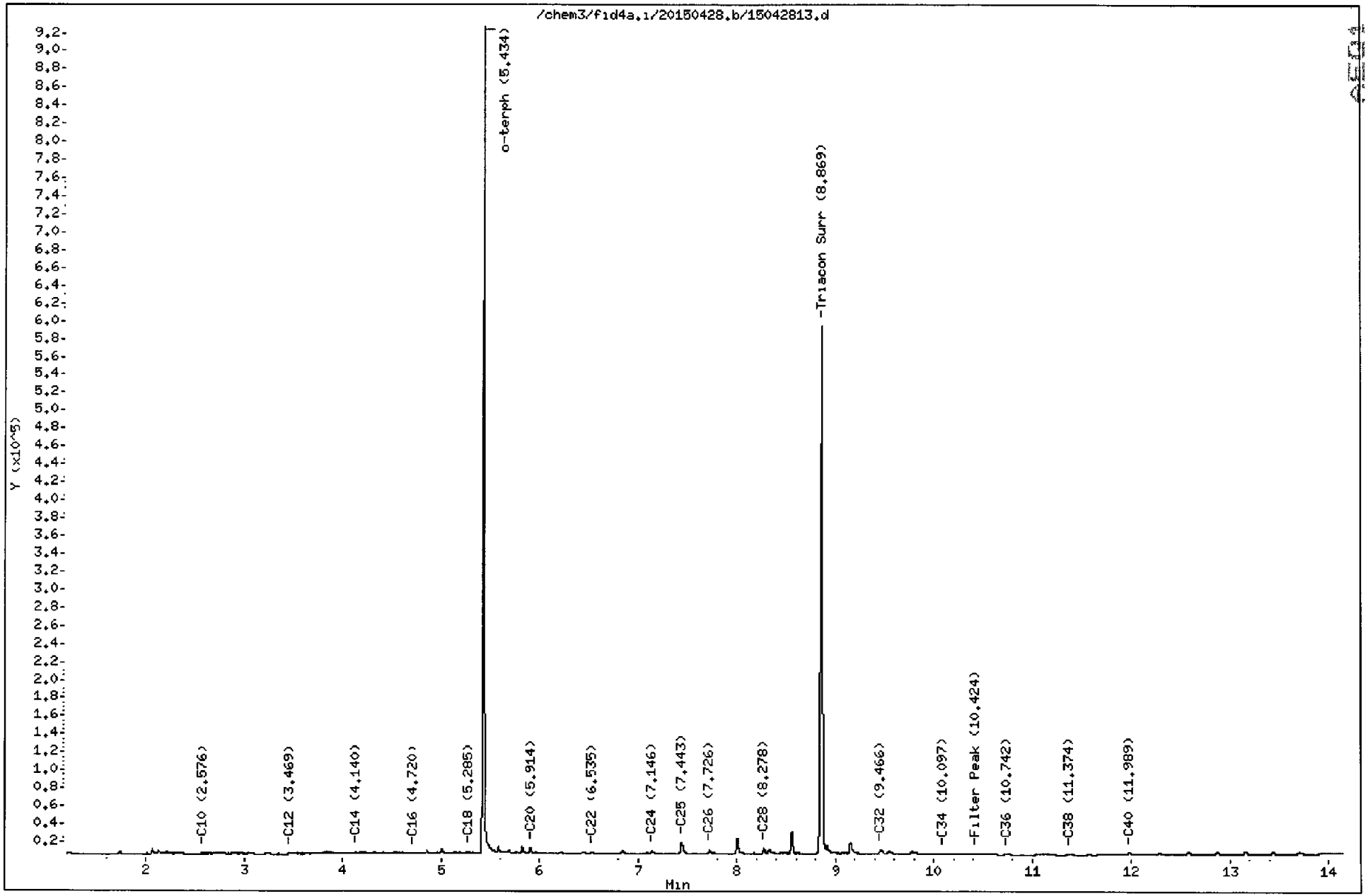
Sample Info: AEQ1F

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



SAMPLE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Client ID: SB19
ARI ID: 15-7827 AEQ1A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	04/20/15 042015#1	SW7196A	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

AEQ1 00058

METHOD BLANK RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SW7196A	04/20/15	mg/L	< 0.010 U	

AEQ1 00069

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	SW7196A	04/20/15	mg/L	0.629	0.620	101.5%

AEQ1 : 00078

REPLICATE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEQ1A Client ID: SB19						
Hexavalent Chromium	SW7196A	04/20/15	mg/L	< 0.010	< 0.010	NA

AEQ1 : 000071

MS/MSD RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AEQ1A Client ID: SB19							
Hexavalent Chromium	SW7196A	04/20/15	mg/L	< 0.010	0.049	0.062	79.0%

AEQ1 00072

SAMPLE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Client ID: SB19-35
ARI ID: 15-7830 AEQ1D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.500	< 0.500 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	77.86

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

AEQ1 : 00073

SAMPLE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Client ID: SB19-45
ARI ID: 15-7831 AEQ1E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.469	< 0.469 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	83.21

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

AEQ1 · 00074

SAMPLE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Client ID: SB19-50
ARI ID: 15-7832 AEQ1F

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.508	< 0.508 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	77.87

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

AEQ1 00075

METHOD BLANK RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	04/21/15	mg/kg	< 0.398 U	PREP
Total Solids	04/21/15	Percent	< 0.01 U	ICB

AEQ1 . 00075

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	04/21/15	mg/kg	20.5	20.0	102.5%
Insoluble Hexavalent Chromiu	04/21/15	mg/kg	631	669	94.3%

ERA #300614

AEQ1 00077

REPLICATE RESULTS-CONVENTIONALS
AEQ1-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEQ1D Client ID: SB19-35					
Total Solids	04/21/15	Percent	77.86	78.87	1.3%

AEQ1 · 0007a

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19
SAMPLE

Lab Sample ID: AEQ1A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/22/15	200.8	04/28/15	**7440-38-2**	**Arsenic**	0.004	**0.060**	
200.8	04/22/15	200.8	04/28/15	**7440-47-3**	**Chromium**	0.01	**0.24**	
200.8	04/22/15	200.8	04/28/15	**7439-92-1**	**Lead**	0.002	**0.057**	
200.8	04/22/15	200.8	04/28/15	7782-49-2	Selenium	0.01	0.01	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19
DUPLICATE

Lab Sample ID: AEQ1A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	0.060	0.048	22.2%	+/- 20%	*
Chromium	200.8	0.24	0.15	46.2%	+/- 20%	*
Lead	200.8	0.057	0.036	45.2%	+/- 20%	*
Selenium	200.8	0.01 U	0.01 U	0.0%	+/- 0.01	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB19
MATRIX SPIKE

Lab Sample ID: AEQ1A
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	0.060	0.120	0.050	120%	
Chromium	200.8	0.24	0.32	0.05	160%	H
Lead	200.8	0.057	0.112	0.050	110%	
Selenium	200.8	0.01 U	0.18	0.16	112%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
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Sample ID: SB19
SAMPLE

Lab Sample ID: AEQ1B
LIMS ID: 15-7828
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/22/15	200.8	04/28/15	**7440-38-2**	**Arsenic**	0.0005	**0.0287**	
200.8	04/22/15	200.8	04/28/15	**7440-47-3**	**Chromium**	0.001	**0.003**	
200.8	04/22/15	200.8	04/28/15	**7439-92-1**	**Lead**	0.0002	**0.0025**	
200.8	04/22/15	200.8	04/28/15	**7782-49-2**	**Selenium**	0.001	**0.002**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
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Sample ID: SB19
MATRIX SPIKE

Lab Sample ID: AEQ1B
LIMS ID: 15-7828
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	0.0287	0.0574	0.025	115%	
Chromium	200.8	0.003	0.028	0.025	100%	
Lead	200.8	0.0025	0.0267	0.025	96.8%	
Selenium	200.8	0.002	0.083	0.080	101%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: SB19
DUPLICATE

Lab Sample ID: AEQ1B
LIMS ID: 15-7828
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	0.0287	0.0285	0.7%	+/- 20%	
Chromium	200.8	0.003	0.003	0.0%	+/- 0.001	L
Lead	200.8	0.0025	0.0025	0.0%	+/- 20%	
Selenium	200.8	0.002	0.002	0.0%	+/- 0.001	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19-35
SAMPLE

Lab Sample ID: AEQ1D
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Percent Total Solids: 82.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/23/15	200.8	04/28/15	**7440-38-2**	**Arsenic**	0.2	**8.5**	
3050B	04/23/15	200.8	04/28/15	**7440-47-3**	**Chromium**	0.6	**20.4**	
3050B	04/23/15	200.8	04/28/15	**7439-92-1**	**Lead**	0.1	**2.5**	
3050B	04/23/15	200.8	04/28/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB19-35
DUPLICATE

Lab Sample ID: AEQ1D
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	8.5	7.9	7.3%	+/- 20%	
Chromium	200.8	20.4	21.1	3.4%	+/- 20%	
Lead	200.8	2.5	2.4	4.1%	+/- 20%	
Selenium	200.8	0.6 U	0.6 U	0.0%	+/- 0.6	L

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19-35
MATRIX SPIKE

Lab Sample ID: AEQ1D
LIMS ID: 15-7830
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	8.5	36.9	28.5	99.6%	
Chromium	200.8	20.4	44.6	28.5	84.9%	
Lead	200.8	2.5	29.6	28.5	95.1%	
Selenium	200.8	0.6 U	91.0	91.0	100%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

AEQ1 00087

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19-45
SAMPLE

Lab Sample ID: AEQ1E
LIMS ID: 15-7831
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Percent Total Solids: 32.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/23/15	200.8	04/28/15	**7440-38-2**	**Arsenic**	0.6	**6.2**	
3050B	04/23/15	200.8	04/28/15	**7440-47-3**	**Chromium**	1	**46**	
3050B	04/23/15	200.8	04/28/15	**7439-92-1**	**Lead**	0.3	**4.6**	
3050B	04/23/15	200.8	04/28/15	7782-49-2	Selenium	1	1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB19-50
SAMPLE

Lab Sample ID: AEQ1F
LIMS ID: 15-7832
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: 04/20/15
Date Received: 04/20/15

Percent Total Solids: 74.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/23/15	200.8	04/28/15	**7440-38-2**	**Arsenic**	0.2	**3.7**	
3050B	04/23/15	200.8	04/28/15	**7440-47-3**	**Chromium**	0.6	**43.8**	
3050B	04/23/15	200.8	04/28/15	**7439-92-1**	**Lead**	0.1	**3.9**	
3050B	04/23/15	200.8	04/28/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AEQ1MB
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/22/15	200.8	04/28/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/22/15	200.8	04/28/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/22/15	200.8	04/28/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/22/15	200.8	04/28/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

AEQ1 000896

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEQ1LCS
LIMS ID: 15-7827
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0273	0.0250	109%	
Chromium	200.8	0.0272	0.0250	109%	
Lead	200.8	0.0266	0.0250	106%	
Selenium	200.8	0.0800	0.0800	100%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AEQ1MB
LIMS ID: 15-7828
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/22/15	200.8	04/28/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/22/15	200.8	04/28/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/22/15	200.8	04/28/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/22/15	200.8	04/28/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

AEQ1 · 00092

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: LAB CONTROL

Lab Sample ID: AEQ1LCS
LIMS ID: 15-7828
Matrix: Water
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0256	0.0250	102%	
Chromium	200.8	0.0265	0.0250	106%	
Lead	200.8	0.0258	0.0250	103%	
Selenium	200.8	0.0734	0.0800	91.8%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AEQ1MB
LIMS ID: 15-7832
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/23/15	200.8	04/28/15	7440-38-2	Arsenic	0.2	0.2	U
3050B	04/23/15	200.8	04/28/15	7440-47-3	Chromium	0.5	0.5	U
3050B	04/23/15	200.8	04/28/15	7439-92-1	Lead	0.1	0.1	U
3050B	04/23/15	200.8	04/28/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AEQ1LCS
LIMS ID: 15-7832
Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

QC Report No: AEQ1-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	28.4	25.0	114%	
Chromium	200.8	27.4	25.0	110%	
Lead	200.8	27.1	25.0	108%	
Selenium	200.8	83.3	80.0	104%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

11 May 2015

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: AEO4

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five soil samples, two water samples and one trip blank on April 17, 2015. The samples were analyzed for VOCs, NWTPH-G, NWTPH-Dx, hexavalent chromium and total and dissolved metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

The percent recoveries for the surrogates, bromobenzene and trifluorotoluene, were low following the initial NWTPHG analyses of samples SB17 and SB18. It was observed that these samples contained significant amounts of sediment. Since the percent recoveries for both surrogates were within established QC limits for the corresponding MB, LCS and LCSD, it was concluded that the sample matrices were the cause of the low surrogate recoveries. No corrective actions were taken.

All samples were initially prepared for dissolved metals on 4/21/15 and they were analyzed on 4/23-4/15. The percent recovery for selenium was slightly low following the analysis of the LCS associated with sample SB17. This sample was re-prepared and re-analyzed for selenium only. The re-analysis proceeded without incident of note. The results for the re-analysis only have been submitted.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,
ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: AEO4

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: A604	Turn-around Requested: Standard	Page: 1	of 1
ARI Client Company: Kennedy/Jenks	Phone: 253 835 6400	Date:	Ice Present? Y
Client Contact: Jessica Faraguli		No. of Coolers: 1	Cooler Temps: 1.9
Client Project Name: Precision Engineering			
Client Project #: 139624	Samplers: JS JRS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals	NWTPH-Dx	VOCs	VOCs NWTPH-HCID TS	NWTPH-HCID	Hex Chrom.	Total Metals	Dissolved Metals	Notes/Comments
SB17-40	4/17	0920	Soil	8	X	X	X	X		X			
SB17-43.5		0940		6	X		X			X			
SB18-26		11:50		10	X	X	X	X	X	X			
SB18-36.5		1220		8	X	X	X	X		X			
SB18-39.5		1245		2	X					X			
SB17		1005	H_2O	11		X	X		X	X	X	X	One field filtered one un-field filtered
SB18		1300		10		X	X		X	X	X	X	Field filtered diss metals

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Joe Sawdey	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: K/J	Company: ARI	Company:	Company:
	Date & Time: 4/17 14:20	Date & Time: 4/17/15 1420	Date & Time:	Date & Time:

for dissolved metals

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks

COC No(s): _____ (NA)

Assigned ARI Job No: AEO41

Project Name: Precision Engineering

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.9

Time: 1420

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 4/17/15 Time: 1420

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	4-17-15	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

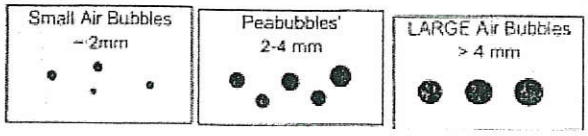
Samples Logged by: JS Date: 4-17-15 Time: 1449

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"	(< 2 mm)
Peabubbles → "pb"	(2 to < 4 mm)
Large → "lg"	(4 to < 6 mm)
Headspace → "hs"	(> 6 mm)

PRESERVATION VERIFICATION 04/17/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AEO4**

Inquiry Number: NONE
Analysis Requested: 04/17/15
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Mark
VTSR: 04/17/15

Project #: 1396024
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-7740 **AEO4A**	SB17						TOT Fail															
15-7741 **AEO4B**	SB18						TOT Pass															
15-7742 **AEO4C**	SB17						DIS Fail									N						
15-7743 **AEO4D**	SB17						DIS Pass									Y						
15-7744 **AEO4E**	SB18						DIS Pass									Y						

Checked By TS Date 4-17-15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AEO4
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024
Project Name: Precision Engineering

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SB17	AEO4A	15-7740	Water	04/17/15 10:05	04/17/15 14:20
2.	SB18	AEO4B	15-7741	Water	04/17/15 13:00	04/17/15 14:20
3.	SB17	AEO4C	15-7742	Water	04/17/15 10:05	04/17/15 14:20
4.	SB17	AEO4D	15-7743	Water	04/17/15 10:05	04/17/15 14:20
5.	SB18	AEO4E	15-7744	Water	04/17/15 13:00	04/17/15 14:20
6.	Trip Blank	AEO4F	15-7745	Water	04/17/15	04/17/15 14:20
7.	SB17-40	AEO4G	15-7746	Soil	04/17/15 09:20	04/17/15 14:20
8.	SB17-43.5	AEO4H	15-7747	Soil	04/17/15 09:40	04/17/15 14:20
9.	SB18-26	AEO4I	15-7748	Soil	04/17/15 11:50	04/17/15 14:20
10.	SB18-36.5	AEO4J	15-7749	Soil	04/17/15 12:20	04/17/15 14:20
11.	SB18-39.5	AEO4K	15-7750	Soil	04/17/15 12:45	04/17/15 14:20

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
 METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized: MW
Reported: 04/23/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 09:25

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-042215A**
 METHOD BLANK

Lab Sample ID: MB-042215A
LIMS ID: 15-7740
Matrix: Water
Date Analyzed: 04/22/15 09:25

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.0%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17**
 SAMPLE

Lab Sample ID: AE04A
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized: MW
Reported: 04/23/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 14:25

Sample Amount: 5.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	2.0	< 2.0	U
75-01-4	Vinyl Chloride	0.40	< 0.40	U
75-00-3	Chloroethane	0.40	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	0.40	< 0.40	U
75-35-4	1,1-Dichloroethene	0.40	< 0.40	U
75-34-3	1,1-Dichloroethane	0.40	< 0.40	U
156-60-5	trans-1,2-Dichloroethene	0.40	< 0.40	U
156-59-2	cis-1,2-Dichloroethene	0.40	< 0.40	U
67-66-3	**Chloroform**	**0.40**	**0.96**	
107-06-2	1,2-Dichloroethane	0.40	< 0.40	U
78-93-3	2-Butanone	10	< 10	U
71-55-6	1,1,1-Trichloroethane	0.40	< 0.40	U
56-23-5	Carbon Tetrachloride	0.40	< 0.40	U
108-05-4	Vinyl Acetate	0.40	< 0.40	U
75-27-4	Bromodichloromethane	0.40	< 0.40	U
78-87-5	1,2-Dichloropropane	0.40	< 0.40	U
10061-01-5	cis-1,3-Dichloropropene	0.40	< 0.40	U
79-01-6	Trichloroethene	0.40	< 0.40	U
124-48-1	Dibromochloromethane	0.40	< 0.40	U
79-00-5	1,1,2-Trichloroethane	0.40	< 0.40	U
71-43-2	Benzene	0.40	< 0.40	U
10061-02-6	trans-1,3-Dichloropropene	0.40	< 0.40	U
110-75-8	2-Chloroethylvinylether	2.0	< 2.0	U
75-25-2	Bromoform	0.40	< 0.40	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10	< 10	U
591-78-6	2-Hexanone	10	< 10	U
127-18-4	Tetrachloroethene	0.40	< 0.40	U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	< 0.40	U
108-88-3	Toluene	0.40	< 0.40	U
108-90-7	Chlorobenzene	0.40	< 0.40	U
100-41-4	Ethylbenzene	0.40	< 0.40	U
100-42-5	Styrene	0.40	< 0.40	U
75-69-4	Trichlorofluoromethane	0.40	< 0.40	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.40	< 0.40	U
179601-23-1	m,p-Xylene	0.80	< 0.80	U
95-47-6	o-Xylene	0.40	< 0.40	U
95-50-1	1,2-Dichlorobenzene	0.40	< 0.40	U
541-73-1	1,3-Dichlorobenzene	0.40	< 0.40	U
106-46-7	1,4-Dichlorobenzene	0.40	< 0.40	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17**
 SAMPLE

Lab Sample ID: AE04A
LIMS ID: 15-7740
Matrix: Water
Date Analyzed: 04/22/15 14:25

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	2.0	< 2.0	U
74-96-4	Bromoethane	0.40	< 0.40	U
107-13-1	Acrylonitrile	2.0	< 2.0	U
563-58-6	1,1-Dichloropropene	0.40	< 0.40	U
74-95-3	Dibromomethane	0.40	< 0.40	U
630-20-6	1,1,1,2-Tetrachloroethane	0.40	< 0.40	U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	< 1.0	U
96-18-4	1,2,3-Trichloropropane	1.0	< 1.0	U
110-57-6	trans-1,4-Dichloro-2-butene	2.0	< 2.0	U
108-67-8	1,3,5-Trimethylbenzene	0.40	< 0.40	U
95-63-6	1,2,4-Trimethylbenzene	0.40	< 0.40	U
87-68-3	Hexachlorobutadiene	1.0	< 1.0	U
106-93-4	1,2-Dibromoethane	0.40	< 0.40	U
74-97-5	Bromochloromethane	0.40	< 0.40	U
594-20-7	2,2-Dichloropropane	0.40	< 0.40	U
142-28-9	1,3-Dichloropropane	0.40	< 0.40	U
98-82-8	Isopropylbenzene	0.40	< 0.40	U
103-65-1	n-Propylbenzene	0.40	< 0.40	U
108-86-1	Bromobenzene	0.40	< 0.40	U
95-49-8	2-Chlorotoluene	0.40	< 0.40	U
106-43-4	4-Chlorotoluene	0.40	< 0.40	U
98-06-6	tert-Butylbenzene	0.40	< 0.40	U
135-98-8	sec-Butylbenzene	0.40	< 0.40	U
99-87-6	4-Isopropyltoluene	0.40	< 0.40	U
104-51-8	n-Butylbenzene	0.40	< 0.40	U
120-82-1	1,2,4-Trichlorobenzene	1.0	< 1.0	U
91-20-3	Naphthalene	1.0	< 1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	< 1.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	102%
Bromofluorobenzene	94.3%
d4-1,2-Dichlorobenzene	105%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB18**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AE04B
LIMS ID: 15-7741
Matrix: Water
Data Release Authorized:
Reported: 04/23/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 13:03

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 1.0	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	**Acetone**	**5.0**	**6.2**	
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	**Chloroform**	**0.20**	**0.38**	
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB18**
 SAMPLE

Lab Sample ID: AE04B
LIMS ID: 15-7741
Matrix: Water
Date Analyzed: 04/22/15 13:03

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	**1,3-Dichloropropane**	**0.20**	**1.0**	
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	101%
Bromofluorobenzene	94.9%
d4-1,2-Dichlorobenzene	105%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blank**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AEO4F
LIMS ID: 15-7745
Matrix: Water
Data Release Authorized:
Reported: 04/23/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT2/MMH
Date Analyzed: 04/22/15 11:21

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: Trip Blank**
 SAMPLE

Lab Sample ID: AEO4F
LIMS ID: 15-7745
Matrix: Water
Date Analyzed: 04/22/15 11:21

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	102%
Bromofluorobenzene	93.2%
d4-1,2-Dichlorobenzene	107%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215A
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/MMH
LCSD: NT2/MMH
Date Analyzed LCS: 04/22/15 08:44
LCSD: 04/22/15 09:04

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	11.5		10.0	115%	11.6		10.0	116%	0.9%
Bromomethane	11.2		10.0	112%	11.1		10.0	111%	0.9%
Vinyl Chloride	11.3		10.0	113%	11.3		10.0	113%	0.0%
Chloroethane	10.6	Q	10.0	106%	7.18	Q	10.0	71.8%	38.5%
Methylene Chloride	10.6		10.0	106%	10.3		10.0	103%	2.9%
Acetone	56.1		50.0	112%	54.2		50.0	108%	3.4%
Carbon Disulfide	9.18		10.0	91.8%	9.19		10.0	91.9%	0.1%
1,1-Dichloroethene	10.3		10.0	103%	10.3		10.0	103%	0.0%
1,1-Dichloroethane	10.4		10.0	104%	10.3		10.0	103%	1.0%
trans-1,2-Dichloroethene	9.92		10.0	99.2%	9.89		10.0	98.9%	0.3%
cis-1,2-Dichloroethene	10.6		10.0	106%	10.6		10.0	106%	0.0%
Chloroform	10.6		10.0	106%	10.5		10.0	105%	0.9%
1,2-Dichloroethane	10.2		10.0	102%	10.2		10.0	102%	0.0%
2-Butanone	57.8		50.0	116%	56.4		50.0	113%	2.5%
1,1,1-Trichloroethane	10.9		10.0	109%	10.9		10.0	109%	0.0%
Carbon Tetrachloride	11.3		10.0	113%	11.1		10.0	111%	1.8%
Vinyl Acetate	10.4		10.0	104%	10.3		10.0	103%	1.0%
Bromodichloromethane	10.8		10.0	108%	10.9		10.0	109%	0.9%
1,2-Dichloropropane	10.5		10.0	105%	10.2		10.0	102%	2.9%
cis-1,3-Dichloropropene	11.7		10.0	117%	11.5		10.0	115%	1.7%
Trichloroethene	10.6		10.0	106%	10.6		10.0	106%	0.0%
Dibromochloromethane	11.1		10.0	111%	10.9		10.0	109%	1.8%
1,1,2-Trichloroethane	10.6		10.0	106%	10.8		10.0	108%	1.9%
Benzene	11.2		10.0	112%	11.1		10.0	111%	0.9%
trans-1,3-Dichloropropene	11.4		10.0	114%	11.3		10.0	113%	0.9%
2-Chloroethylvinylether	10.3		10.0	103%	10.2		10.0	102%	1.0%
Bromoform	10.9		10.0	109%	10.8		10.0	108%	0.9%
4-Methyl-2-Pentanone (MIBK)	57.4		50.0	115%	56.6		50.0	113%	1.4%
2-Hexanone	59.2		50.0	118%	57.8		50.0	116%	2.4%
Tetrachloroethene	10.7		10.0	107%	10.5		10.0	105%	1.9%
1,1,2,2-Tetrachloroethane	10.2		10.0	102%	10.0		10.0	100%	2.0%
Toluene	10.7		10.0	107%	10.8		10.0	108%	0.9%
Chlorobenzene	10.6		10.0	106%	10.6		10.0	106%	0.0%
Ethylbenzene	10.9		10.0	109%	10.8		10.0	108%	0.9%
Styrene	12.3	Q	10.0	123%	12.1	Q	10.0	121%	1.6%
Trichlorofluoromethane	10.6	Q	10.0	106%	12.3	Q	10.0	123%	14.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.4		10.0	104%	10.3		10.0	103%	1.0%
m,p-Xylene	23.4		20.0	117%	23.3		20.0	116%	0.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042215A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215A
LIMS ID: 15-7740
Matrix: Water

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	11.7	10.0	117%	11.3	10.0	113%	3.5%
1,2-Dichlorobenzene	9.91	10.0	99.1%	9.87	10.0	98.7%	0.4%
1,3-Dichlorobenzene	9.97	10.0	99.7%	9.91	10.0	99.1%	0.6%
1,4-Dichlorobenzene	9.59	10.0	95.9%	9.56	10.0	95.6%	0.3%
Acrolein	51.2	50.0	102%	50.4	50.0	101%	1.6%
Iodomethane	9.49	10.0	94.9%	10.4	10.0	104%	9.2%
Bromoethane	10.6	10.0	106%	10.6	10.0	106%	0.0%
Acrylonitrile	10.3	10.0	103%	10.3	10.0	103%	0.0%
1,1-Dichloropropene	10.9	10.0	109%	10.8	10.0	108%	0.9%
Dibromomethane	10.1	10.0	101%	9.97	10.0	99.7%	1.3%
1,1,1,2-Tetrachloroethane	11.2	10.0	112%	11.1	10.0	111%	0.9%
1,2-Dibromo-3-chloropropane	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2,3-Trichloropropane	10.1	10.0	101%	10.1	10.0	101%	0.0%
trans-1,4-Dichloro-2-butene	10.6	10.0	106%	10.5	10.0	105%	0.9%
1,3,5-Trimethylbenzene	11.9 Q	10.0	119%	11.8 Q	10.0	118%	0.8%
1,2,4-Trimethylbenzene	12.1 Q	10.0	121%	12.0 Q	10.0	120%	0.8%
Hexachlorobutadiene	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,2-Dibromoethane	10.8	10.0	108%	10.7	10.0	107%	0.9%
Bromochloromethane	10.5	10.0	105%	10.4	10.0	104%	1.0%
2,2-Dichloropropane	11.1	10.0	111%	11.2	10.0	112%	0.9%
1,3-Dichloropropane	10.8	10.0	108%	10.6	10.0	106%	1.9%
Isopropylbenzene	12.1 Q	10.0	121%	12.0 Q	10.0	120%	0.8%
n-Propylbenzene	11.5	10.0	115%	11.4	10.0	114%	0.9%
Bromobenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
2-Chlorotoluene	10.9	10.0	109%	10.8	10.0	108%	0.9%
4-Chlorotoluene	10.9	10.0	109%	10.8	10.0	108%	0.9%
tert-Butylbenzene	11.9 Q	10.0	119%	11.7 Q	10.0	117%	1.7%
sec-Butylbenzene	12.0 Q	10.0	120%	12.0 Q	10.0	120%	0.0%
4-Isopropyltoluene	12.6 Q	10.0	126%	12.4 Q	10.0	124%	1.6%
n-Butylbenzene	11.9	10.0	119%	11.8	10.0	118%	0.8%
1,2,4-Trichlorobenzene	10.8	10.0	108%	10.8	10.0	108%	0.0%
Naphthalene	11.0	10.0	110%	11.1	10.0	111%	0.9%
1,2,3-Trichlorobenzene	10.7	10.0	107%	10.7	10.0	107%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.3%	95.7%
d8-Toluene	99.6%	100%
Bromofluorobenzene	100%	100%
d4-1,2-Dichlorobenzene	97.7%	99.3%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-042215A	Method Blank	10	108%	99.0%	94.5%	104%	0
LCS-042215A	Lab Control	10	95.3%	99.6%	100%	97.7%	0
LCSD-042215A	Lab Control Dup	10	95.7%	100%	100%	99.3%	0
AEO4A	SB17	10	112%	102%	94.3%	105%	0
AEO4B	SB18	10	117%	101%	94.9%	105%	0
AEO4F	Trip Blank	10	116%	102%	93.2%	107%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-120)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-7740 to 15-7745

