

**INTERIOR TEXACO (BUFFALO SERVICE CENTER)
SITE CHARACTERIZATION REPORT
DELTA JUNCTION, ALASKA**

**ADEC FILE NUMBER 120.26.001
UST FACILITY ID 0125**

March 2018



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March 7, 2018

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ACRONYMS AND ABBREVIATIONS

°C	degree Centigrade
°F	degree Fahrenheit
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
bgs	below the ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CL	cleanup level
CoC	chain of custody
COPC	contaminant of potential concern
CSM	conceptual site model
DRO	diesel range organics
EPA	Environmental Protection Agency
GAC	granular activated carbon
GRO	gasoline range organics
IC	institutional controls
LOD	limit of detection
LOQ	limit of quantitation
mg/kg	milligram per kilogram
mg/L	milligram per liter
MTG	migration-to-groundwater
PAHs	polynuclear aromatic hydrocarbons
PID	photoionization detector
ppm	parts per million
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RP	Responsible Party
RRO	residual range organics
SGS	SGS North America, Inc.
VOC	volatile organic compound

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1.0 INTRODUCTION

This report summarizes field observations from our site characterization of the Interior Texaco (formerly known as Delta Texaco, Alaska Mechanical Fuel Services, and as the Buffalo Service Center) regulated contaminated site (Figure 1). The Alaska Department of Environmental Conservation (ADEC) File number for the site is 120.26.001. These site-characterization activities were undertaken in response to your desire to achieve site closure and ADEC's requirements for site closure. The goal of this assessment was to address data gaps in our understanding of the extent of soil and water contamination associated with the site and to perform a vapor intrusion assessment (VIA).

Our services are provided under our agreement with the former Property owner, CEM Leasing, Inc., from your August 25, 2017 signature on our August 23, 2017 proposal and your January 2018 authorization via email correspondence.

1.1 Project Objectives and Scope of Services

The objectives of our effort included project planning, collecting soil and groundwater samples for analysis, and performing a VIA. Our scope of services included:

- preparing our September 12, 2017 work plan for ADEC review;
- installing and sampling a series of soil borings in the former source areas;
- installing and sampling x groundwater monitoring wells;
- sampling the Kelly's Country Inn water-supply well;
- sampling indoor air and subslab soil gas; and
- preparing this summary report.

We performed the drilling and groundwater sampling between October 12 and 15, 2017, and the vapor intrusion assessment on November 1 and 2, 2017.

2.0 SITE DESCRIPTION AND BACKGROUND

The Property consists of a two-story building with an attached garage, tire shop, and fuel service islands south of the building. A thin, approximately 4-inch-thick layer of asphalt covers part of the site near the building. Prior to 1995, the fueling system consisted of three dispensing islands

(at the northwest corner of the lot, and along the west and south side of the building), a pipe-loading rack (north of the building), and four 12,000-gallon underground storage tanks (USTs) (Figure 2). We understand the UST system was installed in 1971 and operated until 1995.

In 1995, four USTs, associated piping, and dispensing apparatus were taken out of service. UST removal was performed in accordance with the ADEC UST Regulations, 18 AAC 78, during the summer of 1995 by Inland Petro Services (formerly Soil Services, Inc.), of Fairbanks, Alaska. Shannon and Wilson personnel observed the UST removal and excavation, field-screened excavated soils, collected soil samples for analytical results, and prepared a final report. Approximately 150 cubic yards (cy) of contaminated soil were excavated.

CEM Leasing retained Shannon & Wilson to perform a series of targeted site characterization and remedial activities between 1997 and 2010. Details of the services can be found in the approved September 9, 2016 *Interior Texaco (Buffalo Service Center) Limited Site Characterization Work Plan*.

Our work at the site has included drilling and sampling soil borings in and around the UST site, installing soil-vapor extraction wells, monitoring emissions from the passive soil vapor extraction (SVE) system, sampling a contaminated-soil stockpile, and sampling the water-supply well at Kelly's Country Inn adjacent to the site. In June 2016, Shannon & Wilson prepared a draft work plan for ADEC review that described our proposed approach to site closure. ADEC representative John Carnahan determined the approach was too limited to provide sufficient, current site characterization information with which to make determinations on further corrective actions. Following ADEC's review of the work plan, we revised the work plan and initiated a 2016 site characterization. We conducted three days of drilling and sampling. We advanced eight borings to assess the lateral and vertical extent of hydrocarbon contamination both upgradient and downgradient of the former USTs and the western dispensing island. We also installed three temporary well points and collected water samples from the well points and from the Kelly's Country Inn well for laboratory analysis. Current infrastructure, including the current southern fuel-dispensing island, prevented investigation near the former southern pump island. No contaminants of potential concern (COPC) detections above ADEC cleanup levels were observed in the groundwater samples.

Following our 2016 work, we prepared and submitted a report to ADEC for review and comment on October 27, 2016. We recommended ADEC consider site closure with institutional controls. In September 14, 2016, ADEC published a guidance document based on the memorandum on site closure/cleanup complete determinations. On February 28, 2017, we received a letter from ADEC in response to the final report. In the letter, Mr. Carnahan requested additional work, "Closure will require defensible positions on the areas outlined in regulation and likely

incorporate the implementation of enforceable Institutional Controls (ICs) that remain applicable when the land is sold, and require concurrence with affected property owners.”

On June 26, 2017, we met with Mr. John Carnahan and Mr. Eric Breitenberger to discuss the draft report and potential future work. On July 31, 2017, we submitted the *Interior Texaco (Buffalo Service Center) Site Characterization Final Report*. The report was approved by ADEC on August 1, 2017.

On September 12, 2017, we submitted to ADEC the *Interior Texaco (Buffalo Service Center) Limited Site Characterization FINAL Work Plan*. The work plan was approved by ADEC on September 19, 2017.

2.1 Contaminants of Potential Concern and Cleanup Levels

Contaminants of potential concern (COPCs) associated with the site are diesel range organics (DRO), gasoline range organics (GRO), residual range organics (RRO), benzene, ethylbenzene, toluene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs). COPCs for vapor intrusion are volatile organic compounds (VOCs).

To evaluate soil sample concentrations, we compared the analytical data to Tables B1 and B2 Method Two of 18 AAC 75.341 *Migration to Groundwater for the Under 40-Inch Zone*.

To evaluate groundwater sample concentrations, we compared the analytical data to Table C of 18 AAC 75.345 *Groundwater Cleanup Levels*.

To evaluate soil-gas and air-sample concentrations, we compared the analytical data to the commercial ADEC target level. We used Appendix F: DEC Shallow or Subslab Soil Gas Target Levels from ADEC’s *Vapor Intrusion Guidance* (January 2017).

We have included an updated conceptual site model (CSM) in Appendix A.

3.0 FIELD ACTIVITIES

This section summarizes field activities performed between October 12 and October 17, 2017 and November 1 and 2, 2017. Shannon & Wilson’s field geologists Fawn Glassburn and Seth Robinson arrived in Delta Junction on October 12 for the drilling and groundwater monitoring. Ms. Sheila Hinckley arrived on site on November 1 for the vapor intrusion assessment. Sample Collection Logs and Field Notes are included in Appendix B, completed borelogs are included in Appendix C, select site photographs are included in Appendix D, the laboratory reports are included in Appendix E, the laboratory data review checklists (LDRCs) are included in Appendix F, and the ADEC *Building Inventory and Indoor Air Sampling Questionnaire* is included as Appendix G.

3.1 Site Observations

The groundwater gradient is generally to the northwest, sub-parallel to the Tanana River. Upon arrival on site in October, we observed the presence of groundwater in the preexisting monitoring wells *MW-1* (at 28.68 feet below ground surface [bgs]), *MW-2* (at 33.76 feet bgs), and *MW-8* (33.84 feet bgs). We measured the amount of groundwater and determined there was not sufficient water in the existing monitoring wells to collect a sample for laboratory analysis, see Appendix B for sample collection logs.

We advanced eleven borings to assess the lateral and vertical extent of hydrocarbon contamination both upgradient and downgradient of the former USTs and the western dispensing island. We also installed five groundwater monitoring wells and collected water samples from the wells and from the Kelly's Country Inn well for laboratory analysis. Current infrastructure, including the current southern fuel-dispensing island, prevented investigation near the former southern pump island (Figure 2).

Upon arrival on site in November, we installed and sampled three subslab soil gas ports and five indoor air Radiello[®] samples. Prior to sampling, we completed the ADEC *Building Inventory and Indoor Air Sampling Questionnaire*, included in Appendix G.

3.2 Deviations from Work Plan

We conducted our field services consistent with our approved Work Plan. The following are the deviations from our amended scope of services.

The Work Plan called for the water samples to be collected using a Whale Supersub 921 12-Volt submersible centrifugal pump. We opted instead to collect the water samples using a Waterra[®] actuator pump.

3.3 Investigation-Derived Waste (IDW) Management

GeoTek generated soil cuttings and excess soil not selected for laboratory analysis. These solids were used to backfill the boring from which they originated. Excess potentially contaminated soils not used for backfill were placed in 55-gallon drums, labeled, and stored on site for proper off-site disposal. Disposal of the drums is not within our scope of services.

GeoTek decontaminated their drilling tools using high-pressure steam and contained their decontamination fluids. Sampling equipment coming in contact with soil was decontaminated prior to use and reuse. We treated decontamination fluids using our granulated activated carbon (GAC) filter. The treated water was disposed on site. We transported the spent GAC to Fairbanks to be disposed with spent GAC from other Shannon & Wilson projects.

Other IDW consisted of disposable sampling equipment (nitrile gloves, plastic bags) which was disposed at the Fairbanks landfill.

3.4 Sample Custody, Storage, and Transport

After soil and water sample collection, we wrapped the sample bottles in bubble wrap and placed them in hard plastic coolers with adequate quantities of frozen ice-substitute to maintain sample temperatures between 0 degrees Centigrade (°C) and 6 °C until the samples reached the laboratory, using packing material as necessary to prevent bottle breakage and adhere to hazardous materials transportation regulations. A “temperature blank” was packed with the samples in each cooler. Shannon & Wilson maintained custody of the samples until submitting them to the laboratory for analysis.

Shannon & Wilson field staff departed Delta Junction on October 17. Sample coolers were closed using signed custody seals prior to departure from Delta Junction.

The water and soil samples were delivered to the SGS North America (SGS) receiving office in Fairbanks with a requested “standard turnaround” (14 calendar days, Work Orders No. 1178533 and 1178534). Water and soil samples were analyzed for GRO, BTEX, DRO, RRO, and PAHs.

The soil gas and indoor air samples were delivered to Eurofins in California (Work Orders 1711116 and 1711121). We completed a chain of custody (COC) form and placed it inside the box of the canisters for shipment. We maintained custody of the samples at all times until submitting them to Eurofins. We requested analysis of the samples for VOCs by EPA Method TO-15, Selective Ion Monitoring (SIM). Soil-gas samples were delivered to the analytical laboratory with sufficient time to allow the laboratory to extract the samples within the holding-time requirements of the test methods.

4.0 ANALYTICAL RESULTS

Summaries of the analytical results are presented in Tables 1, 2, 3, and 4. The analytical laboratory reports are included in Appendix E and the ADEC laboratory data-review checklists (LDRCs) are included in Appendix F.

4.1 Soil

Analytical results above the ADEC migration-to-groundwater CLs are shown on Figure 2 and Table 1.

Borings were completed at depths between 35 and 40 feet below ground surface. Two samples were collected from each boring: one to characterize the highest apparent contamination and one at the bottom of the boring to characterize the vertical extent.

With the exception of three samples, the samples collected at the bottom of the borings had analytical concentrations below cleanup levels. IT-B6-2 (at 40 feet bgs), IT-B7-2 (at 40 feet bgs) and IT-B10-2 (at 37 feet bgs) samples had concentrations above cleanup levels for one or more analytes. These three borings were completed in the former western fuel island.

With the exception of two samples (IT-B3-1 and IT-B8-1), the samples collected from the shallower depths had analytical concentrations above cleanup levels.

4.2 Groundwater

Analytical results for groundwater are shown on Figure 2 and Table 2.

With the exception of one sample, no analytes were detected above ADEC CLs in water samples collected from the newly-installed monitoring wells. In addition, no analytes were detected above ADEC CLs in the water samples collected from the Kelly's Country Inn well.

The sample collected from MW-13 had a GRO, DRO, and BTEX in concentrations above ADEC CLs.

Concentrations of the other analytes in the project groundwater samples were less than the laboratory's LOD (Table 2).

4.3 Vapor Intrusion

Analytical results for subslab soil-gas and indoor air Radiello samples are shown on Figure 2 and Tabled 3 and 4.

The five indoor-air analytical samples had concentrations above ADEC Target Level for tetrachloroethene (also known as PCE). None of the other analytes had concentrations above the ADEC Target Level.

Four of the subslab soil gas samples had concentrations below ADEC CL. SS-01 had concentrations above ADEC Target Levels for 1,2,4- trimethylbenzene, dichlorodifluoromethane, and PCE.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

We reviewed the analytical results provided by SGS for laboratory QC samples and also conducted our own QA assessment for this project. We reviewed COC records and laboratory sample-receipt forms to check that we followed proper custody procedures, met sample-holding times, and kept samples properly chilled (between 0 °C and 6 °C) during shipping. Our QA-

review procedures allow us to document accuracy and precision of the analytical data and check that the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards.

For this report, we reviewed the soil and water data reported in SGS Work Orders 1178533 and 1178534 and in Eurofins Work Orders 1711116 and 1711121. The laboratory reports contained the case narratives, sample-receipt forms, analytical results and a copy of the CoC. Details regarding the results of our QA analyses are presented in the ADEC LDRCs along with a copy of the original laboratory reports (Appendix E). Our review of the data reveals that some of the analytical samples experienced method and laboratory data-quality failures (surrogate recovery, a method blank detection, field duplicate relative percent difference (RPD) failures, etc.). None of the data-quality failures caused the data to be considered unusable. Analytical results that are considered affected by method and laboratory data-quality failures are flagged in Tables 1, 2, 3, and 4.

6.0 DISCUSSION

The goal of the assessment activities described in this report was to address data gaps in our understanding of the extent of soil and water contamination associated with the site and to perform a vapor intrusion assessment (VIA). While this goal was achieved, the data indicate contamination remains at the site in soil, groundwater, soil vapor, and indoor air at concentrations exceeding regulatory criteria.

6.1 Soil

Soil contamination is present at concentrations above CULs in the former UST area north of the service station, along the northern property boundary, and at the former fuel dispensing area west of the building.

We drilled four soil borings in the former UST area (B1, B2, B-4, and B-11). DRO was found to be present above its CUL in the shallower sample in each of these borings (ranging from approximately 5 feet to 12 feet bgs). In sample B11-1, collected at 5 feet to 7.5 feet bgs, DRO was reported at 12,100 mg/kg, which is near but just below the ADEC maximum allowable concentration (MAC) of 12,500 mg/kg. GRO, BTEX, and several PAHs were also reported in these samples at concentrations exceeding their respective CULs. Of these, GRO exceeded its MAC in sample B2-1.

In each of these four borings, the deeper sample, collected at depths ranging from 37 feet to 40 feet bgs, did not contain COPCs at concentrations above CULs.

We drilled two soil borings along the north property boundary (B-5 and B-8). In sample B5-1, collected from 4 feet to 5 feet bgs, DRO was reported at 12,000 mg/kg, which is near but just below its MAC of 12,500 mg/kg. The deeper sample collected from this boring, and both samples collected from B-8, were not reported to contain COPCs above CULs.

We drilled four soil borings in the former dispensing area west of the building (B-6, B-7, B-9, and B-10). DRO was reported above its CUL in shallow and deep samples from borings B-6, B-7, and B-10. GRO was reported above its CUL in the shallow samples from borings B-6 and B-7; the reported GRO concentration in sample B6-1 exceeded its MAC.

We drilled one soil boring on the east side of the building (B-3). No COPCs were detected at concentrations above their CULs in either sample collected from this boring.

18 AAC 75.340(j)(3) states that “the maximum allowable concentrations for petroleum hydrocarbons described in Table 2B of 18 AAC 75.341(d) must be attained in the surface soil and subsurface soil.” The relevant footnote for Table 2B states that (MACs) are concentrations of petroleum hydrocarbons “in surface and subsurface soil that if exceeded, indicate an increased potential for hazardous substance migration or for risk to human health, safety, or welfare, or to the environment; the level of a petroleum hydrocarbon may not remain at a concentration above the maximum allowable concentration unless a responsible person demonstrates that the petroleum hydrocarbon will not migrate and will not pose a significant risk to human health, safety, or welfare, or to the environment”

6.2 Groundwater

We installed and sampled five groundwater monitoring wells as part of the 2017 site-characterization activities:

- MW-9, within the former UST area north of the building;
- MW-10, east of the building;
- MW-11, along the north property line;
- MW-12, in the former dispensing area west of the building; and
- MW-13, along the north property line near the northwest property corner.

We also collected a sample from the water-supply well for Kelly’s Country Inn. While we observed water to be present in previously installed monitoring wells, it was not in sufficient quantities to sample.

Four of the five monitoring wells did not contain COPCs above CULs (MW-9, MW-10, MW-11, and MW-12). RRO and benzene were reported in one or more of these wells but at estimated (J-flagged) concentrations below their respective limits of quantitation.

MW-13 was reported to contain GRO, DRO, benzene, ethylbenzene, and xylenes at concentrations above their respective CULs.

The Kelly's Country Inn water-supply well sample did not contain COPCs above their respective limits of quantitation with the exception of benzene, which was reported with a J-flagged result.

6.3 Vapor Intrusion Assessment

We installed and sampled three subslab sampling ports in the service station and collected five indoor-air samples from the building for analysis for VOCs.

Three VOCs were reported at concentrations exceeding their ADEC target screening levels in subslab soil-gas sample, SS-01: 1,2,4-trimethylbenzene, dichlorodifluoromethane, and tetrachloroethane (PCE).

PCE was also reported at concentrations exceeding its ADEC target screening level for indoor air in each of the five indoor-air samples.

6.4 Discussion Summary

6.4.1 Soil

In our opinion, the former UST area north of the building has been sufficiently characterized to conclude that soil contamination is present but does not extend to the more dense layer historically observed at approximately 40 feet bgs.

Soil contamination is also present in the former dispensing area west of the building, with contamination extending to the more dense layer.

Shallow soil contamination was observed at the northern property line in Boring B-5 and may not be related to UST releases.

6.4.2 Groundwater

Results of monitoring-well sampling suggest groundwater quality east of the building, in the former dispensing area, and north of the former UST area are within ADEC criteria. The presence of GRO, DRO, and BTEX compounds above cleanup levels in MW-13, along the northern property line near the northwest property corner, suggests contaminated groundwater may extend off the property.

The drinking-water supply well for Kelly's Country Inn, the adjacent property north of the site, has been sampled repeatedly over the past 20 years and has been consistently found to meet ADEC water-quality criteria.

Groundwater in the shallow aquifer perched on the dense soil layer at approximately 40 feet bgs may be an exposure pathway, however we are not aware of water-supply wells on the property within this aquifer.

We compared groundwater data to historical results. In the area of the former western fuel island, we compared the 2000 results from MW-3 to the 2017 results from MW-12. In 2000, samples from the shallow aquifer contained DRO at 57.5 mg/l, GRO at 6.3 mg/L, and benzene at 0.0354 mg/L. In 2017, the sample from MW-12 contained DRO at <0.294 mg/L, GRO at <0.0500 mg/L and benzene at 0.000310 mg/L.

For the former northern UST excavation area, we compared the 2000 MW-8 results to the 2017 MW11 results. In 2000, a sample from the shallow aquifer contained DRO at 3.38 mg/L. In 2017, a sample from MW-11 contained DRO at <0.300 mg/L and RRO at 0.195 J mg/L.

With the exception of MW-13 data, the site-wide 2017 groundwater results indicate a decrease in the groundwater contaminant concentrations.

6.4.3 Vapor

The results of the VIA suggest PCE detected in soil gas beneath the building may be migrating to indoor air.

While exposure to contaminated soil through incidental soil ingestion is currently limited by the asphalt surface at the site, it remains a potentially complete future exposure pathway for commercial, industrial, or construction workers excavating soil at the site. PAHs, which can be absorbed dermally, may be present in areas of contaminated soil, representing another potentially complete future exposure pathway to the same receptors.

Vapor intrusion of PCE to indoor air is a current and potential future exposure pathway.

7.0 RECOMMENDATIONS

Contamination is present in various media at the property, including some at concentrations that require further action. Based on the information presented in this report, we offer the following recommendations:

- Develop a plan to address soil contamination exceeding ADEC CULs and MACs.
- Investigate whether groundwater contamination detected in the vicinity of MW-13 is migrating off the property.
- Develop a plan to address vapor intrusion into the building and mitigate indoor-air quality to reduce PCE concentrations to acceptable levels.

The responsible party recently purchased a soil-vapor extraction mobile unit. It is our understanding they will contract with us to execute a pilot test study on the existing passive SVE system to determine the feasibility of its use. Details of the study will be included in a work plan under separate cover.

8.0 LIMITATIONS

This report was prepared for the use of the CEM Leasing for evaluating remaining contamination at the Interior Texaco site in Delta Junction, Alaska. This work presents our professional judgment as to the conditions in the area. Conclusions and recommendations presented here are based on sampling and analyses we performed, along with a limited review of records and other data available to the public. They should not be construed as definite conclusions about spill-site or soil conditions in the area, and it is possible our tests may not represent the highest levels of contamination in the area. We have not performed an independent evaluation of the accuracy or completeness of third-party information, and shall not be responsible for errors or omissions contained in such information.

The results included in this report should be considered representative of the time and locations at which the sampling occurred. It was not the intent of our investigation to detect the presence of contaminants other than those for which laboratory analyses were performed. No conclusions can be drawn on the presence or absence of other contaminants. The observed levels of contamination may be dependent upon seasonal changes and the passage of time. Due to such changes, or others beyond our control, our observations and recommendations applicable to this site may need to be revised. If substantial time has elapsed between submission of this report and the start of activities or action based upon it, we recommend this report be reviewed to determine the applicability of the conclusions and recommendations considering the lapsed time or changed conditions.

This report was prepared for the exclusive use of CEM Leasing. All documents prepared by Shannon & Wilson are instruments of service with respect to the project for the sole use of CEM Leasing. Only CEM Leasing shall have the right to rely upon such documents. Such documents are not intended or represented to be suitable for reuse by CEM Leasing after the passage of time, on extensions of the project, or on any other project. Any such reuse without written verification or adaptation by Shannon & Wilson, as appropriate for the specific purpose intended, shall be at the user's sole risk.

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When transferring documents in electronic media format, Shannon & Wilson does not make any representations as to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used for the document's creation.

Shannon & Wilson, Inc. has prepared the attachment, *"Important Information about your Environmental Site Assessment/Evaluation Report"* in Appendix G to assist you and others in understanding the uses and limitations of our reports.

9.0 REFERENCES

- Alaska Department of Environmental Conservation, November 2017, *18 AAC 75: Oil and Other Hazardous Substances Pollution Control*: Juneau, Alaska, available: <http://dec.alaska.gov/commish/regulations/>.
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**TABLE 1
INTERIOR TEXACO 2017 SOIL RESULTS**

Analytical Method	Analyte	ADEC Soil Cleanup Level	Units	IT-B1-1 Depth: 10.0-11.2 ft bgs	IT-B1-2 Depth: 39.0-40.0 ft bgs	IT-B2-1 Depth: 10.0-12.0 ft bgs	IT-B2-2 Depth: 37.5-40.0 ft bgs	IT-B2-3 Depth: 10.0-12.0 ft bgs	IT-B3-1 Depth: 5.0-6.6 ft bgs	IT-B3-2 Depth: 30.0-35.0 ft bgs	IT-B4-1 Depth: 7.5-10.0 ft bgs	IT-B4-2 Depth: 37.5-40.0 ft bgs	IT-B5-1 Depth: 4.0-5.0 ft bgs	IT-B5-2 Depth: 38.0-40.0 ft bgs	IT-B6-1 Depth: 2.5-5.0 ft bgs
AK101	Gasoline Range Organics	300	mg/kg	990 JH*	<2.36 B*	1,780 JH*	<2.48 B*	1,380 JH*	<3.38 B*	<2.82 B*	162 JH*	<3.70 B*	160 JH*	5.88 JH*	1,570 JH*
AK102	Diesel Range Organics	250	mg/kg	5,300	41.1	7,750	201	6,250	10.4 J	6.97 J	1,930	195	12,000	11.0 J	1,830
AK103	Residual Range Organics	11,000	mg/kg	170	12.8 J	235	41.3	219	47.4	10.8 J	274	21.3	430	20.9	46.0
SW8021B (BTEX)	Benzene	0.022	mg/kg	0.439	0.0169	0.0155 J	<0.00620	0.00956 J	<0.00845	0.00847 J	0.0117 J	<0.00525	<0.00910	0.00560 J	0.494
	Ethylbenzene	0.13	mg/kg	3.13	0.0123 J	0.865 J*	<0.0124	0.420 J*	<0.0169	<0.0141	0.292	0.00904 J	0.236	0.0101 J	37.4
	o-Xylene	1.5 (total)	mg/kg	263	0.148	461	<0.0325 B*	395	0.106 JH*	0.105 JH*	0.896	<0.0458 B*	3.44	<0.0504 B*	221
	P & M -Xylene		mg/kg	314	0.217 JH*	226	<0.0495 B*	187	<0.0676 B*	<0.132 B*	11.0	<0.0740 B*	4.92	<0.0923 B*	525
	Toluene		6.7	mg/kg	14.7	0.242 JH*	0.210 JH*	<0.0248 B*	<0.130 B*	<0.0169	<0.125 B*	0.229 JH*	<0.0305 B*	<0.0365 B*	<0.0528 B*
8270D SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg	—	—	65.3	—	46.4	—	—	—	—	—	—	11.0
	2-Methylnaphthalene	1.3	mg/kg	—	—	91.7	—	65.0	—	—	—	—	—	—	16.1
	Acenaphthene	37	mg/kg	—	—	1.55	—	1.22	—	—	—	—	—	—	0.119
	Acenaphthylene	18	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146 J*
	Anthracene	390	mg/kg	—	—	0.577	—	0.482 J	—	—	—	—	—	—	0.0551
	Benzo(a)anthracene	0.28	mg/kg	—	—	0.213 J	—	0.186 J	—	—	—	—	—	—	0.00919 J
	Benzo(a)pyrene	0.27	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
	Benzo(b)fluoranthene	2.7	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
	Benzo(g,h,i)perylene	15,000	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
	Benzo(k)fluoranthene	27	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
	Chrysene	82	mg/kg	—	—	0.222 J	—	0.198 J	—	—	—	—	—	—	<0.0146
	Dibenzo(a,h)anthracene	0.87	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
	Fluoranthene	590	mg/kg	—	—	0.992	—	0.872	—	—	—	—	—	—	0.0309
	Fluorene	36	mg/kg	—	—	2.67	—	2.12	—	—	—	—	—	—	0.309
	Indeno(1,2,3-cd)pyrene	8.8	mg/kg	—	—	<0.284	—	<0.277	—	—	—	—	—	—	<0.0146
Naphthalene	0.038	mg/kg	—	—	91.4	—	63.3	—	—	—	—	—	—	17.8	
Phenanthrene	39	mg/kg	—	—	3.76	—	3.12	—	—	—	—	—	—	0.256	
Pyrene	87	mg/kg	—	—	0.839	—	0.731	—	—	—	—	—	—	0.0368	

**TABLE 1
INTERIOR TEXACO 2017 SOIL RESULTS**

Analytical Method	Analyte	ADEC Soil Cleanup Level	Units	IT-B6-2 Depth: 37.5-40.0 ft bgs	IT-B6-3 Depth: 2.5-5.0 ft bgs	IT-B7-1 Depth: 12.5-15.0 ft bgs	IT-B7-2 Depth: 37.5-40.0 ft bgs	IT-B8-1 Depth: 35.0-37.5 ft bgs	IT-B8-2 Depth: 37.5-40.0 ft bgs	IT-B9-1 Depth: 10.0-12.0 ft bgs	IT-B9-2 Depth: 37.5-40.0 ft bgs	IT-B10-1 Depth: 16.0-17.5 ft bgs	IT-B10-2 Depth: 36.0-37.0 ft bgs	IT-B11-1 Depth: 5.0-7.5 ft bgs	IT-B11-2 Depth: 37.5-40.0 ft bgs
AK101	Gasoline Range Organics	300	mg/kg	<5.46 B*	1,340 JH*	1,210 JH*	8.54 JH*	<1.21	<1.34	8.41 JH*	<1.45	158 JH*	32.8 JH*	143 JH*	<1.49
AK102	Diesel Range Organics	250	mg/kg	1,100	1,190	2,900	1,870	<10.2	<10.3	<44.6	<10.2	5,050	5,120	12,100	7.00 J
AK103	Residual Range Organics	11,000	mg/kg	<41.3	46.7	119	<41.9	8.34 J	<10.3	130	<10.2	179 J	83.7 J	281	<10.3
SW8021B (BTEX)	Benzene	0.022	mg/kg	0.00721 J	0.647	0.185	0.0105	<0.00605	<0.00670	0.0167	<0.00720	0.0716 J	<0.00575	0.00931 J	<0.00745
	Ethylbenzene	0.13	mg/kg	0.00842 J	33.9	23.8	0.00639 J	<0.0121	<0.0134	0.217	<0.0144	0.689	0.0133 J	0.0588	<0.0149
	o-Xylene	1.5 (total)	mg/kg	0.106 JH*	213	212	0.176	<0.0121	<0.0134	1.06	<0.0289 B*	12.6	0.410	0.549	<0.0297 B*
	P & M -Xylene		mg/kg	0.179 JH*	497	405	0.158 JH*	<0.0241	<0.0267	2.14	<0.0577 B*	5.30	0.173 JH*	11.0	<0.0595 B*
	Toluene	6.7	mg/kg	<0.120 B*	83.4	29.5	0.174 JH*	<0.0241 B*	<0.0268 B*	0.811	<0.0289 B*	0.186 JH*	<0.0115	<0.0871 B*	<0.0345 B*
8270D SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg	—	8.70	—	—	—	—	—	—	—	—	—	—
	2-Methylnaphthalene	1.3	mg/kg	—	12.9	—	—	—	—	—	—	—	—	—	—
	Acenaphthene	37	mg/kg	—	0.0954	—	—	—	—	—	—	—	—	—	—
	Acenaphthylene	18	mg/kg	—	0.0498 J*	—	—	—	—	—	—	—	—	—	—
	Anthracene	390	mg/kg	—	0.0478	—	—	—	—	—	—	—	—	—	—
	Benzo(a)anthracene	0.28	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Benzo(a)pyrene	0.27	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Benzo(b)fluoranthene	2.7	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Benzo(g,h,i)perylene	15,000	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Benzo(k)fluoranthene	27	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Chrysene	82	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Dibenzo(a,h)anthracene	0.87	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
	Fluoranthene	590	mg/kg	—	0.0263 J	—	—	—	—	—	—	—	—	—	—
	Fluorene	36	mg/kg	—	0.260	—	—	—	—	—	—	—	—	—	—
	Indeno(1,2,3-cd)pyrene	8.8	mg/kg	—	<0.0141	—	—	—	—	—	—	—	—	—	—
Naphthalene	0.038	mg/kg	—	15.3	—	—	—	—	—	—	—	—	—	—	
Phenanthrene	39	mg/kg	—	0.228	—	—	—	—	—	—	—	—	—	—	
Pyrene	87	mg/kg	—	0.0301	—	—	—	—	—	—	—	—	—	—	

Notes: ADEC Soil-Cleanup Levels from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater) and Table B2 Method Two - Petroleum Hydrocarbon Soil Cleanup Levels.

Sample IT-B2-3 is the field-duplicate sample of IT-B2-1.

Sample IT-B6-3 is the field-duplicate sample of IT-B6-1.

ADEC Alaska Department of Environmental Conservation

mg/kg Milligrams per kilogram

BTEX benzene, toluene, ethylbenzene, and xylenes

PAH Polynuclear aromatic hydrocarbon

BOLD Reporting limit (LOQ) or detected concentration exceeds regulatory limit.

BOLD Detected concentration exceeds regulatory limit.

< Analyte not detected above the limit of quantitation (LOQ); reported as less than the LOQ. Flag applied by the laboratory.

J Estimated concentration detected below the LOQ. Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JH* Estimated concentration, biased high, due quality control failures. Flag applied by Shannon & Wilson, Inc.

B* Result is considered not detected due to quality control issues. Flag applied by Shannon & Wilson, Inc.

TABLE 2
INTERIOR TEXACO 2017 GROUNDWATER SAMPLE RESULTS

Analytical Method	Analyte	ADEC Groundwater Cleanup level	Units	Kelly's DW	MW-9	MW-109	MW-10	MW-11	MW-12	MW-13
AK101	Gasoline Range Organics	2.2	mg/L	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	2.23 JH*
AK102	Diesel Range Organics	1.5	mg/L	<0.283	<0.313	<0.302	<0.302	<0.300	<0.294	3.46
AK103	Residual Range Organics	1.1	mg/L	<0.472 B*	0.184 J	0.176 J	0.201 J	0.195 J	0.201 J	0.173 J
SW8021B (BTEX)	Benzene	4.6	µg/L	0.260 J	<0.250	0.150 J	0.460 J	0.380 J	0.310 J	5.58
	Ethylbenzene	15	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	139
	o-Xylene	190	µg/L	<0.500	<0.500	<0.500	0.320 J	<0.500	<0.500	172
	P & M -Xylene		µg/L	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	444
	Toluene	1,100	µg/L	<1.00 B*	<1.00 B*	<1.00 B*	<1.00 B*	<1.00 B*	<1.00 B*	196
SW8260C (VOC)	1,1,1,2-Tetrachloroethane	5.7	µg/L	<0.250	—	—	—	—	—	—
	1,1,1-Trichloroethane	8,000	µg/L	<0.500	—	—	—	—	—	—
	1,1,2,2-Tetrachloroethane	0.76	µg/L	<0.250	—	—	—	—	—	—
	1,1,2-Trichloroethane	0.41	µg/L	<0.200	—	—	—	—	—	—
	1,1-Dichloroethane	28	µg/L	<0.500	—	—	—	—	—	—
	1,1-Dichloroethene	280	µg/L	<0.500	—	—	—	—	—	—
	1,1-Dichloropropene	--	µg/L	<0.500	—	—	—	—	—	—
	1,2,3-Trichlorobenzene	7	µg/L	<0.500	—	—	—	—	—	—
	1,2,3-Trichloropropane	0.0075	µg/L	<0.500	—	—	—	—	—	—
	1,2,4-Trichlorobenzene	4	µg/L	<0.500	—	—	—	—	—	—
	1,2,4-Trimethylbenzene	15	µg/L	<0.500	—	—	—	—	—	—
	1,2-Dibromo-3-chloropropane	--	µg/L	<5.00	—	—	—	—	—	—
	1,2-Dibromoethane	0.075	µg/L	<0.0375	—	—	—	—	—	—
	1,2-Dichlorobenzene	300	µg/L	<0.500	—	—	—	—	—	—
	1,2-Dichloroethane	1.7	µg/L	<0.250	—	—	—	—	—	—
	1,2-Dichloropropane	4.4	µg/L	<0.500	—	—	—	—	—	—
	1,3,5-Trimethylbenzene	120	µg/L	<0.500	—	—	—	—	—	—
	1,3-Dichlorobenzene	300	µg/L	<0.500	—	—	—	—	—	—
	1,3-Dichloropropane	--	µg/L	<0.250	—	—	—	—	—	—
	1,4-Dichlorobenzene	4.8	µg/L	<0.250	—	—	—	—	—	—
	2,2-Dichloropropane	--	µg/L	<0.500	—	—	—	—	—	—
	2-Butanone (MEK)	5,600	µg/L	<5.00	—	—	—	—	—	—
	2-Chlorotoluene	--	µg/L	<0.500	—	—	—	—	—	—
	2-Hexanone	38	µg/L	<5.00	—	—	—	—	—	—
	4-Chlorotoluene	--	µg/L	<0.500	—	—	—	—	—	—
	4-Methyl-2-pentanone (MIBK)	6,300	µg/L	<5.00	—	—	—	—	—	—
	Benzene	4.6	µg/L	<0.200	—	—	—	—	—	—
Bromobenzene	62	µg/L	<0.500	—	—	—	—	—	—	
Bromochloromethane	--	µg/L	<0.500	—	—	—	—	—	—	
Bromodichloromethane	1.3	µg/L	<0.250	—	—	—	—	—	—	
Bromoform	33	µg/L	<0.500	—	—	—	—	—	—	
Bromomethane	7.5	µg/L	<2.50	—	—	—	—	—	—	

Analytical Method	Analyte	ADEC Groundwater Cleanup level	Units	Kelly's DW	MW-9	MW-109	MW-10	MW-11	MW-12	MW-13
SW8260C (VOC) - continued	Carbon disulfide	810	µg/L	<5.00	—	—	—	—	—	—
	Carbon tetrachloride	4.6	µg/L	<0.500	—	—	—	—	—	—
	Chlorobenzene	78	µg/L	<0.250	—	—	—	—	—	—
	Chloroethane	21,000	µg/L	<0.500	—	—	—	—	—	—
	Chloroform	2.2	µg/L	<0.500	—	—	—	—	—	—
	Chloromethane	190	µg/L	<0.500	—	—	—	—	—	—
	cis-1,2-Dichloroethene	36	µg/L	<0.500	—	—	—	—	—	—
	cis-1,3-Dichloropropene	4.7	µg/L	<0.250	—	—	—	—	—	—
	Dibromochloromethane	8.7	µg/L	<0.250	—	—	—	—	—	—
	Dibromomethane	8.3	µg/L	<0.500	—	—	—	—	—	—
	Dichlorodifluoromethane	200	µg/L	<0.500 J*	—	—	—	—	—	—
	Ethylbenzene	15	µg/L	<0.500	—	—	—	—	—	—
	Hexachlorobutadiene	1.4	µg/L	<0.500	—	—	—	—	—	—
	Isopropylbenzene	450	µg/L	<0.500	—	—	—	—	—	—
	Methylene chloride	110	µg/L	<2.50	—	—	—	—	—	—
	Methyl-t-butyl ether	140	µg/L	<5.00	—	—	—	—	—	—
	Naphthalene	1.7	µg/L	<0.500	—	—	—	—	—	—
	n-Butylbenzene	1,000	µg/L	<0.500	—	—	—	—	—	—
	n-Propylbenzene	660	µg/L	<0.500	—	—	—	—	—	—
	o-Xylene	--	µg/L	<0.500	—	—	—	—	—	—
	P & M -Xylene	--	µg/L	<1.00	—	—	—	—	—	—
	p-Isopropyltoluene	--	µg/L	<0.500	—	—	—	—	—	—
	sec-Butylbenzene	2,000	µg/L	<0.500	—	—	—	—	—	—
	Styrene	1,200	µg/L	<0.500	—	—	—	—	—	—
	tert-Butylbenzene	690	µg/L	<0.500	—	—	—	—	—	—
	Tetrachloroethene	41	µg/L	<0.500	—	—	—	—	—	—
	Toluene	1,100	µg/L	<0.500	—	—	—	—	—	—
	Total Xylenes	190	µg/L	<1.50	—	—	—	—	—	—
trans-1,2-Dichloroethene	360	µg/L	<0.500	—	—	—	—	—	—	
trans-1,3-Dichloropropene	4.7	µg/L	<0.500	—	—	—	—	—	—	
Trichloroethene	2.8	µg/L	<0.500	—	—	—	—	—	—	
Trichlorofluoromethane	5,200	µg/L	<0.500	—	—	—	—	—	—	
Trichlorotrifluoroethane	55,000	µg/L	<5.00	—	—	—	—	—	—	
Vinyl acetate	410	µg/L	<5.00	—	—	—	—	—	—	
Vinyl chloride	0.19	µg/L	<0.0750	—	—	—	—	—	—	
8270D SIM LV (PAH)	1-Methylnaphthalene	11	µg/L	—	<0.0254	<0.0265	—	—	—	—
	2-Methylnaphthalene	36	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Acenaphthene	530	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Acenaphthylene	260	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Anthracene	43	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Benzo(a)anthracene	0.12	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Benzo(a)pyrene	0.034	µg/L	—	<0.0101	<0.0106	—	—	—	—
Benzo(b)fluoranthene	0.34	µg/L	—	<0.0254	<0.0265	—	—	—	—	

Analytical Method	Analyte	ADEC Groundwater Cleanup level	Units	Kelly's DW	MW-9	MW-109	MW-10	MW-11	MW-12	MW-13
8270D SIM LV (PAH) - continued	Benzo(g,h,i)perylene	0.26	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Benzo(k)fluoranthene	0.8	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Chrysene	2	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Dibenzo(a,h)anthracene	0.034	µg/L	—	<0.0101	<0.0106	—	—	—	—
	Fluoranthene	260	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Fluorene	290	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Indeno(1,2,3-cd)pyrene	0.19	µg/L	—	<0.0254	<0.0265	—	—	—	—
	Naphthalene	1.7	µg/L	—	<0.0510	<0.0530	—	—	—	—
	Phenanthrene	170	µg/L	—	<0.0254	<0.0265	—	—	—	—
Pyrene	120	µg/L	—	<0.0254	<0.0265	—	—	—	—	

Notes: ADEC Groundwater-Cleanup Levels from 18 AAC 75.345, Table C.

Sample number *MW-109* is a field-duplicate of sample *MW-9*.

µg/L micrograms per liter

mg/L milligrams per liter

ADEC Alaska Department of Environmental Conservation

BTEX benzene, toluene, ethylbenzene, and xylenes

VOC volatile organic compounds

PAH polynuclear aromatic hydrocarbons

LOQ Reporting limit (LOQ) or detected concentration exceeds regulatory limit.

Detected Detected concentration exceeds regulatory limit.

-- Not applicable; the ADEC Cleanup Level is not established for this analyte

< Analyte not detected above the limit of quantitation (LOQ); reported as less than the LOQ. Flag applied by the laboratory.

J Estimated result reported at less than the limit of quantitation (LOQ). Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

JH* Estimated concentration, biased high, due quality control failures. Flag applied by Shannon & Wilson, Inc.

B* Result is considered not detected due to quality control issues. Flag applied by Shannon & Wilson, Inc.

**TABLE 3
NOVEMBER 2017 INDOOR-AIR ANALYTICAL SUMMARY
INTERIOR TEXACO**

Analytical Method	Analyte	ADEC Target Level†	Units	IT-IA-01	IT-IA-02	IT-IA-03	IT-IA-04	IT-IA-05
				11/02/2017 13:00	11/02/2017 13:01	11/02/2017 13:06	11/02/2017 13:10	11/02/2017 13:13
Passive S.E.	1,1,1-Trichloroethane	3,800	µg/m ³	<1.2	<1.2	<1.2	<1.1	<1.1
	1,2-Dichloroethane	4.7	µg/m ³	<0.95	<0.93	<0.93	<0.91	<0.91
	1,4-Dichlorobenzene	11	µg/m ³	<1.4	<1.4	<1.4	<1.4	<1.4
	2-Butanone	22,000	µg/m ³	<0.92	<0.91	<0.90	<0.89	<0.89
	4-Methyl-2-pentanone	13,000	µg/m ³	3.2	3.1	<2.1	<2.1	<2.1
	Acetone	31,000	µg/m ³	21	23	41	24	25
	Benzene	16	µg/m ³	5.2	5.1	<3.6	4.2	4.8
	Carbon tetrachloride	20	µg/m ³	<1.1	<1.1	<1.1	<1.0	<1.0
	Chlorobenzene	220	µg/m ³	<1.1	<1.0	<1.0	<1.0	<1.0
	Chloroform	5.3	µg/m ³	<0.97	<0.95	<0.95	0.97	<0.94
	Cyclohexane	26,000	µg/m ³	4.9	4.7	3.0	4.8	4.4
	Ethanol	NA	µg/m ³	58	54	130	360	240
	Ethyl acetate	NA	µg/m ³	<3.7	<3.7	<3.7	<3.6	<3.6
	Ethylbenzene	49	µg/m ³	6.8	6.6	3.6	6.4	7.5
	Heptane	NA	µg/m ³	8.4	8.2	4.2	7.1	6.4
	Methyl-t-butyl ether	470	µg/m ³	<1.1	<1.1	<1.1	<1.1	<1.1
	Naphthalene	3.6	µg/m ³	<2.9	<2.9	<2.9	<2.8	<2.8
	n-Hexane	3,100	µg/m ³	6.9	6.5	3.7	5.8	6.2
	n-Propylbenzene	4,400	µg/m ³	2.2	2	1.6	2.2	2.2
	o-Xylene	440	µg/m ³	6.9	6.8	3.6	5.9	5.8
P & M -Xylene	440	µg/m ³	18	17	8.6	15	15	
Styrene	4,400	µg/m ³	<1.2	<1.2	<1.2	<1.2	<1.2	
Tetrachloroethene	41	µg/m ³	800	870	130	270	360	
Toluene	7,500	µg/m ³	28	28	12	22	22	
Trichloroethene	2.2	µg/m ³	1.2	1.2	<1.0	<1.0	<1.0	

ADEC Alaska Department of Environmental Conservation

† The ADEC Target Levels were obtained from the November 2017 ADEC Vapor Intrusion Guidance for Contaminated Sites - Appendix D: Target Levels for Indoor Air - Commercial.

NA Not applicable; ADEC Target Level not established.

µg/m³ microgram per cubic meter

< Analyte not detected; listed as less than the reporting limit (RL).

Bold Detected concentration exceeds regulatory limit.

**TABLE 4
NOVEMBER 2017 SUBSLAB ANALYTICAL SUMMARY
INTERIOR TEXACO**

SHANNON & WILSON, INC.

Analytical Method	Analyte	ADEC Target Level†	Units	SS-01	SS-02	SS-102	SS-03
				11/2/2017 10:28 AM	11/2/2017 11:54 AM	11/2/2017 11:44 AM	11/2/2017 1:37 PM
TO-15	1,1,1-Trichloroethane	220,000	µg/m ³	<100	0.24 J*	0.32 J*	<1.9
	1,1,2,2-Tetrachloroethane	21	µg/m ³	<120	<0.24	<0.23	<2.4
	1,1,2-Trichloroethane	8.8	µg/m ³	<100	<0.19	<0.18	<1.9
	1,1-Dichloroethane	770	µg/m ³	<74	<0.14	<0.14	<1.4
	1,1-Dichloroethene	8,800	µg/m ³	<72	<0.070	<0.066	<0.69
	1,2,4-Trichlorobenzene	88	µg/m ³	<540	<6.6	<6.2	<65
	1,2,4-Trimethylbenzene	310	µg/m ³	1,200	2.3	2.1	<8.6
	1,2-Dibromoethane	2	µg/m ³	<140	<0.27	<0.26	<2.7
	1,2-Dichlorobenzene	8,800	µg/m ³	<110	<1.1	<1.0	<10
	1,2-Dichloroethane	47	µg/m ³	<74	0.58	<0.14	<1.4
	1,2-Dichloropropane	120	µg/m ³	<84	<0.82	<0.77	<8.1
	1,3,5-Trimethylbenzene	NA	µg/m ³	900	0.92	<0.82	<8.6
	1,3-Dichlorobenzene	NA	µg/m ³	<110	<1.1	<1.0	<10
	1,4-Dichlorobenzene	110	µg/m ³	<110	<0.21	<0.20	<2.1
	1,4-Dioxane	250	µg/m ³	<260	<0.64	<0.60	<6.3
	2,2,4-Trimethylpentane	NA	µg/m ³	<85	<4.2	<3.9	<41
	2-Butanone (MEK)	220,000	µg/m ³	<220	9.3 J*	14 J*	<26
	2-Hexanone	1,300	µg/m ³	<300	<3.6	<3.4	<36
	4-Ethyltoluene	NA	µg/m ³	1,000	2.0	2.0	<8.6
	4-Methyl-2-pentanone (MIBK)	130,000	µg/m ³	<75	<0.73	<0.68	<7.2
	Acetone	1,400,000	µg/m ³	<170	15	16	98
	Allyl chloride	NA	µg/m ³	<230	<2.8	<2.6	<27
	alpha-Chlorotoluene	NA	µg/m ³	<95	<0.92	<0.86	<9.0
	Benzene	160	µg/m ³	<58	1.3	1.1	2.9
	Bromodichloromethane	33	µg/m ³	<120	<1.2	<1.1	<12
	Bromoform	1,100	µg/m ³	<190	<1.8	<1.7	<18
	Bromomethane	220	µg/m ³	<280	<3.4	<3.2	<34
	1,3-Butadiene	41	µg/m ³	<40	<0.39	<0.37	<3.9
	Carbon disulfide	31,000	µg/m ³	<230	<2.8	<2.6	<27
	Carbon tetrachloride	200	µg/m ³	<120	0.36	0.33	<2.2
	Chlorobenzene	2,200	µg/m ³	110	<0.82	<0.77	<8.0
	Chloroethane	440,000	µg/m ³	<190	<0.23	<0.22	<2.3
	Chloroform	53	µg/m ³	<89	0.30	0.30	1.8
	Chloromethane	3,900	µg/m ³	<150	<1.8	<1.7	<18
cis-1,2-Dichloroethene	NA	µg/m ³	<72	<0.14	<0.13	<1.4	
cis-1,3-Dichloropropene	310	µg/m ³	<83	<0.81	<0.76	<7.9	
Cyclohexane	260,000	µg/m ³	<63	1.0	<0.57	<6.0	
Dibromochloromethane	NA	µg/m ³	<160	<1.5	<1.4	<15	
Dichlorodifluoromethane	4,400	µg/m ³	7,600	4.2 J*	2.8 J*	120	

TO-15, continued	Ethanol	NA	$\mu\text{g}/\text{m}^3$	<140	33 J*	14 J*	42
	Ethylbenzene	490	$\mu\text{g}/\text{m}^3$	<79	2.3	2.3	5.5
	Freon 114	NA	$\mu\text{g}/\text{m}^3$	<130	<0.25	<0.23	<2.4
	Heptane	NA	$\mu\text{g}/\text{m}^3$	<75	1.4	1.2	<7.2
	Hexachlorobutadiene	56	$\mu\text{g}/\text{m}^3$	<780	<9.5	<8.9	<93
	Isopropanol	8,800	$\mu\text{g}/\text{m}^3$	<180	2.4	<2.0	<22
	Isopropylbenzene	18,000	$\mu\text{g}/\text{m}^3$	100	<0.88	<0.82	<8.6
	Methylene chloride	26,000	$\mu\text{g}/\text{m}^3$	<250	<1.2	<1.2	<12
	Methyl tert-butyl ether	4,700	$\mu\text{g}/\text{m}^3$	<66	<0.64	<0.60	<6.3
	n-Hexane	31,000	$\mu\text{g}/\text{m}^3$	<64	0.81	<0.59	<6.2
	n-Propylbenzene	44,000	$\mu\text{g}/\text{m}^3$	190	<0.88	<0.82	<8.6
	o-Xylene	4,400	$\mu\text{g}/\text{m}^3$	320	3.0	3.2	7.9
	P & M -Xylene	4,400	$\mu\text{g}/\text{m}^3$	490	9.2	9.8	21
	Styrene	44,000	$\mu\text{g}/\text{m}^3$	<78	<0.76	<0.71	<7.4
	Tetrachloroethene	1,800	$\mu\text{g}/\text{m}^3$	6,600	170	170	1,400
	Tetrahydrofuran	NA	$\mu\text{g}/\text{m}^3$	<54	<2.6	<2.5	<26
	Toluene	220,000	$\mu\text{g}/\text{m}^3$	<69	19	16	31
	trans-1,2-Dichloroethene	NA	$\mu\text{g}/\text{m}^3$	<72	<0.70	<0.66	<6.9
	trans-1,3-Dichloropropene	310	$\mu\text{g}/\text{m}^3$	<83	<0.81	<0.76	<7.9
	Trichloroethene	84	$\mu\text{g}/\text{m}^3$	<98	<0.19	<0.18	<1.9
Trichlorofluoromethane	NA	$\mu\text{g}/\text{m}^3$	880	12 J*	16 J*	36	
Trichlorotrifluoroethane	1,300,000	$\mu\text{g}/\text{m}^3$	<140	<1.4	<1.3	<13	
Vinyl chloride	280	$\mu\text{g}/\text{m}^3$	<47	<0.046	<0.043	<0.45	

Notes:

Sample SS-102 is a field-duplicate of sampleSS-02.

ADEC Alaska Department of Environmental Conservation

† The ADEC Target Levels were obtained from the November 2017 ADEC Vapor Intrusion Guidance for Contaminated Sites - Appendix E: Target Levels for Subslab Air - Commercial.

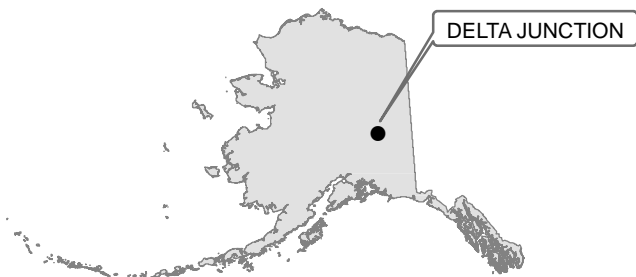
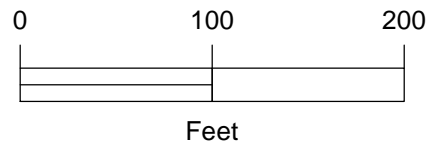
NA Not applicable; ADEC Target Level not established.

 $\mu\text{g}/\text{m}^3$ microgram per cubic meter

< Analyte not detected; listed as less than the reporting limit (RL).

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.

Bold RL exceeds regulatory limit.**Bold** Detected concentration exceeds regulatory limit.



Interior Texaco Site Characterization
Delta Junction, Alaska

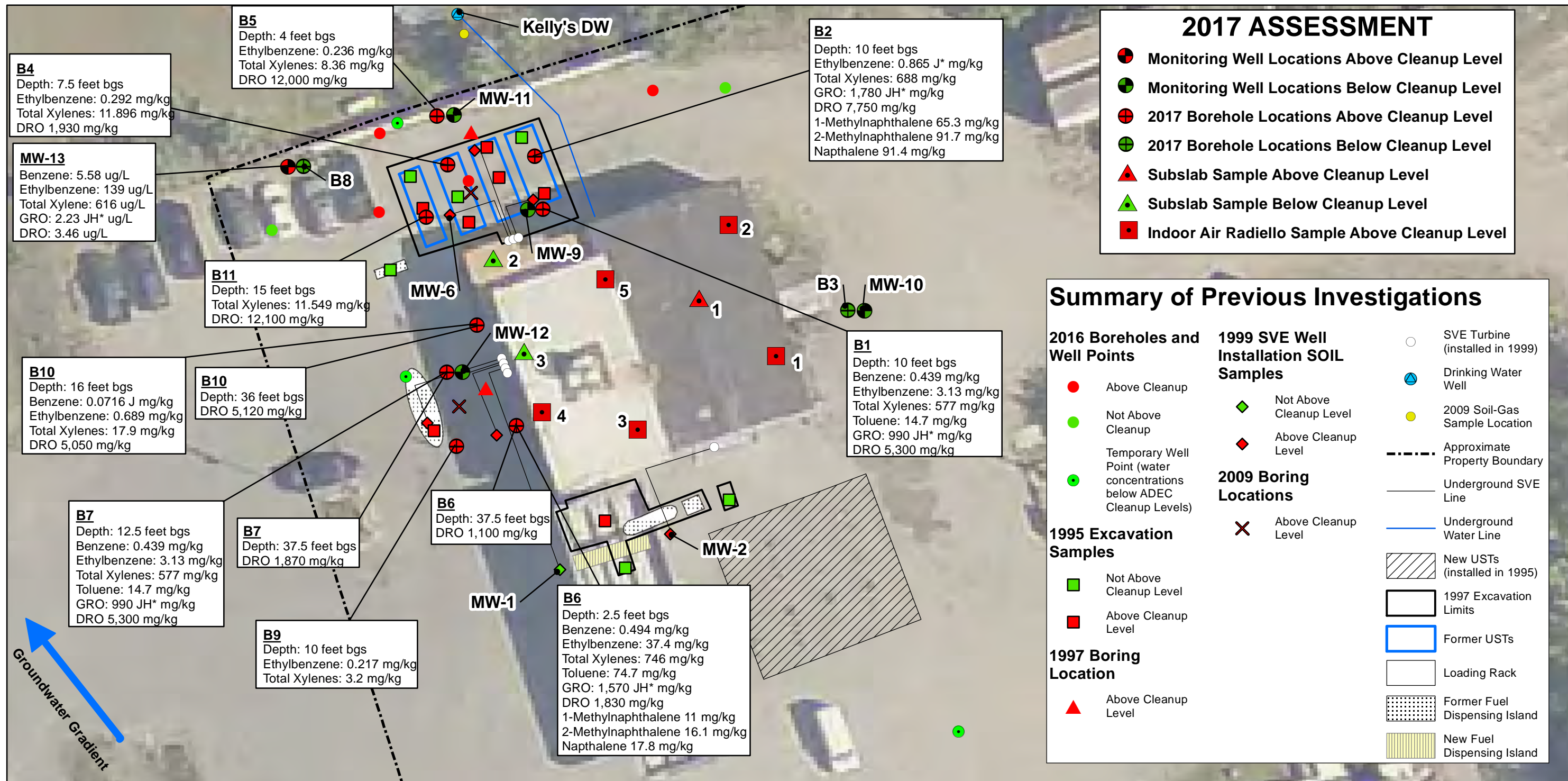
VICINITY MAP

March 2018

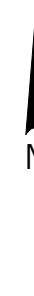
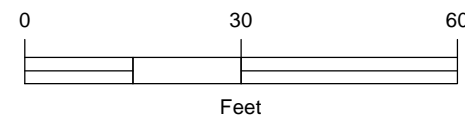
31-1-11809-011

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1



NOTES: There are eight remaining monitoring wells on site, the rest have been destroyed.
 MW-1 was completed at boring B-3 originally installed in 1997.
 MW-2 and MW-6 were completed in 1999 from borings installed in 1999.
 bgs = below ground surface
 mg/kg = milligrams per kilogram
 ug/L = micrograms per liter
 Only results above ADEC cleanup levels are shown. See Table 1 for further details.
 DW = drinking water
 MW = monitoring well



Interior Texaco Limited Site Characterization
 Delta Junction, Alaska

CHARACTERIZATION TO-DATE

March 2018

31-1-11809-011

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Figure 2

APPENDIX A

CONCEPTUAL SITE MODEL (CSM)

- Human Health CSM Graphic Form
- Human Health CSM Scoping Form

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Interior Texaco, ADEC File No. 120.26.001
 Delta Junction, Alaska

Completed By: Valerie Webb, CPG
 Date Completed: July 16, 2017

Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Check the media that could be directly affected by the release.	(2) For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.
Media	Transport Mechanisms
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Runoff or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input checked="" type="checkbox"/> Flow to surface water body <i>check surface water</i> <input type="checkbox"/> Flow to sediment <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Sedimentation <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct release to sediment <i>check sediment</i> <input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(3) Check all exposure media identified in (2).	(4) Check all pathways that could be complete. The pathways identified in this column must agree with Sections 2 and 3 of the Human Health CSM Scoping Form.	(5) Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.						
Exposure Media	Exposure Pathway/Route	Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input type="checkbox"/> Inhalation of Fugitive Dust		F	F				
<input checked="" type="checkbox"/> groundwater	<input type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water		C/F	C/F	C/F			
<input checked="" type="checkbox"/> air	<input checked="" type="checkbox"/> Inhalation of Outdoor Air <input checked="" type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust		C/F	C/F	C/F			
<input type="checkbox"/> surface water	<input type="checkbox"/> Ingestion of Surface Water <input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input type="checkbox"/> sediment	<input type="checkbox"/> Direct Contact with Sediment							
<input type="checkbox"/> biota	<input type="checkbox"/> Ingestion of Wild or Farmed Foods							

Human Health Conceptual Site Model Scoping Form

Site Name: Interior Texaco, Delta Junction, Alaska
File Number: ADEC File No. 120.26.001
Completed by: Valerie Webb, CPG

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, a CSM graphic and text must be submitted with the site characterization work plan.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources (*check potential sources at the site*)

- | | |
|---|---------------------------------------|
| <input checked="" type="checkbox"/> USTs | <input type="checkbox"/> Vehicles |
| <input type="checkbox"/> ASTs | <input type="checkbox"/> Landfills |
| <input checked="" type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers |
| <input type="checkbox"/> Drums | <input type="checkbox"/> Other: _____ |

Release Mechanisms (*check potential release mechanisms at the site*)

- | | |
|--|---|
| <input checked="" type="checkbox"/> Spills | <input type="checkbox"/> Direct discharge |
| <input checked="" type="checkbox"/> Leaks | <input type="checkbox"/> Burning |
| | <input type="checkbox"/> Other: _____ |

Impacted Media (*check potentially-impacted media at the site*)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Surface soil (0-2 feet bgs*) | <input checked="" type="checkbox"/> Groundwater |
| <input checked="" type="checkbox"/> Subsurface Soil (>2 feet bgs) | <input type="checkbox"/> Surface water |
| <input checked="" type="checkbox"/> Air | <input type="checkbox"/> Other: _____ |

Receptors (*check receptors that could be affected by contamination at the site*)

- | | |
|---|--|
| <input type="checkbox"/> Residents (adult or child) | <input checked="" type="checkbox"/> Site visitor |
| <input checked="" type="checkbox"/> Commercial or industrial worker | <input checked="" type="checkbox"/> Trespasser |
| <input checked="" type="checkbox"/> Construction worker | <input type="checkbox"/> Recreational user |
| <input type="checkbox"/> Subsistence harvester (i.e., gathers wild foods) | <input type="checkbox"/> Farmer |
| <input type="checkbox"/> Subsistence consumer (i.e., eats wild foods) | <input type="checkbox"/> Other: _____ |

* bgs – below ground surface

2. Exposure Pathways: (The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)

a) Direct Contact –

1 Incidental Soil Ingestion

Is soil contaminated anywhere between 0 and 15 feet bgs?

Do people use the site or is there a chance they will use the site in the future?

If both boxes are checked, label this pathway complete: complete

2 Dermal Absorption of Contaminants from Soil

Is soil contaminated anywhere between 0 and 15 feet bgs?

Do people use the site or is there a chance they will use the site in the future?

Can the soil contaminants permeate the skin? (Contaminants listed below, or within the groups listed below, should be evaluated for dermal absorption).

- | | |
|--------------------------------|-------------------|
| Arsenic | Lindane |
| Cadmium | PAHs |
| Chlordane | Pentachlorophenol |
| 2,4-dichlorophenoxyacetic acid | PCBs |
| Dioxins | SVOCs |
| DDT | |

If all of the boxes are checked, label this pathway complete: _____

b) Ingestion –

1 Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, OR are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if ADEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

If both the boxes are checked, label this pathway complete: _____

2 Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water OR are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? *Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).*

If both boxes are checked, label this pathway complete: _____

3 Ingestion of Wild Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild food?

Do the site contaminants have the potential to bioaccumulate (*see Appendix A*)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. the top 6 feet of soil, in groundwater that **could be** connected to surface water, etc.)

If all of the boxes are checked, label this pathway complete: _____

c) Inhalation

1 Inhalation of Outdoor Air

Is soil contaminated anywhere between 0 and 15 feet bgs?

Do people use the site or is there a chance they will use the site in the future?

Are the contaminants in soil volatile (*See Appendix B*)?