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.70174	0.78628	0.78628	0.010	12.04732	20.00000	Averaged	
2 Chloromethane	0.91191	1.07759	1.07759	0.100	18.16781	20.00000	Averaged	
3 Vinyl Chloride	0.79954	0.92522	0.92522	0.100	15.71932	20.00000	Averaged	
4 Bromomethane	0.48738	0.56465	0.56465	0.100	15.85276	20.00000	Averaged	
5 Chloroethane	0.51592	0.36871	0.36871	0.010	-28.53279	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.80394	1.01985	1.01985	0.010	26.85721	20.00000	Averaged	<-
7 1,1-Dichloroethene	1.01399	1.04648	1.04648	0.100	3.20434	20.00000	Averaged	
8 Carbon Disulfide	1.68878	1.56139	1.56139	0.010	-7.54319	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.50237	0.52765	0.52765	0.010	5.03183	20.00000	Averaged	
10 Iodomethane	9.17849	10.00000	0.28438	0.010	-8.21508	20.00000	Quadratic	
11 Bromoethane	0.31747	0.34806	0.34806	0.100	9.63665	20.00000	Averaged	
12 Acrolein	0.13291	0.13708	0.13708	0.000	3.13342	20.00000	Averaged	
13 Methylene Chloride	0.59411	0.64672	0.64672	0.010	8.85487	20.00000	Averaged	
14 Acetone	0.18369	0.20434	0.20434	0.001	11.23947	20.00000	Averaged	
15 Trans-1,2-Dichloroethene	0.62051	0.61557	0.61557	0.010	-0.79639	20.00000	Averaged	
16 n-hexane	0.32090	0.30058	0.30058	0.100	-6.33398	20.00000	Averaged	
17 Methyl tert butyl ether	1.06478	0.92733	0.92733	0.100	-12.90891	20.00000	Averaged	
18 1,1-Dichloroethane	1.25616	1.32167	1.32167	0.200	5.21519	20.00000	Averaged	
19 Acrylonitrile	0.26779	0.27519	0.27519	0.001	2.76591	20.00000	Averaged	
20 Vinyl Acetate	1.16346	1.19453	1.19453	0.010	2.67041	20.00000	Averaged	
22 Cis-1,2-Dichloroethene	0.70023	0.75367	0.75367	0.010	7.63217	20.00000	Averaged	
23 2,2-Dichloropropane	0.93935	1.04390	1.04390	0.010	11.12958	20.00000	Averaged	
24 Bromochloromethane	0.32454	0.34756	0.34756	0.050	7.09185	20.00000	Averaged	
25 Chloroform	1.16250	1.25692	1.25692	0.200	8.12219	20.00000	Averaged	
26 Carbon Tetrachloride	0.48922	0.56000	0.56000	0.100	14.46836	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.50795	0.49377	0.49377	0.100	-2.79106	20.00000	Averaged	
28 1,1,1-Trichloroethane	1.01797	1.13608	1.13608	0.100	11.60319	20.00000	Averaged	
30 1,1-Dichloropropene	0.55542	0.61833	0.61833	0.010	11.32522	20.00000	Averaged	
29 2-Butanone	0.32868	0.38008	0.38008	0.001	15.63712	20.00000	Averaged	
31 Benzene	1.55316	1.77546	1.77546	0.500	14.31254	20.00000	Averaged	
$ 33 d4-1,2-Dichloroethane	0.73190	0.70666	0.70666	0.010	-3.44920	20.00000	Averaged	
34 1,2-Dichloroethane	0.66253	0.69068	0.69068	0.100	4.24897	20.00000	Averaged	
36 Trichloroethene	0.38554	0.41443	0.41443	0.100	7.49358	20.00000	Averaged	
38 Dibromomethane	0.25719	0.26645	0.26645	0.010	3.60032	20.00000	Averaged	
39 1,2-Dichloropropane	0.41999	0.44163	0.44163	0.100	5.15338	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 Bromodichloromethane	0.50767	0.57038	0.57038	0.100	12.35257	20.00000	Averaged	
173 2-Pentanone	0.05929	0.07036	0.07036	0.100	18.67469	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.57247	0.67501	0.67501	0.200	17.91096	20.00000	Averaged	
$ 43 d8-Toluene	1.24984	1.25521	1.25521	0.010	0.42981	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.16156	0.16810	0.16810	0.000	4.04838	20.00000	Averaged	
44 Toluene	1.03159	1.13139	1.13139	0.400	9.67463	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.17175	0.19891	0.19891	0.000	15.81186	20.00000	Averaged	
46 Tetrachloroethene	0.40524	0.43821	0.43821	0.200	8.13464	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.56174	0.65002	0.65002	0.010	15.71605	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.36386	0.39239	0.39239	0.100	7.84316	20.00000	Averaged	
49 Chlorodibromomethane	0.34792	0.39649	0.39649	0.100	13.95968	20.00000	Averaged	
50 1,3-Dichloropropane	0.65936	0.72719	0.72719	0.100	10.28810	20.00000	Averaged	
51 1,2-Dibromoethane	0.33748	0.36504	0.36504	0.010	8.16628	20.00000	Averaged	
52 2-Hexanone	0.29587	0.35433	0.35433	0.010	19.75844	20.00000	Averaged	
54 Chlorobenzene	1.06527	1.17527	1.17527	0.500	10.32587	20.00000	Averaged	
55 Ethyl Benzene	0.58463	0.65705	0.65705	0.100	12.38703	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.34552	0.39795	0.39795	0.010	15.17314	20.00000	Averaged	
57 m,p-xylene	0.66952	0.79822	0.79822	0.300	19.22344	20.00000	Averaged	
58 o-Xylene	0.63649	0.75087	0.75087	0.300	17.97018	20.00000	Averaged	
59 Styrene	1.01298	1.27032	1.27032	0.300	25.40470	20.00000	Averaged	<-
60 Bromoform	0.40858	0.46449	0.46449	0.010	13.68404	20.00000	Averaged	
61 Isopropyl Benzene	2.80578	3.46328	3.46328	0.010	23.43375	20.00000	Averaged	<-
$ 62 4-Bromofluorobenzene	0.53942	0.53470	0.53470	0.200	-0.87468	20.00000	Averaged	
63 Bromobenzene	0.80465	0.83864	0.83864	0.010	4.22365	20.00000	Averaged	
64 N-Propyl Benzene	3.67490	4.29029	4.29029	0.010	16.74574	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.91419	0.94990	0.94990	0.100	3.90629	20.00000	Averaged	
66 2-Chloro Toluene	2.61903	2.90890	2.90890	0.010	11.06770	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.50603	3.04547	3.04547	0.010	21.52570	20.00000	Averaged	<-
68 1,2,3-Trichloropropane	0.29644	0.31644	0.31644	0.010	6.74824	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.32858	0.35584	0.35584	0.001	8.29786	20.00000	Averaged	
70 4-Chloro Toluene	2.45845	2.72592	2.72592	0.010	10.87944	20.00000	Averaged	
71 T-Butyl Benzene	2.07040	2.52357	2.52357	0.010	21.88818	20.00000	Averaged	<-
72 1,2,4-Trimethylbenzene	2.46521	3.02992	3.02992	0.010	22.90688	20.00000	Averaged	<-
73 S-Butyl Benzene	3.07720	3.78447	3.78447	0.010	22.98413	20.00000	Averaged	<-
74 4-Isopropyl Toluene	2.50504	3.16714	3.16714	0.010	26.43069	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i
Lab File ID: ccv042215.d
Analysis Type: WATER
Lab Sample ID: CCV0422
Method: /chem3/nt2.i/20150422.b/82600420L.m

Injection Date: 22-APR-2015 07:55
Init. Cal. Date(s): 20-APR-2015 20-APR-2015
Init. Cal. Times: 18:29 20:52
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
75 1,3-Dichlorobenzene	1.55411	1.60490	1.60490	0.600	3.26808	20.00000	Averaged
77 1,4-Dichlorobenzene	1.60680	1.58037	1.58037	0.500	-1.64507	20.00000	Averaged
78 N-Butyl Benzene	2.53563	3.03937	3.03937	0.010	19.86622	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.92329	0.90669	0.90669	0.010	-1.79814	20.00000	Averaged
80 1,2-Dichlorobenzene	1.47741	1.50645	1.50645	0.400	1.96562	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.16612	0.18204	0.18204	0.010	9.58447	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.57498	0.58798	0.58798	0.010	2.25974	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.98696	1.07543	1.07543	0.010	8.96432	20.00000	Averaged
85 Naphthalene	11.22970	10.00000	2.84761	0.010	12.29697	20.00000	Linear
86 1,2,3-Trichlorobenzene	0.99315	1.10021	1.10021	0.010	10.78013	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-042015A
METHOD BLANK

Lab Sample ID: MB-042015A
LIMS ID: 15-7746
Matrix: Soil
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/20/15 11:12

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-042015A
METHOD BLANK

Lab Sample ID: MB-042015A
LIMS ID: 15-7746
Matrix: Soil
Date Analyzed: 04/20/15 11:12

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	117%
d8-Toluene	102%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17-40**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AE04G
LIMS ID: 15-7746
Matrix: Soil
Data Release Authorized: MW
Reported: 04/24/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/20/15 12:20

Sample Amount: 4.92 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 19.4%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	**Chloromethane**	**1.0**	**1.6**	**M**
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	**Methylene Chloride**	**2.0**	**2.8**	
67-64-1	Acetone	5.1	< 5.1	U
75-15-0	**Carbon Disulfide**	**1.0**	**1.6**	
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.1	< 5.1	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.1	< 5.1	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.1	< 5.1	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.1	< 5.1	U
591-78-6	2-Hexanone	5.1	< 5.1	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	51	< 51	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.1	< 5.1	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.1	< 5.1	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.1	< 5.1	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: SB17-40
SAMPLE

Lab Sample ID: AE04G
LIMS ID: 15-7746
Matrix: Soil
Date Analyzed: 04/20/15 12:20

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.1	< 5.1	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.1	< 5.1	U
91-20-3	Naphthalene	5.1	< 5.1	U
87-61-6	1,2,3-Trichlorobenzene	5.1	< 5.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	126%
d8-Toluene	102%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB17-43.5**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AE04H
LIMS ID: 15-7747
Matrix: Soil
Data Release Authorized:
Reported: 04/24/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/20/15 12:45

Sample Amount: 5.36 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 8.4%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.9	< 0.9	U
74-83-9	Bromomethane	0.9	< 0.9	U
75-01-4	Vinyl Chloride	0.9	< 0.9	U
75-00-3	Chloroethane	0.9	< 0.9	U
75-09-2	**Methylene Chloride**	**1.9**	**2.4**	
67-64-1	**Acetone**	**4.7**	**8.8**	
75-15-0	Carbon Disulfide	0.9	< 0.9	U
75-35-4	1,1-Dichloroethene	0.9	< 0.9	U
75-34-3	1,1-Dichloroethane	0.9	< 0.9	U
156-60-5	trans-1,2-Dichloroethene	0.9	< 0.9	U
156-59-2	cis-1,2-Dichloroethene	0.9	< 0.9	U
67-66-3	Chloroform	0.9	< 0.9	U
107-06-2	1,2-Dichloroethane	0.9	< 0.9	U
78-93-3	2-Butanone	4.7	< 4.7	U
71-55-6	1,1,1-Trichloroethane	0.9	< 0.9	U
56-23-5	Carbon Tetrachloride	0.9	< 0.9	U
108-05-4	Vinyl Acetate	4.7	< 4.7	U
75-27-4	Bromodichloromethane	0.9	< 0.9	U
78-87-5	1,2-Dichloropropane	0.9	< 0.9	U
10061-01-5	cis-1,3-Dichloropropene	0.9	< 0.9	U
79-01-6	Trichloroethene	0.9	< 0.9	U
124-48-1	Dibromochloromethane	0.9	< 0.9	U
79-00-5	1,1,2-Trichloroethane	0.9	< 0.9	U
71-43-2	Benzene	0.9	< 0.9	U
10061-02-6	trans-1,3-Dichloropropene	0.9	< 0.9	U
110-75-8	2-Chloroethylvinylether	4.7	< 4.7	U
75-25-2	Bromoform	0.9	< 0.9	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.7	< 4.7	U
591-78-6	2-Hexanone	4.7	< 4.7	U
127-18-4	Tetrachloroethene	0.9	< 0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
108-90-7	Chlorobenzene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
100-42-5	Styrene	0.9	< 0.9	U
75-69-4	Trichlorofluoromethane	0.9	< 0.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U
95-50-1	1,2-Dichlorobenzene	0.9	< 0.9	U
541-73-1	1,3-Dichlorobenzene	0.9	< 0.9	U
106-46-7	1,4-Dichlorobenzene	0.9	< 0.9	U
107-02-8	Acrolein	47	< 47	U
74-88-4	Iodomethane	0.9	< 0.9	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.7	< 4.7	U
563-58-6	1,1-Dichloropropene	0.9	< 0.9	U
74-95-3	Dibromomethane	0.9	< 0.9	U
630-20-6	1,1,1,2-Tetrachloroethane	0.9	< 0.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.7	< 4.7	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.7	< 4.7	U
108-67-8	1,3,5-Trimethylbenzene	0.9	< 0.9	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: SB17-43.5
SAMPLE

Lab Sample ID: AEO4H
LIMS ID: 15-7747
Matrix: Soil
Date Analyzed: 04/20/15 12:45

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.9	< 0.9	U
87-68-3	Hexachlorobutadiene	4.7	< 4.7	U
106-93-4	1,2-Dibromoethane	0.9	< 0.9	U
74-97-5	Bromochloromethane	0.9	< 0.9	U
594-20-7	2,2-Dichloropropane	0.9	< 0.9	U
142-28-9	1,3-Dichloropropane	0.9	< 0.9	U
98-82-8	Isopropylbenzene	0.9	< 0.9	U
103-65-1	n-Propylbenzene	0.9	< 0.9	U
108-86-1	Bromobenzene	0.9	< 0.9	U
95-49-8	2-Chlorotoluene	0.9	< 0.9	U
106-43-4	4-Chlorotoluene	0.9	< 0.9	U
98-06-6	tert-Butylbenzene	0.9	< 0.9	U
135-98-8	sec-Butylbenzene	0.9	< 0.9	U
99-87-6	4-Isopropyltoluene	0.9	< 0.9	U
104-51-8	n-Butylbenzene	0.9	< 0.9	U
120-82-1	1,2,4-Trichlorobenzene	4.7	< 4.7	U
91-20-3	Naphthalene	4.7	< 4.7	U
87-61-6	1,2,3-Trichlorobenzene	4.7	< 4.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	130%
d8-Toluene	98.2%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB18-26**
SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AE04I
LIMS ID: 15-7748
Matrix: Soil
Data Release Authorized: MW
Reported: 04/24/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/20/15 13:10

Sample Amount: 3.60 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 26.0%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	**Methylene Chloride**	**2.8**	**3.1**	
67-64-1	**Acetone**	**6.9**	**25**	
75-15-0	**Carbon Disulfide**	**1.4**	**3.4**	
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	6.9	< 6.9	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	6.9	< 6.9	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	6.9	< 6.9	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.9	< 6.9	U
591-78-6	2-Hexanone	6.9	< 6.9	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.8	< 2.8	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	69	< 69	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.8	< 2.8	U
107-13-1	Acrylonitrile	6.9	< 6.9	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	6.9	< 6.9	U
96-18-4	1,2,3-Trichloropropane	2.8	< 2.8	U
110-57-6	trans-1,4-Dichloro-2-butene	6.9	< 6.9	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: SB18-26
SAMPLE

Lab Sample ID: AE04I
LIMS ID: 15-7748
Matrix: Soil
Date Analyzed: 04/20/15 13:10

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	6.9	< 6.9	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	6.9	< 6.9	U
91-20-3	Naphthalene	6.9	< 6.9	U
87-61-6	1,2,3-Trichlorobenzene	6.9	< 6.9	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	126%
d8-Toluene	98.7%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB18-36.5**
Page 1 of 2 **SAMPLE**

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: AEO4J
LIMS ID: 15-7749
Matrix: Soil
Data Release Authorized:
Reported: 04/24/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Instrument/Analyst: NT5/PAB
Date Analyzed: 04/20/15 13:35

Sample Amount: 6.03 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 9.3%

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.8	< 0.8	U
74-83-9	Bromomethane	0.8	< 0.8	U
75-01-4	Vinyl Chloride	0.8	< 0.8	U
75-00-3	Chloroethane	0.8	< 0.8	U
75-09-2	**Methylene Chloride**	**1.7**	**1.9**	
67-64-1	Acetone	4.1	< 4.1	U
75-15-0	Carbon Disulfide	0.8	< 0.8	U
75-35-4	1,1-Dichloroethene	0.8	< 0.8	U
75-34-3	1,1-Dichloroethane	0.8	< 0.8	U
156-60-5	trans-1,2-Dichloroethene	0.8	< 0.8	U
156-59-2	cis-1,2-Dichloroethene	0.8	< 0.8	U
67-66-3	Chloroform	0.8	< 0.8	U
107-06-2	1,2-Dichloroethane	0.8	< 0.8	U
78-93-3	2-Butanone	4.1	< 4.1	U
71-55-6	1,1,1-Trichloroethane	0.8	< 0.8	U
56-23-5	Carbon Tetrachloride	0.8	< 0.8	U
108-05-4	Vinyl Acetate	4.1	< 4.1	U
75-27-4	Bromodichloromethane	0.8	< 0.8	U
78-87-5	1,2-Dichloropropane	0.8	< 0.8	U
10061-01-5	cis-1,3-Dichloropropene	0.8	< 0.8	U
79-01-6	Trichloroethene	0.8	< 0.8	U
124-48-1	Dibromochloromethane	0.8	< 0.8	U
79-00-5	1,1,2-Trichloroethane	0.8	< 0.8	U
71-43-2	Benzene	0.8	< 0.8	U
10061-02-6	trans-1,3-Dichloropropene	0.8	< 0.8	U
110-75-8	2-Chloroethylvinylether	4.1	< 4.1	U
75-25-2	Bromoform	0.8	< 0.8	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.1	< 4.1	U
591-78-6	2-Hexanone	4.1	< 4.1	U
127-18-4	Tetrachloroethene	0.8	< 0.8	U
79-34-5	1,1,2,2-Tetrachloroethane	0.8	< 0.8	U
108-88-3	Toluene	0.8	< 0.8	U
108-90-7	Chlorobenzene	0.8	< 0.8	U
100-41-4	Ethylbenzene	0.8	< 0.8	U
100-42-5	Styrene	0.8	< 0.8	U
75-69-4	Trichlorofluoromethane	0.8	< 0.8	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.7	< 1.7	U
179601-23-1	m,p-Xylene	0.8	< 0.8	U
95-47-6	o-Xylene	0.8	< 0.8	U
95-50-1	1,2-Dichlorobenzene	0.8	< 0.8	U
541-73-1	1,3-Dichlorobenzene	0.8	< 0.8	U
106-46-7	1,4-Dichlorobenzene	0.8	< 0.8	U
107-02-8	Acrolein	41	< 41	U
74-88-4	Iodomethane	0.8	< 0.8	U
74-96-4	Bromoethane	1.7	< 1.7	U
107-13-1	Acrylonitrile	4.1	< 4.1	U
563-58-6	1,1-Dichloropropene	0.8	< 0.8	U
74-95-3	Dibromomethane	0.8	< 0.8	U
630-20-6	1,1,1,2-Tetrachloroethane	0.8	< 0.8	U
96-12-8	1,2-Dibromo-3-chloropropane	4.1	< 4.1	U
96-18-4	1,2,3-Trichloropropane	1.7	< 1.7	U
110-57-6	trans-1,4-Dichloro-2-butene	4.1	< 4.1	U
108-67-8	1,3,5-Trimethylbenzene	0.8	< 0.8	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SB18-36.5**

SAMPLE

Lab Sample ID: AEO4J
LIMS ID: 15-7749
Matrix: Soil
Date Analyzed: 04/20/15 13:35

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

CAS Number	Analyte	LOQ	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.8	< 0.8	U
87-68-3	Hexachlorobutadiene	4.1	< 4.1	U
106-93-4	1,2-Dibromoethane	0.8	< 0.8	U
74-97-5	Bromochloromethane	0.8	< 0.8	U
594-20-7	2,2-Dichloropropane	0.8	< 0.8	U
142-28-9	1,3-Dichloropropane	0.8	< 0.8	U
98-82-8	Isopropylbenzene	0.8	< 0.8	U
103-65-1	n-Propylbenzene	0.8	< 0.8	U
108-86-1	Bromobenzene	0.8	< 0.8	U
95-49-8	2-Chlorotoluene	0.8	< 0.8	U
106-43-4	4-Chlorotoluene	0.8	< 0.8	U
98-06-6	tert-Butylbenzene	0.8	< 0.8	U
135-98-8	sec-Butylbenzene	0.8	< 0.8	U
99-87-6	4-Isopropyltoluene	0.8	< 0.8	U
104-51-8	n-Butylbenzene	0.8	< 0.8	U
120-82-1	1,2,4-Trichlorobenzene	4.1	< 4.1	U
91-20-3	Naphthalene	4.1	< 4.1	U
87-61-6	1,2,3-Trichlorobenzene	4.1	< 4.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	137%
d8-Toluene	98.0%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042015A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-042015A
LIMS ID: 15-7746
Matrix: Soil
Data Release Authorized:
Reported: 04/24/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT5/PAB
LCSD: NT5/PAB
Date Analyzed LCS: 04/20/15 10:22
LCSD: 04/20/15 10:47

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	46.9	50.0	93.8%	46.2	50.0	92.4%	1.5%
Bromomethane	49.9	50.0	99.8%	47.4	50.0	94.8%	5.1%
Vinyl Chloride	50.4	50.0	101%	50.0	50.0	100%	0.8%
Chloroethane	49.4	50.0	98.8%	49.8	50.0	99.6%	0.8%
Methylene Chloride	51.4	50.0	103%	50.2	50.0	100%	2.4%
Acetone	217	250	86.8%	230	250	92.0%	5.8%
Carbon Disulfide	50.6	50.0	101%	50.9	50.0	102%	0.6%
1,1-Dichloroethene	49.8	50.0	99.6%	49.5	50.0	99.0%	0.6%
1,1-Dichloroethane	50.1	50.0	100%	49.2	50.0	98.4%	1.8%
trans-1,2-Dichloroethene	49.6	50.0	99.2%	47.6	50.0	95.2%	4.1%
cis-1,2-Dichloroethene	49.3	50.0	98.6%	48.1	50.0	96.2%	2.5%
Chloroform	49.7	50.0	99.4%	49.7	50.0	99.4%	0.0%
1,2-Dichloroethane	49.1	50.0	98.2%	49.0	50.0	98.0%	0.2%
2-Butanone	221	250	88.4%	236	250	94.4%	6.6%
1,1,1-Trichloroethane	52.2	50.0	104%	51.5	50.0	103%	1.4%
Carbon Tetrachloride	51.6	50.0	103%	49.7	50.0	99.4%	3.8%
Vinyl Acetate	52.4	50.0	105%	52.7	50.0	105%	0.6%
Bromodichloromethane	47.4	50.0	94.8%	47.8	50.0	95.6%	0.8%
1,2-Dichloropropane	45.0	50.0	90.0%	47.3	50.0	94.6%	5.0%
cis-1,3-Dichloropropene	49.0	50.0	98.0%	48.3	50.0	96.6%	1.4%
Trichloroethene	48.3	50.0	96.6%	47.0	50.0	94.0%	2.7%
Dibromochloromethane	47.0	50.0	94.0%	47.1	50.0	94.2%	0.2%
1,1,2-Trichloroethane	45.4	50.0	90.8%	45.0	50.0	90.0%	0.9%
Benzene	46.6	50.0	93.2%	45.1	50.0	90.2%	3.3%
trans-1,3-Dichloropropene	49.5	50.0	99.0%	49.6	50.0	99.2%	0.2%
2-Chloroethylvinylether	42.7	50.0	85.4%	42.9	50.0	85.8%	0.5%
Bromoform	47.5	50.0	95.0%	49.2	50.0	98.4%	3.5%
4-Methyl-2-Pentanone (MIBK)	222	250	88.8%	229	250	91.6%	3.1%
2-Hexanone	227	250	90.8%	236	250	94.4%	3.9%
Tetrachloroethene	47.9	50.0	95.8%	46.0	50.0	92.0%	4.0%
1,1,2,2-Tetrachloroethane	44.5	50.0	89.0%	46.6	50.0	93.2%	4.6%
Toluene	46.9	50.0	93.8%	45.8	50.0	91.6%	2.4%
Chlorobenzene	46.2	50.0	92.4%	45.8	50.0	91.6%	0.9%
Ethylbenzene	47.4	50.0	94.8%	46.4	50.0	92.8%	2.1%
Styrene	48.3	50.0	96.6%	47.5	50.0	95.0%	1.7%
Trichlorofluoromethane	54.6	50.0	109%	53.1	50.0	106%	2.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	52.1	50.0	104%	52.2	50.0	104%	0.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-042015A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-042015A
LIMS ID: 15-7746
Matrix: Soil

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	94.5	100	94.5%	92.7	100	92.7%	1.9%
o-Xylene	47.4	50.0	94.8%	46.7	50.0	93.4%	1.5%
1,2-Dichlorobenzene	45.7	50.0	91.4%	46.2	50.0	92.4%	1.1%
1,3-Dichlorobenzene	48.6	50.0	97.2%	48.9	50.0	97.8%	0.6%
1,4-Dichlorobenzene	47.7	50.0	95.4%	47.7	50.0	95.4%	0.0%
Acrolein	246	250	98.4%	252	250	101%	2.4%
Iodomethane	40.5 Q	50.0	81.0%	42.7 Q	50.0	85.4%	5.3%
Bromoethane	53.4	50.0	107%	52.6	50.0	105%	1.5%
Acrylonitrile	47.3	50.0	94.6%	46.7	50.0	93.4%	1.3%
1,1-Dichloropropene	49.7	50.0	99.4%	48.0	50.0	96.0%	3.5%
Dibromomethane	45.9	50.0	91.8%	46.7	50.0	93.4%	1.7%
1,1,1,2-Tetrachloroethane	48.0	50.0	96.0%	47.0	50.0	94.0%	2.1%
1,2-Dibromo-3-chloropropane	46.5	50.0	93.0%	51.0	50.0	102%	9.2%
1,2,3-Trichloropropane	44.9	50.0	89.8%	47.1	50.0	94.2%	4.8%
trans-1,4-Dichloro-2-butene	48.8	50.0	97.6%	50.6	50.0	101%	3.6%
1,3,5-Trimethylbenzene	48.4	50.0	96.8%	48.8	50.0	97.6%	0.8%
1,2,4-Trimethylbenzene	49.6	50.0	99.2%	49.6	50.0	99.2%	0.0%
Hexachlorobutadiene	48.2	50.0	96.4%	47.6	50.0	95.2%	1.3%
1,2-Dibromoethane	46.5	50.0	93.0%	45.5	50.0	91.0%	2.2%
Bromochloromethane	46.7	50.0	93.4%	48.1	50.0	96.2%	3.0%
2,2-Dichloropropane	54.5	50.0	109%	54.3	50.0	109%	0.4%
1,3-Dichloropropane	45.1	50.0	90.2%	45.1	50.0	90.2%	0.0%
Isopropylbenzene	49.0	50.0	98.0%	48.8	50.0	97.6%	0.4%
n-Propylbenzene	49.3	50.0	98.6%	49.3	50.0	98.6%	0.0%
Bromobenzene	46.1	50.0	92.2%	45.8	50.0	91.6%	0.7%
2-Chlorotoluene	48.0	50.0	96.0%	48.2	50.0	96.4%	0.4%
4-Chlorotoluene	48.6	50.0	97.2%	48.1	50.0	96.2%	1.0%
tert-Butylbenzene	48.3	50.0	96.6%	48.8	50.0	97.6%	1.0%
sec-Butylbenzene	49.4	50.0	98.8%	49.3	50.0	98.6%	0.2%
4-Isopropyltoluene	51.4	50.0	103%	50.2	50.0	100%	2.4%
n-Butylbenzene	52.2	50.0	104%	51.4	50.0	103%	1.5%
1,2,4-Trichlorobenzene	50.1	50.0	100%	49.7	50.0	99.4%	0.8%
Naphthalene	46.0	50.0	92.0%	48.2	50.0	96.4%	4.7%
1,2,3-Trichlorobenzene	47.0	50.0	94.0%	48.4	50.0	96.8%	2.9%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	111%	114%
d8-Toluene	101%	101%
Bromofluorobenzene	101%	102%
d4-1,2-Dichlorobenzene	99.9%	102%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-042015A	Method Blank	Low	117%	102%	104%	101%	0
LCS-042015A	Lab Control	Low	111%	101%	101%	99.9%	0
LCSD-042015A	Lab Control Dup	Low	114%	101%	102%	102%	0
AEO4G	SB17-40	Low	126%	102%	104%	102%	0
AEO4H	SB17-43.5	Low	130%	98.2%	103%	102%	0
AEO4I	SB18-26	Low	126%	98.7%	102%	103%	0
AEO4J	SB18-36.5	Low	137%	98.0%	106%	102%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 15-7746 to 15-7749

Data File: /chem1/nt5.i/20150420.b/15cc0420.d
Report Date: 22-Apr-2015 10:32

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0420.d
Analysis Type: SOIL
Lab Sample ID: CC0420
Method: /chem1/nt5.i/20150420.b/VO051314S.m