If all of the boxes are checked, label this pathway complete: complete

2 Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be placed on the site in an area that could be affected by contaminant vapors? (i.e., within 100 feet, horizontally or vertically, of the contaminated soil or groundwater, or subject to “preferential pathways” that promote easy airflow, like utility conduits or rock fractures)

Are volatile compounds present in soil or groundwater (*See Appendix C*)?

If both boxes are checked, label this pathway complete: complete

3. Additional Exposure Pathways: *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- Climate permits recreational use of waters for swimming,
- Climate permits exposure to groundwater during activities, such as construction, without protective clothing, or
- Groundwater or surface water is used for household purposes.

Check the box if further evaluation of this pathway is needed:

Comments:

Inhalation of Volatile Compounds in Household Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- The contaminated water is used for household purposes such as showering, laundering, and dish washing, and
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix B)

Check the box if further evaluation of this pathway is needed:

Comments:

Inhalation of Fugitive Dust

Generally DEC soil ingestion cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway, although this is not true in the case of chromium. Examples of conditions that may warrant further investigation include:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers. This size can be inhaled and would be of concern for determining if this pathway is complete.

Check the box if further evaluation of this pathway is needed:

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during recreational or some types of subsistence activities. People then incidentally **ingest** sediment from normal hand-to-mouth activities. In addition, **dermal absorption of contaminants** may be of concern if people come in contact with sediment and the contaminants are able to permeate the skin (see dermal exposure to soil section). This type of exposure is rare but it should be investigated if:

- Climate permits recreational activities around sediment, and/or
- Community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

ADEC soil ingestion cleanup levels are protective of direct contact with sediment. If they are determined to be over-protective for sediment exposure at a particular site, other screening levels could be adopted or developed.

Check the box if further evaluation of this pathway is needed:

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

The mobility of contamination from soil at the site is limited by a number of factors. The soils are very dense, and at some depths, fine-grained; these low-permeability soils reduce vapor migration both horizontally and vertically. Volatilization to outdoor air is further limited by the presence of asphalt pavement over much of the source-area soils. However, volatilization to outdoor and indoor air cannot be completely ruled out; air should be considered a potential exposure medium for the site.

Leaching or subsurface migration downward to the deep (80 feet to 100 feet bgs) groundwater aquifer is limited by a confining layer. Shallow, perched groundwater has been identified in previous site work, in the vapor extraction wells, and samples of the perched groundwater collected in 1999 and 2000 contained fuel contamination above ADEC Table C groundwater cleanup levels. However, we observed perched groundwater only intermittently, often in insufficient quantities to collect samples. There is no evidence that perched groundwater is in contact with the deeper groundwater aquifer; the nearby water-supply well at Kelly's Country Inn has been sampled eight times since 1997, with no fuel-related analytes (including EDB) detected above PQLs. Therefore, while migration or leaching to groundwater is considered a complete transport mechanism (due to perched, shallow groundwater), we do not consider groundwater to be an exposure medium for this site.

A number of exposure pathways to contaminated soil or air (the identified exposure media) remain potentially complete for the site. These exposure pathways are described below. Human receptors are primarily commercial or industrial workers (including fueling-station staff) and site visitors (including customers), trespassers, or recreational users. Potential future receptors include construction workers. There are currently no residences within 100 feet of the site, and the Inn and the fueling station do not have permanent occupants. Also, there is no farming or subsistence harvesting taking place within at least 500 feet of the site. While exposure to contaminated soil through incidental soil ingestion is currently limited by the asphalt surface at the site, it remains a potentially complete future exposure pathway for commercial, industrial, or construction workers excavating soil at the site (e.g. if the current USTs and pump island were removed or upgraded). PAHs, which can be absorbed dermally, may be present in areas of contaminated soil, representing another potentially complete future exposure pathway to the same receptors.

Potential exposure pathways are visually represented in the CSM graphic. We did not evaluate potential risks to ecological receptors.

APPENDIX A

BIOACCUMULATIVE COMPOUNDS

Table A-1: List of Compounds of Potential Concern for Bioaccumulation

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table X of 18 AAC 75.345 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Lead
Arsenic	Dibenzo(a,h)anthracene	Mercury
Benzo(a)anthracene	Dieldrin	Methoxychlor
Benzo(a)pyrene	Dioxin	Nickel
Benzo(b)fluoranthene	Endrin	PCBs
Benzo(k)fluoranthene	Fluoranthene	
Cadmium	Heptachlor	Pyrene
Chlordane	Heptachlor epoxide	Selenium
Chrysene	Hexachlorobenzene	Silver
Copper	Hexachlorocyclopentadiene	Toxaphene
DDD	Indeno(1,2,3-c,d)pyrene	Zinc
DDE		

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at <http://www.pbtprofiler.net/>. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX B

VOLATILE COMPOUNDS

Table B-1: List of Volatile Compounds of Potential Concern

Common volatile contaminants of concern at contaminated sites. A chemical is defined as volatile if the Henry's Law constant is 1×10^{-5} atm-m³/mol or greater and the molecular weight less than 200 g/mole (g/mole; EPA 2004a). Those compounds in Table X of 18 AAC 75.345 that are volatile, based on the definition above, are listed below.

Acenaphthene	1,4-dichlorobenzene	Pyrene
Acetone	1,1-dichloroethane	Styrene
Anthracene	1,2-dichloroethane	1,1,2,2-tetrachloroethane
Benzene	1,1-dichloroethylene	Tetrachloroethylene
Bis(2-chlorethyl)ether	Cis-1,2-dichloroethylene	Toluene
Bromodichloromethane	Trans-1,2-dichloroethylene	1,2,4-trichlorobenzene
Carbon disulfide	1,2-dichloropropane	1,1,1-trichloroethane
Carbon tetrachloride	1,3-dichloropropane	1,1,2-trichloroethane
Chlorobenzene	Ethylbenzene	Trichloroethylene
Chlorodibromomethane	Fluorene	Vinyl acetate
Chloroform	Methyl bromide	Vinyl chloride
2-chlorophenol	Methylene chloride	Xylenes
Cyanide	Naphthalene	GRO
1,2-dichlorobenzene	Nitrobenzene	DRO

APPENDIX C

COMPOUNDS OF CONCERN FOR VAPOR MIGRATION

Table C-1: List of Compounds of Potential Concern for the Vapor Migration

A chemical is considered sufficiently toxic if the vapor concentration of the pure component poses an incremental lifetime cancer risk greater than 10^{-6} or a non-cancer hazard index greater than 1. A chemical is considered sufficiently volatile if its Henry's Law constant is 1×10^{-5} atm-m³/mol or greater.

Acenaphthene	Dibenzofuran	Hexachlorobenzene
Acetaldehyde	1,2-Dibromo-3-chloropropane	Hexachlorocyclopentadiene
Acetone	1,2-Dibromoethane (EDB)	Hexachloroethane
Acetonitrile	1,3-Dichlorobenzene	Hexane
Acetophenone	1,2-Dichlorobenzene	Hydrogen cyanide
Acrolein	1,4-Dichlorobenzene	Isobutanol
Acrylonitrile	2-Nitropropane	Mercury (elemental)
Aldrin	N-Nitroso-di-n-butylamine	Methacrylonitrile
alpha-HCH (alpha-BHC)	n-Propylbenzene	Methoxychlor
Benzaldehyde	o-Nitrotoluene	Methyl acetate
Benzene	o-Xylene	Methyl acrylate
Benzo(b)fluoranthene	p-Xylene	Methyl bromide
Benzylchloride	Pyrene	Methyl chloride (chloromethane)
beta-Chloronaphthalene	sec-Butylbenzene	Methylcyclohexane
Biphenyl	Styrene	Methylene bromide
Bis(2-chloroethyl)ether	tert-Butylbenzene	Methylene chloride
Bis(2-chloroisopropyl)ether	1,1,1,2-Tetrachloroethane	Methylethylketone (2-butanone)
Bis(chloromethyl)ether	1,1,2,2-Tetrachloroethane	Methylisobutylketone
Bromodichloromethane	Tetrachloroethylene	Methylmethacrylate
Bromoform	Dichlorodifluoromethane	2-Methylnaphthalene
1,3-Butadiene	1,1-Dichloroethane	MTBE
Carbon disulfide	1,2-Dichloroethane	m-Xylene
Carbon tetrachloride	1,1-Dichloroethylene	Naphthalene
Chlordane	1,2-Dichloropropane	n-Butylbenzene
2-Chloro-1,3-butadiene (chloroprene)	1,3-Dichloropropene	Nitrobenzene
Chlorobenzene	Dieldrin	Toluene
1-Chlorobutane	Endosulfan	trans-1,2-Dichloroethylene
Chlorodibromomethane	Epichlorohydrin	1,1,2-Trichloro-1,2,2-trifluoroethane
Chlorodifluoromethane	Ethyl ether	1,2,4-Trichlorobenzene
Chloroethane (ethyl chloride)	Ethylacetate	1,1,2-Trichloroethane
Chloroform	Ethylbenzene	1,1,1-Trichloroethane
2-Chlorophenol	Ethylene oxide	Trichloroethylene
2-Chloropropane	Ethylmethacrylate	Trichlorofluoromethane
Chrysene	Fluorene	1,2,3-Trichloropropane
cis-1,2-Dichloroethylene	Furan	1,2,4-Trimethylbenzene
Crotonaldehyde (2-butenal)	Gamma-HCH (Lindane)	1,3,5-Trimethylbenzene
Cumene	Heptachlor	Vinyl acetate
DDE	Hexachloro-1,3-butadiene	Vinyl chloride (chloroethene)

Source: EPA 2002.

Guidance on Developing Conceptual Site Models
January 31, 2005

APPENDIX B
SAMPLE COLLECTION LOGS
AND FIELD NOTES

SAMPLE COLLECTION LOG

Project Number: 3111809-000 Location: Interior Texas Delta Alaska		Date: 10/12/17		Page 1 of 8					
Sampler: FLG/SVR FLG/SVR									
Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
B1	0.5 - 2.5	1058			SB (FG)	DG	FM	377.2	PID
B1	2.5 - 5.0	1859			SB	DG		389.1	
B1	5.0 - 7.5	1104						412.4	
B1	7.5 - 10.0	1105						334.6	
B1	10.0 - 11.2	1108						311.8	
B1	11.2 - 13.6	1109						187.9	
B1	15.0 - 17.5	1130						250.5	
B1	17.5 - 20.0	1131			(R)			112.0	
B1	20.0 - 22.5	1142						35.5	
B1	22.5 - 25.0	1143						5.2	
B1	25.0 - 30.0 (not recovered so only 1.0' to sample)	1150						86.5	
B1	30.0 - 32.5	1240						12.5	
B1	32.5 - 35.0	1241						10.8	
B1	35.0 - 37.5	1300						9.1	
B1	37.5 - 40.0	1301						30.2	
B1	40.0 - 42.5	1425						315.5	
B1	42.5 - 45	1430						629.9	
IT-Bi-1	10.0 - 11.2	1255	10.0	11.2		DG	ES	311.8	GRV/BTEX/DRO/RRO
IT-Bi-2	39.0 - 40.0	1454	39.0		(R)	DG	ES	30.2	GRV/BTEX/DRO/RRO
B2	0.5 - 2.5	1702				DG	FM	11.7	
B2	2.5 - 5.0	1703						577.3	
B2	5.0 - 7.5	1712						695.5 (R)	
B2	7.5 - 10.0	1713						122.6	
B2	10.0 - 12.0	1726						195.1	
B2	12.0 - 14.5	1727						95.3	
B2	15.0 - 17.5	1809						139.6	

Matrix Type	Sampling Method	Sample Type
AR Air	B Bailer/Colliwas	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 311809-006 Location: Interior Texas

Page 2 of 8

Date: 10/12/17

Sampler: FLE/S/R

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
B2	17.5 - 20.0	1808			SB	BG	FM	74.5	
B2	20.0 - 22.5	1816						11.4	
B2	22.5 - 25.0	1818						16.1	
B2	25.0 - 27.5	1831						16.0	
B2	27.5 - 30.0	1832						5.0	
B2	30.0 - 32.5	1924						15.4	
B2	32.5 - 35.0	1925						10.2	
B2	35.0 - 37.5	1937						17.8	
B2	37.5 - 40.0	1938					▽	50.1	
IT-B2-1	10.0 - 12.0 B2	1755					ES	1956	GRD/BTEX/DRO/KRO/PAX
IT-B2-3	10.0 - 12.0 B2	1754					ES	1956	GRD/BTEX/DRO/KRO/PAX
IT-B2-2	37.5 - 40.0 B2	1958					ES	50.1	GRD/BTEX/DRO/KRO
B3	0.5 - 2.5	900					FM	23.1	
B3	2.5 - 5.0	901						7.2	
B3	5.0 - 6.0	912						13.7	
B3	6.0 - 8.5 (Low recovery)	914						13.1	
B3	10.0 - 12.5	926						9.6	
B3	12.5 - 15.0	936						10.1	
B3	15.0 - 17.5	946						6.0	
B3	17.5 - 20.0	947						6.6	
B3	20.0 - 22.5	958						4.4	
B3	22.5 - 25.0	1000						9.8	
B3	25.0 - 27.5	1038						4.4	
B3	27.5 - 30.0	1040						5.2	
B3	30 - 35 (A)	1100						4.1	
B3	30 - 35 (B)	1100					▽	13.8	

Matrix Type	Sampling Method	Sample Type
AR Air	B Bailer/Coliwas	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 31-1-11809-006 Page 3 of 8
 Project Name: - Interior Texaco Interior Texaco
 Sampler: SYR, FLG

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
10/13/17	1145	B3	35-40' (A)		FS		no recovery
		B3	35-40' (B)				" "
	1215	B3	40-45' (A)			4.4	
	1215	B3	40-45' (B)			(7.5)	
	1239	IT-B3-1	5.0-6.0	5.0-6.0	ES	13.7	GRD, BTEX, DRO, PRO
	1222	IT-B3-2	30-35' interval	31.0-32.4	ES	13.8	" "
	1550	MW-1	MW-1		ES		no water
	1731	B4	0.5 - 2.5		FS	316.8	
	1732	B4	2.5 - 5.0			688.3	
	1739	B4	5.0 - 7.5			629.1	
	1740	B4	7.5 - 10.0			1346.0	
	1744	B4	10.0 - 10.5			998.4	
	1745	B4	10.5 - 12.5 Low recovery			395.1	
	1752	B4	15.0 - 17.5			172.7	
	1754	B4	17.5 - 20.0			21.8	
	1805	B4	20.0 - 22.5			50.5	
	1806	B4	22.5 - 25.0			13.8	
	1750	IT-B4-1	7.5 - 10		ES	1340.0	GRD/BTEX/DRO/PRO
10/14/17	902	B4	25.0 - 27.5		FS	389.8	
	903	B4	27.5 - 30.0			673.3	
	930	B4	30.0 - 32.5			56.5	
	932	B4	32.5 - 35.0			132.3	
	958	B4	35.0 - 37.2			99.2	
	1002	B4	37.2 - 40.0			208.0	
	1130	B4	40.0 - 42.5			69.5	
	1112	IT-B4-2	37.2 - 40.0		ES	208.0	GRD/BTEX/DRO/PRO
	1210	B5	0.5 - 2.5		FS	307.1	
	1212	B5	2.5 - 5.0			748.4	
	1238	B5	5.0 - 7.5			760.1	
	1239	B5	7.5 - 10.0			713.2	
	1247	B5	10.0 - 12.5			453.9	
	1248	B5	12.5 - 15.0			48.8	

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

(51P)

SAMPLE COLLECTION LOG

Project Number: 11809-002 Location: Interior Texas Co

Page 4 of 8

Date: 10/14/17

Sampler: FLG/SYR

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
B5	15.0 - 17.5	1306			SB	FG/SG	ES	428.8	
B5	17.5 - 20.0	1307						47.0	
B5	20.0 - 22.5	1327						13.8	
B5	22.5 - 25.0	1328						7.1	
B5	25.0 - 27.5	1464						16.0	
B5	27.5 - 30.0	1405						10.0	
B5	30.0 - 32.5	1435						10.9	
B5	32.5 - 35.0	1436						11.9	
B5	35.0 - 37.5	1487						13.7	
B5	37.5 - 40.0	1408						21.2	
B5	40.0 - 45.0 poor recovery	1518						11.7	
IT-B5-1	4.0 - 5.0	1324						798.4	
IT-B5-2	38.0 - 40.0	1530						21.2	
mw-9 (10/18)	monitoring well mw-9	1320			GW	G	ES	-	620, BTEX, DRO, RRO, PAHs
mw-109 (10/18)	" " duplicate of mw-9	1330			GW	G	FD	-	" "
B6	0.2 - 2.5	759			SB	FG/SG	ES	499.9	
B6	2.5 - 5.0	800						4633.0	
B6	5.0 - 7.5	820						3973.6	
B6	7.5 - 10.0	821						2867.0	
B6	10.0 - 12.5	840						3120.0	
B6	12.5 - 15.0 poor recovery	842						3168.0	
FG IT-B6-1 IT-B6-2 IT-B6-3 IT-B6-4 IT-B6-5 IT-B6-6 IT-B6-7 IT-B6-8 IT-B6-9 IT-B6-10 IT-B6-11 IT-B6-12 IT-B6-13 IT-B6-14 IT-B6-15 IT-B6-16 IT-B6-17 IT-B6-18 IT-B6-19 IT-B6-20 IT-B6-21 IT-B6-22 IT-B6-23 IT-B6-24 IT-B6-25 IT-B6-26 IT-B6-27 IT-B6-28 IT-B6-29 IT-B6-30 IT-B6-31 IT-B6-32 IT-B6-33 IT-B6-34 IT-B6-35 IT-B6-36 IT-B6-37 IT-B6-38 IT-B6-39 IT-B6-40 IT-B6-41 IT-B6-42 IT-B6-43 IT-B6-44 IT-B6-45 IT-B6-46 IT-B6-47 IT-B6-48 IT-B6-49 IT-B6-50 IT-B6-51 IT-B6-52 IT-B6-53 IT-B6-54 IT-B6-55 IT-B6-56 IT-B6-57 IT-B6-58 IT-B6-59 IT-B6-60 IT-B6-61 IT-B6-62 IT-B6-63 IT-B6-64 IT-B6-65 IT-B6-66 IT-B6-67 IT-B6-68 IT-B6-69 IT-B6-70 IT-B6-71 IT-B6-72 IT-B6-73 IT-B6-74 IT-B6-75 IT-B6-76 IT-B6-77 IT-B6-78 IT-B6-79 IT-B6-80 IT-B6-81 IT-B6-82 IT-B6-83 IT-B6-84 IT-B6-85 IT-B6-86 IT-B6-87 IT-B6-88 IT-B6-89 IT-B6-90 IT-B6-91 IT-B6-92 IT-B6-93 IT-B6-94 IT-B6-95 IT-B6-96 IT-B6-97 IT-B6-98 IT-B6-99 IT-B6-100									
IT-B6-1	2.5 - 5.0	917			SB		ES	4033.0	GRD/BTEX/DRO/RRO/PAH
IT-B6-3	2.5 - 5.0	967					FD/ES	4033.0	GRD/BTEX/DRO/RRO/PAH
B6	15.0 - 20.0 sample stuck in tube	900					Fm	-	
B6	20.0 - 25.0 poor recovery	920					Fm	3114.0	
			Matrix Type		Sampling Method		Sample Type		
			AR	Air	B	Bailer/Coliwas	ES	Environmental sample	
			GW	Groundwater	D	Drill cuttings	ER	Equipment rinsate	
			PR	Product	G	Grab sampling	FB	Field blank	
			SB	Subsurf. soil	H	Hand auger	FD	Field duplicate	
			SE	Sediment	L	Tube liner	FM	Field measurement	
			SG	Sludge	P	Pump (liquid)	FR	Field replicate	
			SS	Surface soil	SS	Split spoon	MD	Matrix spike duplicate	
			SW	Surface water	T	Shelby tube	MS	Matrix spike duplicate	
			WR	Water	V	Vacuum (gas)	TB	Trip blank	
					W	Wipe sampling			

SAMPLE COLLECTION LOG

Project Number: 11809-006 Location: Interior Texaco

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Date: 10/15/17

Sampler: FLG/SVR

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
B6	25.0 - 27.5	1002			SB	G	FB	302.8	
B6	27.5 - 30.0	1003						679.2	
B6	30.0 - 32.5	1043						649.1	
B6	32.5 - 35.0	1043						682.2	
B6	35.0 - 37.5	1200						252.0	
B6	37.5 - 40.0	1201						270.2	
IT-B6-2	37.5 - 40.0	1127					ES	270.2	GRD/BTEX/DRO/RRO
B7	0.5 - 2.5	1258						240.0	
B7	2.5 - 5.0	1259						2941.0	
B7	5.0 - 10.0	1301						4199.0	liner stuck in tube
B7	10.0 - 12.5	1321						3240.0	poor recovery
B7	12.5 - 15.0	1322						4271.0	" "
B7	20.0 - 22.5 15.0 - 17.5	1350						1817.0	
B7	22.5 - 25.0 17.5 - 20.0	1351						1618.0	
B7	PLA 25.0 - 30.0 20.0 - 22.5	1420						1507.0	
B7	30.0 - 32.5 22.5 - 25.0	1421						638.0	
B7	32.5 - 35.0 25.0 - 30.0	1430						104.8	mostly rock
Sample stuck in tube									
B7	30.0 - 32.5	1440			SB	G		511.8	
B7	32.5 - 35.0	1441			SB			322.2	
B7	35.0 - 37.5	1449			SB			429.7	
PLA B7	37.5 - 40.0	1450			SB			409.7	
IT-B7-1									
IT-B7-1	12.5 - 15.0	1345			SB	G	ES	421.0	GRD/BTEX/DRO/RRO
IT-B7-2	37.5 - 40.0	1505			SB	G	ES	409.7	GRD/BTEX/DRO/RRO

Matrix Type	Sampling Method	Sample Type
AR Air	B Bailer/Coliwas	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 11809-002 Location: Interior Texaco

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Date: 10/16/17

Sampler: FLG/SVR

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses	
			top	bottom						
B8	0.5 - 2.5	1012			SB	G	FM	8.6		
B8	2.5 - 5.0	1016						8.7		
B8	5.0 - 7.5	1017						8.9		
B8	7.5 - 10.0	1036						7.3		
B8	10.0 - 12.5	1037						6.4		
B8	12.5 - 15.0	1044						5.3		
B8	15.0 - 17.5	1046						7.1		
B8	17.5 - 20.0	1047						3.6		
B8	20.0 - 22.5	1102						7.7		
B8	22.5 - 25.0	1103						4.3		
B8	25.0 - 30.0	1124						4.7	sample stuck in filter	
B8	30.0 - 32.5	1126						7.9		
B8	32.5 - 35.0	1127						6.7		
B8	35.0 - 37.5	1138						14.7		
B8	37.5 - 40.0	1139						9.2		
IT-B8-1	35.0 - 37.5	1140			SB			14.7		
IT-B8-2	37.5 - 40.0	1145			SB			9.2		
MW-11	MW-11	1515	35	45	GW	SPRG	ES	-	GR20, BTEX, DR20, R20	
MW-10	MW-10	1720	35	45	GW	FLG	ES	-	" "	
10/17/16										
B9	0.5 - 2.5	801			SB	G	FM	5.1		
B9	2.5 - 5.0	802						5.3		
B9	5.0 - 7.5	810						11.9		
B9	7.5 - 10.0	811						122.8		
B9	10.0 - 12.5	829						226.3		
B9	12.5 - 15.0	830						164.7		
					Matrix Type	Sampling Method	Sample Type			
					AR Air	B Bailor/Coliwas	ES Environmental sample			
					GW Groundwater	D Drill cuttings	ER Equipment rinsate			
					PR Product	G Grab sampling	FB Field blank			
					SB Subsurf. soil	H Hand auger	FD Field duplicate			
					SE Sediment	L Tube liner	FM Field measurement			
					SG Sludge	P Pump (liquid)	FR Field replicate			
					SS Surface soil	SS Split spoon	MD Matrix spike duplicate			
					SW Surface water	T Shelby tube	MS Matrix spike duplicate			
					WR Water	V Vacuum (gas)	TB Trip blank			
						W Wipe sampling				

SAMPLE COLLECTION LOG

Project Number: 11809-006 Location: Interior Texas

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Date: 10/17/17

Sampler: FLS/SYR

Sample Number	Location	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
			top	bottom					
B9	15.0 - 17.5	942			SB	G	FM	207.7	
B9	17.5 - 20.0	843						11.9	
B9	20.0 - 22.5	850						12.3	
B9	22.5 - 25.0	851						9.3	
B9	25.0 - 27.5	810						6.0	
B9	27.5 - 30.0	811						6.6	
B9	30.0 - 32.5	818						3.6	
B9	32.5 - 35.0	819						27.8	
B9	35.0 - 37.5	933						14.9	
B9	37.5 - 40.0	934						6.3	
IT-B9-1	10.0 - 12.0	945					ES	226.3	GRO/BTEX/DRO/PPO
IT-B9-2	37.5 - 40.0	950					ES	6.3	GRO/BTEX/DRO/PPO
B10	0 - 2.5	1030					FM	77.5	
B10	2.5 - 5.0	1031						937.6	
B10	5.0 - 7.5	1040						1005	
B10	7.5 - 10.0	1041						1215	
B10	10.0 - 12.5	1052						1242	
B10	12.5 - 15.0	1053						946.3	
B10	15.0 - 17.5	1055						1285.0	A
B10	17.5 - 20.0	1056						1255.0	
B10	20 - 22.5	1101						798.7	
B10	22.5 - 25.0	1101						648.3	
B10	25.0 - 27.5	1103						427.3	
B10	27.5 - 30.0	1105						477.5	
B10	30.0 - 32.5	1130						429.9	
B10	32.5 - 35.0	1131						467.0	
B11	35.0 - 37.5	1150						470.6	A
B11	37.5 - 40.0	1151						334.7	

Matrix Type	Sampling Method	Sample Type
AR Air	B Bailer/Coliwas	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	FB Field blank
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

SAMPLE COLLECTION LOG

Project Number: 31-1-11809-006 Page 8 of 8
 Project Name: Interior, Texas
 Sampler: Fawn Glassburn, SYR

Date	Sample Time	Sample ID	Location	Depth (ft)	Sample Type	PID Reading	Analyses
10/17/17	1223	IT-B10-1	Boring B10, sample interval	16.0-17.5	ES	1285.0	GR0, BTEX, DRG, RRO
10/17/17	1230	IT-B10-2	Boring B10, sample interval	36.0-37.0	ES	470.6	" "
10/17/17	1246	MW-12	MW-12	-	ES	-	" "
	1400	B11	0.5-2.5		FS	12.0	
	1402	B11	2.5-5.0			477.0	
	1407	B11	5.0-7.5			918.0	
	1408	B11	7.5-10.0			839.0	
	1413	B11	10.0-15.0 poor recovery			338.1	
	1445	B11	15.0-20.0 Sample stuck in liner			447.9	
	1601	B11	20.0-25.0 poor recovery			557.5	
	1602	B11	25.0-27.5			24.0	
	1629	B11	27.5-30.0			16.8	
	1652	B11	30.0-32.5			15.5	
	1653	B11	32.5-35.0			15.6	
	1656	B11	35.0-37.5			56.5	
	1657	B11	37.5-40.0			5.5	
	1700	IT-B11-1	5.0-7.5			918.0	
	1710	IT-B11-2	37.5-40.0			5.5	
10/18/17	1250	MW-13	Boring B8		ES	-	GR0/BTEX/DRG/RRO

Sample Type FS = Field screening measurement only ES = Environmental sample FD = Field duplicate TB = Trip blank

SYR

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-9 B1</u>	Date Installed <u>10/19/17 (SR)</u>
Project Name <u>Interior T-xaco</u>	Logged By <u>SR</u>
Project Number <u>31-1-11809-006</u>	Driller <u>GRONK</u>

I. TOP SECTION (CASING)

Initial Pipe Length 5.01 10.01
 Cutoff Length 3.97
 Add-on Length -
Total Length 1.04 6.04

IV. WELL DATA

Pipe Type: PVC SS Other _____
 Diameter: 2" 4" Other _____
 Slot Size: 0.01 0.02 Other _____
 Joint Pin End: Up Down Type _____

II. MID SECTION (CASING)

Number of Blank Sections 3
 Length of Section(s):

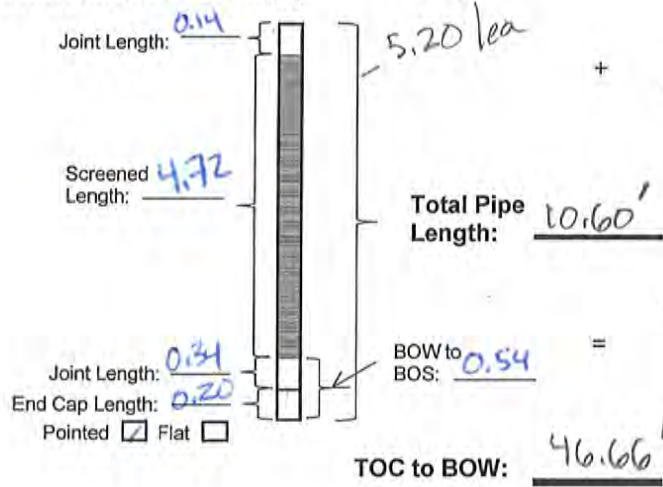
<u>10.01</u>	
<u>10.21</u>	
<u>12.00</u>	

Sum of Lengths: 30.02

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	<u>10.39</u>	<u>0</u>
CEM_PB	<u>0</u>	<u>0.39</u>
*SLUF_PB/FIL_PB	<u>36.20</u>	<u>34.0</u>
BCH_PB	<u>32.5</u> <u>31.53</u>	<u>10</u> <u>33.53</u>
*SLUF_PB/FIL_PB	<u>41.34</u>	<u>36.59</u>
BGR_PB		
*SLUF_PB/FIL_PB	<u>10</u> <u>41.79</u>	<u>10</u> <u>41.34</u>
*SLUF_PS/FIL_PS	<u>46.51</u>	<u>32.5</u> <u>35</u> <u>41.79</u>
*SLUF/FIL (No Pipe)	<u>35</u>	<u>32.5</u> <u>(SR)</u>
*SLUF_PB/FIL_PB	<u>35</u>	<u>32.5</u>
Filter Pack Type or Gradation	<u>10/20 Silica Sand Colorado</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stuckup Flushmount
 TOM to GS Flush
 TOM to TOC _____
 ^TOC to GS -0.39'
 Lock type _____

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 1		
Permafrost 2		

- BCH = Bentonite Chips (gINT code)
- BGR = Bentonite Grout (gINT code)
- bgs = Below Ground Surface
- BOS = Bottom of Screen
- BOW = Bottom of Well
- CEM = Cement (gINT code)
- FIL = Sand Pack (gINT code)
- GS = Ground Surface
- SLUF = Natural Collapse/ Pea Gravel (gINT code)
- SS = Stainless Steel
- TOC = Top of Casing
- TOM = Top of Monument
- TOS = Top of Screen
- PB = Blank Pipe (gINT code)
- PS = Slotted Pipe (gINT code)
- * Circle filter-pack type
- ^ Flushmount = Negative Number
- Stickup = Positive Number

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 46.66'
 - BOW to BOS 0.54
= TOC to BOS 46.12

TOC to BOS 46.12
 - Screened Length 9.92
= TOC to TOS 36.20'

$S.L = (4.72) \times 2 + 0.14 + 0.34$
 $= 9.92$

TOC to BOW	<u>46.66</u>
- TOC to GS	<u>(-0.39')</u>
BOW bgs	<u>47.05'</u>
TOC to TOS	<u>36.20'</u>
- TOC to GS	<u>(-0.39')</u>
TOS bgs	<u>36.59'</u>
TOC to BOS	<u>36.20</u>
- TOC to GS	<u>(-0.39)</u>
BOS bgs	<u>36.59'</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>mw-10 / B3</u>	Date Installed <u>10/15/2017</u>
Project Name <u>Interior Taxaco</u>	Logged By <u>SYR</u>
Project Number <u>31-1-11809</u>	Driller <u>GeoTech</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10.00
 Cutoff Length 5.81
 Add-on Length -
Total Length 4.19