Injection Date: 20-APR-2015 09:38
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.52690	0.55013	0.55013	0.100	4.41016	20.00000	Averaged	
2 Chloromethane	0.82753	0.76176	0.76176	0.100	-7.94814	20.00000	Averaged	
3 Vinyl Chloride	0.80107	0.79130	0.79130	0.100	-1.21919	20.00000	Averaged	
4 Bromomethane	0.46367	0.46993	0.46993	0.100	1.34903	20.00000	Averaged	
5 Chloroethane	0.49441	0.48519	0.48519	0.100	-1.86397	20.00000	Averaged	
6 Trichlorofluoromethane	0.97964	1.04333	1.04333	0.100	6.50124	20.00000	Averaged	
7 1,1-Dichloroethene	0.65179	0.69617	0.69617	0.100	6.80860	20.00000	Averaged	
8 Carbon Disulfide	1.99979	2.17175	2.17175	0.010	8.59860	20.00000	Averaged	
9 112Trichloro122Trifluoroeth	0.59931	0.65269	0.65269	0.010	8.90651	20.00000	Averaged	
10 Iodomethane	39.10433	50.00000	0.47444	0.010	-21.79134	20.00000	Linear	<-
11 Bromoethane	0.40095	0.42641	0.42641	0.010	6.34934	20.00000	Averaged	
12 Acrolein	0.12306	0.11849	0.11849	0.000	-3.71835	20.00000	Averaged	
13 Methylene Chloride	0.64347	0.64084	0.64084	0.010	-0.40897	20.00000	Averaged	
14 Acetone	233	250	0.17620	0.001	-6.81135	20.00000	Linear	
15 Trans-1,2-Dichloroethene	0.71825	0.67259	0.67259	0.010	-6.35592	20.00000	Averaged	
16 Methyl tert butyl ether	1.86711	1.81473	1.81473	0.100	-2.80560	20.00000	Averaged	
17 1,1-Dichloroethane	1.23721	1.19671	1.19671	0.100	-3.27384	20.00000	Averaged	
18 Acrylonitrile	0.20674	0.19169	0.19169	0.001	-7.28051	20.00000	Averaged	
19 Vinyl Acetate	1.17137	1.20734	1.20734	0.010	3.07092	20.00000	Averaged	
20 Cis-1,2-Dichloroethene	0.72862	0.69378	0.69378	0.010	-4.78176	20.00000	Averaged	
22 2,2-Dichloropropane	1.03490	1.11163	1.11163	0.010	7.41432	20.00000	Averaged	
23 Bromochloromethane	0.30145	0.28620	0.28620	0.050	-5.05971	20.00000	Averaged	
24 Chloroform	1.11801	1.11774	1.11774	0.100	-0.02383	20.00000	Averaged	
25 Carbon Tetrachloride	0.39338	0.39019	0.39019	0.100	-0.81107	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.72245	0.77848	0.77848	0.100	7.75531	20.00000	Averaged	
26 1,1,1-Trichloroethane	1.05397	1.07828	1.07828	0.100	2.30610	20.00000	Averaged	
28 1,1-Dichloropropene	0.42433	0.40125	0.40125	0.010	-5.43915	20.00000	Averaged	
29 2-Butanone	0.07081	0.06664	0.06664	0.001	-5.89108	20.00000	Averaged	
30 Benzene	1.18185	1.08091	1.08091	0.100	-8.54100	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.76941	0.87650	0.87650	0.010	13.91914	20.00000	Averaged	
33 1,2-Dichloroethane	0.35968	0.35511	0.35511	0.100	-1.27086	20.00000	Averaged	
34 Trichloroethene	0.29303	0.27279	0.27279	0.100	-6.90713	20.00000	Averaged	
37 Dibromomethane	0.15100	0.14496	0.14496	0.010	-4.00181	20.00000	Averaged	
38 1,2-Dichloropropane	0.29381	0.27778	0.27778	0.100	-5.45653	20.00000	Averaged	
39 Bromodichloromethane	0.36604	0.35531	0.35531	0.100	-2.93060	20.00000	Averaged	
172 2-Pentanone	0.03971	0.03856	0.03856	0.500	-2.90072	20.00000	Averaged	<-

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0420.d
Analysis Type: SOIL
Lab Sample ID: CC0420
Method: /chem1/nt5.i/20150420.b/VO051314S.m

Injection Date: 20-APR-2015 09:38
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.15856	0.14249	0.14249	0.000	-10.13936	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.44353	0.44499	0.44499	0.100	0.33080	20.00000	Averaged
$ 42 d8-Toluene	1.25642	1.28434	1.28434	0.010	2.22244	20.00000	Averaged
43 Toluene	0.72111	0.66522	0.66522	0.100	-7.75055	20.00000	Averaged
44 Tetrachloroethene	0.29028	0.26692	0.26692	0.100	-8.04620	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.10567	0.10247	0.10247	0.000	-3.03539	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.41067	0.41683	0.41683	0.010	1.50169	20.00000	Averaged
47 1,1,2-Trichloroethane	0.21888	0.20161	0.20161	0.100	-7.88995	20.00000	Averaged
48 Chlorodibromomethane	0.25669	0.24342	0.24342	0.100	-5.17235	20.00000	Averaged
49 1,3-Dichloropropane	0.41905	0.38462	0.38462	0.100	-8.21595	20.00000	Averaged
50 1,2-Dibromoethane	0.21367	0.20292	0.20292	0.010	-5.03149	20.00000	Averaged
51 2-Hexanone	0.18542	0.17834	0.17834	0.010	-3.81477	20.00000	Averaged
53 Chlorobenzene	0.80685	0.74353	0.74353	0.300	-7.84880	20.00000	Averaged
54 Ethyl Benzene	1.46772	1.36090	1.36090	0.100	-7.27764	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.28582	0.27786	0.27786	0.010	-2.78647	20.00000	Averaged
56 m,p-xylene	0.56366	0.52030	0.52030	0.100	-7.69334	20.00000	Averaged
57 o-Xylene	0.51550	0.48393	0.48393	0.100	-6.12412	20.00000	Averaged
58 Styrene	0.85309	0.81540	0.81540	0.100	-4.41783	20.00000	Averaged
59 Bromoform	0.31069	0.31043	0.31043	0.100	-0.08408	20.00000	Averaged
60 Isopropyl Benzene	2.63699	2.53992	2.53992	0.010	-3.68101	20.00000	Averaged
$ 62 4-Bromofluorobenzene	0.49717	0.50049	0.50049	0.200	0.66838	20.00000	Averaged
63 Bromobenzene	0.59256	0.55790	0.55790	0.010	-5.84882	20.00000	Averaged
64 N-Propyl Benzene	3.15081	3.08967	3.08967	0.010	-1.94051	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.55806	0.52397	0.52397	0.300	-6.10888	20.00000	Averaged
66 2-Chloro Toluene	1.81234	1.74399	1.74399	0.010	-3.77172	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.21544	2.15620	2.15620	0.010	-2.67376	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18436	0.17915	0.17915	0.010	-2.82621	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.19116	0.19617	0.19617	0.001	2.62018	20.00000	Averaged
70 4-Chloro Toluene	1.88459	1.81039	1.81039	0.010	-3.93719	20.00000	Averaged
71 T-Butyl Benzene	1.89706	1.82436	1.82436	0.010	-3.83219	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.15841	2.12124	2.12124	0.010	-1.72204	20.00000	Averaged
73 S-Butyl Benzene	2.90640	2.82556	2.82556	0.010	-2.78155	20.00000	Averaged
74 4-Isopropyl Toluene	2.31427	2.33770	2.33770	0.010	1.01250	20.00000	Averaged
75 1,3-Dichlorobenzene	1.17810	1.12732	1.12732	0.100	-4.30962	20.00000	Averaged
77 1,4-Dichlorobenzene	1.22542	1.15722	1.15722	0.100	-5.56469	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
Lab File ID: 15cc0420.d
Analysis Type: SOIL
Lab Sample ID: CC0420
Method: /chem1/nt5.i/20150420.b/VO051314S.m

Injection Date: 20-APR-2015 09:38
Init. Cal. Date(s): 15-APR-2015 15-APR-2015
Init. Cal. Times: 11:18 14:12
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	2.24218	2.27184	2.27184	0.010	1.32271	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.95424	0.94568	0.94568	0.010	-0.89727	20.00000	Averaged
80 1,2-Dichlorobenzene	1.16556	1.09263	1.09263	0.100	-6.25727	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.11049	0.11248	0.11248	0.010	1.79632	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.34683	0.33944	0.33944	0.010	-2.13161	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.68446	0.67531	0.67531	0.010	-1.33597	20.00000	Averaged
84 Naphthalene	1.74008	1.64880	1.64880	0.010	-5.24557	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.63954	0.62155	0.62155	0.010	-2.81248	20.00000	Averaged

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Water

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized: MW
Reported: 04/28/15

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-042215 15-7740	Method Blank	04/22/15 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 91.1% 98.2%
AE04A 15-7740	SB17	04/22/15 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 72.0% 74.7%
AE04B 15-7741	SB18	04/22/15 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 72.5% 76.7%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
Matrix: Soil

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Data Release Authorized:
Reported: 04/28/15

ARI ID	Client ID	Analysis Date	Basis	Range	Result
MB-042215	Method Blank	04/22/15	Dry	Gasoline	< 5.0 U
15-7748		PID1		HC ID	---
				Trifluorotoluene	91.1%
				Bromobenzene	98.2%
AEO4I	SB18-26	04/22/15	Dry	Gasoline	< 7.8 U
15-7748		PID1		HC ID	---
				Trifluorotoluene	91.9%
				Bromobenzene	100%

Gasoline values reported in mg/kg (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Results corrected for soil moisture content per Section 11.10.5 of EPA Method 8000C.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG

Sample ID: LCS-042215
LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized: MW
Reported: 04/28/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 04/22/15 12:37
LCSD: 04/22/15 13:08
Instrument/Analyst LCS: PID1/ML
LCSD: PID1/ML

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0
LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.07	1.00	107%	1.06	1.00	106%	0.9%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.7%	94.0%
Bromobenzene	101%	96.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG

Sample ID: LCS-042215
LAB CONTROL SAMPLE

Lab Sample ID: LCS-042215
LIMS ID: 15-7748
Matrix: Soil
Data Release Authorized: MW
Reported: 04/28/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Date Analyzed LCS: 04/22/15 12:37
LCSD: 04/22/15 13:08
Instrument/Analyst LCS: PID1/ML
LCSD: PID1/ML

Purge Volume: 5.0 mL

Sample Amount LCS: 100 mg-dry-wt
LCSD: 100 mg-dry-wt

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	53.4	50.0	107%	53.0	50.0	106%	0.8%

Reported in mg/kg (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	95.7%	94.0%
Bromobenzene	101%	96.6%

ANALYTICAL RESOURCES INCORPORATED

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: AEO4
Matrix: Water

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	TFT	BBZ	TOT OUT
MB-042215	91.1%	98.2%	0
LCS-042215	95.7%	101%	0
LCSD-042215	94.0%	96.6%	0
SB17	72.0%*	74.7%*	2
SB18	72.5%*	76.7%*	2

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 15-7740 to 15-7741

ANALYTICAL RESOURCES INCORPORATED

TPHG SOIL SURROGATE RECOVERY SUMMARY

ARI Job: AEO4
Matrix: Soil

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
Event: 1396024

Client ID	BFB	TFT	BBZ	TOT OUT
MB-042215	NA	91.1%	98.2%	0
LCS-042215	NA	95.7%	101%	0
LCSD-042215	NA	94.0%	96.6%	0
SB18-26	NA	91.9%	100%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(65-128)
(BBZ) = Bromobenzene	(80-120)	(52-149)

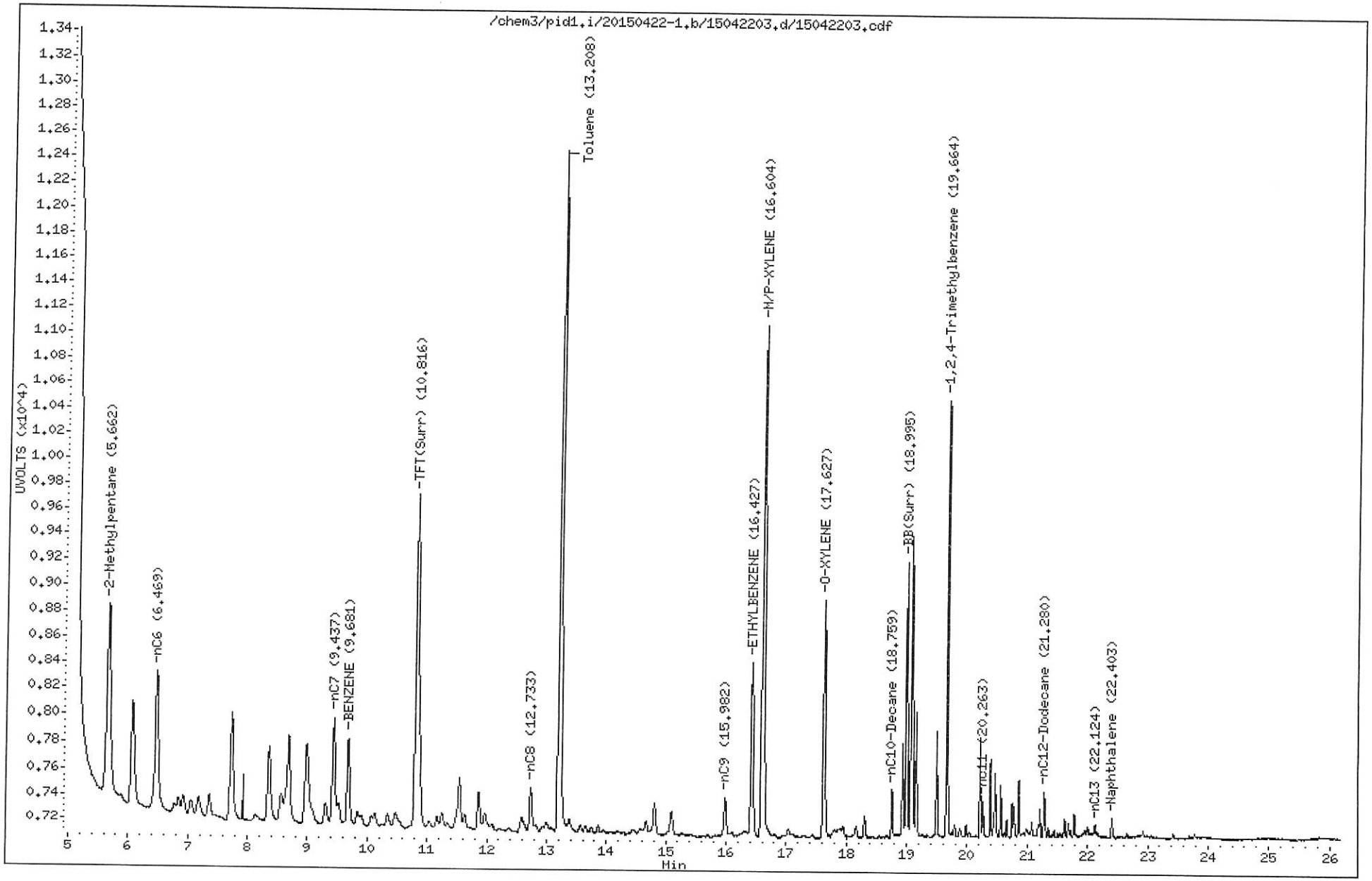
Log Number Range: 15-7748 to 15-7748

Data File: /chem3/pid1.i/20150422-1.b/15042203.d
Date : 22-APR-2015 12:37
Client ID:
Sample Info: LCS0422

Instrument: pid1.i

Operator: ML
Column diameter: 0.18

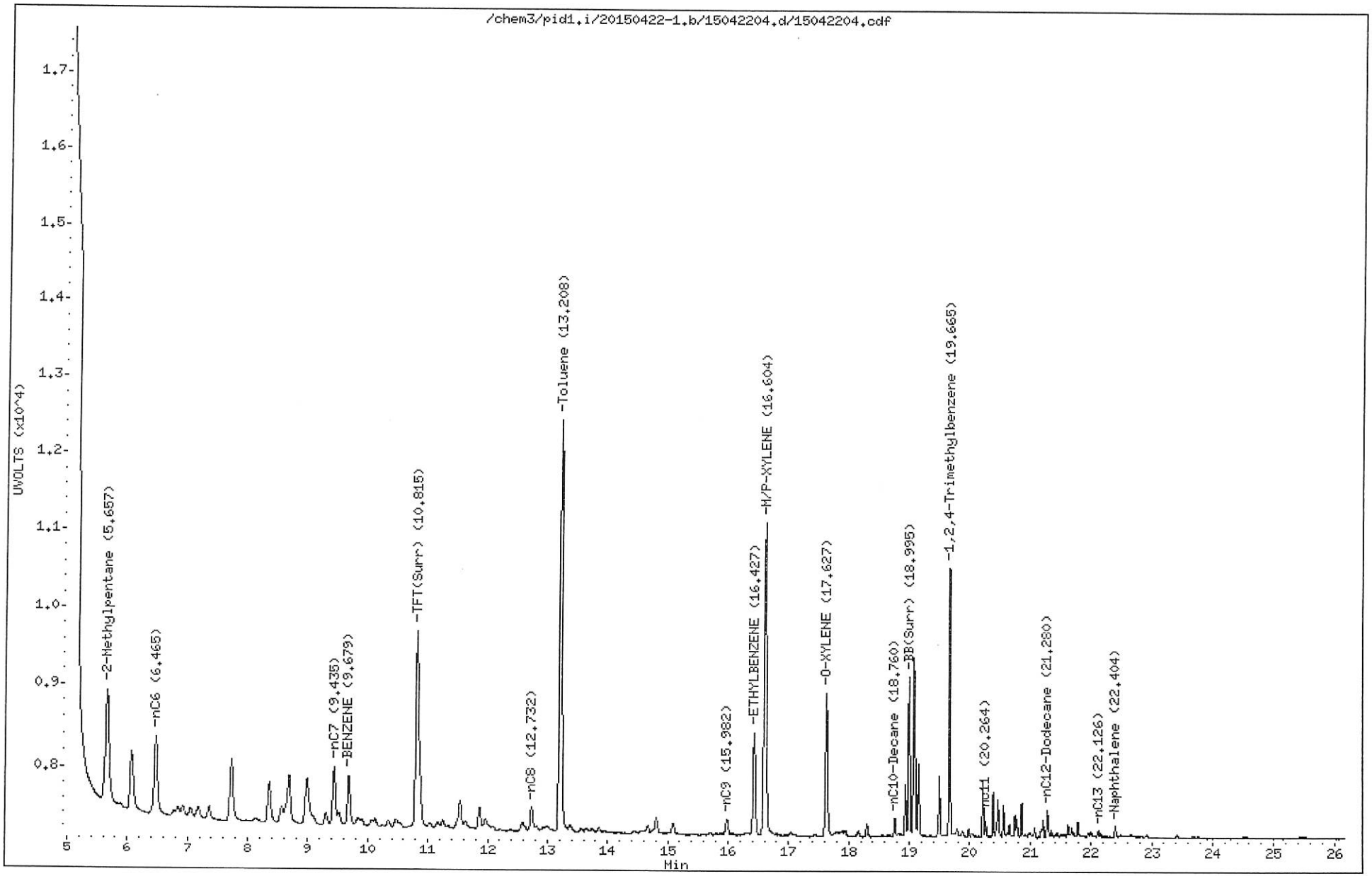
Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/20150422-1.b/15042204.d
Date : 22-APR-2015 13:08
Client ID:
Sample Info: LCSD0422

Instrument: pid1.i
Operator: ML
Column diameter: 0.18

Column phase: RTX 502-2 FID

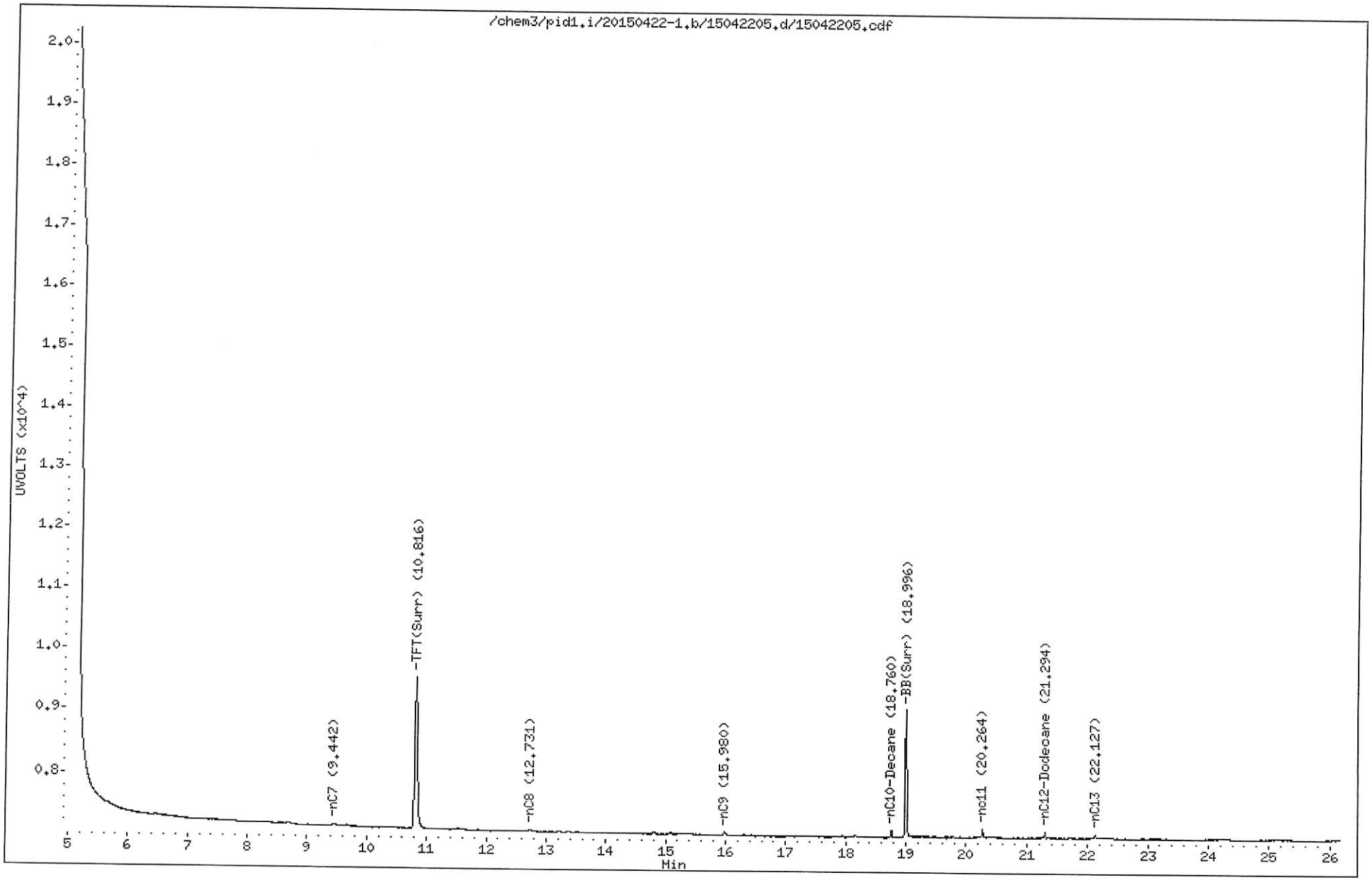


Data File: /chem3/pid1.i/20150422-1.b/15042205.d
Date : 22-APR-2015 13:40
Client ID:
Sample Info: MB0422

Instrument: pid1.i

Operator: ML
Column diameter: 0.18

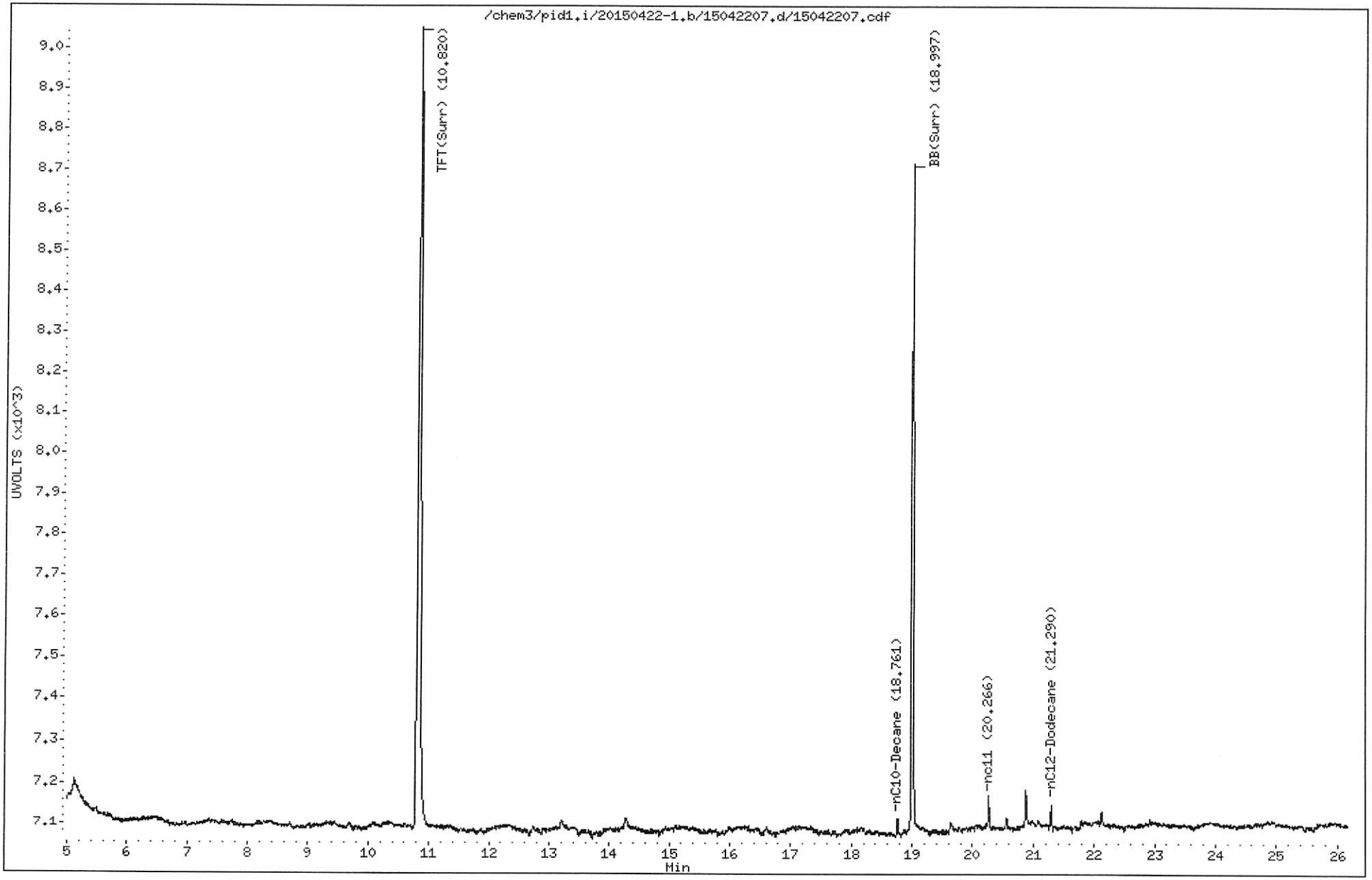
Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/20150422-1.b/15042207.d
Date : 22-APR-2015 16:47
Client ID:
Sample Info: AE04A

Instrument: pid1.i
Operator: ML
Column diameter: 0.18

Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/20150422-1.b/15042208.d

Date : 22-APR-2015 17:18

Client ID:

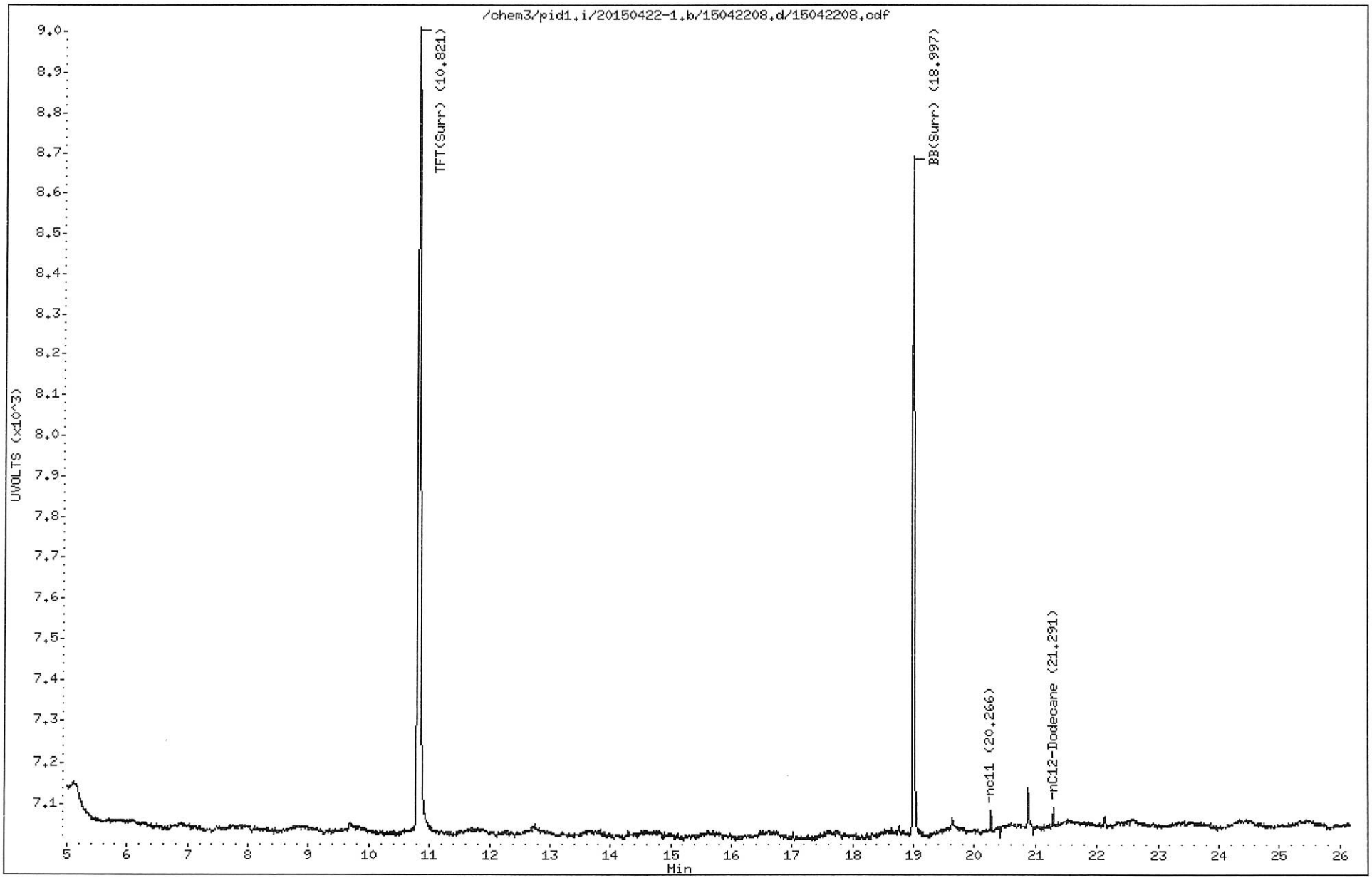
Sample Info: AE04B

Instrument: pid1.i

Operator: ML

Column phase: RTX 502-2 FID

Column diameter: 0.18



Data File: /chem3/pid1.i/20150422-1.b/15042210.d

Date : 22-APR-2015 18:22

Client ID:

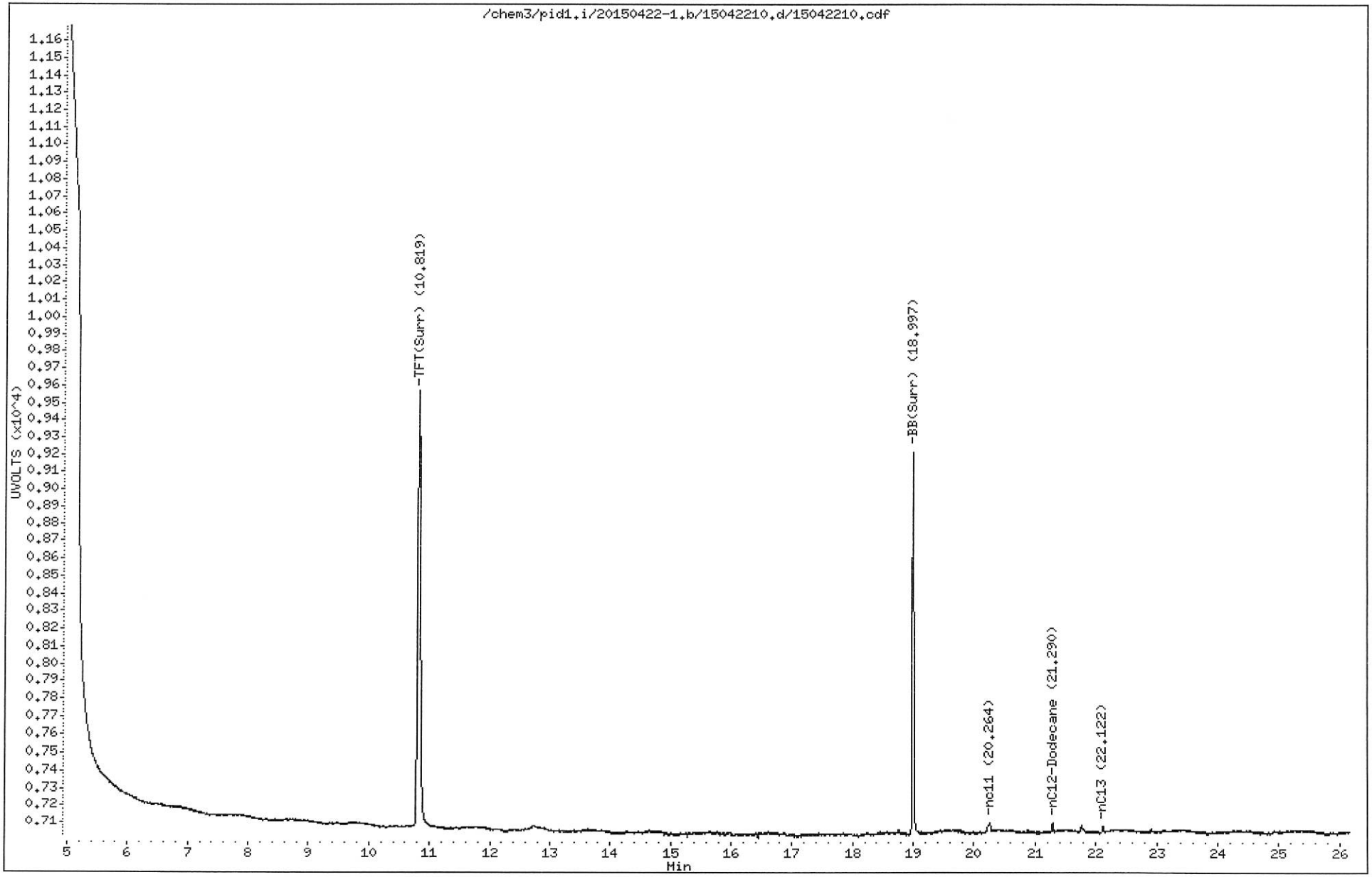
Sample Info: AE04I

Instrument: pid1.i

Operator: ML

Column phase: RTX 502-2 FID

Column diameter: 0.18



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AEO4-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Water

Date Received: 04/17/15

Data Release Authorized:
Reported: 04/28/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042315	Method Blank	04/23/15	04/27/15	1.00	Diesel Range	0.10	< 0.10 U
15-7740	HC ID: ---		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		100%
AEO4A	SB17	04/23/15	04/27/15	1.00	**Diesel Range**	**0.10**	**0.11**
15-7740	HC ID: **DRO**		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		94.6%
AEO4B	SB18	04/23/15	04/27/15	1.00	**Diesel Range**	**0.10**	**0.10**
15-7741	HC ID: **DRO**		FID4A	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		98.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-042315	100%	0
LCS-042315	105%	0
LCSD-042315	102%	0
SB17	94.6%	0
SB18	98.0%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-7740 to 15-7741

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-042315
LCS/LCSD

Lab Sample ID: LCS-042315
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized:
Reported: 04/28/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 04/23/15

Date Analyzed LCS: 04/27/15 19:31
LCSD: 04/27/15 19:55
Instrument/Analyst LCS: FID4A/ML
LCSD: FID4A/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.75	3.00	91.7%	2.71	3.00	90.3%	1.5%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	105%	102%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 04/17/15

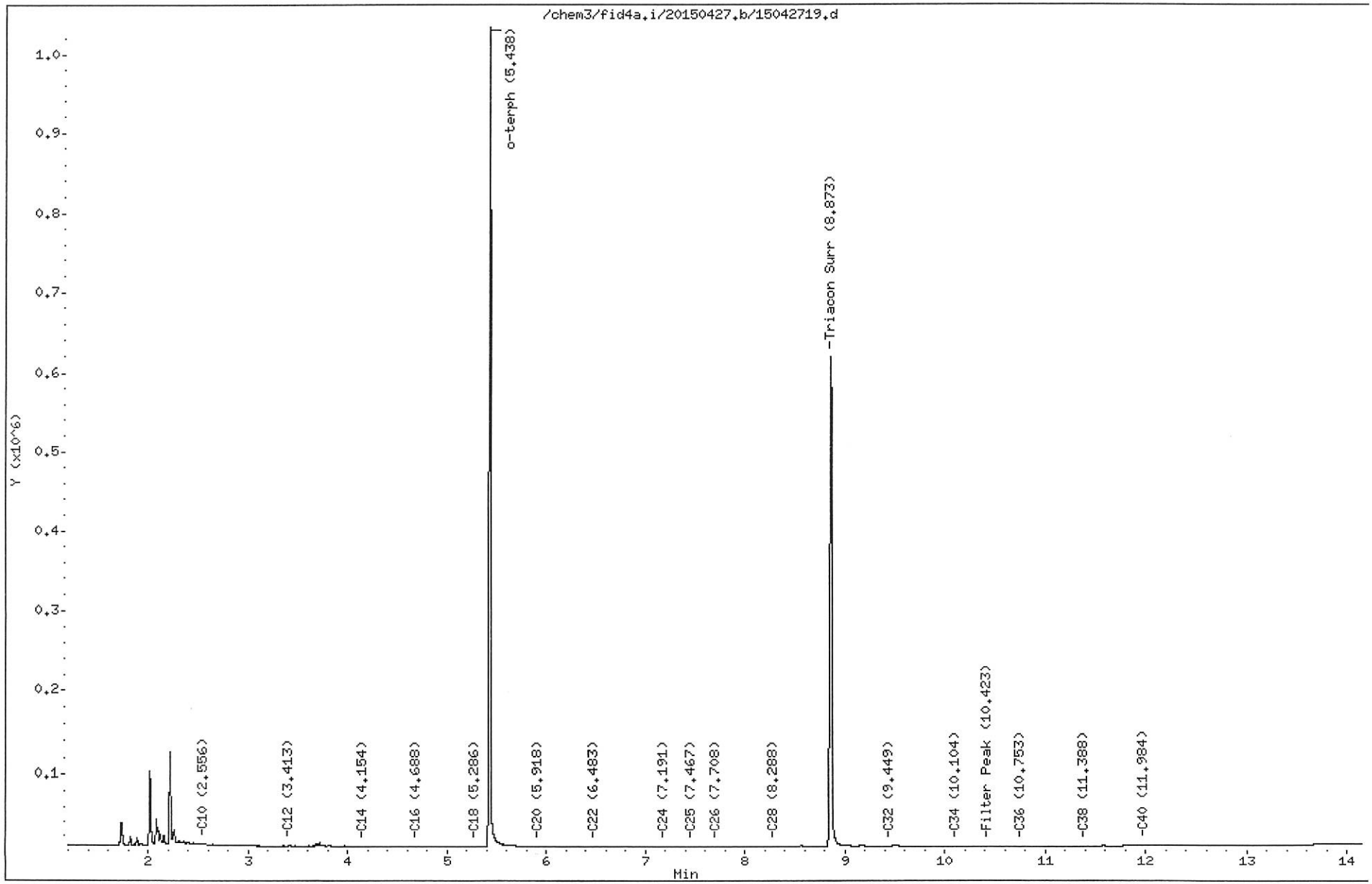
ARI Job: AEO4
Project: Precision Engineering
1396024

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-7740-042315MB1	Method Blank	500 mL	1.00 mL	04/23/15
15-7740-042315LCS1	Lab Control	500 mL	1.00 mL	04/23/15
15-7740-042315LCSD1	Lab Control Dup	500 mL	1.00 mL	04/23/15
15-7740-AEO4A	SB17	500 mL	1.00 mL	04/23/15
15-7741-AEO4B	SB18	500 mL	1.00 mL	04/23/15

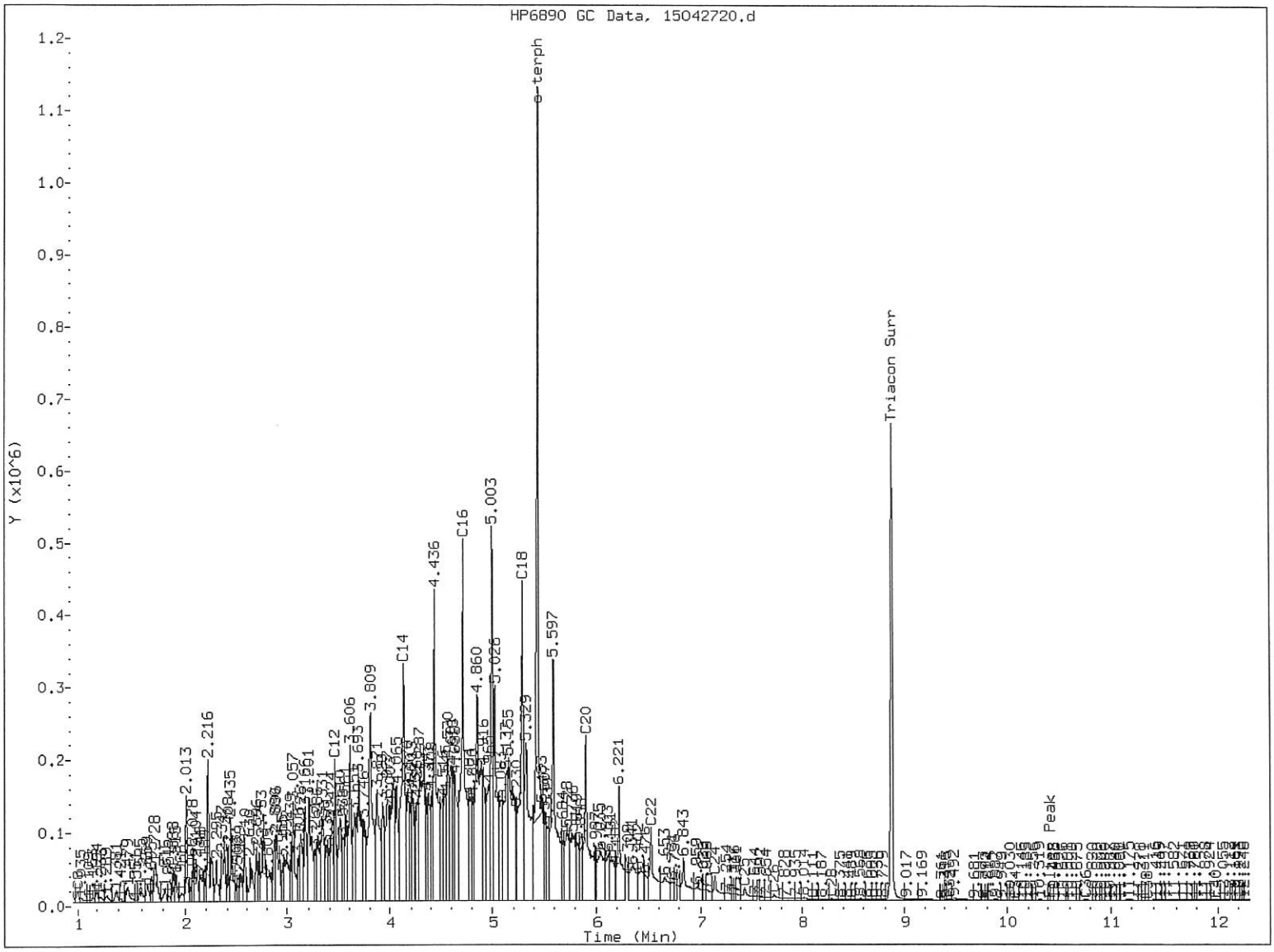
Data File: /chem3/fid4a.i/20150427.b/15042719.d
Date : 27-APR-2015 19:08
Client ID: AEM1MBW1
Sample Info: AEM1MBW1

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 AEM1LCSW1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

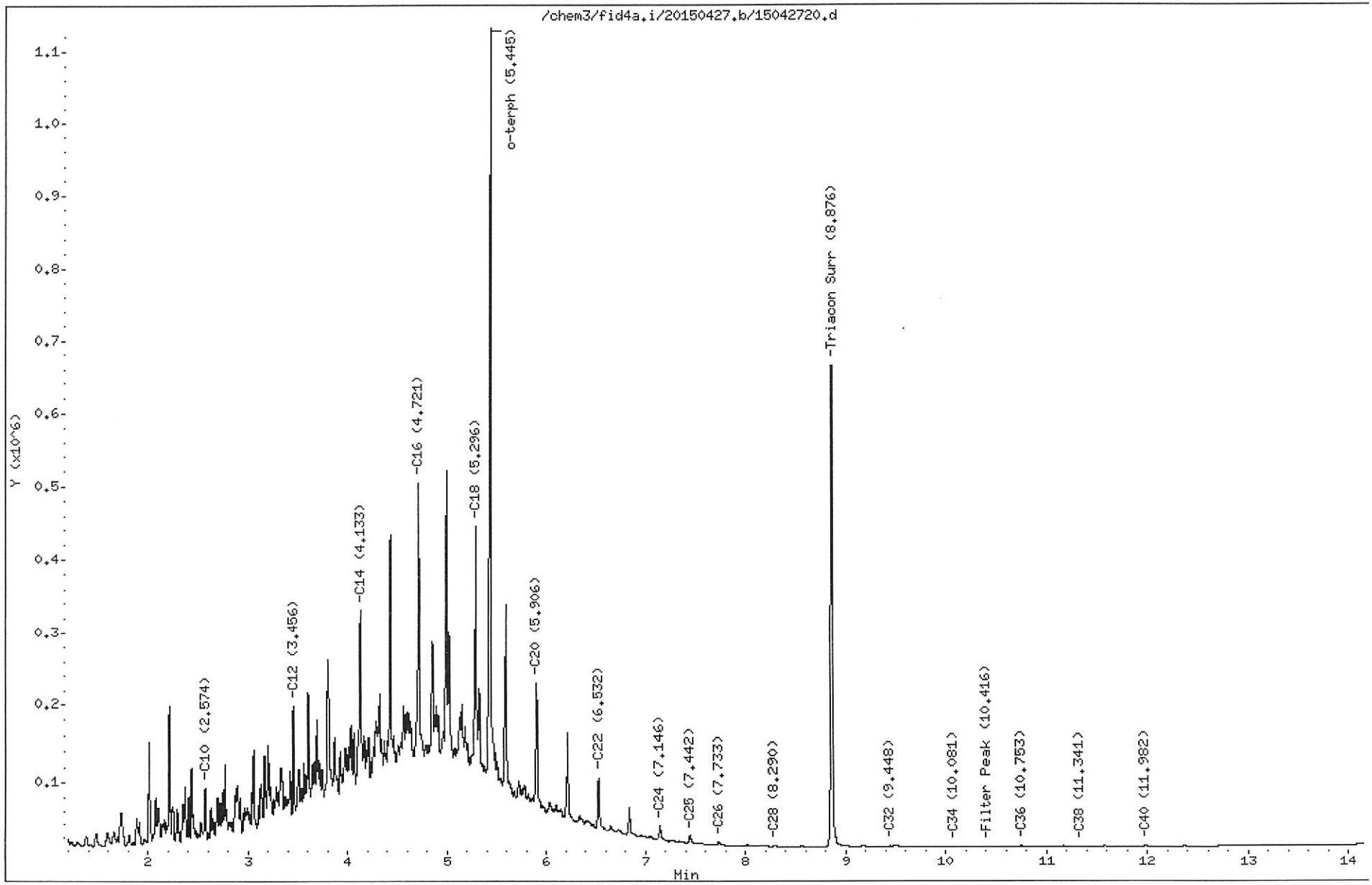
Analyst: ML Date: 4/28/15

Data File: /chem3/fid4a.i/20150427.b/15042720.d
Date : 27-APR-2015 19:31
Client ID: AEM1LCSW1
Sample Info: AEM1LCSW1

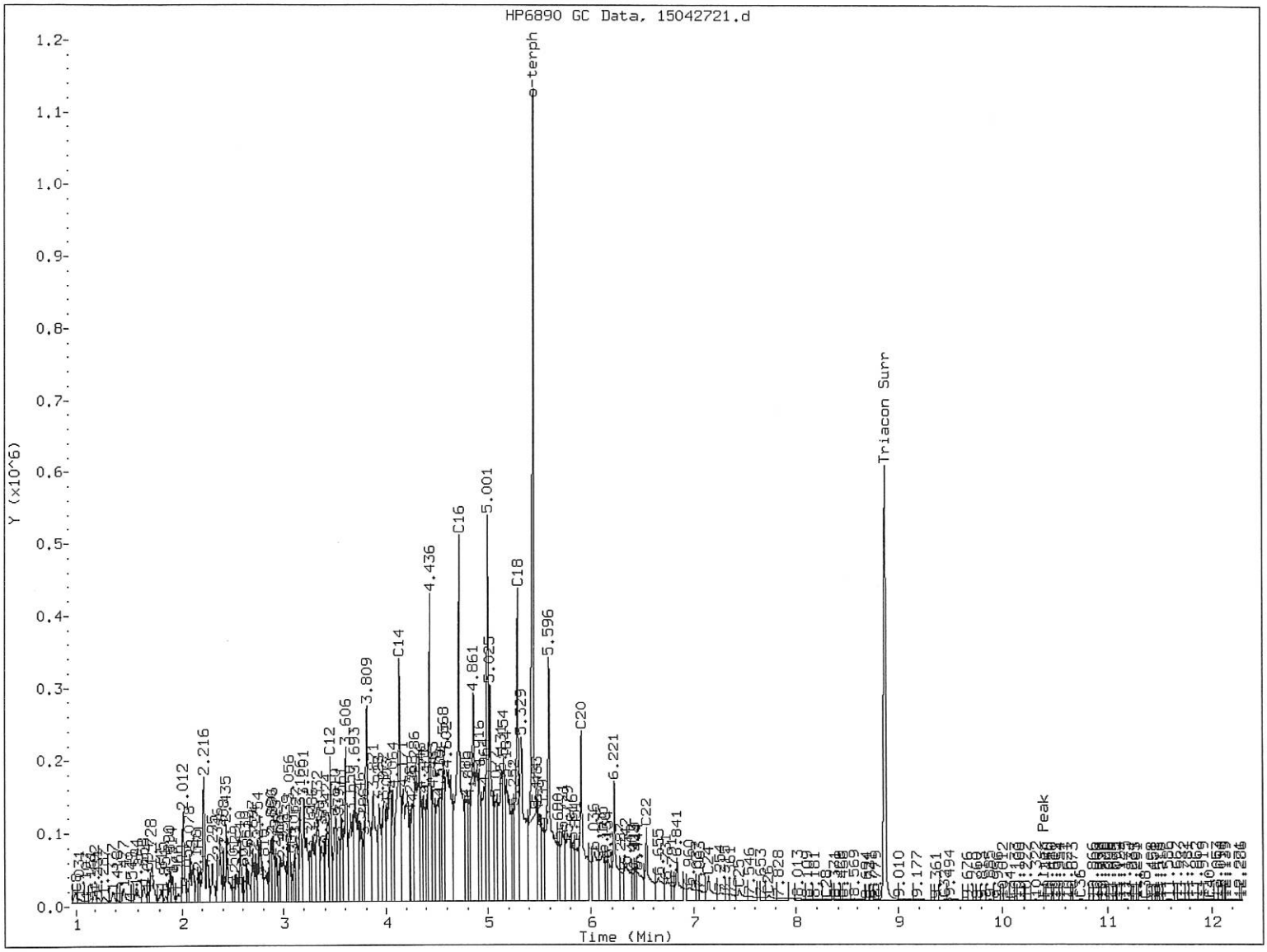
Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 AEM1LCSDW1 FID:4A SIGNAL



MANUAL INTEGRATION

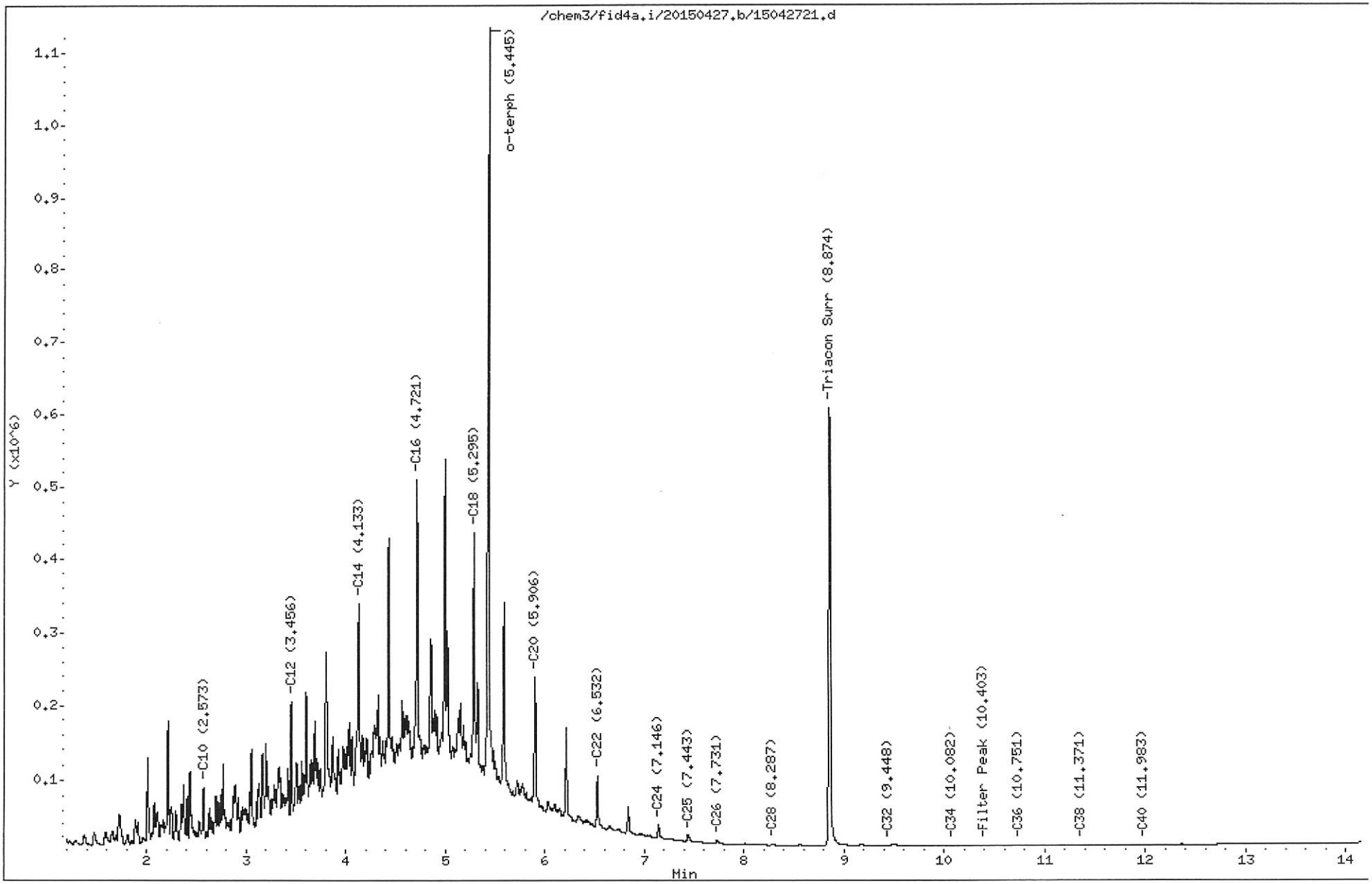
1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: ML Date: 4/28/15

Data File: /chem3/fid4a.i/20150427.b/15042721.d
Date : 27-APR-2015 19:55
Client ID: AEM1LCSDW1
Sample Info: AEM1LCSDW1

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1

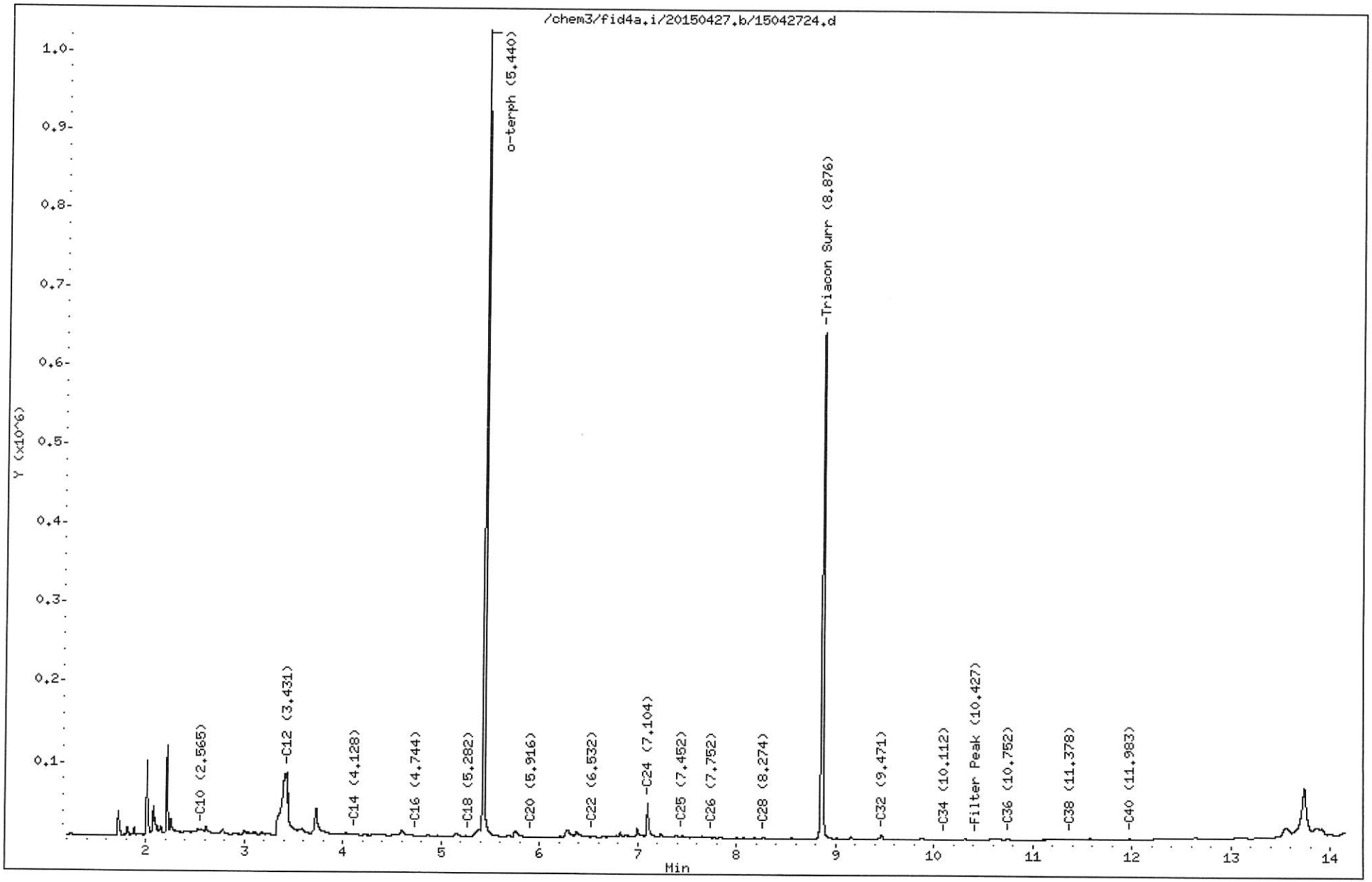


Data File: /chem3/fid4a.i/20150427.b/15042724.d
Date : 27-APR-2015 21:05
Client ID: SB17
Sample Info: AE04A

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1

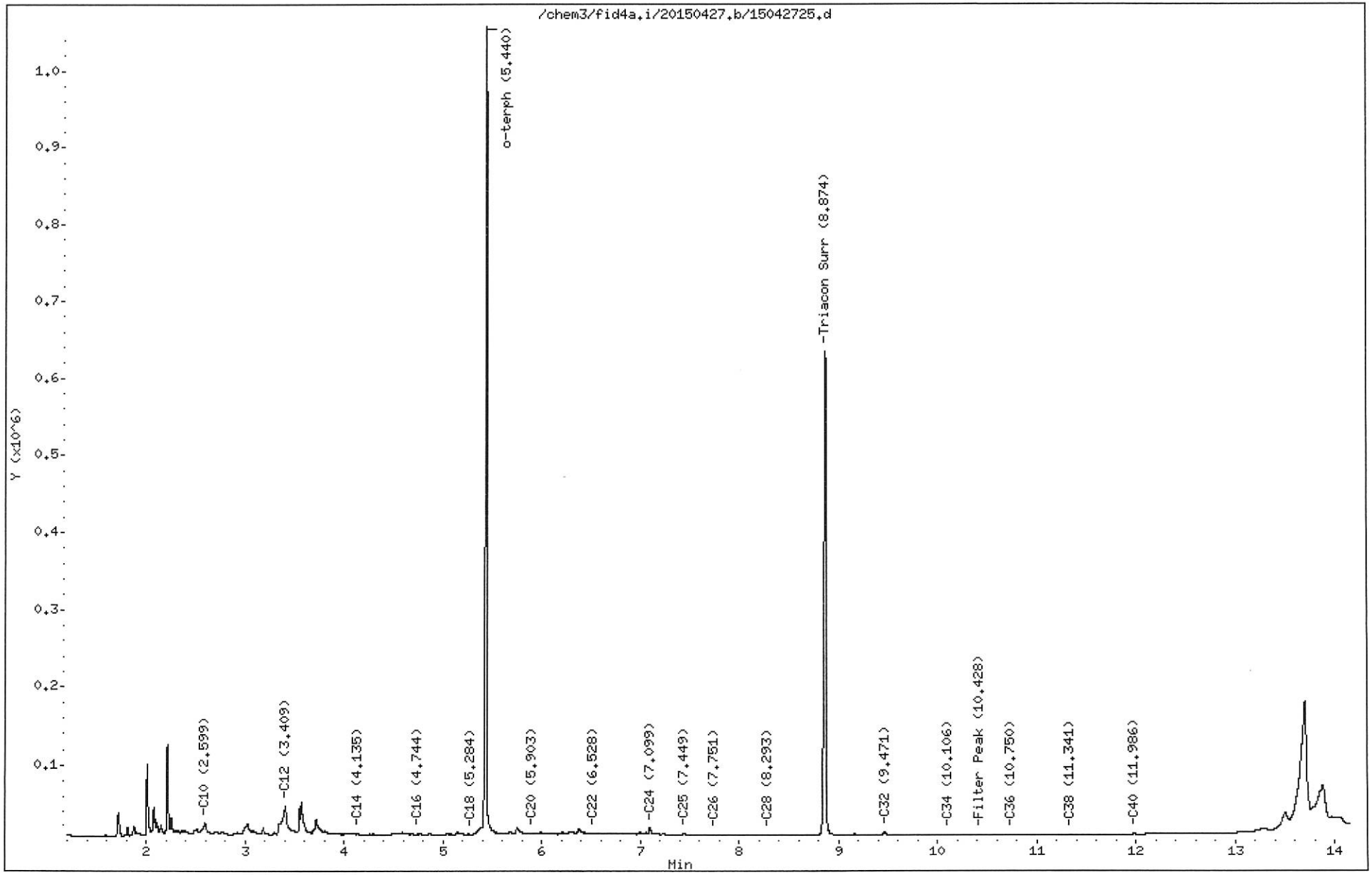


Data File: /chem3/fid4a.i/20150427.b/15042725.d
Date : 27-APR-2015 21:29
Client ID: SB18
Sample Info: AE04B

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method: SW3546

QC Report No: AEO4-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024

Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-042115	Method Blank	04/21/15	04/23/15	1.00	Diesel Range	5.0	< 5.0 U
15-7746	HC ID: ---		FID4A	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		95.7%
AEO4G	SB17-40	04/21/15	04/23/15	1.00	Diesel Range	6.2	< 6.2 U
15-7746	HC ID: ---		FID4A	1.0	Motor Oil Range	12	< 12 U
					o-Terphenyl		97.8%
AEO4I	SB18-26	04/21/15	04/23/15	1.00	Diesel Range	6.7	< 6.7 U
15-7748	HC ID: ---		FID4A	1.0	Motor Oil Range	13	< 13 U
					o-Terphenyl		88.3%
AEO4J	SB18-36.5	04/21/15	04/23/15	1.00	Diesel Range	5.5	< 5.5 U
15-7749	HC ID: ---		FID4A	1.0	Motor Oil Range	11	< 11 U
					o-Terphenyl		87.6%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024

Client ID	OTER	TOT OUT
MB-042115	95.7%	0
LCS-042115	94.2%	0
SB17-40	97.8%	0
SB18-26	88.3%	0
SB18-36.5	87.6%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-7746 to 15-7749

FORM-II TPHD

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1

Sample ID: LCS-042115
LAB CONTROL

Lab Sample ID: LCS-042115
LIMS ID: 15-7746
Matrix: Soil
Data Release Authorized:
Reported: 04/27/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Date Extracted: 04/21/15
Date Analyzed: 04/23/15 16:45
Instrument/Analyst: FID/JLW

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

Range	Lab Control	Spike Added	Recovery
Diesel	108	150	72.0%

TPHD Surrogate Recovery

o-Terphenyl	94.2%

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 04/17/15

ARI Job: AEO4
Project: Precision Engineering
1396024

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-7746-042115MB1	Method Blank	10.0 g	1.00 mL	-	04/21/15
15-7746-042115LCS1	Lab Control	10.0 g	1.00 mL	-	04/21/15
15-7746-AEO4G	SB17-40	8.12 g	1.00 mL	D	04/21/15
15-7748-AEO4I	SB18-26	7.47 g	1.00 mL	D	04/21/15
15-7749-AEO4J	SB18-36.5	9.11 g	1.00 mL	D	04/21/15

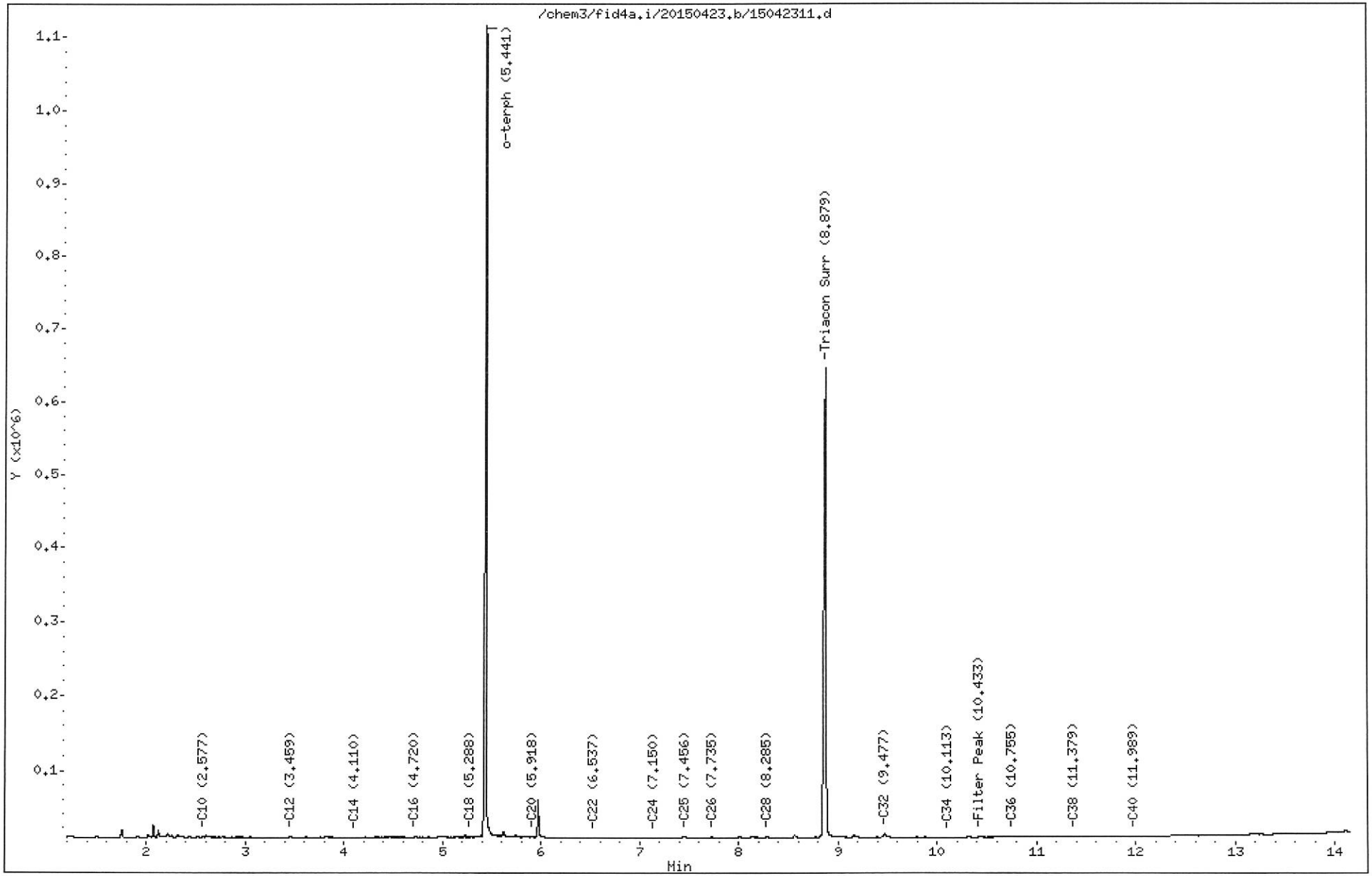
Basis: D=Dry Weight W=As Received

Data File: /chem3/fid4a.i/20150423.b/15042311.d
Date : 23-APR-2015 17:09
Client ID: SB17-40
Sample Info: AE04G

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1

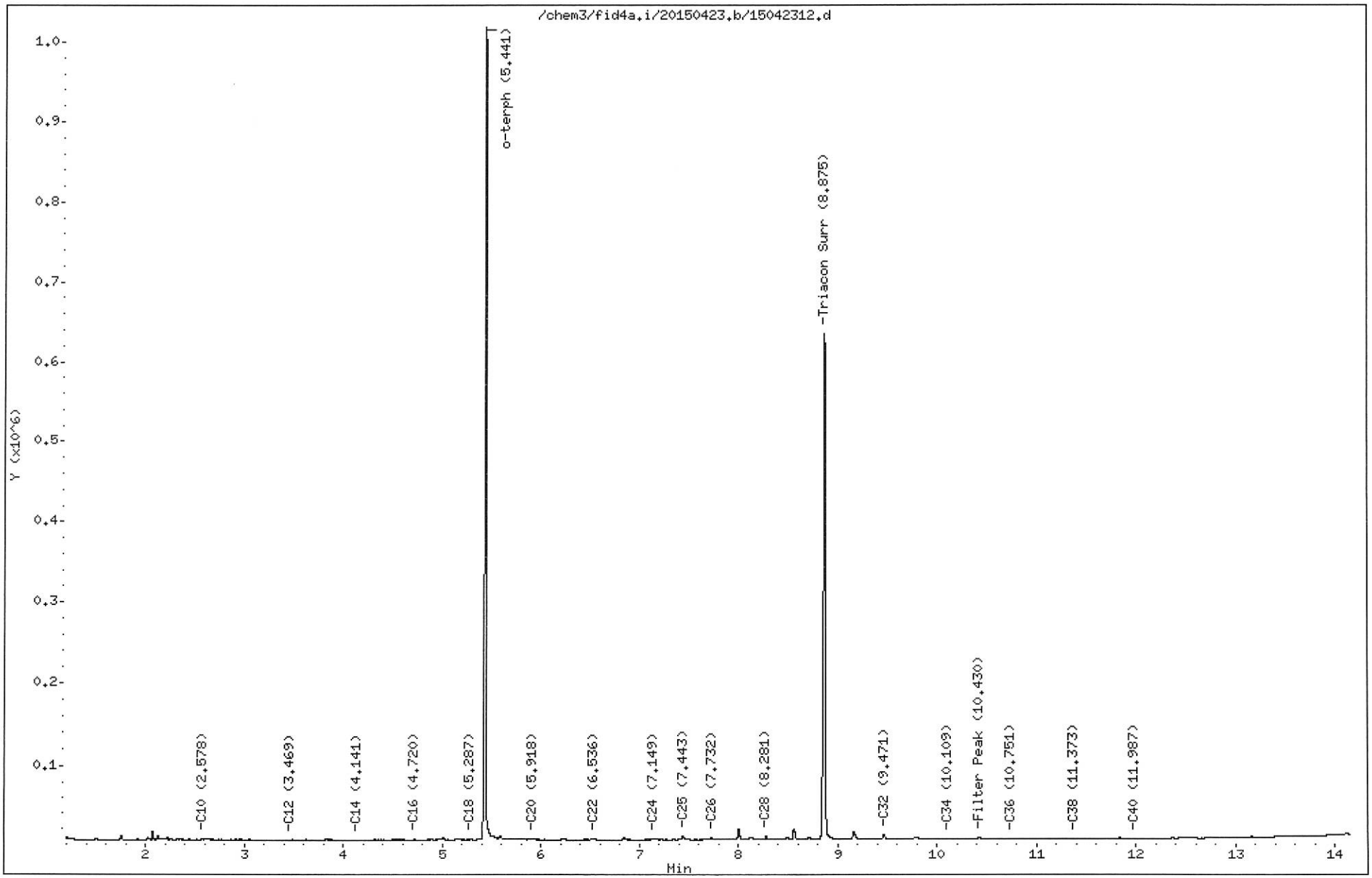


Data File: /chem3/fid4a.i/20150423.b/15042312.d
Date : 23-APR-2015 17:33
Client ID: SB18-26
Sample Info: AE04I

Column phase: RTX-1

Instrument: fid4a.i

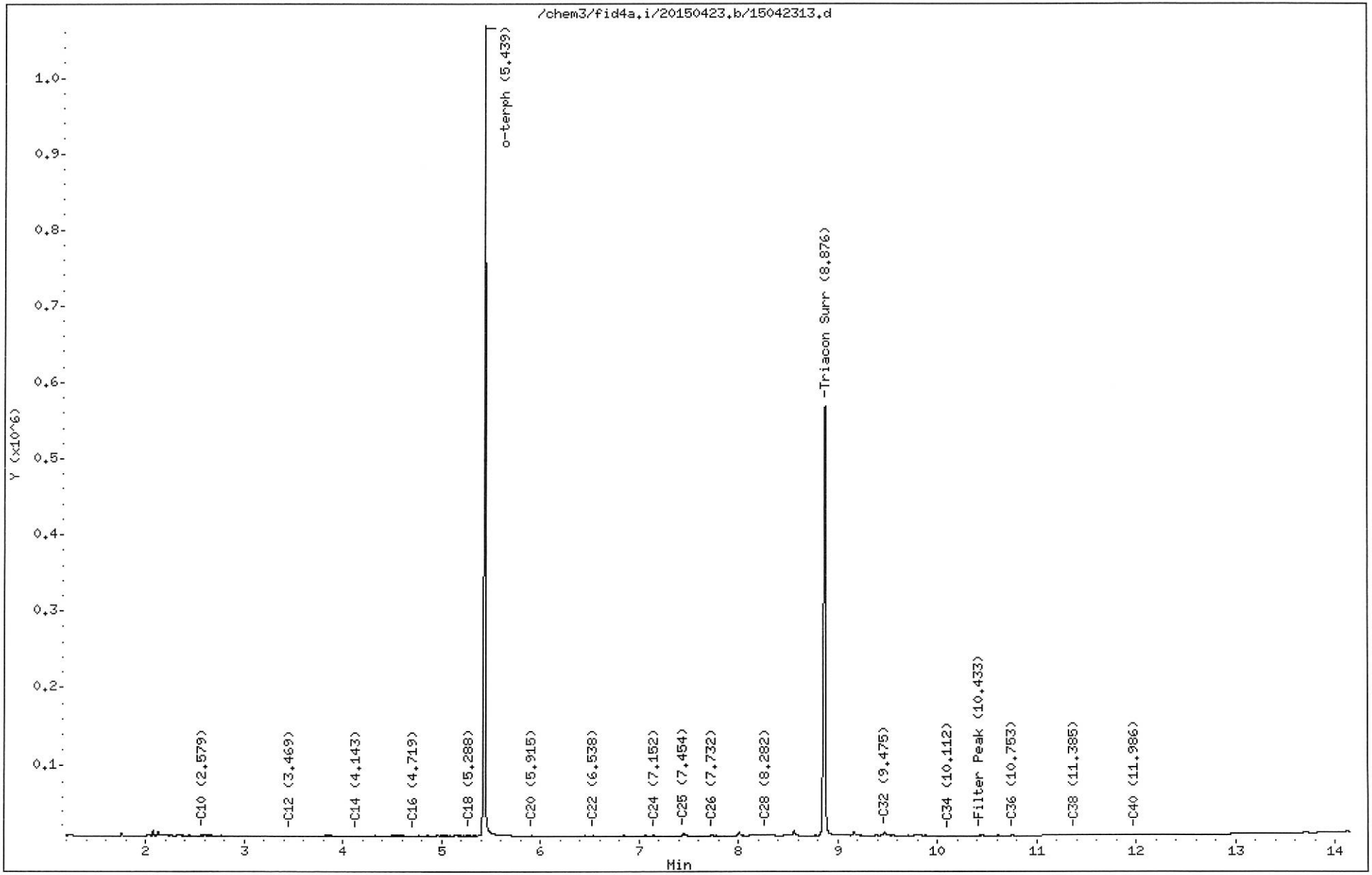
Operator: ML
Column diameter: 0.25



Data File: /chem3/fid4a.i/20150423.b/15042313.d
Date : 23-APR-2015 17:57
Client ID: SB18-36.5
Sample Info: AE04J

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

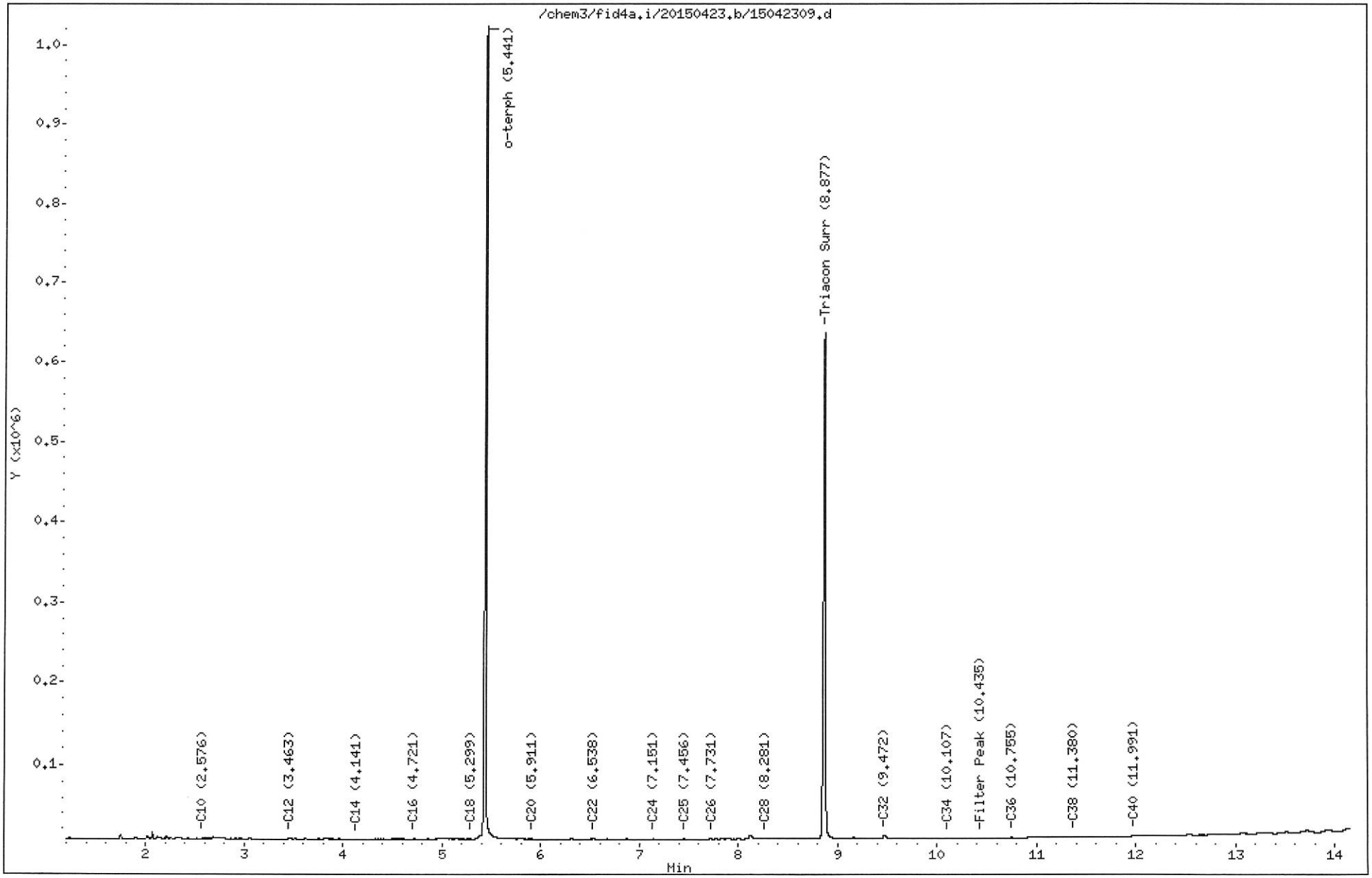
Column phase: RTX-1



Data File: /chem3/fid4a.i/20150423.b/15042309.d
Date : 23-APR-2015 16:22
Client ID: AE04MBS1
Sample Info: AE04MBS1

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

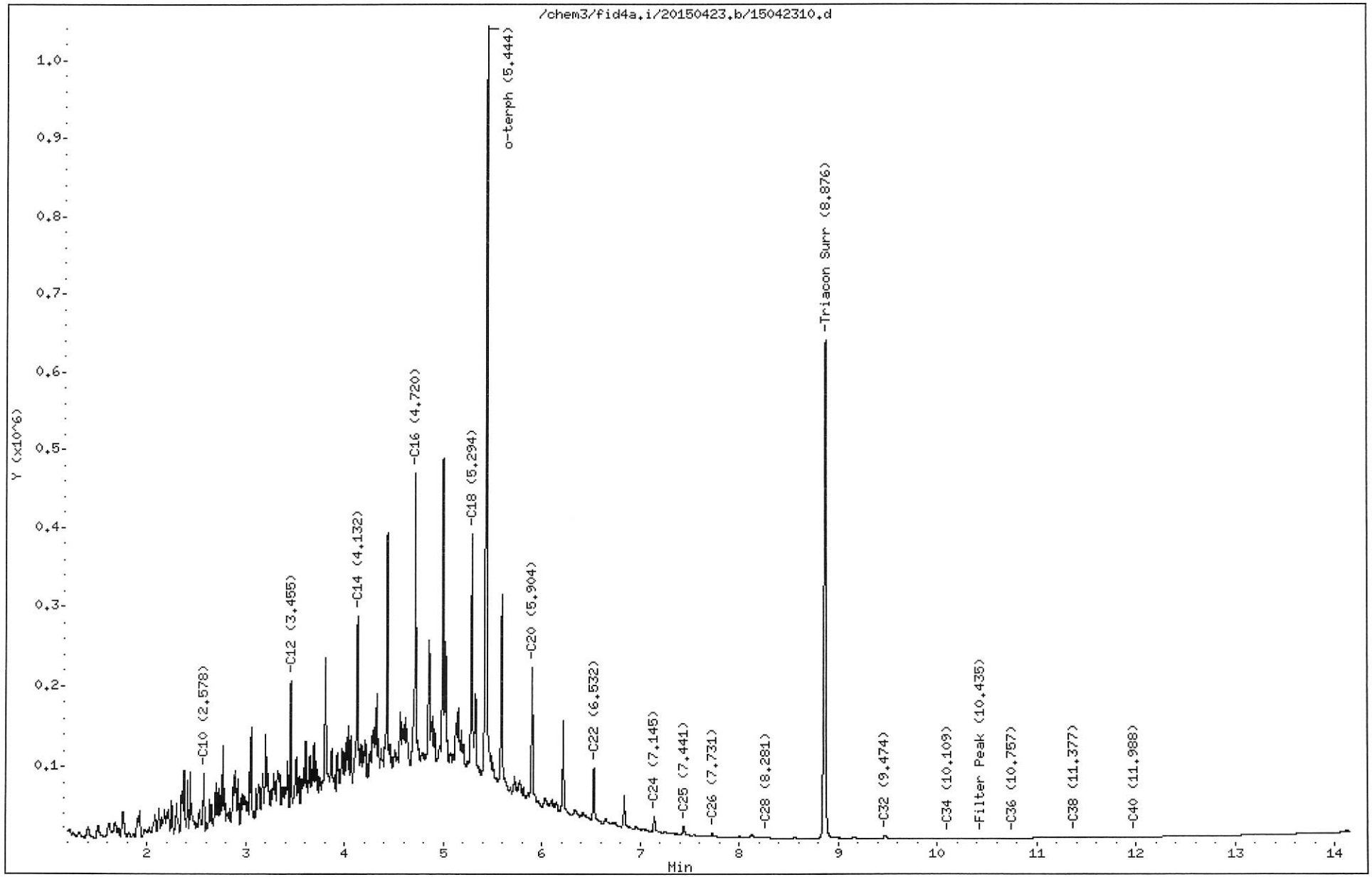
Column phase: RTX-1



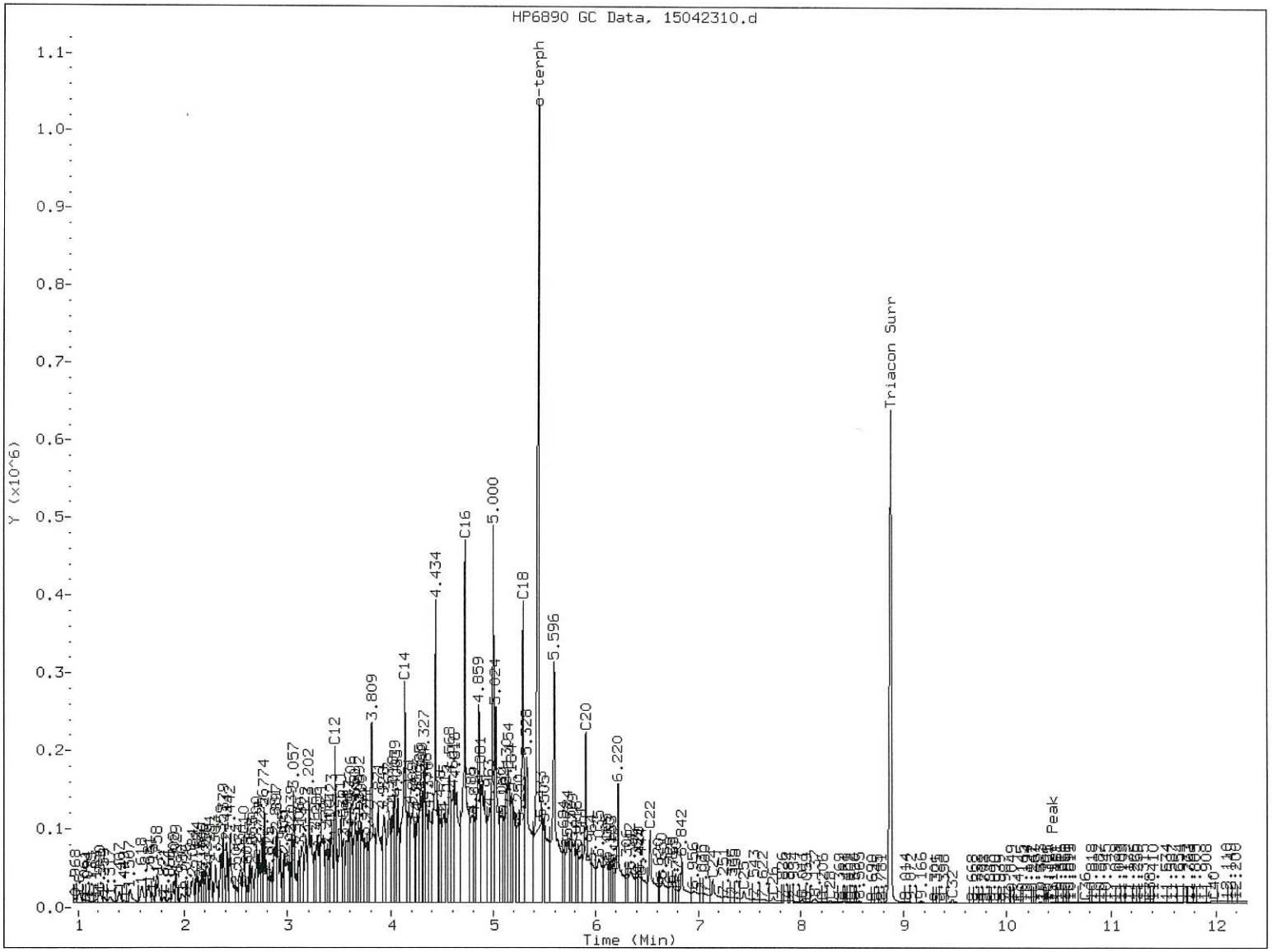
Data File: /chem3/fid4a.i/20150423.b/15042310.d
Date : 23-APR-2015 16:45
Client ID: AE04LCSS1
Sample Info: AE04LCSS1

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 AEO4LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: ML Date: 4/24/15

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB17
ARI ID: 15-7740 AEO4A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	04/17/15 041715#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB18
ARI ID: 15-7741 AEO4B

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	04/17/15 041715#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	04/17/15	mg/L	< 0.010 U	

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #300614	SM3500Cr-B	04/17/15	mg/L	0.615	0.620	99.2%

REPLICATE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AEO4A Client ID: SB17						
Hexavalent Chromium	SM3500Cr-B	04/17/15	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
AE04-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AE04A Client ID: SB17							
Hexavalent Chromium	SM3500Cr-B	04/17/15	mg/L	< 0.010	0.056	0.062	90.3%

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB17-40
ARI ID: 15-7746 AEO4G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.426	< 0.426 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	92.84