IV. WELL DATA

Pipe Type: PVC SS Other _____
 Diameter: 2" 4" Other _____
 Slot Size: 0.01 0.02 Other _____
 Joint Pin End: Up Down Type _____

II. MID SECTION (CASING)

Number of Blank Sections 3
 Length of Section(s):

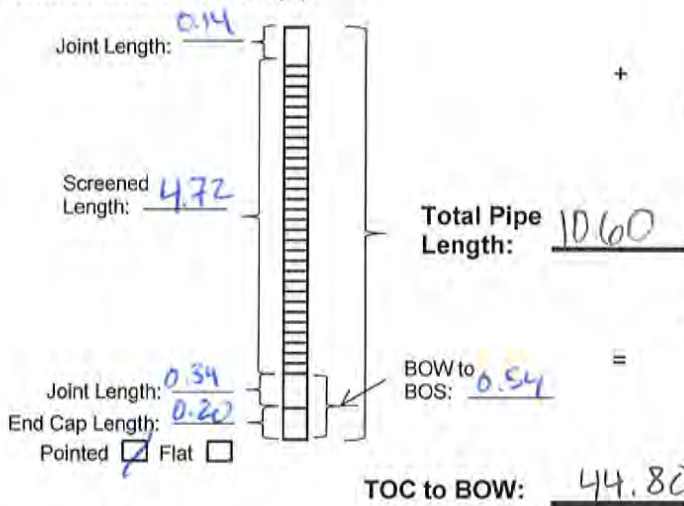
<u>10.00</u>		
<u>10.00</u>		
<u>10.01</u>		

Sum of Lengths: 30.01'

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	<u>0.39</u>	<u>0</u>
CEM_PB	<u>0.60</u>	<u>0.39</u>
*SLUF_PB/FIL_PB	<u>30.73</u>	<u>0.60</u>
BCH_PB	<u>32.73</u>	<u>30.73</u>
*SLUF_PB/FIL_PB	<u>34.73</u>	<u>39.45</u>
BGR_PB		
*SLUF_PB/FIL_PB	<u>39.93</u>	<u>39.45</u>
*SLUF_PS/FIL_PS	<u>44.65</u>	<u>39.93</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB	<u>45.19</u>	<u>44.65</u>
Filter Pack Type or Gradation	<u>10/20 Colorado Silica Sand</u>	

III. SCREENED SECTION(S)



VI. MONUMENTS

Stuckup Flushmount
 TOM to GS Flush
 TOM to TOC _____
 ^TOC to GS -0.39'
 Lock type _____

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 1		
Permafrost 2		

- BCH = Bentonite Chips (gINT code)
- BGR = Bentonite Grout (gINT code)
- bgs = Below Ground Surface
- BOS = Bottom of Screen
- BOW = Bottom of Well
- CEM = Cement (gINT code)
- FIL = Sand Pack (gINT code)
- GS = Ground Surface
- SLUF = Natural Collapse/ Pea Gravel (gINT code)
- SS = Stainless Steel
- TOC = Top of Casing
- TOM = Top of Monument
- TOS = Top of Screen
- PB = Blank Pipe (gINT code)
- PS = Slotted Pipe (gINT code)
- * Circle filter-pack type
- ^ Flushmount = Negative Number
- Stickup = Positive Number

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.80
 - BOW to BOS 0.54
= TOC to BOS 44.26'
 TOC to BOS 44.26'
 - Screened Length 9.92
= TOC to TOS 34.34

TOC to BOW	<u>44.80</u>
- TOC to GS	<u>(-0.39)</u>
BOW bgs	<u>45.19</u>
TOC to TOS	<u>34.34</u>
- TOC to GS	<u>(-0.39)</u>
TOS bgs	<u>34.73</u>
TOC to BOS	<u>44.26</u>
- TOC to GS	<u>(-0.39)</u>
BOS bgs	<u>44.65</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-11</u>	Date Installed <u>10/14/2017</u>
Project Name <u>Interior Tuxaco</u>	Logged By <u>S.R. FLG</u>
Project Number <u>31-1-11804-006</u>	Driller <u>Logan, Gentry</u>

I. TOP SECTION (CASING)

Initial Pipe Length 5.01
 Cutoff Length 1.51
 Add-on Length
Total Length 3.50'

IV. WELL DATA

Pipe Type: PVC SS Other
 Diameter: 2" 4" Other
 Slot Size: 0.01 0.02 Other
 Joint Pin End: Up Down Type

II. MID SECTION (CASING)

Number of Blank Sections 3
 Length of Section(s):

10.00	
10.01	
10.00	

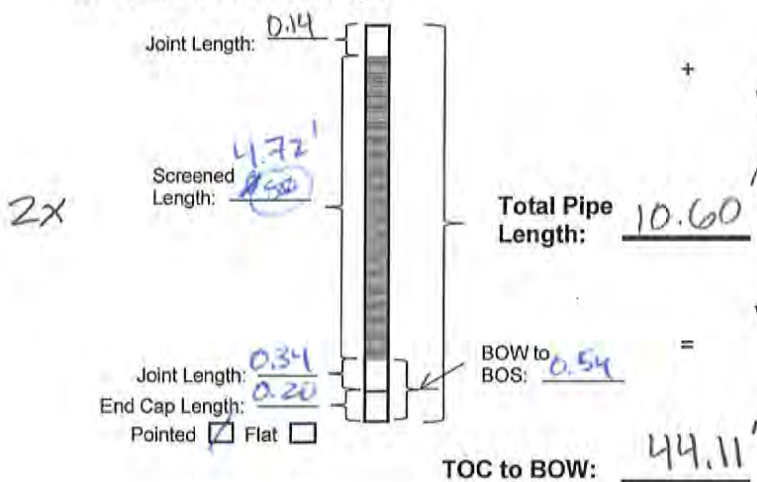
Sum of Lengths: 30.01'

V. BACKFILL

	Bottom	Top
CEM (No Pipe)	<u>0.33</u>	<u>0</u>
CEM_PB	<u>0.60</u>	<u>0.33</u>
*SLUF_PB/FIL_PB	<u>29.0</u>	<u>0.60</u>
BCH_PB	<u>29.0</u>	<u>33.98</u>
*SLUF_PB/FIL_PB	<u>33.98</u>	<u>38.70</u>
BGR_PB	<u>39.18</u>	<u>38.70</u>
*SLUF_PB/FIL_PB	<u>43.90</u>	<u>39.18</u>
*SLUF_PS/FIL_PS	<u>43.90</u>	<u>39.18</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB	<u>44.44</u>	<u>43.90</u>

Filter Pack Type or Gradation 10/20 Sicila Sand

III. SCREENED SECTION(S)



VI. MONUMENTS

Stuckup Flushmount
 TOM to GS flush
 TOM to TOC
 ^TOC to GS -0.33
 Lock type

VII. MOISTURE CONTENT

Depth to Water Below GS

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 1		
Permafrost 2		

- BCH = Bentonite Chips (gINT code)
- BGR = Bentonite Grout (gINT code)
- bgs = Below Ground Surface
- BOS = Bottom of Screen
- BOW = Bottom of Well
- CEM = Cement (gINT code)
- FIL = Sand Pack (gINT code)
- GS = Ground Surface
- SLUF = Natural Collapse/ Pea Gravel (gINT code)
- SS = Stainless Steel
- TOC = Top of Casing
- TOM = Top of Monument
- TOS = Top of Screen
- PB = Blank Pipe (gINT code)
- PS = Slotted Pipe (gINT code)
- * Circle filter-pack type
- ^ Flushmount = Negative Number
- Stickup = Positive Number

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.11
 - BOW to BOS 0.54
= TOC to BOS 43.57
 TOC to BOS 43.57
 - Screened Length 9.92
= TOC to TOS 33.65

TOC to BOW	<u>44.11</u>
- TOC to GS	<u>(-0.33)</u>
BOW bgs	<u>44.44</u>
TOC to TOS	<u>33.65</u>
- TOC to GS	<u>(-0.33)</u>
TOS bgs	<u>33.98</u>
TOC to BOS	<u>43.57</u>
- TOC to GS	<u>(-0.33)</u>
BOS bgs	<u>43.90</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-12</u>	Date Installed <u>10/15/2017</u>
Project Name <u>Intrinsic Taxaco</u>	Logged By <u>SYE, FLG</u>
Project Number <u>31-1-11809-006</u>	Driller <u>Geotek, Lujan</u>

I. TOP SECTION (CASING)

Initial Pipe Length 5.00
 Cutoff Length 1.27
 Add-on Length -
Total Length 3.73

IV. WELL DATA

Pipe Type: PVC SS Other _____
 Diameter: 2" 4" Other _____
 Slot Size: 0.01 0.02 Other _____
 Joint Pin End: Up Down Type _____

II. MID SECTION (CASING)

Number of Blank Sections 3
 Length of Section(s):

<u>10.00</u>	
<u>10.00</u>	
<u>10.00</u>	

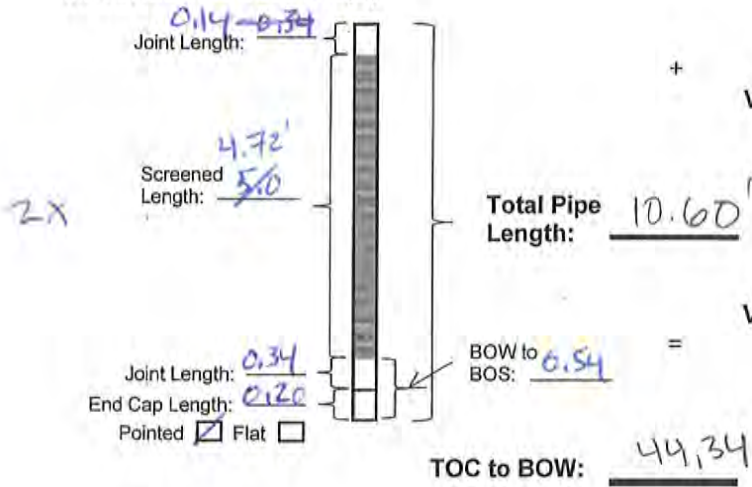
Sum of Lengths: 30.01'

V. BACKFILL

	Bottom	Top
CEM (No Pipe)	<u>0.49</u>	<u>0</u>
CEM_PB	<u>0.80</u>	<u>0.49</u>
*SLUF_PB/FIL_PB	<u>30.5</u>	<u>0.80</u>
BCH_PB	<u>30.5</u>	<u>32.55</u>
*SLUF_PB/FIL_PB	<u>39.27</u>	<u>34.55</u>
BGR_PB		<u>34.55</u>
*SLUF_PB/FIL_PB	<u>39.75</u>	<u>39.27</u>
*SLUF_PS/FIL_PS	<u>44.47</u>	<u>39.75</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB	<u>45.01</u>	<u>44.47</u>

Filter Pack Type or Gradation 10/20 coarse to silica

III. SCREENED SECTION(S)



VI. MONUMENTS

Stuckup Flushmount
 TOM to GS flush
 TOM to TOC _____
 ^TOC to GS -0.49'
 Lock type _____

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 1		
Permafrost 2		

- BCH = Bentonite Chips (gINT code)
- BGR = Bentonite Grout (gINT code)
- bgs = Below Ground Surface
- BOS = Bottom of Screen
- BOW = Bottom of Well
- CEM = Cement (gINT code)
- FIL = Sand Pack (gINT code)
- GS = Ground Surface
- SLUF = Natural Collapse/ Pea Gravel (gINT code)
- SS = Stainless Steel
- TOC = Top of Casing
- TOM = Top of Monument
- TOS = Top of Screen
- PB = Blank Pipe (gINT code)
- PS = Slotted Pipe (gINT code)
- * Circle filter-pack type
- ^ Flushmount = Negative Number
- Stickup = Positive Number

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.34'
 - BOW to BOS 0.54
= TOC to BOS 43.80'
 TOC to BOS 43.80'
 - Screened Length 9.92
= TOC to TOS 33.88'

TOC to BOW	<u>44.34</u>
- TOC to GS	<u>(-0.49)</u>
BOW bgs	<u>44.83</u>
TOC to TOS	<u>33.88</u>
- TOC to GS	<u>(-0.49)</u>
TOS bgs	<u>34.47</u>
TOC to BOS	<u>43.80</u>
- TOC to GS	<u>(-0.49)</u>
BOS bgs	<u>44.47</u>

MONITORING WELL CONSTRUCTION DETAILS

Monitoring Well No. <u>MW-13</u>	Date Installed <u>10/17/17</u>
Project Name <u>Interior Tuxaco</u>	Logged By <u>SYR</u>
Project Number <u>31-1-11809-009</u>	Driller <u>GeoTix</u>

I. TOP SECTION (CASING)

Initial Pipe Length 10.00'
 Cutoff Length 5.63'
 Add-on Length -
Total Length 4.37'

IV. WELL DATA

Pipe Type: PVC SS Other _____
 Diameter: 2" 4" Other _____
 Slot Size: 0.01 0.02 Other _____
 Joint Pin End: Up Down Type _____

II. MID SECTION (CASING)

Number of Blank Sections 3
 Length of Section(s):

<u>10.00</u>	
<u>10.00</u>	
<u>10.00</u>	

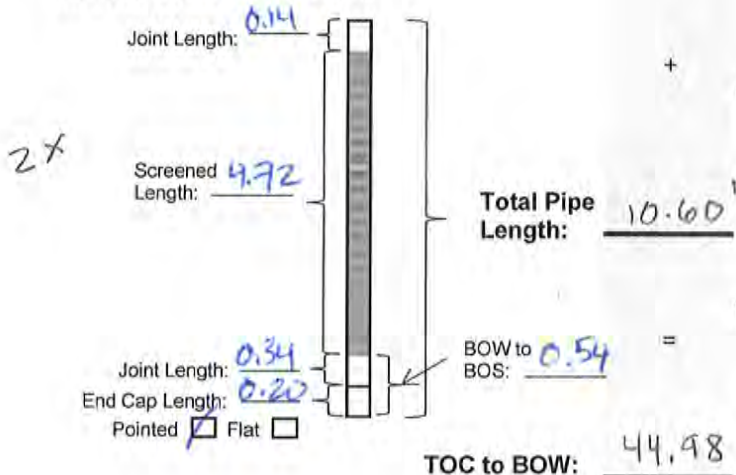
Sum of Lengths: 30.01

V. BACKFILL

	Depth Below GS	
	Bottom	Top
CEM (No Pipe)	<u>0.39</u>	<u>0</u>
CEM_PB	<u>0.60</u>	<u>0.39</u>
*SLUF_PB/FIL_PB	<u>30.0</u>	<u>0.60</u>
BCH_PB	<u>32.0</u>	<u>30.0</u>
*SLUF_PB/FIL_PB	<u>34.91</u>	<u>39.63</u>
BGR_PB		
*SLUF_PB/FIL_PB	<u>40.11</u>	<u>39.63</u>
*SLUF_PS/FIL_PS	<u>44.83</u>	<u>40.11</u>
*SLUF/FIL (No Pipe)		
*SLUF_PB/FIL_PB	<u>45.37</u>	<u>44.83</u>

Filter Pack Type or Gradation 10/20 Colorado Silica Sand

III. SCREENED SECTION(S)



VI. MONUMENTS

Stuckup Flushmount flush
 TOM to GS _____
 TOM to TOC _____
 ^TOC to GS -0.39'
 Lock type _____

VII. MOISTURE CONTENT

Depth to Water Below GS _____

	Frozen Soil Below GS	
	Bottom	Top
Seasonal 1		
Seasonal 2		
Permafrost 1		
Permafrost 2		

- BCH = Bentonite Chips (gINT code)
- BGR = Bentonite Grout (gINT code)
- bgs = Below Ground Surface
- BOS = Bottom of Screen
- BOW = Bottom of Well
- CEM = Cement (gINT code)
- FIL = Sand Pack (gINT code)
- GS = Ground Surface
- SLUF = Natural Collapse/ Pea Gravel (gINT code)
- SS = Stainless Steel
- TOC = Top of Casing
- TOM = Top of Monument
- TOS = Top of Screen
- PB = Blank Pipe (gINT code)
- PS = Slotted Pipe (gINT code)
- * Circle filter-pack type
- ^ Flushmount = Negative Number
- Stickup = Positive Number

VIII. CALCULATIONS BELOW GROUND SURFACE

TOC to BOW 44.98
 - BOW to BOS 0.54
= TOC to BOS 44.44
 TOC to BOS 44.44
 - Screened Length 9.92
= TOC to TOS 34.52

TOC to BOW	<u>44.98</u>
- TOC to GS	<u>(-0.39)</u>
BOW bgs	<u>45.37</u>
TOC to TOS	<u>34.52</u>
- TOC to GS	<u>(-0.39)</u>
TOS bgs	<u>34.91</u>
TOC to BOS	<u>44.44</u>
- TOC to GS	<u>(-0.39)</u>
BOS bgs	<u>44.83</u>

WELL DEVELOPMENT LOG

Owner-Client Intrinsic Texaco Well No. MW-9
 Location Delta Tkt., AK Project No. 31-1-11809-006
 Weather partly cloudy, 38° F Date 10/14/17
 Development Personnel SJR, FLG

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 44.62'
 Depth to Water **Before** Development (feet below top of casing): 39.73'
 Depth to Screen Top and Bottom (from Construction Log): Top: 35 Bottom: 45

Development Details

Feet of water in well 4.89 Time pumping started 1408
 Gallons per foot 0.17 Flow rate (gal/min) ~1.1
 Gallons in well 0.83 Flow-rate measurement method:
 Surge method automated 50 gallons (47 min.)⁻¹ = 1.1 gpm
 Pump used water Time pumping ended 1455
 Tubing used (ft) 50' Gallons Pumped 50 gallons
 Disposal: GAC drum

Depth to Water **After** Development (feet below top of casing): 39.66'
 Total Depth of Well **After** Development (feet below top of casing): 44.64'

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1408	Slightly Turbid; Screen		
1422	very slightly turbid		
1430	" "		
1435	clear		
1445	v. sl. turbid		
1450	clear		
1455	" "		

NOTES: moved purge block up and down through the screened interval.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6



WELL DEVELOPMENT LOG

Owner-Client Interior Texaco Well No. MW-10
 Location Delta Jet, AK Project No. 31-1-13809-006
 Weather Cloudy, 20°F Date 10/16/2017
 Development Personnel SYR, FLG

Diameter and Type of Casing: 2" PVC
 Total Depth of Well Before Development (feet below top of casing): 38.77'
 Depth to Water Before Development (feet below top of casing): 44.24'
 Depth to Screen Top and Bottom (from Construction Log): Top: ~35 Bottom: ~45

Development Details

Feet of water in well 5.47 Time pumping started 1543
 Gallons per foot 0.17 Flow rate (gal/min) (70 gal) / (71 min.) = 1.01 gpm.
 Gallons in well 0.93 Flow-rate measurement method:
(Total Volume Purged) / (elapsed time)
 Surge method Automated Time pumping ended 1654
 Pump used Water Gallons Pumped ~70
 Tubing used (ft) ~50' Disposal: 64C drum

Depth to Water After Development (feet below top of casing): 39.96-42 38.78'
 Total Depth of Well After Development (feet below top of casing): 43.96 44.24

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1544	Very turbid	1648	Very slightly turbid
1546	turbid	1650	clear
1550	slightly turbid	1652	clear
1604	Cloudy		
1617	slightly cloudy		
1620	clear		
1632	slightly cloudy		
1632	slightly cloudy		
1640	clear		
1642	Slightly turbid		

Moved up
2.5' →

 Move up
1.0' →

NOTES: We moved the surge block up and down throughout the screened interval.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

(SYR)

WELL DEVELOPMENT LOG

Owner-Client Interio-Texasco Well No. MW-11
 Location Delta Jet. J AK Project No. 31-1-11809-006
 Weather cloudy, 20's F Date 10/16/18
 Development Personnel SJR, FLG

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 43.98
 Depth to Water **Before** Development (feet below top of casing): 39.90
 Depth to Screen Top and Bottom (from Construction Log): Top: ~40 Bottom: ~45

Development Details

Feet of water in well 4.08 Time pumping started 1335
 Gallons per foot 0.17 Flow rate (gal/min) (55 gallons) (60 min) = 0.92 gpm
 Gallons in well 0.69 Flow-rate measurement method: (Total Gallons pumped) / (elapsed time)
 Surge method Automated Time pumping ended 1437
 Pump used watera Gallons Pumped 55
 Tubing used (ft) 50 Disposal: 6 Hz down

Depth to Water **After** Development (feet below top of casing): 39.92
 Total Depth of Well **After** Development (feet below top of casing): 43.96

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1337	very slightly turbid	1420	clear
1340	clear	1425	" "
1347	" "	1430	" "
1352	slightly turbid	1435	" "
1355	clear	1437	" "
1359	" "		
1401	" "		
1407	very slightly turbid		
1412	clear		
1415	" "		

NOTES: We moved the surge block up and down through several intervals.

WELL CASING VOLUMES

Diameter of Well (ID-inches)	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

WELL DEVELOPMENT LOG

Owner-Client Interior Texas
 Location Delta Alaska
 Weather 25°
 Development Personnel FLG/SYR

Well No. MW-12
 Project No 31-1-11809-006
 Date 10/17/17

Diameter and Type of Casing: 2" pvc
 Total Depth of Well **Before** Development (feet below top of casing): 43.89
 Depth to Water **Before** Development (feet below top of casing): 39.44
 Depth to Screen Top and Bottom (from Construction Log): Top: 35 Bottom: 45

Development Details

Feet of water in well 4.45' Time pumping started 1038
 Gallons per foot 0.17 Flow rate (gal/min) (90gal)/(42min) = 0.98 gpm
 Gallons in well 0.75 Flow-rate measurement method: (Volume Pumped)/(elapsed time)
 Surge method Water w/ surge block Time pumping ended 1200
 Pump used Water Gallons Pumped ~90 gallons
 Tubing used (ft) 50' Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 39.46
 Total Depth of Well **After** Development (feet below top of casing): 43.89

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1038	Turbid	1200	Clear
1033	" "		
1038	Slightly turbid		
1043	" "		
1056	Cloudy		
1135	Cloudy		
1140	Slightly turbid		
1145	" "		
1150	" "		
1155	Clear		

NOTES: We moved the surge block up and down, periodically, throughout the inundated screened interval.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

(SYR)

WELL DEVELOPMENT LOG

Owner-Client Interior Texaco
 Location Delta Jct, AK
 Weather snowing, 20° F
 Development Personnel FLK, SYR

Well No. MW-13
 Project No. 317-11809-006
 Date 10/18/2017

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 44.46'
 Depth to Water **Before** Development (feet below top of casing): 39.87'
 Depth to Screen Top and Bottom (from Construction Log): Top: ~35 Bottom: ~45

Development Details

Feet of water in well 4.59
 Gallons per foot 0.17
 Gallons in well 0.78
 Surge method automated
 Pump used Water
 Tubing used (ft) ~60'

Time pumping started 1005
 Flow rate (gal/min) (140 gal) / (138 min) = 1.01 gpm
 Flow-rate measurement method: (Total volume Pumped) / (total elapsed time)
 Time pumping ended 1223
 Gallons Pumped ~140
 Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 39.73'
 Total Depth of Well **After** Development (feet below top of casing): 44.35'

Observations

Time	Water Clarity (Visual)
1005	very turbid
1010	" "
1015	" "
1020	" "
1030	turbid
1040	" "
1050	" "
1100	slightly turbid
1110	" "
1120	" "

Time	Water Clarity (Visual)
1130	slightly turbid
1140	" "
1150	" "
1200	" "
1210	clear
1220	" "
1223	clear

NOTES: we moved the surge block up and started down throughout the automated screened interval.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

DRINKING WATER WELL SAMPLING LOG

31-1-11809-006

Location Delta Sch., AK; Kelly's Hotel
 Owner/Occupant Susie, coordinated directly
 Site Manager(s) with her.
 Telephone 907-895-4667

Project Number 31-1-11729
 Project Name DOT Class V IW Closure IT
 Date 10/17/17
 Time 1515-1600
 Sampling Personnel SKL, FLG

Sample No. Kelly's DW
 Duplicate —

Time 1530
 Time —

Pumping Start Time 1515
 Pumping End Time 1530
 Tubing (ft.) used hose.

~~Diameter and Type of Casing _____
 Total Depth of Well (ft.) _____
 Depth to Water (ft.) _____
 Feet of Water in Well _____
 Gallons per foot _____
 Gallons in Well _____
 Purge Water Volume (gal.) _____~~

Boring Log/Well Depth Details _____

Laboratory SGS

Analysis	Sample Containers	Preservatives
<input type="checkbox"/> VOCs	3 x 40-mL VOA	HCl
<input type="checkbox"/> Total Coliform	1 x 120-mL filled to 100-mL	Na2S2O3
<input checked="" type="checkbox"/> BTEX, GRO, DRO		

Notes: We collected the sample from a spigot inside of the
water-line shed along the south side of the building.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1¼	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner-Client Interior Tuxaco Project No. 31-1-11809-006
 Location Delta Junction, AK Page 1
 Weather light rain, 30-40's F Date 10/13/17
 Sampling Personnel SYR, FCG Well No. MW-1

Sample No. MW-1 Time - Diameter & Type of Casing 2" PVC
 Duplicate - Time - Time Started 1500
 Time Completed 1600

Measuring Point [MP] TOL MP Elevation -
 Height of MP [Above] [Below] Land Surface 0.31

Water Level Elevation _____ Total Depth of Well Below MP 29.08
 Depth to Water Below MP 28.68
 Purging Method Bailed (SR) Feet of Water in Well 0.40
 Pumping Start - Gallons per foot 0.17
 Pumping End - Gallons in Well 0.07
 Gallons Pumped -

Packer set at - feet below MP
 Ice at - feet below MP Purge Water 6 mL down

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
NOT SAMPLED						

Sampling Method Bailer - well sampled dry after 280mL sample jar was filled.
 Notes used bailer to collect groundwater sample
1st recharge several times to collect sample

Lab SGS **HACH TESTS (mg/L)**
 Sampling Containers Trip Blank
 Lab Supplied _____
 S&W Supplied _____
 Dissolved Oxygen _____
 Ferrous Iron _____
 Total Iron _____
 Sulfate _____
 Nitrate _____
 Sulfide _____
 Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____
 Tubing 1/4"

NOT SAMPLED

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

SRP

MONITORING WELL SAMPLING LOG

Owner-Client Inkster Texas Project No. 1809-006
 Location Delta Jet, AR Page 1
 Weather Cloudy, 30's Date 10/13/17
 Sampling Personnel SVP, FLG Well No. MW-2

Sample No. Time Diameter & Type of Casing 2" PVC
 Duplicate Time Time Started 1645
 Time Completed 1700

Measuring Point [MP] 70' - 0.34' TOC MP Elevation
 Height of MP [Above] [Below] Land Surface 0.34'
 Water Level Elevation Total Depth of Well Below MP 33.76

Purging Method Depth to Water Below MP 33.76
 Pumping Start Feet of Water in Well 0
 Pumping End Gallons per foot 0.17
 Gallons in Well 0
 Gallons Pumped none

Packer set at feet below MP
 Ice at feet below MP Purge Water N/A

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
NOT SAMPLED						

Sampling Method Not Sampled
 Notes Not sufficient water in well to collect sample; not sampled.

Lab N/A
Sampling Containers
 Trip Blank
 Lab Supplied
 S&W Supplied

Analyses
Not Sampled

HACH TESTS (mg/L)

Dissolved Oxygen _____
 Ferrous Iron _____
 Total Iron _____
 Sulfate _____
 Nitrate _____
 Sulfide _____
 Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____

Tubing 0

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6



MONITORING WELL SAMPLING LOG

Owner-Client Interior TEXACO Project No. 31-1-11809-006
 Location Delta Jet, Alaska Page 1
 Weather light rain, 30° F Date 10/13/17
 Sampling Personnel SYR Well No. mw-8

Sample No. not sampled Time - Diameter & Type of Casing 2" PVC
 Duplicate - Time - Time Started 1330
 Time Completed 1400

Measuring Point [MP] TUC MP Elevation -
 Height of MP [Above] (Below) Land Surface 0.33
 Water Level Elevation _____ Total Depth of Well Below MP 33.98'
 Depth to Water Below MP 33.84
 Purging Method whale pump Feet of Water in Well 0.14
 Pumping Start N/A Gallons per foot 0.17
 Pumping End N/A Gallons in Well _____
 Gallons Pumped 0

Packer set at - feet below MP
 Ice at - feet below MP Purge Water GAC Drum

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
NOT SAMPLED						

Sampling Method whale pump
 Notes Not sufficient water in well to sample.

HACH TESTS (mg/L)

Lab <u>N/A</u> Sampling Containers <u>Trip Blank</u> Lab Supplied _____ S&W Supplied _____ Analyses <u>GRO</u> <u>BTEX</u> <u>DRO</u>	Dissolved Oxygen _____ Ferrous Iron _____ Total Iron _____ Sulfate _____ Nitrate _____ Sulfide _____ Manganese (filtered) _____ Total Manganese _____ Alkalinity _____ Tubing <u>D</u>
--	---

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

SYR

MONITORING WELL SAMPLING LOG

Owner-Client Interior Terrace Project No. 31-1-11809-006
 Location 21th St., ALK Page 1
 Weather Snowing, 20°F Date 10/18/17
 Sampling Personnel SJR, PLG Well No. MW-9
 Diameter & Type of Casing 2" PVC
 Sample No. MW-9 Time 1320 Time Started 1200 1300
 Duplicate MW-109 Time 1330 Time Completed 1300 1900
 Measuring Point [MP] TL2 MP Elevation - SR
 Height of MP [Above] (Below) Land Surface 0.39
 Water Level Elevation - Total Depth of Well Below MP 44.64
 Depth to Water Below MP 39.66
 Feet of Water in Well 4.98
 Purging Method Whale pump Gallons per foot 0.17
 Pumping Start 1300 Gallons in Well 0.85
 Pumping End 1314 Gallons Pumped ~8
 Packer set at 38.5' SR feet below MP
 Ice at - feet below MP Purge Water 6 GAL drum

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
1310	6.7	213.3	11.38 SR	7.69	72.0	" "
1313	6.9	215.4	11.41 SR	7.74	69.7	" "
1316	7.0	215.6	11.54	7.74	70.0	" "
1319	7.0	215.7	11.54	7.73	70.6	

Sampling Method Pump; low flow
 Notes none

Lab SGS
 Sampling Containers 20
 Trip Blank 3
 Lab Supplied -
 S&W Supplied -
 Analyses GRO
BTEX
DEO
PEO
PAH

HACH TESTS (mg/L)

Dissolved Oxygen _____
 Ferrous Iron _____
 Total Iron _____
 Sulfate _____
 Nitrate _____
 Sulfide _____
 Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____

Tubing 50'

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner-Client Interior Texaco Project No. 31-1-11809-006
 Location Delta Jct., AK Page 181
 Weather Cloudy, 20's F Date 10/16/17
 Sampling Personnel SXP, FLB Well No. mw-10
 Diameter & Type of Casing 2" PVC
 Sample No. mw-10 Time 1720 Time Started 1711
 Duplicate - Time - Time Completed 1740
 Measuring Point [MP] TOC MP Elevation -
 Height of MP [Above] [Below] Land Surface 0.39'
 Water Level Elevation - Total Depth of Well Below MP 44.24
 Depth to Water Below MP 38.78
 Purging Method Water Pump Feet of Water in Well 5.49
 Pumping Start 1712 Gallons per foot 0.17
 Pumping End 1720 Gallons in Well 0.93
 Gallons Pumped ~4
 Packer set at ~42 feet below MP
 Ice at - feet below MP Purge Water 6 GAL drum

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
1713	7.9	222.3	10.71	7.61	88.7	clear
1716	7.8	221.7	10.69	7.61	88.7	" "
1719	7.8	221.4	10.61	7.69	87.7	" "

Sampling Method Water Pump
 Notes We developed the well immediately prior to sample collection

Lab SGS
Sampling Containers

8
-

3
-

 Lab Supplied
 S&W Supplied
Analyses
BTEX
GRO
DRU

HACH TESTS (mg/L)
 Dissolved Oxygen _____
 Ferrous Iron _____
 Total Iron _____
 Sulfate _____
 Nitrate _____
 Sulfide _____
 Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____
 Tubing 50'

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner-Client Interior Texaco Project No. 1809-006
 Location Delta Jet, AK Page 1
 Weather cloudy, 20°F Date 10/16/2007
 Sampling Personnel SYR, FLG Well No. MW-11
 Diameter & Type of Casing 2" PVC
 Sample No. MW-11 Time 1515 Time Started 1500
 Duplicate — Time — Time Completed 1530
 Measuring Point [MP] TOC MP Elevation —
 Height of MP [Above] [Below] Land Surface 0.33
 Water Level Elevation — Total Depth of Well Below MP 43.96
 Depth to Water Below MP 39.92
 Purging Method Water Pump Feet of Water in Well 4.04
 Pumping Start just developed, 1503 Gallons per foot 0.17
 Pumping End 1515 Gallons in Well 0.69
 Gallons Pumped ~6
 Packer set at 35 feet below MP
 Ice at 24 feet below MP
 Purge Water O₂ see notes

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
1505	7.9	222.5	10.80	7.56	183.6	clear
1508	7.8	222.2	9.95	7.60	168.2	" "
1511	7.8	221.9	9.21	7.60	159.6	" "
1514	7.7	221.9	8.91	7.61	154.0	" "

Sampling Method Water Pump
 Notes well was developed immediately prior to sampling groundwater

Lab <u>SGS</u> Sampling Containers <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><u>8</u></td> <td style="width: 50%; text-align: center;"><u>3</u></td> </tr> <tr> <td style="text-align: center;"><u>—</u></td> <td style="text-align: center;"><u>—</u></td> </tr> </table>	<u>8</u>	<u>3</u>	<u>—</u>	<u>—</u>	Trip Blank Lab Supplied S&W Supplied	HACH TESTS (mg/L) Dissolved Oxygen _____ Ferrous Iron _____ Total Iron _____ Sulfate _____ Nitrate _____ Sulfide _____ Manganese (filtered) _____ Total Manganese _____ Alkalinity _____ Tubing <u>—</u>
<u>8</u>	<u>3</u>					
<u>—</u>	<u>—</u>					
Analyses <u>GP20</u> <u>BTEX</u> <u>DP20</u>						

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner-Client Interior Texas Project No. 1809-206
 Location Delta Twp., AK Page 1
 Weather Partly Cloudy, 20s F Date 10/17/17
 Sampling Personnel SJR, FLB Well No. MW-12

Sample No. MW-12 Diameter & Type of Casing 2" PVC
 Time 1246 Time Started 1233
 Duplicate - Time - Time Completed 1315

Measuring Point [MP] TUC MP Elevation -
 Height of MP [Above] ([Below] Land Surface 0.49

Water Level Elevation - Total Depth of Well Below MP 43.89
 Depth to Water Below MP 39.46

Purging Method Water Feet of Water in Well 4.43
 Pumping Start 1028 Gallons per foot 0.17
 Pumping End 1246 Gallons in Well 0.75
 Gallons Pumped ~7

Packer set at ~41' feet below MP
 Ice at - feet below MP Purge Water 6AC drum.

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
12:33	7.1	218.1	10.30	7.74	75.7	Clear
12:36	7.5	219.9	9.54	7.76	76.7	Clear
12:39	7.6	220.8	9.93	7.83	74.1	Clear
12:42	7.5	220.6	9.94	7.84	74.8	Clear
12:45	7.5	220.1	9.93	7.84	74.0	Clear

1246 Sample Time
 Sampling Method Water
 Notes We developed the well immediately prior to sample collection

HACH TESTS (mg/L)
 Lab SLS Dissolved Oxygen _____
 Sampling Containers 3 Trip Blank 3 Ferrous Iron _____
 Lab Supplied _____ Total Iron _____
 S&W Supplied _____ Sulfate _____
 Analyses GRU Nitrate _____
BTEX Sulfide _____
DRU Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____
 Tubing 50'

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6



MONITORING WELL SAMPLING LOG

Owner-Client Interior, Texas Project No. 1809-006
 Location Delta Jet, AK Page 1
 Weather Snowing, 20's F Date 10/18/17
 Sampling Personnel Syr, Fleg Well No. MW-13
 Diameter & Type of Casing 2" PVC
 Sample No. MW-13 Time 1250 Time Started 1200
 Duplicate - Time - Time Completed 1315
 Measuring Point [MP] Top MP Elevation -
 Height of MP [Above] [Below] Land Surface 0.39
 Water Level Elevation - Total Depth of Well Below MP 44.35
 Depth to Water Below MP 39.73
 Purging Method low flow, water Feet of Water in Well 46.2
 Pumping Start 1238 Gallons per foot 0.17
 Pumping End 1250 Gallons in Well 0.79
 Gallons Pumped ~8
 Packer set at 41 feet below MP
 Ice at - feet below MP Purge Water 64C drum

FIELD PARAMETERS

Time	Temp [°C]	Conductivity [µmhos per cm]	Dissolved Oxygen [mg per L]	pH	Eh [ORP] [mV]	Water Clarity [visual]
1240	7.6	218.6	10.43	7.81	69.3	sl. turbid
1243	7.7	218.7	10.38	7.80	69.7	clear
1246	7.7	218.9	10.40	7.78	70.3	" "
1249	7.7	219.2	10.46	7.76	71.8	" "

Sampling Method low flow, water
 Notes well developed immediately prior to sample collection

Lab _____
 Sampling Containers 8 Trip Blank 3 Lab Supplied _____
 _____ S&W Supplied _____

Analyses
PTX
GRV
DRV
R2W

HACH TESTS (mg/L)
 Dissolved Oxygen _____
 Ferrous Iron _____
 Total Iron _____
 Sulfate _____
 Nitrate _____
 Sulfide _____
 Manganese (filtered) _____
 Total Manganese _____
 Alkalinity _____

Tubing 50'

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

DAILY SAFETY MEETING LOG

JOB NAME: Interior Texaco JOB NO: 3114809 - 006 BORING NO: B1

LOCATION: Delta AK Buffalo Center Bore DATE: 10/12/17 TIME: 8:30

SUBCONTRACTOR: Geotech Alaska S&W REP: FLG/SJR S&W PM: VEW

WORK DESCRIPTION: Soil Borings & Monitor Wells

- CHECK APPLICABLE HAZARDS: Heavy Equipment Vehicles Overhead Tools Temperature Lifting (Use Mechanical Means Instead), Site Housekeeping (Clear Walkways to Prevent Slips, Trips, Falls), Awkward Work Area Public Security Plants Animals Noise Vibration Dust Radiation UV exposure Repetitive Motion Suspected Contamination Chemical Exposure Flammable/Explosive

OTHER HAZARDS: _____

EQUIPMENT ON SITE: Drill Rig

- DOCUMENTATION: Present
- SSHSP On Site?
 - Hospital Map On Site?
 - Fall Protection Plan On Site?
 - Respiratory Protection Plan On Site?
 - Confined Space Entry Plan On Site?
 - Traffic Control Plan?
 - Other Plan?
 - Current Fit Test?

- PPE: Present
- Boots - Safety Toe / Other
 - Safety Glasses
 - Vest - Class II / Class III
 - Hard Hat
 - Ear - Plugs / Muffs / Both
 - Gloves - Type: Leather, Nitrile
 - Face Shield
 - Respirator

Cards/Certs Required? List Below

Other PPE? List Below

Hazards & Controls Discussed?

Need to Update SSHSP?

My signature below confirms that the above hazards, controls and plans have been discussed and that I understand them.

PRINT NAME	SIGNATURE	COMPANY	HAS ALL CARDS	PPE On?
<u>Fawn Glasbren</u>	<u>[Signature]</u>	<u>SEW</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>James Beckner</u>	<u>[Signature]</u>	<u>GTA</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Bobby Frost</u>	<u>[Signature]</u>	<u>GTA</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<u>Seth Robinson</u>	<u>[Signature]</u>	<u>SEW</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

DAILY SAFETY MEETING LOG

JOB NAME: Interior Texaco JOB NO: 31-1-11809-006 BORING NO: B3

LOCATION: Delta Alaska DATE: 10 / 13 / 17 TIME: 8:00

SUBCONTRACTOR: Geotech Alaska S&W REP: FLG/SVR S&W PM: VEW

WORK DESCRIPTION: Soil borings

- CHECK APPLICABLE HAZARDS: Heavy Equipment , Vehicles , Overhead , Tools , Temperature , Lifting (Use Mechanical Means Instead), Site Housekeeping (Clear Walkways to Prevent Slips, Trips, Falls), Awkward Work Area , Public , Security , Plants , Animals , Noise , Vibration , Dust , Radiation , UV exposure , Repetitive Motion , Suspected Contamination , Chemical Exposure , Flammable/Explosive

OTHER HAZARDS: _____

EQUIPMENT ON SITE: Drill Rig

- DOCUMENTATION: Present
- SSHSP On Site?
 - Hospital Map On Site?
 - Fall Protection Plan On Site?
 - Respiratory Protection Plan On Site?
 - Confined Space Entry Plan On Site?
 - Traffic Control Plan?
 - Other Plan?
 - Current Fit Test?

- PPE: Present
- Boots - Safety Toe / Other
 - Safety Glasses
 - Vest - Class II / Class III
 - Hard Hat
 - Ear - Plugs / Muffs / Both
 - Gloves - Type: leather, nitrile
 - Face Shield
 - Respirator

Cards/Certs Required? *List Below*

Other PPE? *List Below*

Hazards & Controls Discussed?

Need to Update SSHSP?

My signature below confirms that the above hazards, controls and plans have been discussed and that I understand them.

PRINT NAME	SIGNATURE	COMPANY	HAS ALL CARDS	PPE On?
James Beckner	<i>[Signature]</i>	GTA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ROBBY FROST	<i>[Signature]</i>	GTA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seth Robinson	<i>[Signature]</i>	SLW	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fawn Glassburn	<i>[Signature]</i>	S&W	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

[Handwritten mark]

DAILY SAFETY MEETING LOG

JOB NAME: Interior Texaco JOB NO: 3111809-006 BORING NO: B4

LOCATION: Delta Alaska

DATE: 10/14/17 TIME: 7:00

SUBCONTRACTOR: Geotek Alaska

S&W REP: FLG/SWR S&W PM: VIEW

WORK DESCRIPTION: Soil Borings & Monitor Wells

CHECK APPLICABLE HAZARDS: Heavy Equipment , Vehicles , Overhead , Tools , Temperature , Lifting (Use Mechanical Means Instead), Site Housekeeping (Clear Walkways to Prevent Slips, Trips, Falls), Awkward Work Area , Public , Security , Plants , Animals , Noise , Vibration , Dust , Radiation , UV exposure , Repetitive Motion , Suspected Contamination , Chemical Exposure , Flammable/Explosive

OTHER HAZARDS: Exhaust, Darkness

EQUIPMENT ON SITE: Drill Rig

DOCUMENTATION: Present

SSHSP On Site?

Hospital Map On Site?

Fall Protection Plan On Site?

Respiratory Protection Plan On Site?

Confined Space Entry Plan On Site?

Traffic Control Plan?

Other Plan?

Current Fit Test?

PPE: Present

Boots - Safety Toe / Other

Safety Glasses

Vest - Class II / Class III

Hard Hat

Ear - Plugs / Muffs / Both

Gloves - Type: Leather, Nitrile

Face Shield

Respirator

Cards/Certs Required? *List Below*

Other PPE? *List Below*

Hazards & Controls Discussed?

Need to Update SSHSP?

My signature below confirms that the above hazards, controls and plans have been discussed and that I understand them.

PRINT NAME	SIGNATURE	COMPANY	HAS ALL CARDS	PPE On?
James Beckner	<i>[Signature]</i>	GTA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ROBBY ERNST	<i>[Signature]</i>	GTA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seth Robinson	<i>[Signature]</i>	S&W	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fawn Glassburn	<i>[Signature]</i>	S&W	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

Daily Safety Meeting

10/15/17

7am

Interior Texaco

~~Awkward~~ Awkward work positions.

Hearing protection

Name

Print

Logan Hermanns

Erik Harding

Fawn Gibesburn

Seth Robinson

Signature

Logan Hermanns

Erik Harding

Fawn Gibesburn

Seth Robinson

(512)

Daily Safety Meeting

Interior Texaco

10/16/17

7am

Today's Topics

Ground conditions, ice, uneven surfaces

Rocks are frost covered & slippery

Hydration in the cold

Long working hours

Name

Print

Logan Hermanns

Erik Hardt

Seth Robinson

Fawn Glassburn

Signature

Logan Hermanns

Erik Hardt

Seth Robinson

Fawn Glassburn

DAILY MEETING LOG

Project: Interior Texaco

Date: 10/17/17

S&W Project #: 31-11809-006

Time: 7am

Weather: 28°

Job Location: Delta Alaska

Job Description: Soil Borings

HAZARD IDENTIFICATION/DOCUMENTATION			
Has Safety Plan been reviewed and acknowledged by field personnel?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Has Work Plan/scope been reviewed by field personnel?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Have changed conditions been addressed and discussed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Does the Safety Plan need to be updated?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Is the Safety Plan on site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Are directions to nearest medical facility on site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Is Fall Protection Plan on site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Is Respiratory Protection Plan on site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Is Confined Entry Plan on site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Is Traffic Control Plan on site?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Other Plans:			

PPE			
Safety Toe Boots	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Safety Glasses	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
High Visibility Vest/Equivalent	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Hard Hat	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Gloves	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Face Shield	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Respirator	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Other PPE:	_____		

Selected Task/Topic*	Potential Hazards	Safe Job Practices/Mitigation
<u>Drilling & logging pinch points</u>	<u>cold, dark, public</u>	<u>come off a log, dress warm lighting</u>
<u>Using hands</u>	<u>pinch points</u>	<u>be vigilant, wear gloves</u>

*For a full list of tasks and associated hazards anticipated for this project refer to the site specific safety plan.

Equipment on site: Geoprobe 8000 DI, general tools.

My signature below confirms that the site specific safety plan, project specific hazards, and mitigation have been discussed and that I understand them.

Print Name	Signature	Badge	Date
<u>Erik Hardy</u>	<u>[Signature]</u>		<u>10/17/17</u>
<u>Logan Hermillos</u>	<u>[Signature]</u>		<u>10/17/17</u>
<u>Fawn Glassburn</u>	<u>[Signature]</u>		<u>10/17/17</u>
<u>Sean Robinson</u>	<u>[Signature]</u>		<u>10/17/17</u>

SJR

SUB-SLAB SOIL-GAS SAMPLING LOG

Owner/Occupant _____

Location Buffalo Service Center

Delta Junction, AK

Weather Cloudy, ~20°F

Project number 1809-008

Project name Interior Texaco

Date and time 11/02/17 @ 0900

Sampling personnel Sheila

Sample No. SS-01

Time (start) 0950 Time (end) 1028

Duplicate —

Time (start) — Time (end) —

Soil-gas port type Teflon

Installation depth 0.5 feet bgs

Date installed 11/01/17

Time installed 1410

Canister ID 620784

Canister volume (L) 6

Laboratory eurofins Air-Toxics

Analysis EPA TO-15

Initial canister vacuum (in. Hg) -30

Final canister vacuum (in. Hg) -8

Notes: Sample Port Location:
Center of the service stations
garage/shop

Leak Detection Tests: Pass / Fail

Shut-in test:

Vacuum applied to sample train -26 in. Hg

Drop in vacuum after one minute <0.5 in. Hg

Tracer test:

Helium applied at probe interface 60,000 ppm

Probe and sampling line purge rate 200 mL/min.

Sample train length 3 ft

Sample train volume 12.67 mL

Time	Helium (ppm)
<u>09:48:00</u>	<u>0</u>
<u>09:48:05</u>	<u>0</u>
<u>09:48:10</u>	<u>0</u>
<u>09:48:15</u>	<u>0</u>
<u>09:48:20</u>	<u>0</u>
<u>09:48:25</u>	<u>0</u>

SUB-SLAB SOIL-GAS SAMPLING LOG

Owner/Occupant _____

Location Buffalo Service Center

Weather Cloudy, ~ 20°F

Sample No. SS-03

Duplicate —

Soil-gas port type Teflon

Installation depth 0.66 feet bgs

Canister ID 00 00 0160 1

Canister volume (L) 6

Initial canister vacuum (in. Hg) -30

Final canister vacuum (in. Hg) -8

Leak Detection Tests: Pass / Fail

Shut-in test:

Vacuum applied to sample train -28 in. Hg

Drop in vacuum after one minute <0.5 in. Hg

Tracer test:

Helium applied at probe interface 80,000 ppm

Probe and sampling line purge rate 200 mL/min.

Sample train length 3 ft

Sample train volume 12.67 mL

Project number 1809-008

Project name Interior Texaco

Date and time 11/02/17 @

Sampling personnel Sheila

Time (start) 1300 Time (end) 1337

Time (start) — Time (end) —

Date installed 11/01/17

Time installed 1530

Laboratory eurofins Air Toxics

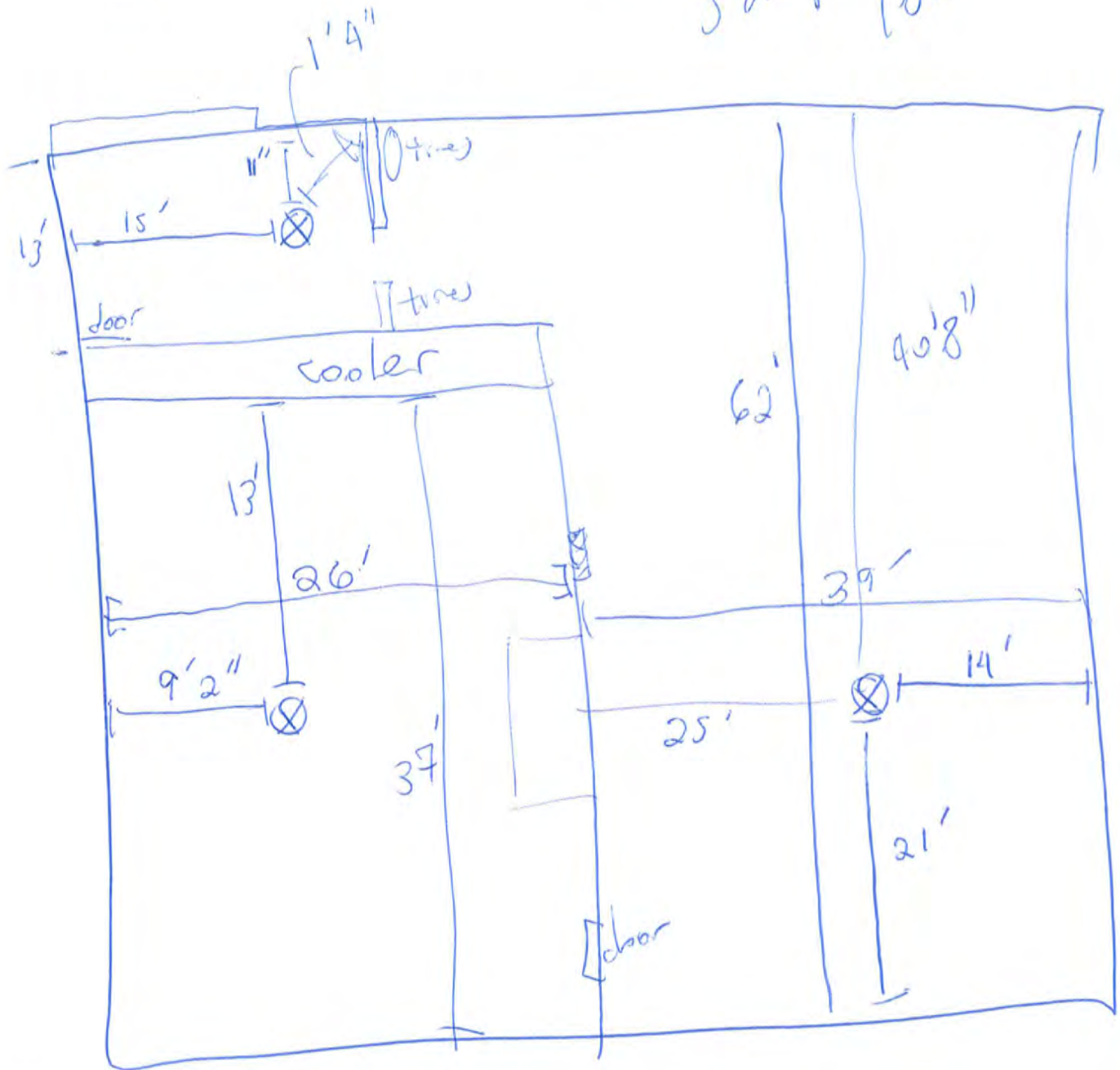
Analysis EPA TO-15

Notes: Sample Port Location:
Near westside of gas station.

Time	Helium (ppm)
12:58:00	0
12:58:05	0
12:58:10	0
12:58:15	0
12:58:20	0
12:58:25	0

Swing Ties

Sub slab sample locations



$$\begin{aligned}
 23.23 \times 3 &= 69.69 \\
 \times 5 &= 116.15 \\
 \Rightarrow 30 \text{ seconds} &= 100 \text{ mL}
 \end{aligned}$$



INDOOR-AIR SAMPLING FORM

Address _____ Project Number 1809-008
 Owner/Occupant _____ Project Name Interior Texaco
 Mailing address _____ Date 11/01/17
 Telephone _____ Time 1240
 Relative Humidity _____ Geo/Eng SMH
 Barometric Pressure _____

Sample Location South east corner of shop. Five feet off ground surface

Sample Number IA-01 Time 11/01/17 - 11/02/17
 Duplicate _____ Time 1245 - 1300
 Canister ID B735M Time _____
 Flow Controller ID N/A
 Purge Rate (passive sampler) Lab eurofin AirToxics
 Analysis TO-15

Initial Vacuum _____
 Final Pressure _____
 Desired Flow Rate _____
 Actual Flow Rate _____

Radiello 130 passive samples

Notes: Temperature near sampler: 60°F (11/01/17 @ 1554)

INDOOR-AIR SAMPLING FORM

Address _____ Project Number 1809-008
Owner/Occupant _____ Project Name Interior Texaco
Mailing address _____ Date 11/01/17

Telephone _____ Time 1250
Relative Humidity _____ Geo/Eng SMH
Barometric Pressure _____

Sample Location Northeast corner of shop. Five feet
off ground surface

Sample Number IA-02 Time 11/01/17 - 11/02/17
Duplicate — Time 1254-1301
Canister ID B736M Time _____
Flow Controller ID N/A
Purge Rate (passive sampler) Lab eurofins AirToxics
Analysis TO-15

Initial Vacuum _____
Final Pressure _____
Desired Flow Rate _____
Actual Flow Rate _____
Radiello 130 passive samples

Notes: Temperature near sampler is 65°F (11/01/17 at 1555)
65

INDOOR-AIR SAMPLING FORM

Address _____ Project Number 1809-008
 Owner/Occupant _____ Project Name Interior Texaco
 Mailing address _____ Date 11/01/17
 _____ Time 1255
 Telephone _____ Geo/Eng SMH
 Relative Humidity _____ Barometric Pressure _____

Sample Location Southeast corner of gas station
Four feet off ground surface

Sample Number IA-03 Time 11/01/17 - 11/02/17
 Duplicate — Time 1257 - 1306
 Canister ID B737M Time _____
 Flow Controller ID N/A
 Purge Rate (passive sampler) Lab eurofins AirToxics
 Analysis TO-15

Initial Vacuum _____
 Final Pressure _____
 Desired Flow Rate _____
 Actual Flow Rate _____

Radiello 130 passive samples

Notes: Temperature near sampler: 65°F (11/01/17 @ 1556)
67

INDOOR-AIR SAMPLING FORM

Address _____ Project Number 1809-008
 Owner/Occupant _____ Project Name Interior Texaco
 Mailing address _____ Date 11/01/17
 _____ Time 1257
 Telephone _____ Geo/Eng SMH
 Relative Humidity _____ Barometric Pressure _____

Sample Location Westside of gas station, behind
checkout counter. Six feet off
ground surface.

Sample Number IA-04 Time 11/01/17 - 11/02/17
 Duplicate — Time 1258 - 1310
 Canister ID B738M Time —
 Flow Controller ID N/A
 Purge Rate (passive sampler) Lab eurofins AirToxics
 Analysis TO-15

Initial Vacuum _____
 Final Pressure _____
 Desired Flow Rate _____
 Actual Flow Rate _____
Radiello 130 passive samples

Notes: Temperature near sampler: 71°F (11/01/17 @ 1557)
70.5°F

INDOOR-AIR SAMPLING FORM

Address _____ Project Number 1809-008
Owner/Occupant _____ Project Name Interior Texaco
Mailing address _____ Date 11/01/17

Telephone _____ Time 1259
Relative Humidity _____ Geo/Eng SMH
Barometric Pressure _____

Sample Location Northeast corner of gas station. Five feet off ground surface

Sample Number IA-05 Time 11/01/17 - 11/02/17
Duplicate — Time 1300 - 1313
Canister ID B739M Time _____
Flow Controller ID N/A
Purge Rate (passive sampler) Lab eurofins Air Toxics
Analysis TO-15

Initial Vacuum _____
Final Pressure _____
Desired Flow Rate _____
Actual Flow Rate _____
Radello 130 passive samples

Notes: Temperature near sampler: 70°F (11/01/17 @ 1600)
69

APPENDIX C
SOIL BORING LOGS

LOG OF GEOPROBE

Date Started	10/12/17	Location	Southern extent of former USTs location
Date Completed	10/12/17	Ground Elevation:	NA
Total Depth (ft)	45.0	Typical Run Length	5 feet
Drilling Company:		Hole Diameter:	
GeoTek Alaska, Inc.		2.5 inches	

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Dark brown, Poorly Graded Gravel with Sand (GP); moist; trace fines.	0.4		377.2		IT-B1-1	
		Dark brown, Poorly Graded Sand with Gravel (SP); moist; trace fines.			389.1			
5		Olive-gray, Poorly Graded Sand with Silt (SP-SM); moist.	5.0		412.4			
					2246			
10		Red-brown, Poorly Graded Sand with Gravel (SP); moist.	10.8		3118			
		Gray, Silt with Sand (ML); moist; trace gravel; petroleum odor.	12.5		1879			
15		Red-brown, Poorly Graded Sand with Gravel (SP); moist; fractured gravel.	15.4		2505			
					112			
20					35.5			
					5.2			
25					86.5			
					12.5			
30		Olive-brown, Poorly Graded Gravel with Sand (GP); moist; fractured gravel; trace silt.	32.0		10.8			
					9.1			
35					30.2			
40		Gray, Poorly Graded Gravel with Silt and Sand (GP-GM); wet; fractured gravel.	40.0		365.0			
					329.0			
45		BORING COMPLETED OCTOBER 12, 2017.	45.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

<p>2" Plastic Tube - No Soil Recovery</p> <p>2" Plastic Tube with Soil Recovery</p> <p>Run No.</p> <p>Ground Water Level ATD</p>	<p>Piezometer Screen and Sand Filter</p> <p>Bentonite-Cement Grout</p> <p>Bentonite Chips/Pellets</p> <p>Bentonite Grout</p>
--	--

Interior Texaco
Delta Junction, AK

LOG OF GEOPROBE B1/MW-9

31-1-11809-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/17/17	Location	Northwest corner of main building
Date Completed	10/17/17	Ground Elevation:	NA
Total Depth (ft)	40.0	Typical Run Length	5 feet
Drilling Company:		Hole Diameter:	
GeoTek Alaska, Inc.		2.5 inches	

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Asphalt.	0.2		77.5			
		Gray, Poorly Graded Sand with Gravel (SP); moist; trace fines.	1.5		937.6			
5		Red-brown to olive-brown to dark brown, Poorly Graded Sand with Silt (SP-SM); moist; petroleum odor.	5.4		1005			5
10		Light gray-brown to red-brown, Poorly Graded Sand (SP); moist; trace fines; petroleum odor; interbedded with olive-brown, Silt with Sand (ML); moist; from 5.6 to 7.0 feet, 7.8 to 8.5 feet, and 11.5 to 11.8 feet.			1215			10
15		Red-brown, Poorly Graded Sand with Gravel (SP); moist; trace fines; petroleum odor.	13.5		1242			15
20		Red-brown, Poorly Graded Sand (SP); moist; trace gravel; trace fines; petroleum odor.	15.5		946.3		IT-B10-1	20
25		Olive-brown to gray-brown, Poorly Graded Gravel with Sand (GP); moist to wet below 38.5 feet; fractured gravel; trace fines.	16.0		1285			25
30					1255			30
35					798.7			35
40					848.3		IT-B10-2	40
45					427.3			45
					477.5			
					429.9			
					467			
					470.6			
					334.7			
			40.0					
		BORING COMPLETED OCTOBER 17, 2017.						