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB17-43.5
ARI ID: 15-7747 AEO4H

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.445	1.78
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	89.18

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB18-26
ARI ID: 15-7748 AEO4I

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.510	< 0.510 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	76.36

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB18-36.5
ARI ID: 15-7749 AEO4J

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.459	< 0.459 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	84.36

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Client ID: SB18-39.5
ARI ID: 15-7750 AEO4K

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	04/21/15 042115#1	SW7196A	mg/kg	0.426	< 0.426 U
Total Solids	04/21/15 042115#1	SM2540G	Percent	0.01	92.84

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	04/21/15	mg/kg	< 0.398 U	PREP
Total Solids	04/21/15	Percent	< 0.01 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
AEO4-Kennedy Jenks Consultants, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 04/29/15

Project: Precision Engineering
Event: 1396024
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	04/21/15	mg/kg	20.5	20.0	102.5%
Insoluble Hexavalent Chromiu	04/21/15	mg/kg	631	669	94.3%

ERA #300614

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB17
SAMPLE

Lab Sample ID: AE04A
LIMS ID: 15-7740
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.01	**0.21**	
200.8	04/21/15	200.8	04/24/15	**7440-47-3**	**Chromium**	0.02	**1.77**	
200.8	04/21/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.001	**0.223**	
200.8	04/21/15	200.8	04/24/15	7782-49-2	Selenium	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB18
SAMPLE

Lab Sample ID: AE04B
LIMS ID: 15-7741
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.001	**0.113**	
200.8	04/21/15	200.8	04/28/15	**7440-47-3**	**Chromium**	0.02	**0.38**	
200.8	04/21/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.0002	**0.0396**	
200.8	04/21/15	200.8	04/24/15	**7782-49-2**	**Selenium**	0.002	**0.003**	

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: SB17
SAMPLE

Lab Sample ID: AE04C
LIMS ID: 15-7742
Matrix: Water
Data Release Authorized:
Reported: 05/11/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.0005	**0.0059**	
200.8	04/21/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.0005	**0.0007**	
200.8	04/21/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	05/07/15	200.8	05/08/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: SB17
SAMPLE

Lab Sample ID: AEO4D
LIMS ID: 15-7743
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AEO4-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.0005	**0.0067**	
200.8	04/21/15	200.8	04/24/15	**7440-47-3**	**Chromium**	0.001	**0.002**	
200.8	04/21/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.0001	**0.0002**	
200.8	04/21/15	200.8	04/24/15	**7782-49-2**	**Selenium**	0.001	**0.002**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: SB18
SAMPLE

Lab Sample ID: AE04E
LIMS ID: 15-7744
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/24/15	**7440-38-2**	**Arsenic**	0.002	**0.046**	
200.8	04/21/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.0005	**0.0014**	
200.8	04/21/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.0001	**0.0002**	
200.8	04/21/15	200.8	04/24/15	7782-49-2	Selenium	0.005	0.005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB17-40
SAMPLE

Lab Sample ID: AE04G
LIMS ID: 15-7746
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Percent Total Solids: 88.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**2.5**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.5	**21.2**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**1.7**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB17-43.5
SAMPLE

Lab Sample ID: AE04H
LIMS ID: 15-7747
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Percent Total Solids: 88.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**2.8**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.6	**25.3**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**1.9**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB18-26
SAMPLE

Lab Sample ID: AE04I
LIMS ID: 15-7748
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Percent Total Solids: 71.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.3	**6.4**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.6	**19.5**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**2.9**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.6	0.6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB18-36.5
SAMPLE

Lab Sample ID: AE04J
LIMS ID: 15-7749
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Percent Total Solids: 87.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**2.3**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.5	**18.1**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**1.8**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SB18-39.5
SAMPLE

Lab Sample ID: AE04K
LIMS ID: 15-7750
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: 04/17/15
Date Received: 04/17/15

Percent Total Solids: 90.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	**7440-38-2**	**Arsenic**	0.2	**2.1**	
3050B	04/22/15	200.8	04/23/15	**7440-47-3**	**Chromium**	0.5	**21.9**	
3050B	04/22/15	200.8	04/23/15	**7439-92-1**	**Lead**	0.1	**1.7**	
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AE04MB
LIMS ID: 15-7741
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/21/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/21/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/21/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: AE04LCS
LIMS ID: 15-7741
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0259	0.0250	104%	
Chromium	200.8	0.0245	0.0250	98.0%	
Lead	200.8	0.0239	0.0250	95.6%	
Selenium	200.8	0.0729	0.0800	91.1%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AE04MB
LIMS ID: 15-7742
Matrix: Water
Data Release Authorized:
Reported: 05/11/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/21/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/21/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	05/07/15	200.8	05/08/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AE04LCS
LIMS ID: 15-7742
Matrix: Water
Data Release Authorized:
Reported: 05/11/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0237	0.0250	94.8%	
Chromium	200.8	0.0247	0.0250	98.8%	
Lead	200.8	0.0240	0.0250	96.0%	
Selenium	200.8	0.0686	0.0800	85.8%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AE04MB
LIMS ID: 15-7744
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
200.8	04/21/15	200.8	04/23/15	7440-38-2	Arsenic	0.0002	0.0002	U
200.8	04/21/15	200.8	04/23/15	7440-47-3	Chromium	0.0005	0.0005	U
200.8	04/21/15	200.8	04/23/15	7439-92-1	Lead	0.0001	0.0001	U
200.8	04/21/15	200.8	04/24/15	7782-49-2	Selenium	0.0005	0.0005	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: AE04LCS
LIMS ID: 15-7744
Matrix: Water
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	0.0256	0.0250	102%	
Chromium	200.8	0.0256	0.0250	102%	
Lead	200.8	0.0248	0.0250	99.2%	
Selenium	200.8	0.0724	0.0800	90.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AE04MB
LIMS ID: 15-7750
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	04/22/15	200.8	04/23/15	7440-38-2	Arsenic	0.2	0.2	U
3050B	04/22/15	200.8	04/23/15	7440-47-3	Chromium	0.5	0.5	U
3050B	04/22/15	200.8	04/23/15	7439-92-1	Lead	0.1	0.1	U
3050B	04/22/15	200.8	04/24/15	7782-49-2	Selenium	0.5	0.5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: AE04LCS
LIMS ID: 15-7750
Matrix: Soil
Data Release Authorized:
Reported: 05/01/15

QC Report No: AE04-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	25.8	25.0	103%	
Chromium	200.8	25.8	25.0	103%	
Lead	200.8	24.7	25.0	98.8%	
Selenium	200.8	77.5	80.0	96.9%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

Appendix D

Groundwater Purge and Sampling Records and
Air Sampling Records

Ecology Precision Engineering Site (Seattle, WA)
FIELD INDOOR AIR SAMPLING LOG

Project No.: 1396024.00

Date: 2/7/15

Sampling Location ID: Precision Eng. Seattle

Sampling Personnel: Josh Hopp, Craig Joseph

Weather conditions (Note approximate wind speed/direction, rain, and temperature): rainy, light 5-10mph wind from the west

Number of canisters placed in building:

Location of canister(s) within building: 1 inside shop (retail) area in center of ~~eastern~~ northern wing of the building
1 outdoor

Location of duplicate sample(s), if taken: none

Sample ID	Canister serial no.	Flow controller serial no.	Temp. at sample	LAB initial vacuum of canister (in.	FIELD Initial vacuum of canister	Sample start time	Sample end time	Final vacuum of canister (in. Hg)
IA-Shop-020715	315	F166	~70°F	—	-30+	1800	1730	-8+
AMB-OUTDOOR-020715	297	F119	~45	—	-30+	1810	1725	-3+

Comments (Odors present, smoking, windows/doors open during sampling, etc.): Cracks observed in building slab in retail shop area; industrial activities occur in neighboring "bays" in same building (e.g. observed welding activities immediately before the VI investigation); heating system was turned off for the weekend; various consumer products stored + sold within the structure (no inventory completed).

Kennedy/Jenks Consultants

Subslab and Soil Vapor Survey Log Sheet

Project Name / Location: Precision Eng / Seattle, WA **Date:** 2/7/15

Client: Wash DOE **Field Representative(s):** Josh H, Craig J. **Arrival Time:** 1430

Samplers Name: Josh H, Craig J. **Departure Time:**

Weather / Site Conditions:

Sample ID	Installation Time	Canister/ Controller No.	Sample Collection		Probe Depth (ft)	Tubing Length (ft)	Purge Volume (mL)	Sample Volume (mL)	Flow Rate (mL/min)	Summa Vacuum Pressure (in Hg)		Tracer Gas Concentrations			Shut-In Test <100" H_2O	Probe Vacuum Pressure <100" H_2O
			Start Time	End Time						Initial	Final	Initial Shroud Conc. (%)	Final Shroud Conc. (%)	Sample (%)		
SS-1	1530	425/008	1728	1734	5	2	200	1000	200	-27.5	-4	91%	95%	13-24%	OK	—
							+300									
							+200									
							+200									

Probe Installation Materials

Filter: Airstone

Tubing: 1/16th poly

Termination: 2-way valve

Probe Construction Specifications

Borehole Diam: 1 inch

Subslab Sand Pack: 6 inches

Soil Gas Sand Pack: —

PV's 1' 1/4-inch tubing = 5 ml 1' 1/8-inch tubing = 1 ml

Field Notes: purged 900mL from subslab point; several clerks identified helium on field meter (13-24%) – have lab analyze for He. May be something else – methane – detected by field meter.

DAILY FIELD LOG

Kennedy/Jenks Consultants
PAGE 1 OF 1

Project No.: 1396024.00

Date: February 7, 2015

Site Name: Ecology Precision Engineering Site (Seattle, WA)

Prepared By: Josh Hopp
(Print Name)

Field Activities: Indoor air sampling
Subslab soil gas sampling

Weather Conditions: Overcast to rainy, ~50°F, Wind from west ~5-10 mph

Subcontractors *(list all performing field activities in work area)*
None

Visitors *(list all visitors, including name, phone number, and organization)*
None

WORK PERFORMED

Time	Description of Work Performed
1430	Kennedy/Jenks personnel (Craig Joseph, Josh Hopp, Jessica Faragalli) arrive onsite and conduct site walk indoors. Tour w/ occupants + interview conducted.
1500	Tailgate safety briefing. Discuss hazards related to drilling w/ roto-hammer + sampling. Set up @ SS-1 + begin drilling. Slab ~4-5 inches thick.
1530	Install probe @ SS-1 and let equilibrate. Set-up + shut-in test above ground sampling train; tighten fittings on sampling train + shut in test passed (above-ground sampling train held vacuum for 3 minutes). Elevated helium detected in subslab sample using field meter, approx 13-24%. Collect sample.
1800	Deploy 24-hr summa canisters — (1) indoor in retail shop area + (1) outdoor in bay area on North side of building.
1830	All depart.

K/J Field Personnel: Craig Joseph, Josh Hopp, Jessica Faragalli

Signature: JHG

Task Manager Review *(initial)*:

Date:

Copy to Project File *(yes/no)*:

DAILY FIELD LOG

Kennedy/Jenks Consultants
PAGE 1 OF 1

Project No.: 1396024.00

Date: 2/8/15

Site Name: Ecology Precision Engineering Site (Seattle, WA)

Prepared By: Craig Joseph (CEJ)
(Print Name)

Field Activities: Indoor air sampling
Subslab soil gas sampling

Weather Conditions:

Subcontractors ***(list all performing field activities in work area)***
None

Visitors ***(list all visitors, including name, phone number, and organization)***
None

WORK PERFORMED

Time	Description of Work Performed
1630	CEJ arrive site. Occupant unlocks door. CEJ uses sandpaper to smooth surface finish of the sample hole drilled on 2/7/15.
1700	CEJ labels IDW drums being stored near the SE corner of the building. A total of 9 purge/decon waters and 7 soil drums now exist on site. Two of the water drums are half full
1720	CEJ calls Josh Hopp, who confirms it is ok to close the Sums cans
1725	Close sample can. AMB-OUTDOOR-020715. Final vacuum ≅ -3+
1730	Close sample can. IA-SHOP-020715. Final vacuum ≅ -8+

K/J Field Personnel: Craig Joseph

Signature: Craig Joseph

Task Manager Review ***(initial)*** **:**

Date:

Copy to Project File ***(yes/no)*** **:**

Groundwater Purge and Sample Form (Minimal Drawdown) **Kennedy/Jenks Consultants**

Date: 5/1/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: N/A
Purge Depth (ft): N/A
Total Discharge (gal): N/A
Water Disposal: N/A
Weather: sunny

Well Number: MW-1
Monument Type: Stickup: X (ft PVC) Flush: ____
Well Diameter (in): 2inch
Well Condition: Good

		Reference:
Total Casing Depth (ft):	43.57 toc	TOC
Screened Interval (ft):	33-43 toc	
Depth to Groundwater (ft):	<1' (~2.5") toc	
Depth to LNAPL (ft):	N/A	

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
43.35		2	0.16		
0.16		4	0.64		
		6	1.44		6.93

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	
Other: Turbidity	Micro TPI	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Notes: Not sampled due to limited access.

Needs bolt.

Groundwater Purge and Sample Form (Minimal Drawdown) **Kennedy/Jenks Consultants**

Date: 5/1/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1300
Purge Depth (ft): 15.5
Total Discharge (gal): 4.25
Water Disposal: Drum onsite
Weather: Sunny

Well Number: MW-2
Monument Type: Stickup: X in vault. (ft PVC) Flush: ____
Well Diameter (in): 2"
Well Condition: Good
Total Casing Depth (ft): 19.54 toc
Screened Interval (ft): ____ toc
Depth to Groundwater (ft): 4.15 toc
Depth to LNAPL (ft): N/A
Reference: TOC

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
15		0.16	4	0.64		2.4
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

1150 Time	1200 min	1205 min	1210 min	1220 min	1225 min	1300 min	min	min
Parameter (every 5 min)								
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125			
Volume Purged (gal)	0.5	0.75	1.0	1.25	1.5	2.0		
Water Depth (ft)	9.66	10.75	12.59	15.09	15.54	~~23.19~~	17.5	
Temperature (Celsius)	16.33	16.04	16.42	17.47	17.65	23.19		
pH	6.91	6.88	6.85	6.82	6.82	6.82		
Sp. Conductance (mS/cm)	3.394	3.359	3.389	3.398	3.400	3.430		
DO (mg/L)	1.30	0.94	0.60	0.49	0.43	0.49		
ORP (mV)	-119.7	-114.5	-115.6	-115.0	-114.8	-110.0		
Turbidity (NTU)	25.44	22.52	15.99	14.19	—	37.17		
Color	Light Yellow	———						
Odor/Evidence of LNAPL	No O/S	———						

Notes: Well in good condition, need to cut off bolt. In vault (~1 ft deep). Well has slow recharge. Had to stop purge restarted purge at 1300 and collected sample at purge depth ~ 19 ft below TOC

Needs new bolt

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 4/30/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1645
Purge Depth (ft): 15
Total Discharge (gal): 3.75
Water Disposal: Drum onsite
Weather: sunny

Well Number: MW-3
Monument Type: Stickup: X (ft PVC) Flush:
Well Diameter (in): 2 inch
Well Condition:

		Reference:
Total Casing Depth (ft):	20.17 toc	TOC
Screened Interval (ft):	toc	
Depth to Groundwater (ft):	5.35 toc	
Depth to LNAPL (ft):	N/A	

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
15		2	0.16		2.4
		4	0.64		
0.16		6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

1600 Time	1603	1607	1612	1617	1622	1627	1632	1641
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Volume Purged (gal)	0.25	0.5	0.75	1	1.5	2.25	2.75	3.25
Water Depth (ft)	6.34	6.57	6.61	6.58	6.57	6.58	6.54	6.57
Temperature (Celsius)	16.70	15.86	15.59	15.77	15.68	15.67	15.74	15.79
pH	7.45	7.04	6.98	6.95	6.92	6.88	6.85	6.81
Sp. Conductance (mS/cm)	0.434	0.426	0.420	0.414	0.414	0.413	0.413	0.412
DO ~~(mg/L)~~ %	13.5	8.7	8.2	7.9	7.1	6.4	5.3	4.2
ORP (mV)	-87.6	~~-38.5~~ -83.5	-102.4	-110.2	-112.6	-113.4	-117.6	-122.0
Turbidity (NTU)	104.7	95.86	66.46	67.08	58.80	46.53	40.08	33.61
Color	Light Yellow							
Odor/Evidence of LNAPL	None							

Notes: Water is light yellow, transparent with light brown particulates.

Needs new batt.

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 5/1/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: ~~20 ft~~ 1635
Purge Depth (ft): 20 ft
Total Discharge (gal): 3.5
Water Disposal: Drum onsite
Weather: sunny

Well Number: MW-4
Monument Type: Stickup: X (ft PVC) Flush:
Well Diameter (in): 2 inch
Well Condition: Fair, stick up is tilted, PVC is broken in places

		Reference:
Total Casing Depth (ft):	25.74 toc	TOC
Screened Interval (ft):	toc	
Depth to Groundwater (ft):	2.40 toc	
Depth to LNAPL (ft):	N/A	

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
23.3		0.16	2		3.73
		0.64	4		
		1.44	6		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

1555 Time	1600	1605	1610	1615	1620	1625	1630	
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125		
Volume Purged (gal)	0.25	0.5	1	1.5	2	2.5	3.0	
Water Depth (ft)	6.44	7.15	9.10	10.35	11.34	12.69	13.57	
Temperature (Celsius)	14.71	14.49	14.29	14.44	14.37	14.33	14.38	
pH	7.84	7.85	7.90	7.93	7.95	7.97	7.98	
Sp. Conductance (mS/cm)	0.539	0.538	0.537	0.538	0.538	0.538	0.537	
DO (mg/L)	1.25	0.96	0.60	0.57	0.59	0.62	0.64	
ORP (mV)	-47.0	-49.6	-48.4	-50.0	-50.4	-50.3	-50.4	
Turbidity (NTU)	14.17	12.87	11.23	9.45	9.04	7.86	6.58	
Color	Clear							
Odor/Evidence of LNAPL	NO/S							

Notes: Clear with black sediment (suspended)

Needs New bolt

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 5/1/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1500 / Dup MW-10@1510
Purge Depth (ft):
Total Discharge (gal): 4.5
Water Disposal: Drum onsite
Weather: Sunny

Well Number: MW-5
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2in
Well Condition: Good

			Reference:
Total Casing Depth (ft):	19.90	toc	TOC
Screened Interval (ft)	10	toc	
Depth to Groundwater (ft):	4.52	toc	
Depth to LNAPL (ft):	N/A		

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
		2	0.16		
15.4	*	4	0.64	=	
0.10		6	1.44		2.46

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

Time	1400	1405	1410	1415	1420	1430	1440	1445	1450	1455
Parameter (every 5 min)		min	min	min	min	min	min	min	min	
Flow Rate (gal/min)		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Volume Purged (gal)		0.25	0.5	1	1.25	2	2.5	3	3.5	4
Water Depth (ft)		5.34	5.44	5.23	~~5.35~~	5.69	5.73	5.74	5.78	5.79
Temperature (Celsius)		18.52	18.37	18.38	18.32	18.25	18.24	18.25	18.3	18.31
pH		8.26	8.13	8.06	8.00	7.71	7.44	7.31	7.22	7.18
Sp. Conductance (mS/cm)		0.545	0.533	0.532	0.538	0.603	0.637	0.652	0.67c	0.675
DO (mg/L)		0.84	0.05	1.10	1.57	0.16	0.57	1.15	1.57	1.53
ORP (mV)		-54.6	-53.3	-51.9	-49.5	-39.0	-30.2	26.1	-22.1	-20.5
Turbidity (NTU)		20.62	9.03	7.67	5.84	4.31	3.71	2.91	5.43	~~5.5~~ 2.44
Color		clear →			slightly yellow →		yellow →			
Odor/Evidence of LNAPL		No O/S	No O/S →							

Notes: First gallon was clear, steadily getter brighter yellow with time

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 4/30/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1335
Purge Depth (ft): 15ft
Total Discharge (gal): 3.25
Water Disposal: Drum onsite
Weather: Sunny

Well Number: MW-10
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2inch
Well Condition: Good

		Reference:
Total Casing Depth (ft):	20.07 toc	TOC
Screened Interval (ft):	10-20 ft toc	
Depth to Groundwater (ft):	4.97 toc	
Depth to LNAPL (ft):	N/A	

Well Volume Calculation:

Water Column (ft)		Multiplier for Casing Diameter (in)			Casing Volume (gal)
15.0	·	0.16	2	=	2.4
		0.64	4		
		1.44	6		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

1250 Time	1255	1300	1307	1318	1326	1331		
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125		
Volume Purged (gal)	0.25	0.5	1.0	1.75	2.25	2.75		
Water Depth (ft)	7.66	5.07	6.46	6.34	7.64	8.23		
Temperature (Celsius)	17.02	15.93	15.84	16.19	16.48	16.54		
pH	6.81	6.95	7.01	7.02	7.02	7.03		
Sp. Conductance (mS/cm)	3.951	3.984	3.972	3.968	3.963	3.960		
DO (mg/L)	10.17	2.35	4.18	0.52	0.30	0.35		
ORP (mV)	-167.8	-172.5	-163.3	-162.0	-171.8	-169.3		
Turbidity (NTU)	58.68	41.71	36.54	32.88	41.54	36.85		
Color	Rusty orange →		Yellow →					
Odor/Evidence of LNAPL	No →							

Notes: Rubber gasket disintegrated. High sediment & water accumulation in well head. Evidence of fine suspended sediment.

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 4/30/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1530
Purge Depth (ft): 26 ft
Total Discharge (gal): 5
Water Disposal: Drum onsite 5/2/14
Weather: Sunny, 72°F

Well Number: MW 7
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2inch
Well Condition:
Total Casing Depth (ft): 31.46 toc
Screened Interval (ft): _____ toc
Depth to Groundwater (ft): 5.41 toc
Depth to LNAPL (ft): N/A
Reference: TOC

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
26		2	0.16		4.16
		4	0.64		
		6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

Time	1415	1420	1425	1435	1445	1455	1505	1515	525
Parameter (every 5 min)	min	min	min	min	min	min	min	min	min
Flow Rate (gal/min)		0.125	0.125	0.125	0125	0125	0.125	0.125	0125
Volume Purged (gal)		0.25	0.5	1	1.75	2.5	3.0	3.75	4.5
Water Depth (ft)		7.11	8.37	9.40	10.58	11.38	11.97	12.24	12.4
Temperature (Celsius)		17.81	17.54	17.41	17.49	17.53	17.62	17.82	17.91
pH		6.98	6.88	6.84	6.80	6.89	6.97	7.02	7.04
Sp. Conductance (mS/cm)		2.487	2.646	3.068	3.140	2.825	2.547	2.465	2.443
DO (mg/L)		10.81	4.31	3.01	2.05	1.49	1.24	1.31	1.27
ORP (mV)		-39.5	-36.0	-41.0	-42.9	-43.4	-42.5	-43.7	-44.0
Turbidity (NTU)		5.40	3.19	1.08	.89	0.82	1.07	0.90	0.82
Color		clear	clear	clear	clear				
Odor/Evidence of LNAPL		No O/S	No O/S	No O/S	No O/S				

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 5/1/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
Sampling Time: 1035
Purge Depth (ft): 15
Total Discharge (gal): 4
Water Disposal: Drum onsite
Weather: Sunny

Well Number: MW-8
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition:
Total Casing Depth (ft): 19.80 toc
Screened Interval (ft): 10 toc
Depth to Groundwater (ft): ~~4.984~~ 4.09 toc
Depth to LNAPL (ft): N/A
Reference: TOC

Well Volume Calculation:

Water Column (ft)		Multiplier for Casing Diameter (in)			Casing Volume (gal)
15	*	0.16	2	0.16	= 2.4
			4	0.64	
			6	1.44	

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments

0925 Time	0930	0940	0945	0955	1000	1010	1015	1030	1035
Parameter (every 5 min)	min	min	min	min	min	min	min	min	
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Volume Purged (gal)	0.25	0.75	1.0	1.75	2.25	2.5	2.75	3.25	3.75
Water Depth (ft)	5.70	6.62	7.90	8.71	9.29	9.94	10.15	10.10	10.07
Temperature (Celsius)	15.49	15.14	15.09	15.16	15.27	15.25	15.39	16.34	16.29
pH	6.88	6.74	6.71	6.70	6.68	6.66	6.63	6.62	6.64
Sp. Conductance (mS/cm)	1.385	1.415	1440	1.477	1.478	1.504	1.522	1.615	1.422
DO (mg/L)	1.28	6.76	0.59	0.45	0.45	0.60	0.56	0.41	0.40
ORP (mV)	-120.6	-131.7	-135.5	-139.6	-138.8	-137.3	-136.8	-138.1	-138.2
Turbidity (NTU)	14.76	18.28	15.28	20.74	22.12	29.02	34.53	38.36	48.57
Color	Slight Yellow tint								
Odor/Evidence of LNAPL	No O/S								

Notes: Interface probe detected petroleum below water level & in well ~0.5 ft below TOC. Believed to be instrument malfunction. Probe was thoroughly cleaned.

Water has slight yellow tint, transparent, and contains fine, light brown particles. Water was bubbly past ~8 ft below TOC

Groundwater Purge and Sample Form Date: 8/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW2
Project Number: 1796024.00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 3.19	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: ~~1405~~ 1410	PURGE DEPTH (FT.): 17
TIME END PURGE: 1515	
TIME SAMPLED: 1510	

COMMENTS: Sample MW2 / hex chrome / Metals As, Cr, Pb & Se / NWTPH-Dx / VOCs

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	43.58		3.19		40.39		0.16	0.64	1.44		6.46

TIME ~~1410~~ 1405	1418	1430	1435	1440	1448	1450	1505
VOLUME PURGED (GAL)	.8	1.4	2	2.5	3.5	4.5	6.1
PURGE RATE (GPM)							
TEMPERATURE (°C)	15.55	15.43	15.11	14.93	14.63	13.22	13.05
pH	8.16	8.09	8.00	7.97	7.99	8.13	8.19
SPECIFIC CONDUCTIVITY (uncorrected) (micromhos/cm)	0.300	0.305	0.305	0.305	0.305	0.307	0.306
DISSOLVED OXYGEN (mg/L)	2.38	2.38	2.30	2.17	3.31	0.55	0.91
~~Eh(mv) Pt-AgCl ref.~~ ORP	7.3	18.5	30.6	39.6	45.6	51.9	55.6
TURBIDITY / COLOR	clear 9.86	10.90 clear	5.93 clear	5.86 clear	6.86 clear	6.60 clear	6.78
ODOR	no	←	←	←	←	←	←
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	7.44	8.69	10.59	12.06	13.88	16.35	19.12
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering **Well Number:** W

Project Number: 13960024.00 **Personnel:** R L EZ

STATIC WATER LEVEL (FT.): 5.21	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 0830	PURGE DEPTH (FT.): 12
TIME END PURGE: 1725	
TIME SAMPLED: ~~0945~~ 1720	

COMMENTS: dewatered during sampling, sampled later in day
Sample MW12 / Hex chrome / metals As, Cr, Pb & Se / VOCs / NWTPH-Dx

WELL VOLUME CALCULATION	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
Fill in before purging	19.44	-	5.21	=	14.23	X	0.16	0.64	1.44	=	2.28

TIME	0830	0835	0840	0845	0850	0855	0900	0905
VOLUME PURGED (GAL)		.4	.6	1	1.4	1.7	2	2.5
PURGE RATE (GPM)								
TEMPERATURE (°C)		17.54	17.67	18.17	18.72	18.05	16.17	16.05
pH		6.84	6.97	7.02	7.10	7.11	7.20	7.20
SPECIFIC CONDUCTIVITY (micromhos) cm (uncorrected)		3.453	3.431	3.345	3.454	3.187	3.477	3.477
DISSOLVED OXYGEN (mg/L)		1.49	0.91	0.33	0.30	0.71	0.30	1.10
~~Eh(mv)Pt+AgCl ref.~~ ORP		-92.9	-107.6	-101.4	-102.0	-96.7	-88.7	-89.5
TURBIDITY / COLOR		5.49 clear/yellow	8.62 clear/tan	5.75 clear/tan	7.05 clear/tan	27.32 clear/tan	5.45 clear/tan	12.77 clear/tan
ODOR		NO						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		7.77	9.79	11.84	13.55	14.18	16.25	17.93
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date: ~~8/24/14~~ 8/24/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW3
Project Number: 1396024 . 00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 6.69	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 0940	PURGE DEPTH (FT.): 15
TIME END PURGE: 1020	
TIME SAMPLED: 1015	
COMMENTS: Sample MW3 / Hex chrome / Metals As, Cr, Pb + Se / VOCs / NWTPH-Dx	

WELL VOLUME CALCULATION	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
Fill in before purging	20.16		6.69		13.47		(0.16)	0.64	1.44		2.155

TIME	0940	0945	0950	0955	1000	1005		
VOLUME PURGED (GAL)		.6	1	1.4	2	2.4		
PURGE RATE (GPM)								
TEMPERATURE (°C)		15.38	15.30	15.27	15.30	15.29		
pH		7.71	7.61	7.57	7.55	7.54		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		0.426	0.422	0.411	0.405	0.404		
DISSOLVED OXYGEN (mg/L)		0.97	0.66	0.44	0.35	0.27		
~~Eh(mv) Pt-AgCl ref.~~ ORP		0.6	-13.7	-20.7	-27.0	-31.0		
TURBIDITY / COLOR		12.79 clear	11.05 clear	8.00 clear	10.26 clear	7.20 clear		
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		7.95	7.96	8.05	8.09	8.12		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date: 8/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW4
Project Number: 1496024 . 00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 3.05	MEASURING POINT DESCRIPTION: ~~interface~~ top of well
WATER LEVEL MEASUREMENT METHOD: Interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 1210	PURGE DEPTH (FT.): 15
TIME END PURGE: 1315	
TIME SAMPLED: 1300 / Duplicate 1305	
COMMENTS: Samples MW4 and MW4-1 / Hex Chrome / Metals As, Cr, Pb ~~Ni~~ / VOCs / ~~TPHD~~ NWTPH-Dx	

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	25.63		3.05		22.58		0.16	0.64	1.44		3.61