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

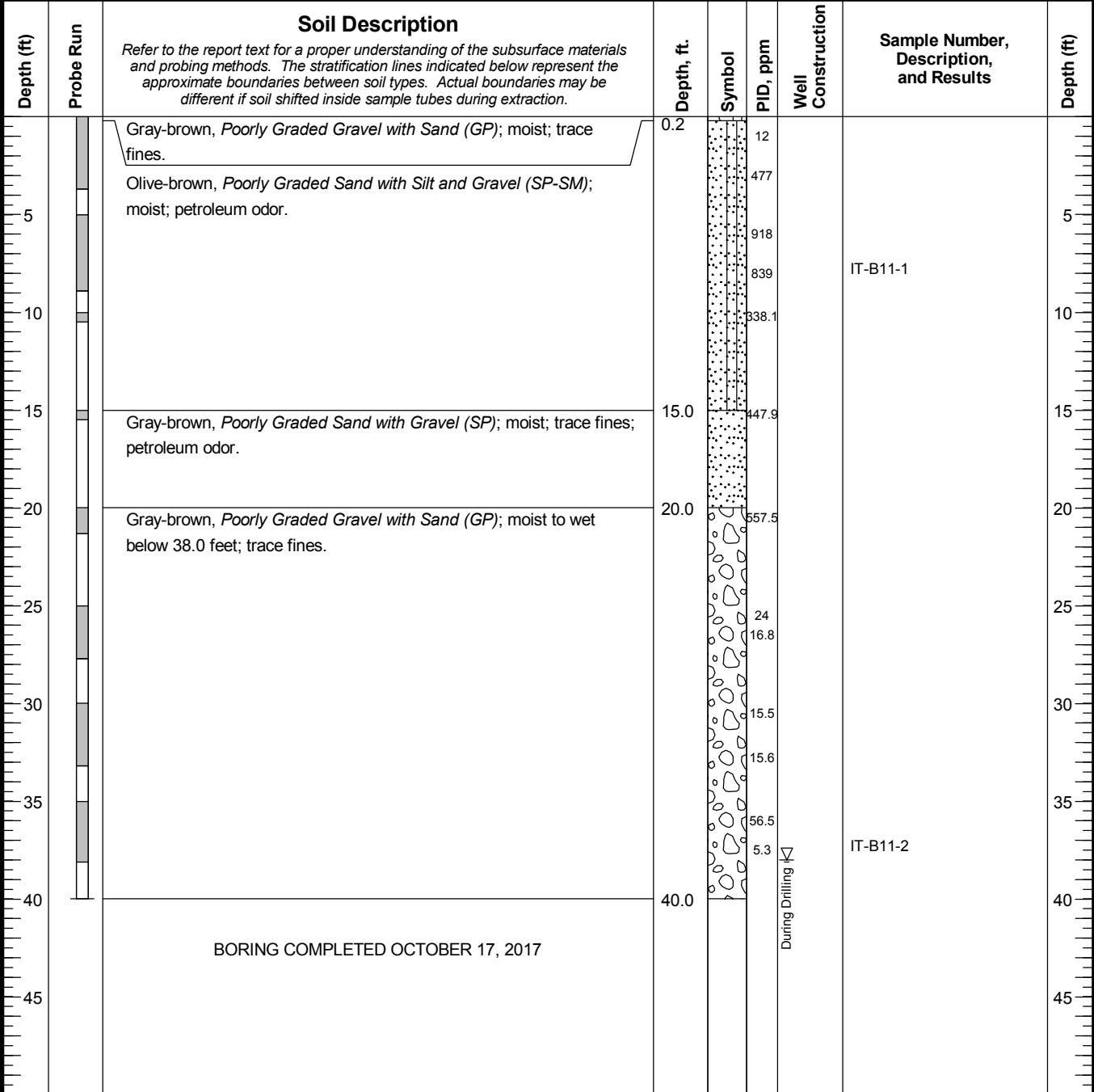
- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B10	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR

LOG OF GEOPROBE

Date Started	10/17/17	Location	Western extent of former USTs	Ground Elevation:	NA
Date Completed	10/17/17			Typical Run Length	5 feet
Total Depth (ft)	40.0	Drilling Company:	GeoTek Alaska, Inc.	Hole Diameter:	2.5 inches



NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B11	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/12/17	Location	Eastern extent of former USTs location	Ground Elevation:	NA
Date Completed	10/12/17			Typical Run Length	5 feet
Total Depth (ft)	40.0	Drilling Company:	GeoTek Alaska, Inc.	Hole Diameter:	2.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
5	1	Dark brown, <i>Poorly Graded Gravel with Sand (GP)</i> ; moist; fractured gravel; trace fines.	0.3	[Symbol]	11.7 577.3			5
10	2	Dark brown, <i>Poorly Graded Sand with Silt and Gravel (SP-SM)</i> ; moist; fractured gravel; trace organics, roots.			885.5 1226			10
15	3	Dark brown to gray, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist; trace fines; with a bed of <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; from 14.1 to 14.5 feet.	12.0		1956 953		IT-B2-1/IT-B2-3	15
20	4	Olive-brown to olive-gray to red-brown, <i>Poorly Graded Gravel with Sand (GP)</i> ; moist to wet below 36.5 feet; fractured gravel; trace fines; with bed of dark brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist; trace fines; from 27.5-28.0 feet.	17.0		1356 75.5 11.4 16.1 16 5 15.4 10.2			20
25					17.8 50.1		IT-B2-2	25
30						During Drilling [Symbol]		30
35								35
40		BORING COMPLETED OCTOBER 12, 2017.	40.0					40
45								45

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

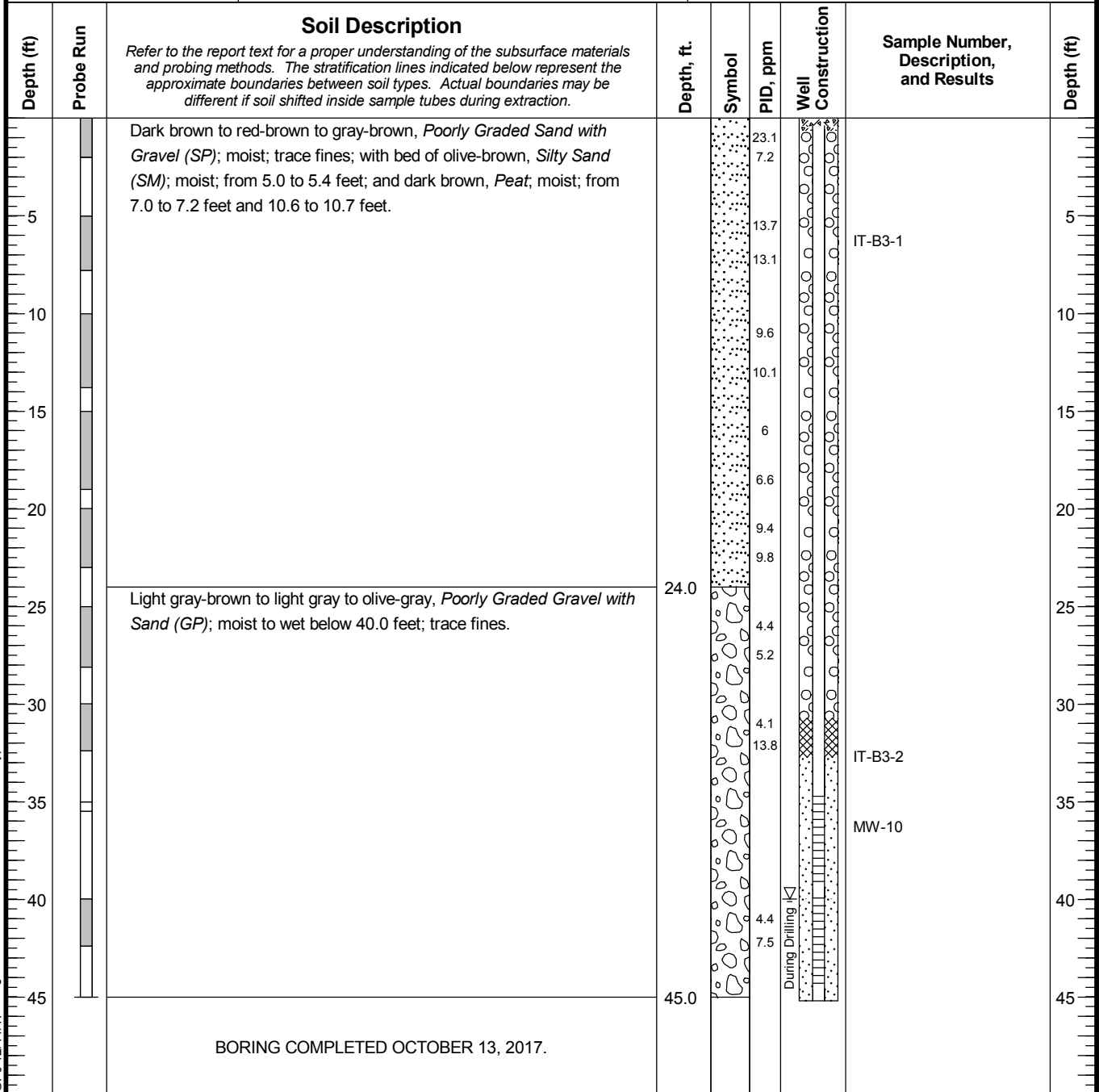
- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B2	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/13/17	Location	East of main building	Ground Elevation:	NA
Date Completed	10/13/17			Typical Run Length	5 feet
Total Depth (ft)	45.0	Drilling Company:	GeoTek Alaska, Inc.	Hole Diameter:	2.5 inches



NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">3</td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="padding-left: 5px;">2" Plastic Tube - No Soil Recovery</td> </tr> <tr> <td style="width: 30px; text-align: center;">↑</td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="padding-left: 5px;">2" Plastic Tube with Soil Recovery</td> </tr> </table> <p>Run No. ▽ Ground Water Level ATD</p>	3		2" Plastic Tube - No Soil Recovery	↑		2" Plastic Tube with Soil Recovery	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">⊠</td> <td style="padding-left: 5px;">Piezometer Screen and Sand Filter</td> </tr> <tr> <td style="width: 30px; text-align: center;">⊞</td> <td style="padding-left: 5px;">Bentonite-Cement Grout</td> </tr> <tr> <td style="width: 30px; text-align: center;">⊞</td> <td style="padding-left: 5px;">Bentonite Chips/Pellets</td> </tr> <tr> <td style="width: 30px; text-align: center;">⊞</td> <td style="padding-left: 5px;">Bentonite Grout</td> </tr> </table>	⊠	Piezometer Screen and Sand Filter	⊞	Bentonite-Cement Grout	⊞	Bentonite Chips/Pellets	⊞	Bentonite Grout
3		2" Plastic Tube - No Soil Recovery													
↑		2" Plastic Tube with Soil Recovery													
⊠	Piezometer Screen and Sand Filter														
⊞	Bentonite-Cement Grout														
⊞	Bentonite Chips/Pellets														
⊞	Bentonite Grout														

Interior Texaco
Delta Junction, AK

LOG OF GEOPROBE B3/MW-10

31-1-11809-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/13/17	Location	Northern extent of former USTs
Date Completed	10/14/17	Ground Elevation:	NA
Total Depth (ft)	45.0	Typical Run Length	5 feet
		Drilling Company:	GeoTek Alaska, Inc.
		Hole Diameter:	2.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
5	1	Dark brown, <i>Poorly Graded Sand with Silt (SP-SM)</i> ; moist; petroleum odor.	9.0	[Symbol]	316.8 888.3 829.1 1346		IT-B4-1	5
10	2	Red-brown to gray-brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist; trace fines; petroleum odor; with bed of dark brown, <i>Silty Sand (SM)</i> ; moist; trace gravel; from 15.0-16.3 feet.	21.3	[Symbol]	998.4 895.1 172.7 21.8 50.5			10
20	3	Olive-brown to light gray-brown, <i>Poorly Graded Gravel with Sand (GP)</i> ; moist to wet below 36.5 feet; fractured grave; trace fines; strong petroleum odor; with bed of olive-brown, <i>Poorly Graded Sand (SP)</i> ; moist; trace gravel; trace fines; from 27.0 to 30.0 feet.	39.0	[Symbol]	13.8 889.8 673.3 56.5 132.3			20
30	4	Olive-brown, <i>Poorly Graded Gravel with Silt and Sand (GP-GM)</i> ; wet.	45.0	[Symbol]	99.2 208 69.5	During Drilling [Symbol]	IT-B4-2	30
35								35
40								40
45								45
		BORING COMPLETED OCTOBER 14, 2017.						

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

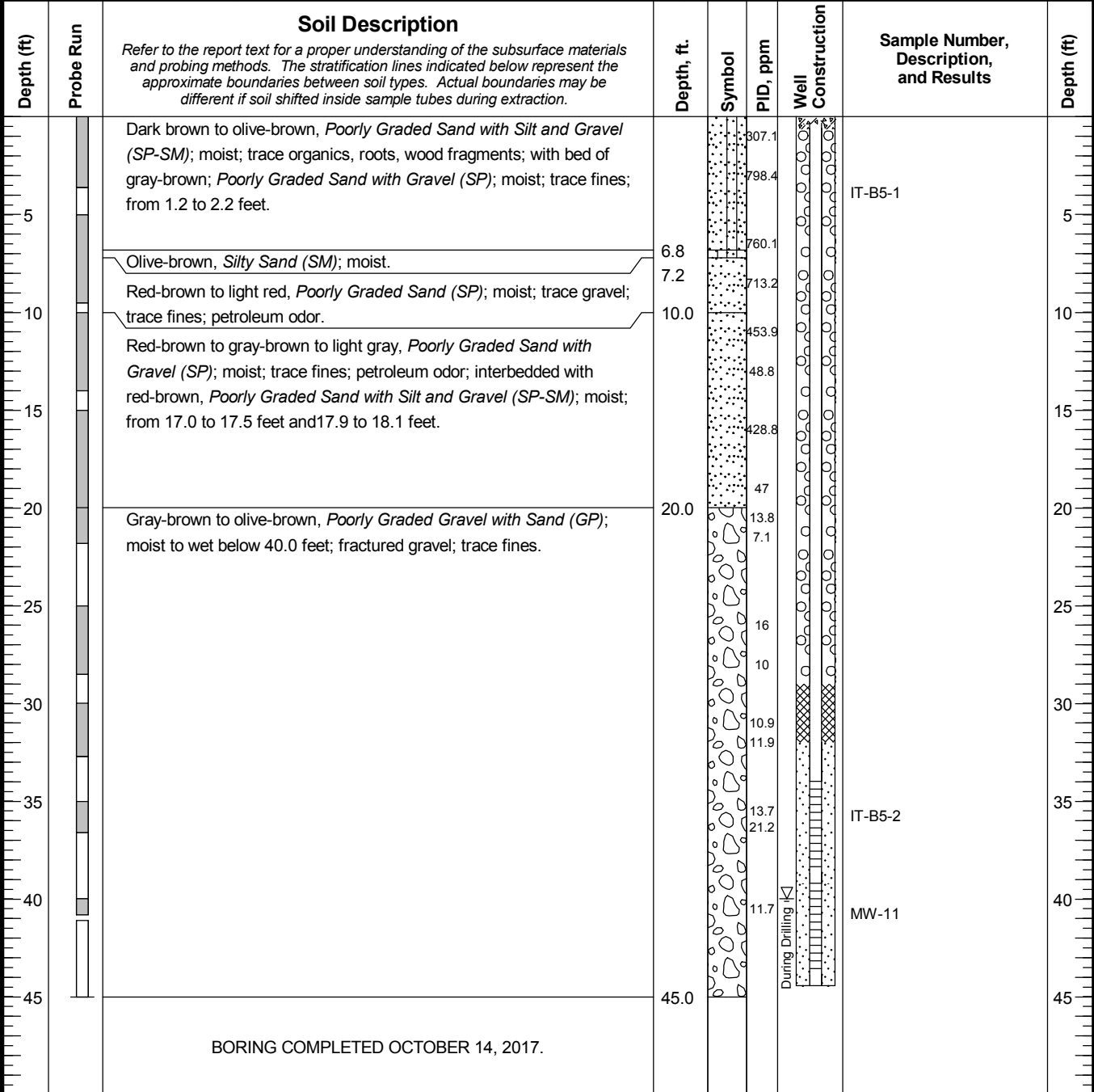
- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B4	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Rev: Typ: SYR

LOG OF GEOPROBE

Date Started	10/14/17	Location	Property boundary, north of former USTs
Date Completed	10/14/17	Ground Elevation:	NA
Total Depth (ft)	45.0	Typical Run Length	5 feet
Drilling Company:		Hole Diameter:	
GeoTek Alaska, Inc.		2.5 inches	



BORING COMPLETED OCTOBER 14, 2017.

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

<p>3" 2" Plastic Tube - No Soil Recovery</p> <p> 2" Plastic Tube with Soil Recovery</p> <p>Run No.</p> <p> Ground Water Level ATD</p>	<p> Piezometer Screen and Sand Filter</p> <p> Bentonite-Cement Grout</p> <p> Bentonite Chips/Pellets</p> <p> Bentonite Grout</p>
--	--

Interior Texaco
Delta Junction, AK

LOG OF GEOPROBE B5/MW-11

31-1-11809-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure

GEOPROBE_WELL_31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/15/17	Location	West of main building
Date Completed	10/15/17	Ground Elevation:	NA
Total Depth (ft)	40.0	Typical Run Length	5 feet
Drilling Company:		Hole Diameter:	
GeoTek Alaska, Inc.		2.5 inches	

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Asphalt.	0.2					
		Gray-brown, Poorly Graded Sand with Gravel (SP); moist; trace fines	1.5		499.9			
5		Gray-brown with red-brown laminations, Poorly Graded Sand with Silt (SP-SM); moist; trace gravel; trace organics, roots; petroleum odor.			4033		IT-B6-1/IT-B6-3	5
10		Red-brown to light red-brown, Poorly Graded Sand (SP); moist; trace fines; petroleum odor; with bed of red-brown, Poorly Graded Sand with Silt (SP-SM); moist; from 12.0 to 12.7 feet; and with bed of gray-brown, Silt with Sand (ML); moist; from 12.7 to 13.0 feet.	7.5		3973			10
15		Red-brown, Poorly Graded Sand with Silt (SP-SM); moist; petroleum odor.			2867			15
20		Gray-brown, Poorly Graded Sand with Gravel (SP); moist; trace fines; petroleum odor.	13.5		3120			20
25		Gray-brown, Poorly Graded Gravel with Sand (GP); moist to wet below 37.1 feet; fractured gravel; trace fines; petroleum odor.	22.5		3168			25
30					382.8			30
35					379.2			35
40					349.1			40
45					382.2			45
					259			
					270.2	During Drilling	IT-B6-2	
		BORING COMPLETED OCTOBER 15, 2017.	40.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

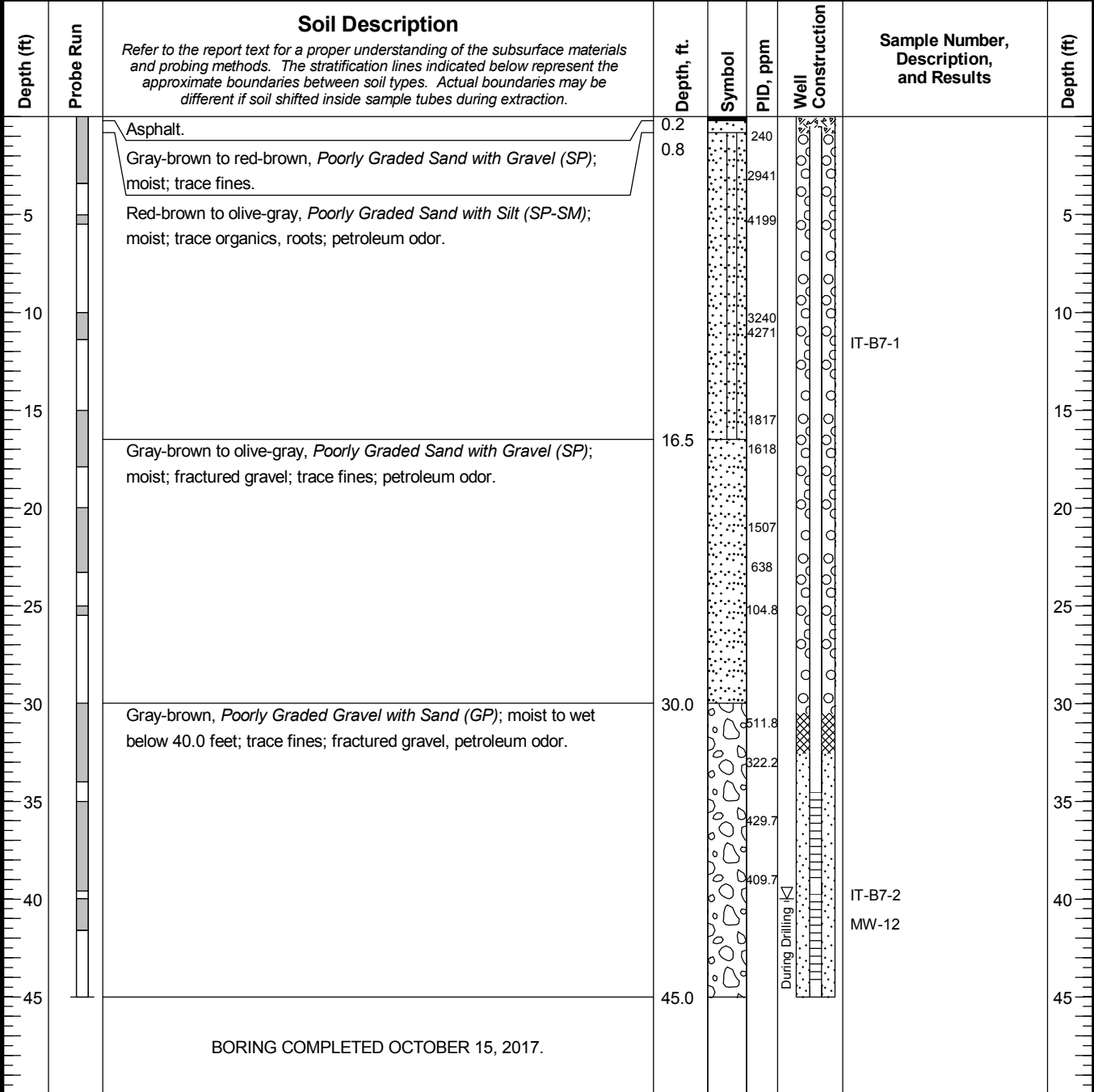
- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B6	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

LOG OF GEOPROBE

Date Started	10/15/17	Location	West of main building
Date Completed	10/15/17	Ground Elevation:	NA
Total Depth (ft)	45.0	Typical Run Length	5 feet
Drilling Company:		Hole Diameter:	
GeoTek Alaska, Inc.		2.5 inches	



Typ: SYR
 Rev:
 Log: SYR
 GEOPROBE_WELL_31-1-11809-009.GPJ 21-20447.GPJ 12/11/17

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

2" Plastic Tube with Soil Recovery	Piezometer Screen and Sand Filter
2" Plastic Tube - No Soil Recovery	Bentonite-Cement Grout
Ground Water Level ATD	Bentonite Chips/Pellets
	Bentonite Grout

Interior Texaco
Delta Junction, AK

LOG OF GEOPROBE B7/MW-12

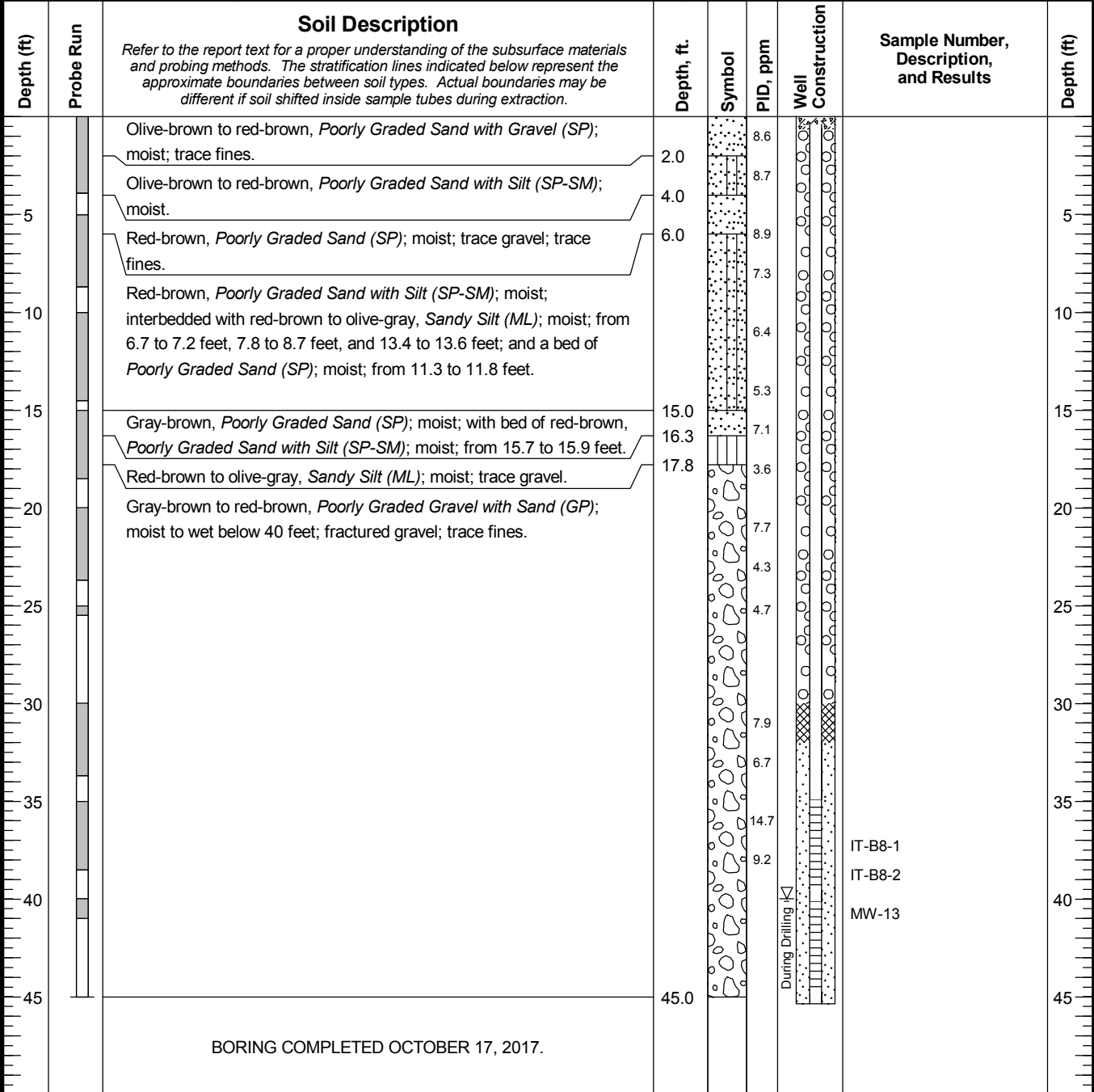
31-1-11809-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure

LOG OF GEOPROBE

Date Started	10/17/17	Location	Property boundary, downgradient of former USTs
Date Completed	10/17/17	Ground Elevation:	NA
Total Depth (ft)	40.0	Drilling Company:	GeoTek Alaska, Inc.
		Typical Run Length	5 feet
		Hole Diameter:	2.5 inches



BORING COMPLETED OCTOBER 17, 2017.

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

<table border="0"> <tr> <td style="width: 20px; text-align: center;">3</td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td>2" Plastic Tube - No Soil Recovery</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td>2" Plastic Tube with Soil Recovery</td> </tr> <tr> <td style="text-align: center;">Run No.</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">▽</td> <td></td> <td>Ground Water Level ATD</td> </tr> </table>	3		2" Plastic Tube - No Soil Recovery			2" Plastic Tube with Soil Recovery	Run No.			▽		Ground Water Level ATD	<table border="0"> <tr> <td style="width: 20px; text-align: center;">□</td> <td style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Piezometer Screen and Sand Filter</td> </tr> <tr> <td style="width: 20px; text-align: center;">□</td> <td style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Bentonite-Cement Grout</td> </tr> <tr> <td style="width: 20px; text-align: center;">□</td> <td style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Bentonite Chips/Pellets</td> </tr> <tr> <td style="width: 20px; text-align: center;">□</td> <td style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></td> <td>Bentonite Grout</td> </tr> </table>	□		Piezometer Screen and Sand Filter	□		Bentonite-Cement Grout	□		Bentonite Chips/Pellets	□		Bentonite Grout
3		2" Plastic Tube - No Soil Recovery																							
		2" Plastic Tube with Soil Recovery																							
Run No.																									
▽		Ground Water Level ATD																							
□		Piezometer Screen and Sand Filter																							
□		Bentonite-Cement Grout																							
□		Bentonite Chips/Pellets																							
□		Bentonite Grout																							

Interior Texaco
Delta Junction, AK

LOG OF GEOPROBE B8/MW-13

31-1-11809-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Rev: Typ: SYR

LOG OF GEOPROBE

Date Started	10/17/17	Location	West of main building
Date Completed	10/17/17	Ground Elevation:	NA
Total Depth (ft)	40.0	Typical Run Length	5 feet
		Drilling Company:	GeoTek Alaska, Inc.
		Hole Diameter:	2.5 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Well Construction	Sample Number, Description, and Results	Depth (ft)
		Asphalt.	0.2					
		Red-brown, Poorly Graded Sand with Gravel (SP); moist; trace fines.	1.5		5.1			
5		Red-brown to light gray, Poorly Graded Sand with Silt (SP-SM); moist; interbedded with olive-brown to red-brown, Silt with Sand (ML); moist; from 2.6 to 3.2 feet, 6.8 to 8.8 feet, 13.2 to 13.4 feet, and 13.7 to 13.8 feet; and interbedded with red-brown, Poorly Graded Sand (SP); moist; from 3.5 to 3.7 feet, 5.7 to 6.0 feet; petroleum odor.			5.1			5
10					11.9			10
					122.8			
					226.3			
15		Red-brown to olive-gray, Poorly Graded Sand (SP); moist; to Poorly Graded Sand with Gravel (SP); moist; fractured gravel.	14.1		164.7		IT-B9-1	15
20					207.7			20
25					11.8			25
					12.3			
					9.3			
25.0		Olive-gray to light gray-brown, Poorly Graded Gravel with Sand (GP); moist to wet below 38.5 feet; trace fines.	25.0		6			25
30					6.6			30
					3.6			
					27.8			
35					14.9			35
					6.3			
40			40.0				IT-B9-2	40
45								45
		BORING COMPLETED OCTOBER 17, 2017.						

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Interior Texaco Delta Junction, AK	
LOG OF GEOPROBE B9	
31-1-11809-009	
SHANNON & WILSON, INC. Geotechnical and Environmental Consultants	Figure

GEOPROBE WELL 31-1-11809-009.GPJ 21-20447.GPJ 12/11/17 Log: SYR Typ: SYR Rev:

APPENDIX D
INTERIOR TEXACO 2017 PROJECT PHOTOS



Photo 1: Setting up the drill rig in front of the Buffalo Service Center at boring location *IT-B10*. (October 15, 2017)



Photo 2: Boring Location *IT-B1* and monitoring well *MW-9* located on the northern side of the Buffalo Service Center. (October 15, 2017)



Photo 3: Boring Location *IT-B2* located on the northern side of the Buffalo Service Center. (October 15, 2017)



Photo 4: Boring Location *IT-B3* and monitoring well *MW-10* located on the eastern side of the Buffalo Service Center. (October 15, 2017)



Photo 5: Boring Location *IT-B4* located on the northwestern side of the Buffalo Service Center. (October 15, 2017)



Photo 6: Boring Location *IT-B5* and monitoring well *MW-11* located on the northern side of the Buffalo Service Center. (October 15, 2017)



Photo 7: Boring locations *IT-B6*, *IT-B7*, *IT-B9*, and *IT-B10* marked by orange cones in front of the Buffalo Service Center. (October 18, 2017)



Photo 8: Developing monitoring well *MW-13* located on the northwestern side of the Buffalo Service Center at boring location *IT-B8*. (October 18, 2017)



Photo 9: Overview of the Buffalo Service Station garage and maintenance area. (November 2, 2017)

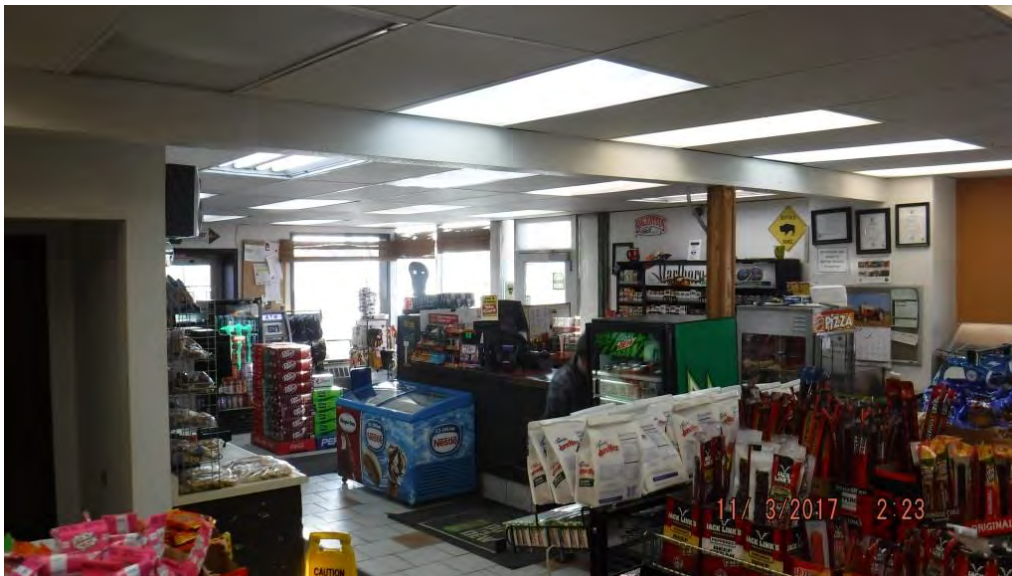


Photo 10: Overview of the Buffalo Service Center storefront. (November 3, 2017)



Photo 11: Preparing to install a sub-slab sampling port in the service station garage. (November 2, 2017)



Photo 12: Installing a sub-slab sampling port in the service station garage. (November 2, 2017)



Photo 13: Sub-slab sampling port SS-03 installed inside the Buffalo Service Station storefront. (November 2, 2017)



Photo 14: Assembling the soil-gas sampling apparatus inside the service station garage. (November 2, 2017)

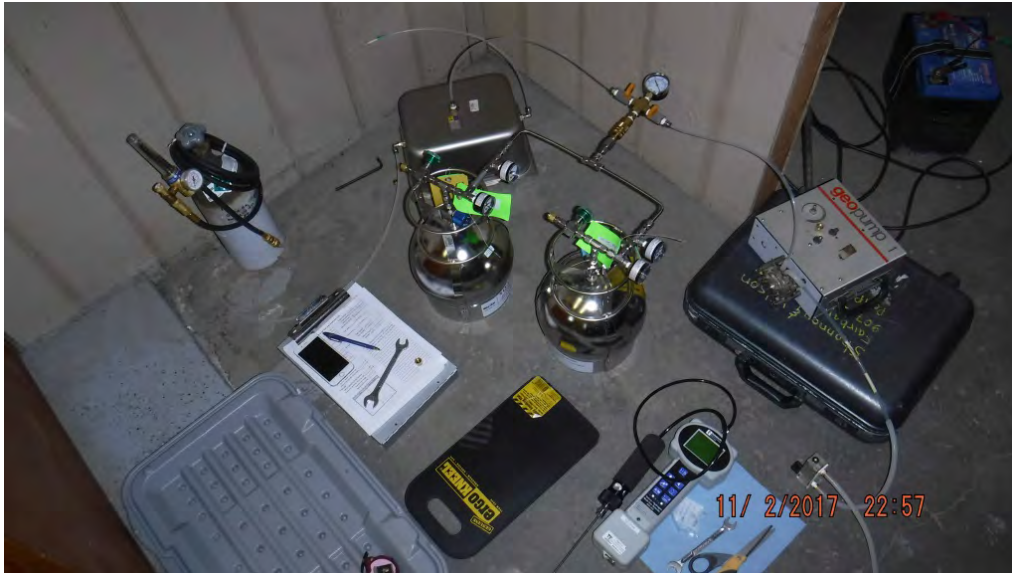


Photo 15: Performing leak testing on the soil-gas sampling apparatus at location SS-02 in the tire shop. (November 2, 2017)



Photo 16: An indoor passive air sampler installed in the northeast corner of the service station garage. (November 3, 2017)

APPENDIX E
SGS LABORATORY REPORTS AND EUROFINS
LABORATORY REPORTS
WORK ORDERS NO. 1178533, 1178534, 1711116, 1711121



Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
907-479-0600

Report Number: 1178533

Client Project: Interior Texaco 31-1-11809-009

Dear Valerie Webb,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Alaska Division Technical Director

Stephen Ede

2017.11.17

16:50:28 -09'00'

Jennifer Dawkins
Project Manager
Jennifer.Dawkins@sgs.com

Date

Print Date: 11/17/2017 2:55:17PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group



Case Narrative

SGS Client: Shannon & Wilson-Fairbanks

SGS Project: 1178533

Project Name/Site: Interior Texaco 31-1-11809-009

Refer to sample receipt form for information on sample condition. Corrected Report: Report for 1178533007 corrected to include QC limits.

MW-13

1178533006 PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (158 %) does not meet QC criteria due to matrix interference.

XXX/38729]

1421821 MB

AK102/103 - DRO/RRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

VXX/3163

1423400 LCSD

8260C - LCSD RPD for dichlorodifluoromethane (30) does not meet QC criteria. Results may be biased high.

VXX/3164

1423466 LCSD

8260C - LCSD RPD for vinyl acetate (24.6) does not meet QC criteria. This analyte was not detected in associated samples.

VMS/1739

1423468 CCV

8260C - CCV recovery for vinyl acetate (123%) does not meet QC criteria. This analyte was not detected in associated samples.

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to the associated field samples.

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are **AK00971 DW Chemistry (Provisionally Certified as of 10/12/2017) & Microbiology (Provisionally Certified as of 9/21/2017) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103)**. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
MW-9	1178533001	10/18/2017	10/20/2017	Water (Surface, Eff., Ground)
MW-109	1178533002	10/18/2017	10/20/2017	Water (Surface, Eff., Ground)
MW-10	1178533003	10/16/2017	10/20/2017	Water (Surface, Eff., Ground)
MW-11	1178533004	10/16/2017	10/20/2017	Water (Surface, Eff., Ground)
MW-12	1178533005	10/17/2017	10/20/2017	Water (Surface, Eff., Ground)
MW-13	1178533006	10/18/2017	10/20/2017	Water (Surface, Eff., Ground)
Kelly's DW	1178533007	10/17/2017	10/20/2017	Drinking Water
Trip Blank	1178533008	10/19/2017	10/20/2017	Water (Surface, Eff., Ground)

Method

8270D SIM LV (PAH)
 AK101
 SW8021B
 AK102
 AK103
 SW8260C

Method Description

8270 PAH SIM GC/MS Liq/Liq ext. LV
 AK101/8021 Combo.
 AK101/8021 Combo.
 DRO/RRO Low Volume Water
 DRO/RRO Low Volume Water
 Volatile Organic Compounds (W) FULL

Detectable Results Summary

Client Sample ID: MW-9			
Lab Sample ID: 1178533001			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.184J	mg/L
Volatile Fuels	Toluene	0.580J	ug/L
Client Sample ID: MW-109			
Lab Sample ID: 1178533002			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.176J	mg/L
Volatile Fuels	Benzene	0.150J	ug/L
	Toluene	0.400J	ug/L
Client Sample ID: MW-10			
Lab Sample ID: 1178533003			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.201J	mg/L
Volatile Fuels	Benzene	0.460J	ug/L
	o-Xylene	0.320J	ug/L
	Toluene	0.630J	ug/L
Client Sample ID: MW-11			
Lab Sample ID: 1178533004			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.195J	mg/L
Volatile Fuels	Benzene	0.380J	ug/L
	Toluene	0.570J	ug/L
Client Sample ID: MW-12			
Lab Sample ID: 1178533005			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.201J	mg/L
Volatile Fuels	Benzene	0.310J	ug/L
	Toluene	0.450J	ug/L
Client Sample ID: MW-13			
Lab Sample ID: 1178533006			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Diesel Range Organics	3.46	mg/L
	Residual Range Organics	0.173J	mg/L
Volatile Fuels	Benzene	5.58	ug/L
	Ethylbenzene	139	ug/L
	Gasoline Range Organics	2.23	mg/L
	o-Xylene	172	ug/L
	P & M -Xylene	444	ug/L
	Toluene	196	ug/L
Client Sample ID: Kelly's DW			
Lab Sample ID: 1178533007			
Semivolatile Organic Fuels	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
	Residual Range Organics	0.196J	mg/L
Volatile Fuels	Benzene	0.260J	ug/L
	Toluene	0.530J	ug/L

Print Date: 11/17/2017 2:55:23PM

Results of MW-9

Client Sample ID: **MW-9**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533001
 Lab Project ID: 1178533

Collection Date: 10/18/17 13:20
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
2-Methylnaphthalene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Acenaphthene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Acenaphthylene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Anthracene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Benzo(a)Anthracene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Benzo[a]pyrene	0.0101 U	0.0203	0.00630	ug/L	1		11/01/17 20:37
Benzo[b]Fluoranthene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Benzo[g,h,i]perylene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Benzo[k]fluoranthene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Chrysene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Dibenzo[a,h]anthracene	0.0101 U	0.0203	0.00630	ug/L	1		11/01/17 20:37
Fluoranthene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Fluorene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Indeno[1,2,3-c,d] pyrene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Naphthalene	0.0510 U	0.102	0.0315	ug/L	1		11/01/17 20:37
Phenanthrene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Pyrene	0.0254 U	0.0508	0.0152	ug/L	1		11/01/17 20:37
Surrogates							
2-Methylnaphthalene-d10 (surr)	72.4	47-106		%	1		11/01/17 20:37
Fluoranthene-d10 (surr)	69.8	24-116		%	1		11/01/17 20:37

Batch Information

Analytical Batch: XMS10532
 Analytical Method: 8270D SIM LV (PAH)
 Analyst: NRB
 Analytical Date/Time: 11/01/17 20:37
 Container ID: 1178533001-I

Prep Batch: XXX38710
 Prep Method: SW3520C
 Prep Date/Time: 10/21/17 08:20
 Prep Initial Wt./Vol.: 246 mL
 Prep Extract Vol: 1 mL

Results of MW-9

Client Sample ID: **MW-9**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533001
 Lab Project ID: 1178533

Collection Date: 10/18/17 13:20
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.313 U	0.625	0.188	mg/L	1		10/27/17 15:28
Surrogates							
5a Androstane (surr)	83.8	50-150		%	1		10/27/17 15:28

Batch Information

Analytical Batch: XFC13920
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/27/17 15:28
 Container ID: 1178533001-G

Prep Batch: XXX38713
 Prep Method: SW3520C
 Prep Date/Time: 10/22/17 08:03
 Prep Initial Wt./Vol.: 240 mL
 Prep Extract Vol: 1 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.184 J	0.521	0.156	mg/L	1		10/27/17 15:28
Surrogates							
n-Triacontane-d62 (surr)	82.3	50-150		%	1		10/27/17 15:28

Batch Information

Analytical Batch: XFC13920
 Analytical Method: AK103
 Analyst: JMG
 Analytical Date/Time: 10/27/17 15:28
 Container ID: 1178533001-G

Prep Batch: XXX38713
 Prep Method: SW3520C
 Prep Date/Time: 10/22/17 08:03
 Prep Initial Wt./Vol.: 240 mL
 Prep Extract Vol: 1 mL



Results of MW-9

Client Sample ID: MW-9
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533001
Lab Project ID: 1178533

Collection Date: 10/18/17 13:20
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0500 U, 0.100, 0.0310, mg/L, 1, 10/27/17 12:46

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 97.8, 50-150, %, 1, 10/27/17 12:46

Batch Information

Analytical Batch: VFC13967
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/27/17 12:46
Container ID: 1178533001-D

Prep Batch: VXX31613
Prep Method: SW5030B
Prep Date/Time: 10/27/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 93.9, 77-115, %, 1, 10/27/17 12:46

Batch Information

Analytical Batch: VFC13967
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/27/17 12:46
Container ID: 1178533001-D

Prep Batch: VXX31613
Prep Method: SW5030B
Prep Date/Time: 10/27/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of MW-109

Client Sample ID: **MW-109**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533002
 Lab Project ID: 1178533

Collection Date: 10/18/17 13:30
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
2-Methylnaphthalene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Acenaphthene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Acenaphthylene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Anthracene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Benzo(a)Anthracene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Benzo[a]pyrene	0.0106 U	0.0212	0.00657	ug/L	1		11/01/17 20:57
Benzo[b]Fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Benzo[g,h,i]perylene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Benzo[k]fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Chrysene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Dibenzo[a,h]anthracene	0.0106 U	0.0212	0.00657	ug/L	1		11/01/17 20:57
Fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Fluorene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Indeno[1,2,3-c,d] pyrene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Naphthalene	0.0530 U	0.106	0.0328	ug/L	1		11/01/17 20:57
Phenanthrene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Pyrene	0.0265 U	0.0530	0.0159	ug/L	1		11/01/17 20:57
Surrogates							
2-Methylnaphthalene-d10 (surr)	56.3	47-106		%	1		11/01/17 20:57
Fluoranthene-d10 (surr)	55.7	24-116		%	1		11/01/17 20:57

Batch Information

Analytical Batch: XMS10532
 Analytical Method: 8270D SIM LV (PAH)
 Analyst: NRB
 Analytical Date/Time: 11/01/17 20:57
 Container ID: 1178533002-I

Prep Batch: XXX38710
 Prep Method: SW3520C
 Prep Date/Time: 10/21/17 08:20
 Prep Initial Wt./Vol.: 236 mL
 Prep Extract Vol: 1 mL



Results of MW-109

Client Sample ID: MW-109
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533002
Lab Project ID: 1178533

Collection Date: 10/18/17 13:30
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 15:38
Container ID: 1178533002-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 15:38
Container ID: 1178533002-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL



Results of MW-109

Client Sample ID: MW-109
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533002
Lab Project ID: 1178533

Collection Date: 10/18/17 13:30
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0500 U, 0.100, 0.0310, mg/L, 1, 10/26/17 17:09

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 108, 50-150, %, 1, 10/26/17 17:09

Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/17 17:09
Container ID: 1178533002-A

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.7, 77-115, %, 1, 10/26/17 17:09

Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 17:09
Container ID: 1178533002-A

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-10

Client Sample ID: MW-10
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533003
Lab Project ID: 1178533

Collection Date: 10/16/17 17:20
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 15:47
Container ID: 1178533003-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 15:47
Container ID: 1178533003-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL



Results of MW-10

Client Sample ID: MW-10
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533003
Lab Project ID: 1178533

Collection Date: 10/16/17 17:20
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Gasoline Range Organics, 0.0500 U, 0.100, 0.0310, mg/L, 1, 10/26/17 14:56

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: 4-Bromofluorobenzene (surr), 105, 50-150, %, 1, 10/26/17 14:56

Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/17 14:56
Container ID: 1178533003-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: 1,4-Difluorobenzene (surr), 95.4, 77-115, %, 1, 10/26/17 14:56

Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 14:56
Container ID: 1178533003-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-11

Client Sample ID: MW-11
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533004
Lab Project ID: 1178533

Collection Date: 10/16/17 15:15
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 15:57
Container ID: 1178533004-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 15:57
Container ID: 1178533004-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Results of MW-11

Client Sample ID: MW-11
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533004
Lab Project ID: 1178533

Collection Date: 10/16/17 15:15
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0500 U, 0.100, 0.0310, mg/L, 1, 10/26/17 15:15

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 106, 50-150, %, 1, 10/26/17 15:15

Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/17 15:15
Container ID: 1178533004-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.2, 77-115, %, 1, 10/26/17 15:15

Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 15:15
Container ID: 1178533004-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-12

Client Sample ID: MW-12
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533005
Lab Project ID: 1178533

Collection Date: 10/17/17 12:46
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 16:07
Container ID: 1178533005-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 16:07
Container ID: 1178533005-G
Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



Results of MW-12

Client Sample ID: MW-12
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533005
Lab Project ID: 1178533

Collection Date: 10/17/17 12:46
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.0500 U, 0.100, 0.0310, mg/L, 1, 10/26/17 15:34

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 106, 50-150, %, 1, 10/26/17 15:34

Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/17 15:34
Container ID: 1178533005-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.5, 77-115, %, 1, 10/26/17 15:34

Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 15:34
Container ID: 1178533005-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-13

Client Sample ID: MW-13
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533006
Lab Project ID: 1178533

Collection Date: 10/18/17 12:50
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 16:17
Container ID: 1178533006-G

Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 16:17
Container ID: 1178533006-G

Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/17 08:03
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL



Results of MW-13

Client Sample ID: MW-13
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533006
Lab Project ID: 1178533

Collection Date: 10/18/17 12:50
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 2.23, 0.100, 0.0310, mg/L, 1, 10/25/17 19:48

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 158, *, 50-150, %, 1, 10/25/17 19:48

Batch Information

Analytical Batch: VFC13965
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/17 19:48
Container ID: 1178533006-A

Prep Batch: VXX31600
Prep Method: SW5030B
Prep Date/Time: 10/25/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 102, 77-115, %, 1, 10/25/17 19:48

Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 15:53
Container ID: 1178533006-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VFC13965
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/25/17 19:48
Container ID: 1178533006-A

Prep Batch: VXX31600
Prep Method: SW5030B
Prep Date/Time: 10/25/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Kelly's DW

Client Sample ID: Kelly's DW
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533007
Lab Project ID: 1178533

Collection Date: 10/17/17 15:30
Received Date: 10/20/17 10:15
Matrix: Drinking Water
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13908
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/25/17 00:30
Container ID: 1178533007-G
Prep Batch: XXX38729
Prep Method: SW3520C
Prep Date/Time: 10/24/17 08:04
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13908
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/25/17 00:30
Container ID: 1178533007-G
Prep Batch: XXX38729
Prep Method: SW3520C
Prep Date/Time: 10/24/17 08:04
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL



Results of Kelly's DW

Client Sample ID: **Kelly's DW**
Client Project ID: **Interior Texaco 31-1-11809-009**
Lab Sample ID: 1178533007
Lab Project ID: 1178533

Collection Date: 10/17/17 15:30
Received Date: 10/20/17 10:15
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0300	mg/L	1		10/26/17 16:12

Surrogates

4-Bromofluorobenzene (surr)	102	50-150		%	1		10/26/17 16:12
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Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/17 16:12
Container ID: 1178533007-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.260 J	0.500	0.150	ug/L	1		10/26/17 16:12
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/26/17 16:12
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/26/17 16:12
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/26/17 16:12
Toluene	0.530 J	1.00	0.310	ug/L	1		10/26/17 16:12

Surrogates

1,4-Difluorobenzene (surr)	93.5	77-115		%	1		10/26/17 16:12
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Batch Information

Analytical Batch: VFC13966
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/26/17 16:12
Container ID: 1178533007-B

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Kelly's DW

Client Sample ID: Kelly's DW
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533007
Lab Project ID: 1178533

Collection Date: 10/17/17 15:30
Received Date: 10/20/17 10:15
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

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J flagging is activated



Results of Kelly's DW

Client Sample ID: Kelly's DW
Client Project ID: Interior Texaco 31-1-11809-009
Lab Sample ID: 1178533007
Lab Project ID: 1178533

Collection Date: 10/17/17 15:30
Received Date: 10/20/17 10:15
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Chloroform, Chloromethane, etc., with their respective results and limits.



Results of Kelly's DW

Client Sample ID: **Kelly's DW**
Client Project ID: **Interior Texaco 31-1-11809-009**
Lab Sample ID: 1178533007
Lab Project ID: 1178533

Collection Date: 10/17/17 15:30
Received Date: 10/20/17 10:15
Matrix: Drinking Water
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS17389
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 10/30/17 20:25
Container ID: 1178533007-D

Prep Batch: VXX31639
Prep Method: SW5030B
Prep Date/Time: 10/30/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS17390
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 10/31/17 21:08
Container ID: 1178533007-D

Prep Batch: VXX31640
Prep Method: SW5030B
Prep Date/Time: 10/31/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533008
 Lab Project ID: 1178533

Collection Date: 10/19/17 11:30
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500 U	0.100	0.0310	mg/L	1		10/25/17 15:40

Surrogates

4-Bromofluorobenzene (surr)	95	50-150		%	1		10/25/17 15:40
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Batch Information

Analytical Batch: VFC13965
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/25/17 15:40
 Container ID: 1178533008-A

Prep Batch: VXX31600
 Prep Method: SW5030B
 Prep Date/Time: 10/25/17 08:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250 U	0.500	0.150	ug/L	1		10/25/17 15:40
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/25/17 15:40
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/25/17 15:40
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/25/17 15:40
Toluene	0.500 U	1.00	0.310	ug/L	1		10/25/17 15:40

Surrogates

1,4-Difluorobenzene (surr)	93.9	77-115		%	1		10/25/17 15:40
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Batch Information

Analytical Batch: VFC13965
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/25/17 15:40
 Container ID: 1178533008-A

Prep Batch: VXX31600
 Prep Method: SW5030B
 Prep Date/Time: 10/25/17 08:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533008
 Lab Project ID: 1178533

Collection Date: 10/19/17 11:30
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		11/01/17 00:05
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		11/01/17 00:05
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
Benzene	0.200 U	0.400	0.120	ug/L	1		11/01/17 00:05
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
Bromoform	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Bromomethane	2.50 U	5.00	1.50	ug/L	1		11/01/17 00:05
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
Chloroethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05

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Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Interior Texaco 31-1-11809-009**
 Lab Sample ID: 1178533008
 Lab Project ID: 1178533

Collection Date: 10/19/17 11:30
 Received Date: 10/20/17 10:15
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Chloromethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		11/01/17 00:05
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Freon-113	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		11/01/17 00:05
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
Naphthalene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
o-Xylene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		11/01/17 00:05
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Styrene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Toluene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		11/01/17 00:05
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		11/01/17 00:05
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		11/01/17 00:05
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		11/01/17 00:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		11/01/17 00:05
4-Bromofluorobenzene (surr)	102	85-114		%	1		11/01/17 00:05
Toluene-d8 (surr)	97.8	89-112		%	1		11/01/17 00:05

Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **Interior Texaco 31-1-11809-009**
Lab Sample ID: 1178533008
Lab Project ID: 1178533

Collection Date: 10/19/17 11:30
Received Date: 10/20/17 10:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS17390
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/01/17 00:05
Container ID: 1178533008-A

Prep Batch: VXX31640
Prep Method: SW5030B
Prep Date/Time: 10/31/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1770961 [VXX/31600]

Blank Lab ID: 1422451

QC for Samples:

1178533006, 1178533008

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	103	50-150		%

Batch Information

Analytical Batch: VFC13965

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: ST

Analytical Date/Time: 10/25/2017 1:45:00PM

Prep Batch: VXX31600

Prep Method: SW5030B

Prep Date/Time: 10/25/2017 8:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 11/17/2017 2:55:29PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31600]
 Blank Spike Lab ID: 1422454
 Date Analyzed: 10/25/2017 14:43

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31600]
 Spike Duplicate Lab ID: 1422455
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533006, 1178533008

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.06	106	1.00	1.01	101	(60-120)	4.50	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	101	101	0.0500	98.5	99	(50-150)	2.70	

Batch Information

Analytical Batch: **VFC13965**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31600**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/25/2017 08:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1770961 [VXX/31600]
Blank Lab ID: 1422451

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1178533006, 1178533008

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	92.6	77-115		%

Batch Information

Analytical Batch: VFC13965
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/25/2017 1:45:00PM

Prep Batch: VXX31600
Prep Method: SW5030B
Prep Date/Time: 10/25/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/17/2017 2:55:33PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31600]
 Blank Spike Lab ID: 1422452
 Date Analyzed: 10/25/2017 14:23

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31600]
 Spike Duplicate Lab ID: 1422453
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533006, 1178533008

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	118	118	100	114	114	(80-120)	3.30	(< 20)
Ethylbenzene	100	115	115	100	110	110	(75-125)	4.50	(< 20)
o-Xylene	100	113	113	100	110	110	(80-120)	3.00	(< 20)
P & M -Xylene	200	230	115	200	221	111	(75-130)	4.10	(< 20)
Toluene	100	115	115	100	115	115	(75-120)	0.12	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	105	105	50	102	102	(77-115)	3.40	

Batch Information

Analytical Batch: **VFC13965**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31600**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/25/2017 08:00**
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1771009 [VXX/31607]
Blank Lab ID: 1422646

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1178533002, 1178533003, 1178533004, 1178533005, 1178533006, 1178533007

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	104	50-150		%

Batch Information

Analytical Batch: VFC13966
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/26/2017 11:45:00AM

Prep Batch: VXX31607
Prep Method: SW5030B
Prep Date/Time: 10/26/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31607]
 Blank Spike Lab ID: 1422649
 Date Analyzed: 10/26/2017 12:43

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31607]
 Spike Duplicate Lab ID: 1422650
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533002, 1178533003, 1178533004, 1178533005, 1178533006, 1178533007

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.01	101	1.00	1.03	103	(60-120)	1.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	106	106	0.0500	107	107	(50-150)	1.10	

Batch Information

Analytical Batch: **VFC13966**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31607**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/26/2017 08:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1771009 [VXX/31607]
 Blank Lab ID: 1422646

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1178533002, 1178533003, 1178533004, 1178533005, 1178533006, 1178533007

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.410J	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	94.8	77-115		%

Batch Information

Analytical Batch: VFC13966
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: ST
 Analytical Date/Time: 10/26/2017 11:45:00AM

Prep Batch: VXX31607
 Prep Method: SW5030B
 Prep Date/Time: 10/26/2017 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31607]
 Blank Spike Lab ID: 1422647
 Date Analyzed: 10/26/2017 12:24

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31607]
 Spike Duplicate Lab ID: 1422648
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533002, 1178533003, 1178533004, 1178533005, 1178533006, 1178533007

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	102	102	100	112	112	(80-120)	8.80	(< 20)
Ethylbenzene	100	99.2	99	100	110	110	(75-125)	10.00	(< 20)
o-Xylene	100	101	101	100	110	110	(80-120)	8.40	(< 20)
P & M -Xylene	200	202	101	200	221	111	(75-130)	9.30	(< 20)
Toluene	100	98.4	98	100	108	108	(75-120)	9.70	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	103	103	50	103	103	(77-115)	0.60	

Batch Information

Analytical Batch: **VFC13966**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31607**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/26/2017 08:00**
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1771078 [VXX/31613]

Blank Lab ID: 1422751

QC for Samples:

1178533001

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	99.8	50-150		%

Batch Information

Analytical Batch: VFC13967

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: ST

Analytical Date/Time: 10/27/2017 11:10:00AM

Prep Batch: VXX31613

Prep Method: SW5030B

Prep Date/Time: 10/27/2017 8:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31613]
 Blank Spike Lab ID: 1422754
 Date Analyzed: 10/27/2017 12:08

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31613]
 Spike Duplicate Lab ID: 1422755
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.01	101	1.00	0.924	92	(60-120)	8.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	103	103	0.0500	99.2	99	(50-150)	3.70	

Batch Information

Analytical Batch: **VFC13967**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31613**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/27/2017 08:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 11/17/2017 2:55:51PM

Method Blank

Blank ID: MB for HBN 1771078 [VXX/31613]
 Blank Lab ID: 1422751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1178533001

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.320J	1.00	0.310	ug/L

Surrogates

1,4-Difluorobenzene (surr)	94.3	77-115		%
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Batch Information

Analytical Batch: VFC13967
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: ST
 Analytical Date/Time: 10/27/2017 11:10:00AM

Prep Batch: VXX31613
 Prep Method: SW5030B
 Prep Date/Time: 10/27/2017 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31613]
 Blank Spike Lab ID: 1422752
 Date Analyzed: 10/27/2017 11:49

Spike Duplicate ID: LCSD for HBN 1178533
 [VXX31613]
 Spike Duplicate Lab ID: 1422753
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	106	106	100	107	107	(80-120)	0.21	(< 20)
Ethylbenzene	100	104	104	100	103	103	(75-125)	0.88	(< 20)
o-Xylene	100	104	104	100	101	101	(80-120)	2.40	(< 20)
P & M -Xylene	200	210	105	200	206	103	(75-130)	1.90	(< 20)
Toluene	100	104	104	100	104	104	(75-120)	0.02	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	103	103	50	100	100	(77-115)	2.10	

Batch Information

Analytical Batch: **VFC13967**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31613**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/27/2017 08:00**
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1771251 [VXX/31639]

Blank Lab ID: 1423398

QC for Samples:

1178533007

Matrix: Water (Surface, Eff., Ground)

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L

Print Date: 11/17/2017 2:55:57PM

Method Blank

Blank ID: MB for HBN 1771251 [VXX/31639]
 Blank Lab ID: 1423398

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1178533007

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	115	81-118		%
4-Bromofluorobenzene (surr)	104	85-114		%
Toluene-d8 (surr)	97.2	89-112		%

Batch Information

Analytical Batch: VMS17389
 Analytical Method: SW8260C
 Instrument: VSA Agilent GC/MS 7890B/5977A
 Analyst: FDR
 Analytical Date/Time: 10/30/2017 11:13:00AM

Prep Batch: VXX31639
 Prep Method: SW5030B
 Prep Date/Time: 10/30/2017 12:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31639]
 Blank Spike Lab ID: 1423399
 Date Analyzed: 10/30/2017 11:38

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31639]
 Spike Duplicate Lab ID: 1423400
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	29.3	98	30	26.3	88	(78-124)	10.70	(< 20)
1,1,1-Trichloroethane	30	29.0	97	30	30.4	101	(74-131)	4.70	(< 20)
1,1,2,2-Tetrachloroethane	30	29.1	97	30	27.4	91	(71-121)	6.30	(< 20)
1,1,2-Trichloroethane	30	30.2	101	30	30.2	101	(80-119)	0.17	(< 20)
1,1-Dichloroethane	30	27.3	91	30	27.8	93	(77-125)	1.70	(< 20)
1,1-Dichloroethene	30	31.6	105	30	30.4	101	(71-131)	3.90	(< 20)
1,1-Dichloropropene	30	30.2	101	30	31.1	104	(79-125)	2.70	(< 20)
1,2,3-Trichlorobenzene	30	30.1	100	30	28.4	95	(69-129)	6.00	(< 20)
1,2,3-Trichloropropane	30	28.7	96	30	26.5	89	(73-122)	7.80	(< 20)
1,2,4-Trichlorobenzene	30	29.6	99	30	28.3	94	(69-130)	4.50	(< 20)
1,2-Dibromo-3-chloropropane	30	28.7	96	30	28.6	95	(62-128)	0.24	(< 20)
1,2-Dibromoethane	30	30.1	100	30	29.8	99	(77-121)	0.97	(< 20)
1,2-Dichlorobenzene	30	28.2	94	30	28.6	95	(80-119)	1.40	(< 20)
1,2-Dichloroethane	30	28.1	94	30	28.6	95	(73-128)	1.80	(< 20)
1,2-Dichloropropane	30	29.6	99	30	30.9	103	(78-122)	4.20	(< 20)
1,3-Dichlorobenzene	30	28.6	95	30	29.4	98	(80-119)	2.50	(< 20)
1,3-Dichloropropane	30	31.2	104	30	30.8	103	(80-119)	1.10	(< 20)
1,4-Dichlorobenzene	30	28.6	95	30	29.3	98	(79-118)	2.40	(< 20)
2,2-Dichloropropane	30	31.0	103	30	31.8	106	(60-139)	2.40	(< 20)
2-Butanone (MEK)	90	90.9	101	90	96.7	107	(56-143)	6.20	(< 20)
2-Chlorotoluene	30	30.0	100	30	30.9	103	(79-122)	3.00	(< 20)
2-Hexanone	90	87.4	97	90	89.0	99	(57-139)	1.80	(< 20)
4-Chlorotoluene	30	29.7	99	30	30.6	102	(78-122)	2.90	(< 20)
4-Isopropyltoluene	30	28.3	94	30	28.3	94	(77-127)	0.07	(< 20)
4-Methyl-2-pentanone (MIBK)	90	87.0	97	90	85.3	95	(67-130)	2.00	(< 20)
Bromobenzene	30	27.9	93	30	28.8	96	(80-120)	3.10	(< 20)
Bromochloromethane	30	27.0	90	30	28.0	94	(78-123)	3.80	(< 20)
Bromodichloromethane	30	28.8	96	30	29.9	100	(79-125)	4.00	(< 20)
Bromoform	30	28.9	96	30	27.4	91	(66-130)	5.20	(< 20)
Bromomethane	30	32.6	109	30	31.2	104	(53-141)	4.30	(< 20)
Carbon disulfide	45	48.5	108	45	52.7	117	(64-133)	8.30	(< 20)
Carbon tetrachloride	30	29.7	99	30	30.6	102	(72-136)	3.00	(< 20)
Chlorobenzene	30	28.2	94	30	28.1	94	(82-118)	0.35	(< 20)
Chloroethane	30	33.4	111	30	34.5	115	(60-138)	3.20	(< 20)

Print Date: 11/17/2017 2:55:59PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31639]
 Blank Spike Lab ID: 1423399
 Date Analyzed: 10/30/2017 11:38