TIME	1215	1220	1225	1230	1235	1240	1250
VOLUME PURGED (GAL)	.5	1	1.5	2	2.5	3.1	3.6
PURGE RATE (GPM)							
TEMPERATURE (°C)	18.25	18.54	18.77	18.78	18.74	18.59	17.49
pH	8.06	7.89	7.85	7.85	7.87	7.88	7.85
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	0.541	0.503	0.500	0.501	0.503	0.505	0.508
DISSOLVED OXYGEN (mg/L)	0.90	0.89	0.89	1.38	1.71	1.89	0.97
~~Eh(mv) Pt-AgCl ref.~~ ORP	13.7	21.5	25.8	29.1	31.8	34.0	40.4
TURBIDITY / COLOR	9.98 clear	8.33 clear	7.78 clear	8.32 clear	7.73 clear	8.93 clear	6.26 clear
ODOR	no	no					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	6.23	8.45	10.48	12.12	14.44	15.86	15.90
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/21/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW5
Project Number: 1396024.00	**Personnel:** R. Lopez
STATIC WATER LEVEL (FT.): 5.77	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 1055	PURGE DEPTH (FT.): #15
TIME END PURGE: 1135	
TIME SAMPLED: 1130	
COMMENTS: Sample MW5 / Hex Chrome / Metals As, Cr, Pb & Se / VOCs / NWTPH-Dx	

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	19.87	-	5.77	=	14.1	X	(0.16)	0.64	1.44	=	2.25

TIME	1055	1100	1105	1110	1115	1120		
VOLUME PURGED (GAL)		.5	1	1.5	2.1	2.6		
PURGE RATE (GPM)								
TEMPERATURE (°C)		19.00	19.13	19.21	19.27	19.28		
pH		7.67	7.74	7.78	7.76	7.60		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		0.519	0.517	0.517	0.574	0.674		
DISSOLVED OXYGEN (mg/L)		0.85	0.53	0.41	0.35	0.30		
~~Eh(mv) Pt-AgCl ref.~~ ORP		19.8	19.1	21.7	24.8	29.4		
TURBIDITY / COLOR		9.57 clear	6.71 clear/yellow	8.36 clear/yellow	8.46 clear/yellow	8.59 clear/yellow		
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		10.93	~~10~~ 7.19	7.27	7.32	7.41		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date: 8/21/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW6
Project Number: 13960024 . 00	**Personnel:** R Lopez

STATIC WATER LEVEL (FT.): 4.43	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 0705	PURGE DEPTH (FT.): 12
TIME END PURGE: 0745	
TIME SAMPLED: 0740	

COMMENTS: Sample MW6 / Hex chrome / Metals As, Cr, Pb & Se / VOCs / NWTPH-Dx

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	20.08		4.43		15.65		(0.16)	0.64	1.44		2.50

TIME	0705	0710	0715	0720	0725	0730	
VOLUME PURGED (GAL)	.5	.9	1.4	2	2.5		
PURGE RATE (GPM)							
TEMPERATURE (°C)	16.46	16.69	16.91	17.0	17.16		
pH	7.30	7.57	7.57	7.57	7.54		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	3.616	3.668	3.621	3.158	3.165		
DISSOLVED OXYGEN (mg/L)	1.46	0.51	0.32	0.23	0.19		
~~Eh(mv) Pt-AgCl ref.~~ ORP	-10.2	-82.8	-109.1	-118.8	-122.9		
TURBIDITY / COLOR	6.61 clear/yellow	6.57 light brown	6.26 brown	5.95 brown	6.07 brown		
ODOR	no						
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	5.57	6.14	6.65	7.42	9.12		
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 6/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW7
Project Number: 1296024 . 00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 5.87	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 1010	PURGE DEPTH (FT.): 15
TIME END PURGE: 1105	
TIME SAMPLED: 1100	

COMMENTS: Sample MW7 | Hex Chrome | Metals As, Cr, Pb, Se | VOCs | NWTPH-Dx

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	31.49		5.87		25.62		0.16	0.64	1.44		4.1

TIME	1010	1015	1020	1025	1030	1035	1040	1045
VOLUME PURGED (GAL)		.55	1	1.5	2	2.6	3.1	3.5
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.94	17.14	17.03	18.65	16.62	16.31	16.19
pH		7.09	7.13	7.15	7.16	7.08	7.06	7.07
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		2.369	2.370	2.372	2.376	2.372	2.374	2.711
DISSOLVED OXYGEN (mg/L)		1.02	0.45	0.35	0.26	0.22	0.22	0.20
~~Eh(mv)Pt-AgCl ref.~~ ORP		5.3	8.2	11.6	14.9	17.7	19.8	24.5
TURBIDITY / COLOR		clear/5.00	5.56 clear	5.24 clear	5.49 clear	4.42 clear	4.44 clear	4.36 clear
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		9.42	10.61	11.49	12.78	13.73	14.63	15.18
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date: 8/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW7 cont.
Project Number: 1396024 . 00	**Personnel:**
STATIC WATER LEVEL (FT.):	MEASURING POINT DESCRIPTION:
WATER LEVEL MEASUREMENT METHOD:	PURGE METHOD:
TIME START PURGE:	PURGE DEPTH (FT.):
TIME END PURGE:	
TIME SAMPLED:	
COMMENTS:	

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
							0.16	0.64	1.44		

TIME	1050	1055					
VOLUME PURGED (GAL)	4	4.3					
PURGE RATE (GPM)							
TEMPERATURE (°C)	16.44	16.43					
pH	7.10	7.08					
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	2.814	2.760					
DISSOLVED OXYGEN (mg/L)	0.23	0.19					
~~Eh(mV) Pt-AgCl ref.~~ ORP	214.0	23.2					
TURBIDITY / COLOR	clear 4.59	4.25 clear					
ODOR	~~Yes~~ no	—					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	15.75	16.11					
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/20/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW8
Project Number: 1396024.00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 5.53	MEASURING POINT DESCRIPTION:
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 1620	PURGE DEPTH (FT.): 12
TIME END PURGE: 1715	
TIME SAMPLED: 1705	

COMMENTS: Sample MW8 | Hex chrome | Metals As, Cr, Pb, Se | VOCs | NWTPH-Dx

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	19.79		5.53		14.26		0.16	0.64	1.44		2.28

TIME	1620	1625	1630	1635	1640	1645	1650
VOLUME PURGED (GAL)		.4	.9	1.4	1.8	2.1	2.4
PURGE RATE (GPM)							
TEMPERATURE (°C)		17.35	17.51	17.85	18.07	18.12	17.90
pH		7.37	7.14	7.01	6.98	6.92	6.91
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		2,006	2,018	2.014	1.920	1.871	1.894
DISSOLVED OXYGEN (mg/L)		1.35	0.58	0.39	0.29	0.24	0.27
~~Eh(mv) Pt AgCl ref.~~ ORP		-31.6	-55.9	-70.4	-84.1	-86.1	-85.4
TURBIDITY / COLOR		10.60 clear	2.36 clear/tan	1.92 clear/tan	22.92 clear/tan	28.57 clear/tan	30.27 clear/tan
ODOR		NO					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)		7.25					
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/21/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** ~~MW11~~ MW9
Project Number: 1396024 . 00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 5.84	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE 400	PURGE DEPTH (FT.): 20
TIME END PURGE: 1415	
TIME SAMPLED: 1440	
COMMENTS: Sample MW9 / Hexchrome / Metals As, Cr, Mo, Se / VOCs / NWTPH-Dx	

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	35.72	-	5.84	=	29.88	X	0.16	0.64	1.44	=	4.7

TIME	1400	1405	1410	1415	1420	1425	1430	1435
VOLUME PURGED (GAL)		.8	1.4	2.	2.6	3.4	4.1	4.75
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.90	16.67	16.47	16.42	16.39	16.35	16.49
pH		7.65	7.53	7.44	7.39	7.34	7.29	7.22
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		2.441	2.426	2.426	2.453	2.489	2.502	2.507
DISSOLVED OXYGEN (mg/L)		0.71	0.46	0.43	0.42	0.40	0.40	0.31
Eh(mv) ~~Pt-AgCl ref.~~ ORP		6.2	9.4	11.2	11.4	10.2	8.2	5.6
TURBIDITY / COLOR		27.67 clear	24.05 clear	27.63 clear	30.23 clear	26.07 clear	17.73 clear	16.51 clear
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		7.04	7.31	7.46	7.56	7.65	7.73	7.79
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date: 8/21/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** MW10
Project Number: 1396024.00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 3.93	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 1250	PURGE DEPTH (FT.): 15
TIME END PURGE: 1335	
TIME SAMPLED: 1330	

COMMENTS: Sample MW10 | Hex Chrome | Metals 1, Cr, Pb, Se | VOCs | NWTPH-Dx

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	19.87	-	3.93	=	15.94	X	0.16	0.64	1.44	=	2.5

TIME	1250	1255	1300	1305	1310	1315	1320	
VOLUME PURGED (GAL)		.5	1	1.6	2	2.6	3.1	
PURGE RATE (GPM)								
TEMPERATURE (°C)		17.70	17.60	17.56	17.54	17.50	17.46	
pH		7.03	7.10	7.04	6.97	6.97	7.07	
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		3.809	3.774	3.718	3.689	3.669	3.675	
DISSOLVED OXYGEN (mg/L)		1.42	0.95	0.91	0.77	0.66	0.58	
~~Eh(mV)Pt-AgCl ref.~~ ORP		69.4	55.5	50.7	47.2	43.7	40.6	
TURBIDITY / COLOR		4652 clear/tan	39.05 tan	23.66 clear tan	27.65 clear/tan	25.16 clear/tan	23.87 clear/tan	
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		4.90	5.20	5.55	5.71	5.93	6.03	
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form Date 8/21/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering	**Well Number:** ~~MW9~~ MW11
Project Number: 1396024 . 00	**Personnel:** R Lopez

STATIC WATER LEVEL (FT.): 5.42	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: peristaltic pump
TIME START PURGE: 0835	PURGE DEPTH (FT.): 15
TIME END PURGE: 0915	
TIME SAMPLED: 0910	

COMMENTS: Sample MW11 | Hex chrome | Metals As, Cr, Mo + Se | VOCs | NWTPH-Dx

WELL VOLUME CALCULATION	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
Fill in before purging	20.03		5.42		14.61		0.16	0.64	1.44		2.3

TIME	0835	0840	0845	0850	0855	0900		
VOLUME PURGED (GAL)		.60	1.2	1.75	2.2	2.75		
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.21	16.11	16.05	16.02	15.99		
pH		7.54	7.50	7.53	7.55	7.55		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		1.285	1.255	1.247	1.241	1.241		
DISSOLVED OXYGEN (mg/L)		1.02	0.49	0.34	0.29	0.25		
~~Eh(mv) Pt-AgCl ref.~~ ORP		7.4	-13.6	-31.3	-43.0	-51.2		
TURBIDITY / COLOR		32.04 clear	26.48 clear	19.71 clear	slight 14.91 clear	14.91 Clear		
ODOR		no		groundwater				
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		5.74	5.99	5.70	5.71	5.93		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/2/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1355
Purge Depth (ft): 38 ft
Total Discharge (gal): 2.5
Water Disposal: Onsite Drums
Weather: Sunny, ~35°F

Well Number: MW-1
Monument Type: Stickup: X (ft PVC) Flush:
Well Diameter (in): 2 inch
Well Condition: Good
Total Casing Depth (ft): 43.57 toc
Screened Interval (ft): 33-43 toc
Depth to Groundwater (ft): 0.85 toc
Depth to LNAPL (ft): Well N/A
Reference: TOC

Volume Calculation:

Water Column (ft)		Multiplier for Casing Diameter (in)			Casing Volume (gal)
42.7	·		2	0.16	= 6.8
		0.16	4	0.64	
			6	1.44	

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-1 ~~(dup)~~	2	VOA	HCl	40ml	Nor	Clear	VOCs	
	1	Poly	HNO_3	250ml			Metals	Cr, Pb, As, Se
	2	Amber	—	500ml			NWTPH-Dx	
	1	Poly	HNO_3	250ml			CrVI	

Time	1310	1315	1320	1325	1330	1335	1340	1345	1350
Parameter (every 5 min)		5 min	10 min	15 min	20 min	25 min	30 min	min	min
Flow Rate (~~gal/min~~) L/min		0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (gal) L		1.5	3	4	5	6	7	8	9
Water Depth (ft)		1.74	3.26	4.13	4.57	4.98	5.48	5.97	6.25
Temperature (Celsius)		9.6	9.5	9.5	9.6	9.7	9.9	10.0	10.0
pH		6.88	7.40	7.60	7.72	7.87	7.95	8.02	8.05
Sp. Conductance (mS/cm)		0.319	0.317	0.318	0.317	0.318	0.318	0.319	0.319
DO (mg/L)		3.95	4.16	3.26	3.14	2.79	2.33	2.13	2.08
ORP (mV)		-34.2	-89.6	-104.7	-117.7	-127.7	-149.3	-155.3	-153.8
Turbidity (NTU)		1.32	1.07	1.82	1.69	1.38	1.07	0.81	1.03
Color		Clear						1.81	
Odor/Evidence of LNAPL		N; O/S							

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/2/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR / CEJ
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1640
Purge Depth (ft): 16 ft.
Total Discharge (gal): 2.15
Water Disposal: Drum onsite
Weather:

Well Number: MW-2
Monument Type: Stickup: X Flush: (Locking (PVC))
Well Diameter (in): 2 inch
Well Condition: Good

		Reference:
Total Casing Depth (ft):	19.54 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	4.71 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)		Multiplier for Casing Diameter (in)	2	0.16		Casing Volume (gal)
14.83	·	0.16	4	0.64	=	2.3
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-2	2	VOA	HCl	40mL	N		~~TPH-Dx~~ TOC	
	1	Poly	HNO_3	250mL	N		Metals	Cr, Pb, As, Se
	2	Amber	-	500mL	N		TPH-Dx	
	1	Poly	HNO_3	250mL	N		Cr+6	

Time	1540	1545	1550	1555	1600	1605	1610	1615	1620
Parameter (every 5 min)		5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ L/min		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged ~~(gal)~~ L		1	2	3	4	5	6	7	8
Water Depth (ft)		6.22	6.83	7.76	9.24	10.01	10.82	11.82	12.39
Temperature (Celsius)		13.7	13.5	12.9	12.4	12.5	12.6	12.8	12.9
pH		6.82	6.83	6.86	6.85	6.72	6.68	6.64	6.70
Sp. Conductance (mS/cm)		3.32	3.33	3.32	3.34	3.30	3.39	3.40	3.39
DO (mg/L)		1.81	0.87	1.11	0.99	1.18	1.01	0.86	0.86
ORP (mV)		-124.1	-135.8	-131.3	-143.3	-131.8	-136.3	-137.3	-134.3
Turbidity (NTU)		145.4	181.7	157.8	133.1	32.1	126.4	152.7	150.2
Color		Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Odor/Evidence of LNAPL		No o/s	No o/s	No o/s	No o/s	No o/s	No o/s	No o/s	No o/s

Notes:

MW-2 cont'd

12/2/14

Time	1625	1630	1635					
Parameter (every 5 min)	5 min	5 min	5 min	min	min	min	min	min
Flow Rate ~~(gal/min)~~ L/min	0.2	0.2	0.2					
Volume Purged ~~(gal)~~ L	9	10	11					
Water Depth (ft)	13.08	13.36						
Temperature (Celsius)	12.8	12.9	12.9					
pH	6.77	6.68	6.71					
Sp. Conductance (mS/cm)	3.34	3.36	3.35					
DO (mg/L)	1.80	1.44	1.47					
ORP (mV)	-129.7	-134.7	-139.3					
Turbidity (NTU)	26.35	7.03	8.89					
Color	Yellow	Yellow	Yellow					
Odor/Evidence of LNAPL	No ols	No ols	No ols					

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 12/4/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1240
Purge Depth (ft): 15
Total Discharge (gal): 2.25
Water Disposal: Drum onsite
Weather:

Well Number: MW-3
Monument Type: Stickup: X (ft PVC) Flush:
Well Diameter (in): 2 inch
Well Condition: Good

		Reference:
Total Casing Depth (ft):	20.17 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	5.46 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
14.71		0.16	4	0.64		2.4
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol. (ml)	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-3	2	Amber	NA	500	No	Clear	NWTPH-Dx	
↓	2	VOA	HCl	40	↓	↓	VOCs	
	1	Poly	HNO3	250			Metals	As, Pb, Cr, Se
	1	Poly	-	250			Cr VI	

Time	1155	1200	1205	1210	1215	1220	1225	1230	1235
Parameter (every 5 min)		min	min	min	min	min	min	min	min
Flow Rate (gal/min)		0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (gal)		1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
Water Depth (ft)		6.24	6.22	6.23	6.24	6.21	6.20	6.19	6.19
Temperature (Celsius)		14.9	15.0	14.9	14.9	15.0	15.0	15.0	15.0
pH		6.70	6.57	6.55	6.49	6.47	6.47	6.47	6.48
Sp. Conductance (mS/cm)		0.443	0.436	0.435	0.430	0.416	0.414	0.413	0.413
DO (mg/L)		2.03	1.53	1.38	0.93	1.01	1.23	1.30	1.32
ORP (mV)		-150.2	-147.2	-144.5	-140.5	-145.0	-140.6	-137.1	-135.2
Turbidity (NTU)		2.20	3.52	3.11	4.70	5.47	4.97	4.38	4.27
Color		Clear							→
Odor/Evidence of LNAPL		NO/S							→

Notes: Some trace small brown particles.

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/2/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1500
Purge Depth (ft): 20ft
Total Discharge (gal): 2.5
Water Disposal: Drum onsite
Weather: Sunny, 35°F

Well Number: MW-4
Monument Type: Stickup X (ft PVC) Flush:
Well Diameter (in): 2 inch * Measure depths from South
Well Condition: OK.

		Reference
Total Casing Depth (ft):	25.74 toc	TOC
Screened Interval (ft):	toc	
Depth to Groundwater (ft):	4.43 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
21.3			2	0.16		3.4
		0.16	4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
~~MW-4-120214~~	~~6~~							
MW-4	2	Amber	—	500	No	Clear	NWTPH-Dx	
	2	VOA	HCl	40			VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			CrVI	

1420 Time	1425	1430	1435	1440	1445	1450	1455	1458
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min) L/m	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (gal) L	1	2.5	3.5	4.5	5.5	6.5	7.5	8
Water Depth (ft)	3.21	5.43	6.19	7.15	7.84	8.36	8.81	9.11
Temperature (Celsius)	12.5	13.7	13.9	13.9	13.9	13.8	13.6	13.5
pH	7.65	7.72	7.74	7.76	7.79	7.80	7.82	7.83
Sp. Conductance (mS/cm)	0.524	0.533	0.533	0.534	0.535	0.535	0.536	0.535
DO (mg/L)	4.35	2.29	2.10	2.05	2.06	2.20	2.22	2.20
ORP (mV)	-100.7	-114.8	-120.4	-129.1	-132.3	-144.2	-147.0	-140.9
Turbidity (NTU)	2.73	6.66	3.66	5.91	4.17	4.04	3.40	3.03
Color	Clear	*						
Odor/Evidence of LNAPL	No O/S							

* Some small black particles in water

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/4/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1105
Purge Depth (ft): 15ft.
Total Discharge (gal): 2.75
Water Disposal: Drum onsite
Weather: Indoors / Rainy, 40°F

Well Number: MW-5
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good, missing 1 bolt.

		Reference:
Total Casing Depth (ft):	19.90 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	5.06 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
14.84		0.16	4	0.64		2.3
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time
Dup	MW-12	1000

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-5	2	Amber	—	500	NO	YSI Yellow	NWTPH-Dx	
	2	VOA	HCl	40			VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			Cr VI	
MW-12	2	Amber	—	500	NO		NWTPH-Dx	
	2	VOA	HCl	40			VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			Cr VI	

1010 Time	1015	1020	1025	1030	1035	1040	1045	1050
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (~~gal/min~~) L/min	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (~~gal~~) L	1	2	3	4	5	6	7	8
Water Depth (ft)	5.49	5.58	5.59	5.61	5.62	5.65	5.66	5.67
Temperature (Celsius)	17.6	18.1	18.3	18.3	18.4	18.5	18.5	18.5
pH	7.37	7.47	7.52	7.54	7.52	7.47	7.50	7.52
Sp. Conductance (mS/cm)	0.557	0.552	0.549	0.549	0.547	0.545	0.545	0.546
DO (mg/L)	0.96	0.82	0.99	1.05	1.24	1.40	1.40	1.28
ORP (mV)	-163.7	-180.4	-186.5	-190.3	-188.1	-190.2	-193.9	-197.3
Turbidity (NTU)	2.65	2.71	2.77	2.57	2.98	3.37	2.48	2.12
Color	YSI Yellow	→	→	→	→	→	→	→
Odor/Evidence of LNAPL	NO O/S	→	→	→	→	→	→	→

Notes:

MW-5 cont'd

12/4/14

Time	1055	1058	1101	1104				
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.2	0.2	0.2	0.2				
Volume Purged (gal)	8.5	9.2	9.7	10.25				
Water Depth (ft)	5.67	5.68	5.68	5.69				
Temperature (Celsius)	18.5	18.5	18.5	18.5				
pH	7.50	7.49	7.49	7.49				
Sp. Conductance (mS/cm)	0.552	0.554	0.556	0.556				
DO (mg/L)	1.23	1.21	1.19	1.20				
ORP (mV)	-196.8	-193.9	-194.7	-194.5				
Turbidity (NTU)	2.18	2.10	2.15	2.09				
Color	V. lt. Yellow	→	→	→				
Odor/Evidence of LNAPL	NOD/S	→	→	→				

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/3/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1630
Purge Depth (ft): 15 ft
Total Discharge (gal): 1.5
Water Disposal: Drum onsite
Weather:

Well Number: MW-6
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good

			Reference:
Total Casing Depth (ft):	20.07	toc	TOC
Screened Interval (ft):	1 20	toc	
Depth to Groundwater (ft):	4.53	toc	
Depth to LNAPL (ft): Well	N/A		

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
15.54		0.16	4	0.64		2.5
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-6	2	Amber	—	500	No	Yellow/brn	NWTPH-Dx	
↓	2	VOA	HCl*	40	↓	↓	VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			Cr VI	

Time	1600	1605	1610	1615	1620	1625			
Parameter (every 5 min)		min	min	min	min	min	min	min	min
Flow Rate (gal/min)		0.2	0.2	0.2	0.2	0.2			
Volume Purged (gal)		1	2	3	4	5			
Water Depth (ft)		4.35	4.78	4.91	5.41	5.45			
Temperature (Celsius)		14.4	15.2	15.7	15.8	15.8			
pH		6.74	6.68	6.66	6.65	6.65			
Sp. Conductance (mS/cm)		4.03	4.09	4.06	4.05	4.03			
DO (mg/L)		1.06	0.36	0.18	0.17	0.16			
ORP (mV)		-177.9	-213.8	-243.7	-246.6	-250.0			
Turbidity (NTU)		1.47	3.80	3.62	3.62	4.43			
Color		Yellow/Brn							
Odor/Evidence of LNAPL		No O/S							

Notes: Water is a dark yellow/light brown color.
* water is very aerated. Preservative likely gone trying to get air bubbles out. Noted on COC.

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/3/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1540
Purge Depth (ft): 24 ft
Total Discharge (gal): 8
Water Disposal: Drum onsite
Weather:

Well Number: MW 7
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good.

		Reference:
Total Casing Depth (ft):	31.46 toc	TOC
Screened Interval (ft):	21-31 toc	
Depth to Groundwater (ft):	5.68 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
25.78		0.16	2			4.12
		0.64	4			
		1.44	6			

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-7	2	Amber	—	500	No	clear	NWTPH-Dx	
↓	2	VOA	HCl	40	↓	↓	VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			Cr VI	

Time	1445	1450	1455	1500	1505	1510	1515	1520	1525	1530
Parameter (every 5 min)		min	min	min	min	min	min	min	min	
Flow Rate (gal/min)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Volume Purged (gal)		1	2	3	4	5	6	7	8	
Water Depth (ft)		~~7.49~~ 7.69	7.69	7.94	8.40	8.58	8.72	8.83	8.93	
Temperature (Celsius)		~~15.0~~ 14.9	14.9	14.9	14.9	14.7	14.6	14.3	14.4	
pH		~~7.05~~ 6.95	6.95	6.91	6.88	6.87	6.86	6.84	6.83	
Sp. Conductance (mS/cm)		2.53	2.53	2.51	2.52	2.52	2.53	2.59	2.79	
DO (mg/L)		1.50	0.94	0.81	0.62	0.55	6.45	0.50	0.68	
ORP (mV)		-124.0	-182.3	-205.3	-212.1	-215.5	-224.0	-229.6	-216.5	
Turbidity (NTU)		1.41	1.18	1.12	0.72	1.00	1.04	1.14	1.09	1.02
Color		clear								
Odor/Evidence of LNAPL		No								

Notes:

MW-7 cont'd

12/3/14

Time	1530	1533	1536					
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.2	0.2	0.2					
Volume Purged (gal)	9	10	11					
Water Depth (ft)	8.910	8.98	9.03					
Temperature (Celsius)	14.4	14.4	14.4					
pH	6.77	6.76	6.75					
Sp. Conductance (mS/cm)	2.97	3.02	3.04					
DO (mg/L)	0.59	0.57	0.57					
ORP (mV)	-224.2	-224.0	-226.9					
Turbidity (NTU)	1.02	1.03	1.00					
Color	Clear →		→					
Odor/Evidence of LNAPL	No/S →		→					

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/3/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1010
Purge Depth (ft): 15ft
Total Discharge (gal): 2.25
Water Disposal: Drum onsite
Weather:

Well Number: MW-8
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: OK, seal disintegrating

		Reference:
Total Casing Depth (ft):	19.80 toc	TOC
Screened Interval (ft):	10ft: 9-19 toc	
Depth to Groundwater (ft):	5.42 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
14.38		0.16	4	0.64		2.3
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-8	2	Amber	-	500	No	Lt. Yellow	NWTPH-Dx	
↓	2	VOA	HCl	40ml	↓	↓	VOCs	
	1	Poly	HNO_3	250			Metals	As, Pb, & Cr
	1	Poly	-	250			Cr VI	

0930 Time	0935	0940	0945	0950	0955	1000	1005	
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Volume Purged (gal)	1	2	3	4	5	6	7	
Water Depth (ft)	6.02	6.88	7.38	7.59	7.89	8.12	8.31	
Temperature (Celsius)	14.5	14.8	15.1	15.80	15.1	14.9	14.9	
pH	6.56	6.52	6.50	6.50	6.50	6.51	6.51	
Sp. Conductance (mS/cm)	1.76	1.70	1.73	1.74	1.74	1.75	1.75	
DO (mg/L)	1.35	0.98	0.83	0.78	0.80	0.81	0.85	
ORP (mV)	-222.5	-190.3	-212.2	-221.2	-191.4	-218.5	-203.8	
Turbidity (NTU)	15.70	19.83	18.31	16.03	15.38	14.65	14.79	
Color	Clear to Yellow →					Sl Yellow →		
Odor/Evidence of LNAPL	No O/S →						→	

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/3/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1140
Purge Depth (ft): 33 ft.
Total Discharge (gal): 1.85
Water Disposal: Drum onsite
Weather:

Well Number: MW-9
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good

		Reference:
Total Casing Depth (ft):	35.74 toc	TOC
Screened Interval (ft):	31-36 toc	
Depth to Groundwater (ft):	4.90 toc	
Depth to LNAPL (ft): Well	N/A	

Volume Calculation:

Water Column (ft)	*	Multplier for Casing Diameter (in)			=	Casing Volume (gal)
30.84		0.16	2	0.16		4.95
		0.64	4	0.64		
		1.44	6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-9	2	Amber	—	500	NO	Clear	NWTPH-Dx	
	2	VOA	HCl	40ml			VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, As, Se
	1	Poly	—	250			Cr VI	

Time	1100	1105	1110	1115	1120	1125	1130	1135	
Parameter (every 5 min)		min	min	min	min	min	min	min	min
Flow Rate (gal/min)		0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Volume Purged (gal)		1	2	3	4	5	6	7	
Water Depth (ft)		5.32	5.44	5.50	5.54	5.57	5.60	5.63	
Temperature (Celsius)		14.0	13.7	14.2	14.5	14.5	14.4	14.5	
pH		7.19	7.19	7.19	7.18	7.18	7.17	7.17	
Sp. Conductance (mS/cm)		2.34	2.33	2.35	2.35	2.35	2.35	2.35	
DO (mg/L)		1.17	0.91	0.74	0.58	0.64	0.62	0.67	
ORP (mV)		-227.9	-231.8	-254.5	-276.0	-217.4	-249.3	-248.8	
Turbidity (NTU)		9.26	10.07	6.81	5.58	4.30	4.23	4.14	
Color		Sl. yellow	V. Sl. Yellow	Clear	→	→	→	→	
Odor/Evidence of LNAPL		NO/S	→	→	→	→	→	→	

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 12/3/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1340
Purge Depth (ft): 15ft
Total Discharge (gal): 3
Water Disposal: Drum onsite
Weather:

Well Number: MW-10
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good

			Reference:
Total Casing Depth (ft):	19.83	toc	TOC
Screened Interval (ft):	10-20	toc	
Depth to Groundwater (ft):	3.00	toc	
Depth to LNAPL (ft): Well	N/A		

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
16.83		0.16	2	0.16		2.7
			4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-10	2	Amber	—	500	NO	Lt Yellow	NWTPH-DX	
↓	2	VOA	HCl	40	↓	↓	VOCs	
	1	Poly	HNO_3	250			Metals	Cr, Pb, Cr, Se
	1	Poly	—	250			Cr VI	

Time	1220	1225	1230	1235	1240	1245	1250	1255	1305
Parameter (every 5 min)		min	min	min	min	min	min	min	min
Flow Rate ~~(gal/min)~~ L/min		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Volume Purged ~~(gal)~~ L		1	2	3	4	5	6	~~7~~ 6.5	7.5
Water Depth (ft)		3.58	3.71	3.79	3.91	3.96	3.98	3.99	4.01
Temperature (Celsius)		15.4	15.8	15.9	16.1	16.1	16.1	15.9	15.6
pH		6.55	6.58	6.57	6.58	6.58	6.58	6.58	6.60
Sp. Conductance (mS/cm)		4.12	4.10	4.05	4.02	4.04	4.02	4.02	4.00
DO (mg/L)		1.76	~~1.15~~ 1.15	1.09	0.94	0.95	0.97	0.90	1.79
ORP (mV)		-150.8	-145.1	-159.8	-184.7	-187.9	-189.4	-184.2	-169.0
Turbidity (NTU)		12.68	14.82	18.41	25.35	33.49	34.52	30.49	27.25
Color		Lt Yellow							
Odor/Evidence of LNAPL		No							

Emptied flow cell.

Notes: Rusty-colored foam at water surface. Slightly aerated/effervescent. Tiny bubbles and particles observed - raising turbidity

MW-10 cont'd

12/13/14

Time	1310	1315	1320	1325	1330	1335		
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.1	0.1	0.1	0.1	0.1	0.1		
Volume Purged (gal)	8.0	8.5	9.0	9.5	10	10.5		
Water Depth (ft)	4.02	4.04	4.08	4.12	4.15	4.18		
Temperature (Celsius)	15.8	15.80	15.8	16.0	16.0	16.0		
pH	6.60	6.59	6.59	6.59	6.60	6.60		
Sp. Conductance (mS/cm)	4.01	3.99	3.97	3.94	3.95	3.96		
DO (mg/L)	1.20	1.02	1.02	0.93	0.99	0.02		
ORP (mV)	-181.2	-182.9	-185.3	-186.4	-186.4	-184.7		
Turbidity (NTU)	22.02	15.20	13.73	16.41	16.28	16.21		
Color	lt. Yellow	→	→	→	→	→		
Odor/Evidence of LNAPL	NOOS	→	→	→	→	→		

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 12/4/14
Project Name: Precision Engineering Facility
Project Number: 1396024.00
Sampling Personnel: DKR
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 0930
Purge Depth (ft): 15 ft
Total Discharge (gal): 2
Water Disposal: Drum on site
Weather:

Well Number: MW-11
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: Good

			Reference:
Total Casing Depth (ft):	19.98	toc	TOC
Screened Interval (ft):	10-20	toc	
Depth to Groundwater (ft):	4.36	toc	
Depth to LNAPL (ft): Well	N/A		

Volume Calculation:

Water Column (ft)		Multiplier for Casing Diameter (in)			Casing Volume (gal)
15.62	·		2	0.16	=
		0.16	4	0.64	
			6	1.44	2.49

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus (3665)	
Other: Turbidity	Micro TPi	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW-11	2			500	NO	V.Sl.Yellow	NWTPH-DX	
↓	2		HCl	40	↓	↓	VOCs	
	1		HNO3	250			Metals	Cr, Pb, As, Se
	1			250			Cr VI	

0850 Time	0855	0900	0905	0910	0915	0920	0925	
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.3	0.2	0.2	0.2	0.2	0.2	0.2	
Volume Purged (gal)	1.5	2.5	3.5	4.5	5.5	6.5	7.5	
Water Depth (ft)	4.65	4.64	4.64	4.65	4.66	4.66	4.67	
Temperature (Celsius)	15.2	15.1	15.1	15.0	14.9	14.9	14.9	
pH	6.40	6.49	6.48	6.49	6.50	6.50	6.50	
Sp. Conductance (mS/cm)	1.34	1.34	1.33	1.35	1.34	1.34	1.34	
DO (mg/L)	1.19	0.52	0.43	0.35	0.32	0.23	0.29	
ORP (mV)	~~112.9~~	-173.1	-143.4	-145.9	-177.9	-185.2	-190.3	
Turbidity (NTU)	1.96	1.55	1.41	1.59	1.87	2.00	1.97	
Color	Lt. Yellow	→	Sl. Yellow	→	→	V.Sl. Yellow	→	
Odor/Evidence of LNAPL	No O/S	→	→	→	→	→	→	

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/9/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: ~~1510~~ 1505 (CJ)
Purge Depth (ft): 38 ft.
Total Discharge ~~(gal)~~ L: 8
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW1
Monument Type: Stickup: X (ft PVC) Flush ~~X~~ (CJ)
Well Diameter (in): 2 inch
Well Condition: good

		Reference:
Total Casing Depth (ft):	43.55 toc	TOC
Screened Interval (ft):	33-43 toc	
Depth to Groundwater (ft):	0.30 toc	
Depth to LNAPL (ft): Well	—	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
43.3		0.16	2 / 0.16		6.9
		0.16	4 / 0.64		
			6 / 1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus	
Other:	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW1	2	Amber	NA	500	No	Clear	NWTPH-Dx	
	2	VOA	HCl	40	No	↓	VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time (CJ)	~~1350~~ 1425	1430	1435	1440	1445	1450	1455	1500
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	—	1	2	3	4	5	6	7
Water Depth (ft)	0.3	1.89	2.76	2.96	3.00	3.01	3.26	3.34
Temperature (Celsius)	11.2	11.3	11.3	11.3	11.6	11.1	10.9	10.8
pH	6.10	6.10	6.16	6.16	6.10	6.10	6.12	6.09
Sp. Conductance (mS/cm)	0.3118	0.3110	0.3110	0.3112	0.3114	0.3116	0.3113	0.3097
DO (mg/L)	0.40	0.34	0.26	0.26	0.44	0.34	0.25	0.23
ORP (mV)	60.6	59.4	56.1	55.2	51.9	51.8	51.4	75.7
Turbidity (NTU)	3.41	1.32	2.18	1.81	1.93	1.62	1.47	1.53
Color	Clear (CJ)							
Odor/Evidence of LNAPL	No o/s							

Notes: *Battery died @ 1500, restarted pump @ 1505; sampled @ 1510
NOTE: I inadvertenly wrote 1505 on all sample labels. This will be the recorded sample time

Time	1510							
Parameter (every 5 min)	5 min	min	min	min	min	min	min	min
Flow Rate (gal/min)	200							
Volume Purged (gal)	8							
Water Depth (ft)	3.31							
Temperature (Celsius)	11.2							
pH	6.10							
Sp. Conductance (mS/cm)	51.3							
DO (mg/L) (C3)	0.22							
ORP (mV)	0.3102							
Turbidity (NTU)	1.83							
Color	clear							
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/9/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1620
Purge Depth (ft): 15 ft
Total Discharge (~~gal~~) L: 6
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW2
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: good

		Reference:
Total Casing Depth (ft):	19.53 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	4.92 toc	
Depth to LNAPL (ft): Well		

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
14.61		0.16	4	0.64		2.3
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW2	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1550	1555	1600	1605	1610	1615	1620
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate (~~gal/min~~) mL/min	200	200	200	150	150	150	150
Volume Purged (~~gal~~) L	-	1	2	3.75	4.50	5.25	6.0
Water Depth (ft)	4.92	7.00	7.70	8.47	8.98	10.12	10.67
Temperature (Celsius)	14.8	14.5	14.4	14.4	14.3	14.3	14.4
pH	6.52	6.63	6.65	6.63	6.63	6.63	6.63
Sp. Conductance (mS/cm)	3.036	3.126	3.129	3.129	3.131	3.130	3.129
DO (mg/L)	0.86	0.19	0.16	0.14	0.15	0.14	0.15
ORP (mV)	26.0	-37.5	-49.7	-54.9	-57.4	-59.9	-60.1
Turbidity (NTU)	1.35	1.03	1.48	2.06	1.75	1.68	1.78
Color	yellow						
Odor/Evidence of LNAPL	No						

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: ~~MW3~~ 3/9/15 (1)

Well Number: MW3

Project Name: Precision Engineering

Monument Type: Stickup: 0 (ft PVC) Flush: ~~10~~ (3)

Project Number: 1396024.00

Well Diameter (in): 2 inch

Sampling Personnel: C. Joseph

Well Condition: good

Water Level Meter: Geotech Interface Probe

			Reference:
Total Casing Depth (ft):	20.18	toc	TOC
Screened Interval (ft):	10-20	toc	
Depth to Groundwater (ft):	5.83	toc	
Depth to LNAPL (ft): Well			

Purging Equipment: Geotech Peristaltic Pump

Sampling Time: 1340

Purge Depth (ft): 15

Total Discharge ~~(gal)~~ L: 6

Water Disposal: Onsite 55 gal. drums

Weather:

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
			2	0.16		
14.35		0.16	4	0.64		2.3
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI ProPlus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				
MW3	2	Amber	NA	500	No	clear	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1305	1310	1315	1320	1325	1330	1335	1340
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	–	1	2	3	4	5	5	6
Water Depth (ft)	5.83	6.20	6.20	6.21	6.24	6.25	6.25	6.25
Temperature (Celsius)	14.5	14.4	14.4	14.3	14.4	14.4	14.5	14.4 (3)
pH	6.58	6.57	6.52	6.52	6.52	6.53	6.53	~~6.6~~ 6.52
Sp. Conductance (mS/cm)	420.3	419.3	417.4	417.8	416.2	417.9	415.9	416.0
DO (mg/L)	0.71	0.69	0.36	0.37	0.33	0.30	0.30	0.30
ORP (mV)	-14.4	-18.7	-24.4	-30.9	-35.7	-38.1	-38.9	-39.1
Turbidity (NTU)	65.5	24.6	20.9	22.0	31.2	27.0	34.3	32.8
Color	clear*			clear				
Odor/Evidence of LNAPL	No ls							

Notes: * - clear water w/ flaky, tan colored particulates

Groundwater Purge and Sample Form (Minimal Drawdown) **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1655
Purge Depth (ft): 20
Total Discharge ~~(gal)~~ L: 4
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW4
Monument Type: Stickup: _____ (ft PVC) Flush: _____
Well Diameter (in): 2 inch
Well Condition: good/casing broken (as in previous events)
Total Casing Depth (ft): 25.75 toc
Screened Interval (ft): 15-20 toc
Depth to Groundwater (ft): 2.63 toc
Depth to LNAPL (ft): Well —
Reference: TOC

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
23.1		0.16	2	0.16		3.7
		0.64	4	0.64		
		1.44	6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW4	2	Amber	NA	500	No	clear	NWTPH-Dx	
	2	VOA	HCl	40	No	↓	VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1635	1640	1645	1650	1655			
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	min	min	min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200			
Volume Purged ~~(gal)~~ L	—	1	2	3	4			
Water Depth (ft)	2.63	4.03	4.87	5.67	6.54			
Temperature (Celsius)	13.5	13.3	13.4	13.4	13.4			
pH	7.78	7.80	7.80	7.82	7.81			
Sp. Conductance (mS/cm)	0.5249	0.5243	0.5248	0.5211	0.5227			
DO (mg/L)	1.15	1.16	1.15	1.14	1.14			
ORP (mV)	-71.0	-70.0	-69.0	-68.2	-67.9			
Turbidity (NTU)	17.6	16.8	16.9	15.9	16.3			
Color	clear	clear	clear	clear	clear			
Odor/Evidence of LNAPL	No o/s	No o/s	No o/s	No o/s	No o/s			

Notes:

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1535
Purge Depth (ft): 15
Total Discharge ~~(gal)~~ L: 12
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW5
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: good
Total Casing Depth (ft): ~~10-20~~ toc
Screened Interval (ft) (C3): ~~19.90~~ toc
Depth to Groundwater (ft): 5.21 toc
Depth to LNAPL (ft): Well _____
Reference: TOC

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
14.7		.16	4	0.64		2.4
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time
Dupe	MW-12	1600

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW5	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No	↓	Cr 6+	

Time	1435	1440	1445	1450	1455	1500	1505	1510
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	—	1	2	3	4	5	6	7
Water Depth (ft)	5.21	5.23	5.23	5.28	5.30	5.31	5.32	5.32
Temperature (Celsius)	18.0	18.0	18.0	18.0	18.0	18.1	18.1	18.1
pH	7.89	7.84	7.83	7.77	7.69	7.69	7.61	7.51
Sp. Conductance (mS/cm)	0.5282	0.5254	0.5260	0.5214	0.5270	0.5272	0.5341	0.5379
DO (mg/L) (C3)	0.30	0.27	0.24	0.24	0.26	0.21	0.19	0.17
ORP (mV)	~~66.8~~ 24.5	23.1	23.7	22.0	22.9	24.5	27.0	28.7
Turbidity (NTU)	2.54	1.97	2.85	4.53	2.44	1.36	1.19	1.11
Color	Clear	↓	↓	↓	↓	↓	↓	Yellow (C3)
Odor/Evidence of LNAPL	No/S	↓	↓	↓	↓	↓	↓	↓

Notes:

Time	1515	1520	1525	1530	1535			
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	min	min	min
Flow Rate (gal/min) mL/min	200	200	200	200	200			
Volume Purged ~~(gal)~~ L	8	9	129 X	9 11 JS	12 JS			
Water Depth (ft)	5.22	5.23	5.24	5.25	5.26			
Temperature (Celsius)	18.0	18.1	18.1	18.1	18.1			
pH	7.39	7.27	7.20	7.13	7.10			
Sp. Conductance (mS/cm)	0.5723	0.585	0.599	0.615	0.626			
DO (mg/L)	0.16	0.16	0.16	0.15	0.15			
ORP (mV)	31.1	34.7	37.1	40.3	43.4			
Turbidity (NTU)	1.22	0.98	0.89	0.81	1.01			
Color	~~yellow~~	—	—	—	—			
Odor/Evidence of LNAPL	—	—	—	—	—			

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1325
Purge Depth (ft): 15
Total Discharge (~~gal~~) L: 10
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW6
Monument Type: Stickup: _____ (ft PVC) Flush: ✓
Well Diameter (in): 2 inch
Well Condition: good
Total Casing Depth (ft): 20.05 toc
Screened Interval (ft): 10-20 toc
Depth to Groundwater (ft): 4.14 toc
Depth to LNAPL (ft): Well
Reference: TOC

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
15.9		-0.16	2	0.16		2.5
			4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI ProPlus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				
MW6	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No	↓	Cr 6+	

Time	1235	1240	1245	1250	1255	1300	1305	1310
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	min
Flow Rate (~~gal/min~~) mL/min	200	200	200	200	200	200	200	200
Volume Purged (~~gal~~) L	—	1	2	3	4	5	6	7
Water Depth (ft)	4.14	4.27	4.31	4.39	4.64	4.86	5.08	5.16
Temperature (Celsius)	15.3	15.1	15.2	15.2	15.1	15.1	15.2	15.1
pH	6.71	6.72	6.85	6.75	6.76	6.76	6.76	6.77
Sp. Conductance (mS/cm)	3.847	3.852	3.855	3.863	3.859	3.851	3.846	3.843
DO (mg/L)	0.37	0.23	0.19	0.11	0.11	0.09	0.06	0.06
ORP (mV)	-32.4	-51.5	-57.9	-72.4	-76.6	-84.5	-87.4	-90.1
Turbidity (NTU)	27.2	22.6	19.9	19.4	17.3	20.3	19.8	21.9
Color	dark yellow	↓	↓	↓	↓	↓	↓	↓
Odor/Evidence of LNAPL	No/S	↓	↓	↓	↓	↓	↓	↓

Notes:

Time	1315	1320	1325					
Parameter (every 5 min)	5 min	5 min	5 min	min	min	min	min	min
Flow Rate (gal/min)	200	200	200					
Volume Purged (gal)	8	9	10					
Water Depth (ft)	5.23	5.38	5.46					
Temperature (Celsius)	15.1	15.3	15.2					
pH	6.77	6.74	6.76					
Sp. Conductance (mS/cm)	3.842	3.840	3.844					
DO (mg/L)	0.08	0.07	0.07					
ORP (mV)	-92.6	-94.6	-95.3					
Turbidity (NTU)	13.6	9.78	7.98					
Color	yellow	—	—					
Odor/Evidence of LNAPL	None	—	—					

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1130
Purge Depth (ft): ~25
Total Discharge ~~(gal)~~ L: 6.25
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW7
Monument Type: Stickup: _____ (ft PVC) Flush: ~~6~~
Well Diameter (in): 2 inch
Well Condition: good

		Reference:
Total Casing Depth (ft):	31.47 toc	TOC
Screened Interval (ft):	21-31 toc	
Depth to Groundwater (ft):	5.97 toc	
Depth to LNAPL (ft): Well		

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
25.5		.16	2 0.16 4 0.64 6 1.44		4.08

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI Pro Plus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW7	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1055	1100	1105	1110	1115	1120	1125	1130
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	150	150	150
Volume Purged ~~(gal)~~ L	-	1	2	3	4	4.75	5.5	6.25
Water Depth (ft)	5.97	6.75	7.37	7.66	7.97	8.38	8.52	8.64
Temperature (Celsius)	14.8	14.8	14.8	14.9	14.9	15.0	14.9	15.0
pH	6.79	6.80	6.79	6.76	6.77	6.79	6.81	6.81
Sp. Conductance (mS/cm)	2.905	2.928	3.033	3.076	3.037	2.925	2.861	2.750
DO (mg/L)	0.50	0.28	0.21	0.20	0.18	0.16	0.16	0.15
ORP (mV)	56.0	49.7	46.6	45.0	42.3	39.9	38.8	38.7
Turbidity (NTU)	4.21	3.64	2.18	2.47	1.97	2.11	1.99	1.89
Color	* Clear	"	yellow	"	* clear	yellow	"	* clear *
Odor/Evidence of LNAPL	No ls	"	"	"	"	"	"	"

Notes: * Water is clear but with a slight yellow tint

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1020
Purge Depth (ft): 15
Total Discharge ~~(gal)~~ L: 4.25 L
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW8
Monument Type: Stickup: _____ (ft PVC) Flush: 0
Well Diameter (in): 2 inch
Well Condition: good
Total Casing Depth (ft): 19.83 toc
Screened Interval (ft): 5 to ~~20~~ 19 toc
Depth to Groundwater (ft): 4.05 toc
Depth to LNAPL (ft): Well —
Reference: TOC

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
15.78		0.16	2	0.16		2.5
			4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI ProPlus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				
MW8	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	0955	1000	1005	1010	1015	1020		
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	min	min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	150	150	150		
Volume Purged ~~(gal)~~ L	—	1	2	2.75	3.50	4.25		
Water Depth (ft)	4.05	4.07	4.93	5.42	5.77	6.02		
Temperature (Celsius)	13.2	13.2	13.1	13.1	13.2	13.4		
pH	6.62	6.63	6.62	6.61	6.61	6.61		
Sp. Conductance (mS/cm)	1.410	1.412	1.414	1.419	1.422	1.436		
DO (mg/L)	0.87	0.72	0.34	0.24	0.24	0.23		
ORP (mV)	-16.1	-19.6	-39.5	-48.4	-51.9	-53.2		
Turbidity (NTU)	52.1	48.7	28.0	20.6	20.7	20.4		
Color	yellow							
Odor/Evidence of LNAPL	No o/s							

Notes: Note: well box was full of water when lid was opened. Water removed before popping well cap.

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 1/9/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1205
Purge Depth (ft): 33
Total Discharge (~~gal~~) L: 10
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW-9
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: good
Total Casing Depth (ft): 35.72 toc
Screened Interval (ft): 31-36 toc
Depth to Groundwater (ft): 4.87 toc
Depth to LNAPL (ft): Well
Reference: TOC

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
30.85			2	0.16		4.9
			4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI ProPlus	
Other: Turbidity	Hach 2100P	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				
MW9	2	Amber	NA	500	No	clear	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1115	1120	1125	1130	1135	1140	1145	1150
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	-	1	2	3	4	5	6	7
Water Depth (ft)	4.87	5.38	5.40	5.41	5.41	5.43	5.43	5.45
Temperature (Celsius)	13.8	14.0	13.9	14.0	14.1	14.2	14.5	14.4
pH	7.18	7.29	7.20	7.29	7.24	7.22	7.22	7.22
Sp. Conductance (mS/cm)	2.297	2.295	2.295	2.297	2.296	2.295	2.298	2.297
DO (mg/L)	0.68	0.64	0.46	0.46	0.45	0.45	0.20	0.20
ORP (mV)	73.1	60.7	55.6	48.1	43.7	41.1	37.5	32.9
Turbidity (NTU)	175	59.9	44.9	28.7	24.4	23.5	15.4	8.79
Color	yellow/cloudy				*Clear			Clear
Odor/Evidence of LNAPL	No o/s							

Notes: * water is clear in color but has flaky particulate matter suspended in it

Time	1155	1200	1205					
Parameter (every 5 min)	← min	5 min	5 min	min	min	min	min	min
Flow Rate (gal/min)	200	200	200					
Volume Purged (gal)	8	9	10					
Water Depth (ft)	5.45	5.45	5.45					
Temperature (Celsius)	14.4	14.6	14.5					
pH	7.22	7.21	7.22					
Sp. Conductance (mS/cm)	2.298	2.296	2.297					
DO (mg/L)	0.19	0.21	0.19					
ORP (mV)	26.8	23.3	22.9					
Turbidity (NTU)	11.9	10.3	7.4					
Color	clear	clear	clear					
Odor/Evidence of LNAPL	No ols	———	↑					

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Time								
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/9/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 1035
Purge Depth (ft): 15
Total Discharge ~~(gal)~~ L: 7
Water Disposal: Onsite 55 gal. drums
Weather:

Well Number: MW-10
Monument Type: Stickup: _____ (ft PVC) Flush: 0
Well Diameter (in): 2 inch
Well Condition: good

		Reference:
Total Casing Depth (ft):	19.83 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	3.09 toc	
Depth to LNAPL (ft): Well		

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
16.74		0.16	2	0.16		2.7
			4	0.64		
			6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI ProPlus	
Other: Turbidity	Hach 2100Q	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				
MW10	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	1000	1005	1010	1015	1020	1025	1030	1035
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/m	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	-	1	2	3	4	5	6	7
Water Depth (ft)	3.09	3.89	3.94	4.03	4.09	4.13	4.18	4.22
Temperature (Celsius)	14.4	14.2	14.2	14.1	14.2	14.3	14.3	14.3
pH	6.66	6.53	6.59	6.56	6.50	6.54	6.59	6.60
Sp. Conductance (mS/cm)	4.213	4.264	4.232	4.081	4.021	3.996	3.989	3973
DO (mg/L)	0.74	0.32	0.24	0.22	0.20	0.17	0.15	0.15
ORP (mV)	-28.5	-55.8	-60.2	-67.5	-70.2	-69.8	-69.7	-69.9
Turbidity (NTU)	6.24	5.14	5.03	6.77	7.30	3.98	4.49	4.63
Color	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow
Odor/Evidence of LNAPL	No o/s						Trace Sheen	No o/s

Notes: Lots of effervescence

Groundwater Purge and Sample Form (Minimal Drawdown) — **Kennedy/Jenks Consultants**

Date: 3/10/15
Project Name: Precision Engineering
Project Number: 1396024.00
Sampling Personnel: C. Joseph
Water Level Meter: Geotech Interface Probe
Purging Equipment: Geotech Peristaltic Pump
Sampling Time: 0905
Purge Depth (ft): 15
Total Discharge ~~(gal)~~: 7
Water Disposal: Onsite 55 gal. drums
Weather: 45°, overcast

Well Number: MW11
Monument Type: Stickup: _____ (ft PVC) Flush: X
Well Diameter (in): 2 inch
Well Condition: good

		Reference:
Total Casing Depth (ft):	19.99 toc	TOC
Screened Interval (ft):	10-20 toc	
Depth to Groundwater (ft):	4.23 toc	
Depth to LNAPL (ft): Well	—	

Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
15.76		0.16	2		2.5
		0.64	4		
		0.16	6		
		1.44			

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:		
Other:		
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers: No.	Type	Pres.	Vol.	Field Filtered	Turbidity/ Color	Analysis Requested	MS/MSD & Comments
MW11	2	Amber	NA	500	No	yellow	NWTPH-Dx	
	2	VOA	HCl	40	No		VOCs	
	1	Poly	HNO3	250	No		Metals	As, Pb, Cr, Se
	1	Poly	NA	250	No		Cr 6+	

Time	0830	0835	0840	0845	0850	0855	0900	0905
Parameter (every 5 min)	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
Flow Rate ~~(gal/min)~~ mL/min	200	200	200	200	200	200	200	200
Volume Purged ~~(gal)~~ L	-	1	2	3	4	5	6	7
Water Depth (ft)	4.23	4.39	4.40	4.41	4.43	4.45	4.45	4.47
Temperature (Celsius)	13.5	13.6	13.9	14.0	14.1	14.0	14.0	14.0
pH	6.78	6.69	6.66	6.66	6.65	6.64	6.64	6.64
Sp. Conductance (mS/cm)	1.173	1.191	1.199	1.199	1.198	1.199	1.202	1.203
DO (mg/L)	1.73	0.89	0.40	0.25	0.22	0.19	0.17	0.16
ORP (mV)	27.3	-5.2	-33.2	-52.2	-56.4	-63.4	-65.9	-66.4
Turbidity (NTU)	109	55.7	19.8	13.8	11.9	9.84	8.29	7.92
Color	cloudy/yellow		brown	yellow				
Odor/Evidence of LNAPL	No o/s							

Notes:

Appendix E

Well Development Records

Groundwater Purge and Sample Form Date 8/18/14 **Kennedy/Jenks Consultants**

Project Name: Ecology Precision Engineering	**Well Number:** MW9
Project Number: 1960024.00	**Personnel:** R Lopez
STATIC WATER LEVEL (FT.): 5.89	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: double stage purge pump Geotech
TIME START PURGE: 1030	PURGE DEPTH (FT.): 35
TIME END PURGE: 1220	
TIME SAMPLED:	

COMMENTS: Initial well development
~100 gal total purge

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	35.86		5.89		29.97		0.16	0.64	1.44		4.8 x 5 = 24 gal

TIME	1030 → 1035	1045 → 1050	1107 → 1111	1120 → 1124	1145 → 1149	1200 → 1205	1215 → 1219
VOLUME PURGED (GAL)	5 gal	5 gal	5 gal	5 gal	5 gal	5 gal	5 ga
PURGE RATE (GPM)	1	~1	~1	~1	~1	1	1
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	clear @ 23ft cloudy @ 29ft	med brown silt	at 35 ft many fines	tan/brown fine fines	tan 395.9 NTU FAU	tan + light brown 281.3 279.7	light brown 309.6 259.3 153.7
ODOR	NO	no	no				
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	11.0 fast recharge rate	14.35	6.73 → 15.40	7.61 → 19.63	7.31 → 18.58	8.02 → 19.45	8.61 → 19.64
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/18/14 **Kennedy/Jenks Consultants**

Project Name: Ecology Cornet Bay	**Well Number:** MW9 cont.
Project Number:	**Personnel:** R Lopez
STATIC WATER LEVEL (FT) 6.53	MEASURING POINT DESCRIPTION:
WATER LEVEL MEASUREMENT METHOD:	PURGE METHOD:
TIME START PUR	PURGE DEPTH (FT.):
TIME END PURGE	
TIME SAMPLED:	
COMMENTS:	

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
							0.16	0.64	1.44		

TIME	1425. 1445						
VOLUME PURGED (GAL)	25						
PURGE RATE (GPM)	1						
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	grey brown → clear	69.06 65.15 60.36					
ODOR	NO	59.11 55.11 50.61					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	6.53 → 21.83 → 35.73 → 35.94						
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date 8/18/14 **Kennedy/Jenks Consultants**

Project Name: Precision Engineering **Well Number:** MW10

Project Number: 1396034.00 **Personnel:** R. Lopez

STATIC WATER LEVEL (FT.):	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: double stage purge pump bladder
TIME START PURGE 1240	PURGE DEPTH (FT.): 19
TIME END PURGE: 1420	
TIME SAMPLED:	

COMMENTS: Initial well development

~37 gal total purge, ~45 gal total discharge, turbidity clear 33 NTU

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	19.84		3.73		16.11		0.16	0.64	1.44		2.6x5=13 gal

TIME	1240 → 1243	1250 → 1255	1300 → 1303	1309 → 1315	1333 → 1334	1355 → 1420	1455 → 1502
VOLUME PURGED (GAL)	5	8	pauses (no flow for pump clogging)	~3	~4	~12 ~~15~~	~8
PURGE RATE (GPM)	~1.2					pump stalls	pump stalls
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	brown sediment	———	brown still sediment	light brown	293.2	52.4	light brown
ODOR						197.1	
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	3.73 → 9.64	6.62 → 15.42	12.98 → 16.33		10.74 → 15.36 Total depth 19.96	12.04 → 17.35	10.98 → 18.22 TD 19.84
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?						yes	yes

Groundwater Purge and Sample Form Date: **Kennedy/Jenks Consultants**

Project Name:	**Well Number:** [redacted], MW10 conf
Project Number:	**Personnel:**

STATIC WATER LEVEL (FT.):	MEASURING POINT DESCRIPTION:
WATER LEVEL MEASUREMENT METHOD:	PURGE METHOD:
TIME START PURGE:	PURGE DEPTH (FT.):
TIME END PURGE:	
TIME SAMPLED:	

COMMENTS:

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
							0.16	0.64	1.44		

TIME	1325-1530						
VOLUME PURGED (GAL)	5						
PURGE RATE (GPM)	1						
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	clear 33.44						
ODOR	no						
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	11.25-12.63						
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form Date: 8/19/14 **Kennedy/Jenks Consultants**

Project Name: Ecology Precision Engineering **Well Number:** MW 11

Project Number: 1356024.00 **Personnel:** R Lax 2

STATIC WATER LEVEL (FT.): 4.75	MEASURING POINT DESCRIPTION: top of well
WATER LEVEL MEASUREMENT METHOD: interface probe	PURGE METHOD: double stage purge pump Geotech
TIME START PURGE: 0845	PURGE DEPTH (FT.): 19
TIME END PURGE: 1035	
TIME SAMPLED:	

COMMENTS: 1040 - Measure TD=20.04' btoc; hard

WELL VOLUME CALCULATION (Fill in before purging)	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	CASING VOLUME (GAL)
	19.75		4.75		2.4		0.16	0.64	1.44		2.4 x 5 = 12

TIME	0845	1017	1035				
VOLUME PURGED (GAL)	Start	80	100				
PURGE RATE (GPM)		1	STOP				
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	brown-gray	cloudy yellow 230	cloudy yellow 260 NTU				
ODOR		no	no				
DEPTH OF PURGE INTAKE (FT)		15-17	15-17'				
DEPTH TO WATER DURING PURGE (FT)	4.75-ar		7.15				
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?		no	no				