Spike Duplicate ID: LCSD for HBN 1178533
 [VXX31639]
 Spike Duplicate Lab ID: 1423400
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloroform	30	27.5	92	30	28.5	95	(79-124)	3.60	(< 20)
Chloromethane	30	27.3	91	30	32.3	108	(50-139)	17.00	(< 20)
cis-1,2-Dichloroethene	30	27.3	91	30	27.8	93	(78-123)	1.70	(< 20)
cis-1,3-Dichloropropene	30	29.9	100	30	28.4	95	(75-124)	5.00	(< 20)
Dibromochloromethane	30	28.1	94	30	28.4	95	(74-126)	1.10	(< 20)
Dibromomethane	30	27.5	92	30	27.8	93	(79-123)	1.20	(< 20)
Dichlorodifluoromethane	30	25.3	84	30	34.2	114	(32-152)	30.00	* (< 20)
Freon-113	45	49.8	111	45	54.0	120	(70-136)	8.10	(< 20)
Hexachlorobutadiene	30	28.2	94	30	27.8	93	(66-134)	1.50	(< 20)
Isopropylbenzene (Cumene)	30	29.4	98	30	32.2	107	(72-131)	9.20	(< 20)
Methylene chloride	30	29.1	97	30	30.2	101	(74-124)	3.80	(< 20)
Methyl-t-butyl ether	45	48.3	107	45	51.1	114	(71-124)	5.70	(< 20)
n-Butylbenzene	30	28.4	95	30	28.7	96	(75-128)	1.00	(< 20)
sec-Butylbenzene	30	29.7	99	30	29.9	100	(77-126)	0.64	(< 20)
Styrene	30	28.9	96	30	31.0	103	(78-123)	6.80	(< 20)
tert-Butylbenzene	30	29.8	100	30	30.7	102	(78-124)	3.00	(< 20)
Tetrachloroethene	30	29.2	97	30	27.4	91	(74-129)	6.30	(< 20)
trans-1,2-Dichloroethene	30	26.7	89	30	27.2	91	(75-124)	1.90	(< 20)
trans-1,3-Dichloropropene	30	27.3	91	30	27.2	91	(73-127)	0.37	(< 20)
Trichloroethene	30	29.3	98	30	29.4	98	(79-123)	0.38	(< 20)
Trichlorofluoromethane	30	34.2	114	30	37.0	123	(65-141)	7.60	(< 20)
Vinyl acetate	30	33.8	113	30	37.3	124	(54-146)	9.90	(< 20)
Vinyl chloride	30	29.6	99	30	32.6	109	(58-137)	9.60	(< 20)

Surrogates

1,2-Dichloroethane-D4 (surr)	30	99.7	100	30	101	101	(81-118)	1.70	
4-Bromofluorobenzene (surr)	30	96.2	96	30	101	101	(85-114)	4.70	
Toluene-d8 (surr)	30	104	104	30	98.3	98	(89-112)	5.60	

Print Date: 11/17/2017 2:55:59PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31639]
 Blank Spike Lab ID: 1423399
 Date Analyzed: 10/30/2017 11:38

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31639]
 Spike Duplicate Lab ID: 1423400
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007

Results by SW8260C

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			

Batch Information

Analytical Batch: VMS17389
 Analytical Method: SW8260C
 Instrument: VSA Agilent GC/MS 7890B/5977A
 Analyst: FDR

Prep Batch: VXX31639
 Prep Method: SW5030B
 Prep Date/Time: 10/30/2017 00:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1771304 [VXX/31640]

Blank Lab ID: 1423464

QC for Samples:

1178533007, 1178533008

Matrix: Water (Surface, Eff., Ground)

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Print Date: 11/17/2017 2:56:01PM

Method Blank

Blank ID: MB for HBN 1771304 [VXX/31640]

Blank Lab ID: 1423464

QC for Samples:

1178533007, 1178533008

Matrix: Water (Surface, Eff., Ground)

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	97.6	89-112		%

Method Blank

Blank ID: MB for HBN 1771304 [VXX/31640]

Blank Lab ID: 1423464

QC for Samples:

1178533007, 1178533008

Matrix: Water (Surface, Eff., Ground)

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS17390

Analytical Method: SW8260C

Instrument: VSA Agilent GC/MS 7890B/5977A

Analyst: FDR

Analytical Date/Time: 10/31/2017 7:38:00PM

Prep Batch: VXX31640

Prep Method: SW5030B

Prep Date/Time: 10/31/2017 12:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 11/17/2017 2:56:01PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31640]
 Blank Spike Lab ID: 1423465
 Date Analyzed: 10/31/2017 20:00

Spike Duplicate ID: LCSD for HBN 1178533
 [VXX31640]
 Spike Duplicate Lab ID: 1423466
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007, 1178533008

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	29.8	99	30	30.2	101	(78-124)	1.40	(< 20)
1,1,1-Trichloroethane	30	30.3	101	30	30.5	102	(74-131)	0.68	(< 20)
1,1,2,2-Tetrachloroethane	30	29.6	99	30	30.7	102	(71-121)	3.90	(< 20)
1,1,2-Trichloroethane	30	30.5	102	30	29.9	100	(80-119)	2.00	(< 20)
1,1-Dichloroethane	30	27.7	92	30	28.1	94	(77-125)	1.40	(< 20)
1,1-Dichloroethene	30	30.7	102	30	30.9	103	(71-131)	0.65	(< 20)
1,1-Dichloropropene	30	32.0	107	30	32.2	107	(79-125)	0.64	(< 20)
1,2,3-Trichlorobenzene	30	31.7	106	30	32.5	108	(69-129)	2.70	(< 20)
1,2,3-Trichloropropane	30	29.3	98	30	30.4	101	(73-122)	3.80	(< 20)
1,2,4-Trichlorobenzene	30	31.3	104	30	32.6	109	(69-130)	4.10	(< 20)
1,2,4-Trimethylbenzene	30	28.0	93	30	29.8	99	(79-124)	6.10	(< 20)
1,2-Dibromo-3-chloropropane	30	32.3	108	30	32.0	107	(62-128)	0.74	(< 20)
1,2-Dibromoethane	30	30.4	101	30	29.9	100	(77-121)	1.60	(< 20)
1,2-Dichlorobenzene	30	30.2	101	30	30.8	103	(80-119)	2.20	(< 20)
1,2-Dichloroethane	30	30.6	102	30	30.4	101	(73-128)	0.63	(< 20)
1,2-Dichloropropane	30	31.1	104	30	30.9	103	(78-122)	0.67	(< 20)
1,3,5-Trimethylbenzene	30	28.9	96	30	30.7	102	(75-124)	5.80	(< 20)
1,3-Dichlorobenzene	30	30.2	101	30	31.0	103	(80-119)	2.40	(< 20)
1,3-Dichloropropane	30	30.6	102	30	29.9	100	(80-119)	2.20	(< 20)
1,4-Dichlorobenzene	30	29.6	99	30	31.0	103	(79-118)	4.70	(< 20)
2,2-Dichloropropane	30	31.4	105	30	30.2	101	(60-139)	3.90	(< 20)
2-Butanone (MEK)	90	84.9	94	90	85.2	95	(56-143)	0.31	(< 20)
2-Chlorotoluene	30	31.1	104	30	31.8	106	(79-122)	2.10	(< 20)
2-Hexanone	90	84.6	94	90	94.8	105	(57-139)	11.40	(< 20)
4-Chlorotoluene	30	30.7	102	30	31.6	105	(78-122)	2.80	(< 20)
4-Isopropyltoluene	30	30.1	100	30	31.8	106	(77-127)	5.50	(< 20)
4-Methyl-2-pentanone (MIBK)	90	85.2	95	90	93.4	104	(67-130)	9.10	(< 20)
Benzene	30	30.3	101	30	31.0	103	(79-120)	2.20	(< 20)
Bromobenzene	30	29.5	98	30	30.2	101	(80-120)	2.20	(< 20)
Bromochloromethane	30	29.8	99	30	29.9	100	(78-123)	0.36	(< 20)
Bromodichloromethane	30	31.3	104	30	30.8	103	(79-125)	1.50	(< 20)
Bromoform	30	31.5	105	30	30.8	103	(66-130)	2.30	(< 20)
Bromomethane	30	35.5	118	30	34.8	116	(53-141)	1.90	(< 20)
Carbon disulfide	45	48.7	108	45	49.3	110	(64-133)	1.10	(< 20)

Print Date: 11/17/2017 2:56:03PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31640]
 Blank Spike Lab ID: 1423465
 Date Analyzed: 10/31/2017 20:00

Spike Duplicate ID: LCSD for HBN 1178533
 [VXX31640]
 Spike Duplicate Lab ID: 1423466
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007, 1178533008

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	32.1	107	30	32.2	107	(72-136)	0.21	(< 20)
Chlorobenzene	30	29.9	100	30	30.5	102	(82-118)	1.90	(< 20)
Chloroethane	30	28.0	93	30	32.4	108	(60-138)	14.60	(< 20)
Chloroform	30	27.8	93	30	27.9	93	(79-124)	0.19	(< 20)
Chloromethane	30	28.8	96	30	29.9	100	(50-139)	3.50	(< 20)
cis-1,2-Dichloroethene	30	27.8	93	30	28.3	94	(78-123)	1.70	(< 20)
cis-1,3-Dichloropropene	30	32.9	110	30	32.1	107	(75-124)	2.60	(< 20)
Dibromochloromethane	30	30.8	103	30	30.1	100	(74-126)	2.50	(< 20)
Dibromomethane	30	28.9	96	30	28.2	94	(79-123)	2.30	(< 20)
Dichlorodifluoromethane	30	28.2	94	30	28.9	97	(32-152)	2.70	(< 20)
Ethylbenzene	30	30.0	100	30	29.8	99	(79-121)	0.50	(< 20)
Freon-113	45	47.4	105	45	47.2	105	(70-136)	0.31	(< 20)
Hexachlorobutadiene	30	31.5	105	30	32.3	108	(66-134)	2.50	(< 20)
Isopropylbenzene (Cumene)	30	33.4	111	30	32.4	108	(72-131)	3.10	(< 20)
Methylene chloride	30	29.9	100	30	30.2	101	(74-124)	1.20	(< 20)
Methyl-t-butyl ether	45	48.3	107	45	46.7	104	(71-124)	3.50	(< 20)
Naphthalene	30	31.6	105	30	32.5	108	(61-128)	2.70	(< 20)
n-Butylbenzene	30	29.9	100	30	31.6	105	(75-128)	5.60	(< 20)
n-Propylbenzene	30	31.3	104	30	32.0	107	(76-126)	2.20	(< 20)
o-Xylene	30	30.7	102	30	29.6	99	(78-122)	3.80	(< 20)
P & M -Xylene	60	61.6	103	60	59.1	99	(80-121)	4.10	(< 20)
sec-Butylbenzene	30	31.4	105	30	32.3	108	(77-126)	2.80	(< 20)
Styrene	30	33.0	110	30	31.6	105	(78-123)	4.50	(< 20)
tert-Butylbenzene	30	31.5	105	30	32.2	107	(78-124)	2.10	(< 20)
Tetrachloroethene	30	32.5	108	30	32.9	110	(74-129)	1.10	(< 20)
Toluene	30	29.5	98	30	30.0	100	(80-121)	1.60	(< 20)
trans-1,2-Dichloroethene	30	30.6	102	30	30.8	103	(75-124)	0.82	(< 20)
trans-1,3-Dichloropropene	30	30.8	103	30	29.9	100	(73-127)	3.00	(< 20)
Trichloroethene	30	31.0	103	30	31.3	104	(79-123)	0.86	(< 20)
Trichlorofluoromethane	30	29.5	98	30	29.8	99	(65-141)	0.94	(< 20)
Vinyl acetate	30	36.8	123	30	29.0	97	(54-146)	23.80	* (< 20)
Vinyl chloride	30	29.8	99	30	31.8	106	(58-137)	6.50	(< 20)
Xylenes (total)	90	92.3	103	90	88.7	99	(79-121)	4.00	(< 20)

Print Date: 11/17/2017 2:56:03PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [VXX31640]
 Blank Spike Lab ID: 1423465
 Date Analyzed: 10/31/2017 20:00

Spike Duplicate ID: LCSD for HBN 1178533 [VXX31640]
 Spike Duplicate Lab ID: 1423466
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007, 1178533008

Results by SW8260C

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	94	94	30	92.2	92	(81-118)	1.90	
4-Bromofluorobenzene (surr)	30	95.8	96	30	96.9	97	(85-114)	1.10	
Toluene-d8 (surr)	30	103	103	30	103	103	(89-112)	0.30	

Batch Information

Analytical Batch: **VMS17390**
 Analytical Method: **SW8260C**
 Instrument: **VSA Agilent GC/MS 7890B/5977A**
 Analyst: **FDR**

Prep Batch: **VXX31640**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/31/2017 00:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1770637 [XXX/38710]

Blank Lab ID: 1421504

QC for Samples:

1178533001, 1178533002

Matrix: Water (Surface, Eff., Ground)

Results by 8270D SIM LV (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	74.8	47-106		%
Fluoranthene-d10 (surr)	75.6	24-116		%

Batch Information

Analytical Batch: XMS10523
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: NRB
 Analytical Date/Time: 11/1/2017 2:04:00AM

Prep Batch: XXX38710
 Prep Method: SW3520C
 Prep Date/Time: 10/21/2017 8:20:13AM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Print Date: 11/17/2017 2:56:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [XXX38710]

Blank Spike Lab ID: 1421505

Date Analyzed: 11/01/2017 02:24

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001, 1178533002

Results by 8270D SIM LV (PAH)

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.25	63	(41-115)
2-Methylnaphthalene	2	1.14	57	(39-114)
Acenaphthene	2	1.30	65	(48-114)
Acenaphthylene	2	1.37	68	(35-121)
Anthracene	2	1.51	76	(53-119)
Benzo(a)Anthracene	2	1.49	74	(59-120)
Benzo[a]pyrene	2	1.38	69	(53-120)
Benzo[b]Fluoranthene	2	1.51	75	(53-126)
Benzo[g,h,i]perylene	2	1.26	63	(44-128)
Benzo[k]fluoranthene	2	1.42	71	(54-125)
Chrysene	2	1.42	71	(57-120)
Dibenzo[a,h]anthracene	2	1.17	58	(44-131)
Fluoranthene	2	1.27	63	(58-120)
Fluorene	2	1.39	69	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.37	68	(48-130)
Naphthalene	2	1.18	59	(43-114)
Phenanthrene	2	1.49	75	(53-115)
Pyrene	2	1.34	67	(53-121)

Surrogates

2-Methylnaphthalene-d10 (surr)	2	59.5	60	(47-106)
Fluoranthene-d10 (surr)	2	62.5	63	(24-116)

Batch Information

Analytical Batch: XMS10523

Analytical Method: 8270D SIM LV (PAH)

Instrument: Agilent GC 7890B/5977A SWA

Analyst: NRB

Prep Batch: XXX38710

Prep Method: SW3520C

Prep Date/Time: 10/21/2017 08:20

Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/17/2017 2:56:07PM



Matrix Spike Summary

Original Sample ID: 1177465003
 MS Sample ID: 1421506 MS
 MSD Sample ID: 1421507 MSD

Analysis Date: 11/01/2017 3:26
 Analysis Date: 11/01/2017 3:46
 Analysis Date: 11/01/2017 4:06
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001, 1178533002

Results by 8270D SIM LV (PAH)

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0261U	2.02	1.45	72	2.14	1.49	70	41-115	2.70	(< 20)
2-Methylnaphthalene	0.0261U	2.02	1.33	66	2.14	1.39	65	39-114	4.80	(< 20)
Acenaphthene	0.0261U	2.02	1.5	74	2.14	1.52	71	48-114	1.40	(< 20)
Acenaphthylene	0.0261U	2.02	1.58	79	2.14	1.62	76	35-121	2.40	(< 20)
Anthracene	0.0261U	2.02	1.74	86	2.14	1.80	84	53-119	3.80	(< 20)
Benzo(a)Anthracene	0.0261U	2.02	1.61	80	2.14	1.69	79	59-120	4.70	(< 20)
Benzo(a)pyrene	0.0104U	2.02	1.55	77	2.14	1.59	74	53-120	2.20	(< 20)
Benzo(b)Fluoranthene	0.0261U	2.02	1.62	81	2.14	1.71	80	53-126	5.20	(< 20)
Benzo(g,h,i)perylene	0.0261U	2.02	1.47	73	2.14	1.55	72	44-128	5.30	(< 20)
Benzo(k)fluoranthene	0.0261U	2.02	1.59	79	2.14	1.68	79	54-125	5.80	(< 20)
Chrysene	0.0261U	2.02	1.61	80	2.14	1.67	78	57-120	3.40	(< 20)
Dibenzo(a,h)anthracene	0.0104U	2.02	1.37	68	2.14	1.43	67	44-131	4.60	(< 20)
Fluoranthene	0.0261U	2.02	1.43	71	2.14	1.47	69	58-120	2.90	(< 20)
Fluorene	0.0261U	2.02	1.58	78	2.14	1.64	77	50-118	3.70	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0261U	2.02	1.5	75	2.14	1.57	73	48-130	4.30	(< 20)
Naphthalene	0.0520U	2.02	1.37	68	2.14	1.41	66	43-114	2.90	(< 20)
Phenanthrene	0.0261U	2.02	1.72	85	2.14	1.78	84	53-115	3.60	(< 20)
Pyrene	0.0261U	2.02	1.49	74	2.14	1.56	73	53-121	4.60	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.02	1.36	67	2.14	1.41	66	47-106	3.80	
Fluoranthene-d10 (surr)		2.02	1.39	69	2.14	1.44	67	24-116	3.20	

Batch Information

Analytical Batch: XMS10523
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: NRB
 Analytical Date/Time: 11/1/2017 3:46:00AM

Prep Batch: XXX38710
 Prep Method: 3520 Liq/Liq Ext for 8270 PAH SIM LV
 Prep Date/Time: 10/21/2017 8:20:13AM
 Prep Initial Wt./Vol.: 248.00mL
 Prep Extract Vol: 1.00mL

Print Date: 11/17/2017 2:56:09PM

Method Blank

Blank ID: MB for HBN 1770654 [XXX/38713]
Blank Lab ID: 1421577

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1178533001, 1178533002, 1178533003, 1178533004, 1178533005, 1178533006

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	88.9	60-120		%

Batch Information

Analytical Batch: XFC13920
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/27/2017 12:24:00PM

Prep Batch: XXX38713
Prep Method: SW3520C
Prep Date/Time: 10/22/2017 8:03:42AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/17/2017 2:56:10PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [XXX38713]
 Blank Spike Lab ID: 1421578
 Date Analyzed: 10/27/2017 12:33

Spike Duplicate ID: LCSD for HBN 1178533
 [XXX38713]
 Spike Duplicate Lab ID: 1421579
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001, 1178533002, 1178533003, 1178533004, 1178533005, 1178533006

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	19.1	96	20	18.8	94	(75-125)	1.70	(< 20)
Surrogates									
5a Androstane (surr)	0.4	93.2	93	0.4	92.5	93	(60-120)	0.73	

Batch Information

Analytical Batch: **XFC13920**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38713**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/22/2017 08:03**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770654 [XXX/38713]
Blank Lab ID: 1421577

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1178533001, 1178533002, 1178533003, 1178533004, 1178533005, 1178533006

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	85	60-120		%

Batch Information

Analytical Batch: XFC13920

Analytical Method: AK103

Instrument: Agilent 7890B F

Analyst: JMG

Analytical Date/Time: 10/27/2017 12:24:00PM

Prep Batch: XXX38713

Prep Method: SW3520C

Prep Date/Time: 10/22/2017 8:03:42AM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 11/17/2017 2:56:17PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [XXX38713]
 Blank Spike Lab ID: 1421578
 Date Analyzed: 10/27/2017 12:33

Spike Duplicate ID: LCSD for HBN 1178533 [XXX38713]
 Spike Duplicate Lab ID: 1421579
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533001, 1178533002, 1178533003, 1178533004, 1178533005, 1178533006

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	19.6	98	20	19.3	96	(60-120)	1.70	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	88.6	89	0.4	87.9	88	(60-120)	0.82	

Batch Information

Analytical Batch: **XFC13920**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38713**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/22/2017 08:03**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770772 [XXX/38729]
Blank Lab ID: 1421821

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1178533007

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.453J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	102	60-120		%

Batch Information

Analytical Batch: XFC13908
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/24/2017 8:45:00PM

Prep Batch: XXX38729
Prep Method: SW3520C
Prep Date/Time: 10/24/2017 8:04:39AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [XXX38729]
 Blank Spike Lab ID: 1421822
 Date Analyzed: 10/24/2017 20:55

Spike Duplicate ID: LCSD for HBN 1178533
 [XXX38729]
 Spike Duplicate Lab ID: 1421823
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	18.3	92	20	19.8	99	(75-125)	7.50	(< 20)
Surrogates									
5a Androstane (surr)	0.4	94.3	94	0.4	106	106	(60-120)	12.00	

Batch Information

Analytical Batch: **XFC13908**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38729**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/24/2017 08:04**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770772 [XXX/38729]

Blank Lab ID: 1421821

QC for Samples:
1178533007

Matrix: Water (Surface, Eff., Ground)

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.411J	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	106	60-120		%

Batch Information

Analytical Batch: XFC13908
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/24/2017 8:45:00PM

Prep Batch: XXX38729
Prep Method: SW3520C
Prep Date/Time: 10/24/2017 8:04:39AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/17/2017 2:56:26PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178533 [XXX38729]
 Blank Spike Lab ID: 1421822
 Date Analyzed: 10/24/2017 20:55

Spike Duplicate ID: LCSD for HBN 1178533 [XXX38729]
 Spike Duplicate Lab ID: 1421823
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1178533007

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	20.6	103	20	21.9	109	(60-120)	5.90	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	91.3	91	0.4	102	102	(60-120)	11.30	

Batch Information

Analytical Batch: **XFC13908**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38729**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/24/2017 08:04**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



1178533

D



Locations Nationwide
 Alaska
 Maryland
 New Jersey
 North Carolina
 West Virginia

Alaska
 Maryland
 New Jersey
 North Carolina
 West Virginia

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out.
 Omissions may delay the onset of analysis.

CLIENT: Shannon & Wilson
 CONTACT: Val Webb
 PROJECT: Interior
 NAME: 1 Texaco
 REPORTS TO: Val Webb
 INVOICE TO: S4W

PHONE NO: 458-3152
 PROJECT PWSID/ PERMIT#: 31-1-11807-009
 E-MAIL: vew@shannonwil.com
 QUOTE #:
 P.O. #: S4W

Section 3

Preservative

Page 1 of 1

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	Type C = COMP G = GRAB MI = Multi-Incre-mental Soils	# CONTAINERS	REMARKS/ LOC ID
①A-J	MW-9	10/18/17	1320	GW (P10)	X	1	PHH (8220)
②A-J	MW-109	10/18/17	1330	GW 10	X	1	DRO/PRO (8210)
③A-H	MW-10	10/18/17	1730	GW	X	1	HCL
④A-H	MW-11	10/18/17	1515	GW	X	1	HCL
⑤A-H	MW-12	10/17/17	1246	GW	X	1	HCL
⑥A-H	MW-13	10/18/17	1250	GW	X	1	HCL
⑦A-C	Trip Blank	10/19/17	1130			3	
⑧A-H							

Section 4

DOD Project? Yes (No) No

Section 4

Cooler ID: Level II

Data Deliverable Requirements:

Relinquished By: (1)	Date	Time	Received By:	Date	Time
<i>[Signature]</i>	10/19/17	11:51	<i>[Signature]</i>	10/19/17	11:51
<i>[Signature]</i>	10/19/17	1600	<i>[Signature]</i>	10/19/17	1600
<i>[Signature]</i>			<i>[Signature]</i>		
Relinquished By: (4)	Date	Time	Received For Laboratory By:	Date	Time
<i>[Signature]</i>	10/20/17	10:15	<i>[Signature]</i>	10/20/17	10:15

Requested Turnaround Time and/or Special Instructions:
 STA 111

Temp Blank °C: 5.7
 or Ambient []

Chain of Custody Seal: (Circle)
 INTACT BROKEN **ABSENT**

(See attached Sample Receipt Form)

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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1178533



Cooler Packing Form For Fairbanks

Cooler ID ①

Cooler Temperature -0.1 D41

Please list the WOs and associated samples packed in this Cooler

WO #	Samples	Special Notes
1178533	MW-9 MW-109 MW-109 MW-11 MW-12 MW-13 TRIP BLANK	



e-Sample Receipt Form

SGS Workorder #:

1178533



1 1 7 8 5 3 3

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	Yes	1 Front 1 Back
COC accompanied samples?	Yes	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ -0.1 °C Therm. ID: D41
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	Yes	
<p>If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".</p> <p>Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.</p>		
Holding Time / Documentation / Sample Condition Requirements		
Were samples received within holding time?	Yes	Note: Refer to form F-083 "Sample Guide" for specific holding times.
Do samples match COC ** (i.e., sample IDs, dates/times collected)?	No	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		
"Kelly's DW" sampled 10/17/17 15:30 was not written on COC. GRO/BTEX and DRO/RRO containers were received. Logged in as sample 7A-H for GRO/BTEX, DRO/RRO, and VOCs per client request. "MW-13" to be analyzed for GRO/BTEX, DRO/RRO per client request.		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1178533001-A	HCL to pH < 2	OK	1178533005-G	HCL to pH < 2	OK
1178533001-B	HCL to pH < 2	OK	1178533005-H	HCL to pH < 2	OK
1178533001-C	HCL to pH < 2	OK	1178533006-A	HCL to pH < 2	OK
1178533001-D	HCL to pH < 2	OK	1178533006-B	HCL to pH < 2	OK
1178533001-E	HCL to pH < 2	OK	1178533006-C	HCL to pH < 2	OK
1178533001-F	HCL to pH < 2	OK	1178533006-D	HCL to pH < 2	OK
1178533001-G	HCL to pH < 2	OK	1178533006-E	HCL to pH < 2	OK
1178533001-H	HCL to pH < 2	OK	1178533006-F	HCL to pH < 2	OK
1178533001-I	No Preservative Required	OK	1178533006-G	HCL to pH < 2	OK
1178533001-J	No Preservative Required	OK	1178533006-H	HCL to pH < 2	OK
1178533002-A	HCL to pH < 2	OK	1178533007-A	HCL to pH < 2	OK
1178533002-B	HCL to pH < 2	OK	1178533007-B	HCL to pH < 2	OK
1178533002-C	HCL to pH < 2	OK	1178533007-C	HCL to pH < 2	OK
1178533002-D	HCL to pH < 2	OK	1178533007-D	HCL to pH < 2	OK
1178533002-E	HCL to pH < 2	OK	1178533007-E	HCL to pH < 2	OK
1178533002-F	HCL to pH < 2	OK	1178533007-F	HCL to pH < 2	OK
1178533002-G	HCL to pH < 2	OK	1178533007-G	HCL to pH < 2	OK
1178533002-H	HCL to pH < 2	OK	1178533007-H	HCL to pH < 2	OK
1178533002-I	No Preservative Required	OK	1178533008-A	HCL to pH < 2	OK
1178533002-J	No Preservative Required	OK	1178533008-B	HCL to pH < 2	OK
1178533003-A	HCL to pH < 2	OK	1178533008-C	HCL to pH < 2	OK
1178533003-B	HCL to pH < 2	OK			
1178533003-C	HCL to pH < 2	OK			
1178533003-D	HCL to pH < 2	OK			
1178533003-E	HCL to pH < 2	OK			
1178533003-F	HCL to pH < 2	OK			
1178533003-G	HCL to pH < 2	OK			
1178533003-H	HCL to pH < 2	OK			
1178533004-A	HCL to pH < 2	OK			
1178533004-B	HCL to pH < 2	OK			
1178533004-C	HCL to pH < 2	OK			
1178533004-D	HCL to pH < 2	OK			
1178533004-E	HCL to pH < 2	OK			
1178533004-F	HCL to pH < 2	OK			
1178533004-G	HCL to pH < 2	OK			
1178533004-H	HCL to pH < 2	OK			
1178533005-A	HCL to pH < 2	OK			
1178533005-B	HCL to pH < 2	OK			
1178533005-C	HCL to pH < 2	OK			
1178533005-D	HCL to pH < 2	OK			
1178533005-E	HCL to pH < 2	OK			
1178533005-F	HCL to pH < 2	OK			

Container Id Preservative

Container
Condition

Container Id Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
907-479-0600

Report Number: **1178534**

Client Project: **31-1-11809-009 Interior Texaco**

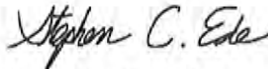
Dear Valerie Webb,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.



Alaska Division Technical Director

Stephen Ede

2017.11.09

08:58:32 -09'00'

Jennifer Dawkins
Project Manager
Jennifer.Dawkins@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**
SGS Project: **1178534**
Project Name/Site: **31-1-11809-009 Interior Texaco**
Project Contact: **Valerie Webb**

Refer to sample receipt form for information on sample condition.

IT-B1-1 (1178534001) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (515%) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (40X).

IT-B2-1 (1178534003) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (1420 %) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (40X).
8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 (259%) does not meet QC criteria due to sample dilution (20X).

IT-B2-3 (1178534004) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (583 %) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (40X).
8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 (171%) does not meet QC criteria due to sample dilution (20X).

IT-B4-1 (1178534008) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (523 %) does not meet QC criteria due to matrix interference.

IT-B5-1 (1178534010) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (1230 %) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (40X).

IT-B6-1 (1178534012) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (2070 %) does not meet QC criteria due to matrix interference.

IT-B6-3 (1178534013) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (1370 %) does not meet QC criteria due to matrix interference.

IT-B7-1 (1178534014) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (2280 %) does not meet QC criteria due to matrix interference.
AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (20X).

IT-B7-2 (1178534015) PS

AK103 - The LOQ for RRO is elevated. The sample was diluted due to the dark color of the extract.

IT-B6-2 (1178534016) PS

AK103 - The LOQ for RRO is elevated. The sample was diluted due to the dark color of the extract.

IT-B9-1 (1178534019) PS

AK102 - The LOQ for DRO is elevated. The sample was diluted due to the dark color of the extract.

IT-B10-1 (1178534021) PS

AK103 - The LOQ for RRO is elevated. The sample was diluted due to the dark color of the extract.
AK101 - Surrogate recovery for 4-bromofluorobenzene (2430%) does not meet QC criteria due to matrix interference.

IT-B10-2 (1178534022) PS

Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**
SGS Project: **1178534**
Project Name/Site: **31-1-11809-009 Interior Texaco**
Project Contact: **Valerie Webb**

AK103 - The LOQ for RRO is elevated. The sample was diluted due to the dark color of the extract.

AK101 - Surrogate recovery for 4-bromofluorobenzene (224 %) does not meet QC criteria due to matrix interference.

IT-B11-1 (1178534023) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene (268 %) does not meet QC criteria due to matrix interference.

AK102 - Surrogate recovery for 5a-androstane (0%) does not meet QC criteria due to sample dilution (40X).

1178534005(1421941MS) (1421942) MS

8021B - MS recoveries for P&M-Xylene and o-Xylene do not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

1178534005(1421941MSD) (1421943) MSD

8021B - MSD recoveries for P&M-Xylene and o-Xylene do not meet QC criteria due to matrix interference. Refer to LCS/LCSD for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 11/08/2017 4:21:45PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
IT-B1-1	1178534001	10/12/2017	10/20/2017	Soil/Solid (dry weight)
IT-B1-2	1178534002	10/12/2017	10/20/2017	Soil/Solid (dry weight)
IT-B2-1	1178534003	10/12/2017	10/20/2017	Soil/Solid (dry weight)
IT-B2-3	1178534004	10/12/2017	10/20/2017	Soil/Solid (dry weight)
IT-B2-2	1178534005	10/12/2017	10/20/2017	Soil/Solid (dry weight)
IT-B3-1	1178534006	10/13/2017	10/20/2017	Soil/Solid (dry weight)
IT-B3-2	1178534007	10/13/2017	10/20/2017	Soil/Solid (dry weight)
IT-B4-1	1178534008	10/13/2017	10/20/2017	Soil/Solid (dry weight)
IT-B4-2	1178534009	10/14/2017	10/20/2017	Soil/Solid (dry weight)
IT-B5-1	1178534010	10/14/2017	10/20/2017	Soil/Solid (dry weight)
IT-B5-2	1178534011	10/14/2017	10/20/2017	Soil/Solid (dry weight)
IT-B6-1	1178534012	10/15/2017	10/20/2017	Soil/Solid (dry weight)
IT-B6-3	1178534013	10/15/2017	10/20/2017	Soil/Solid (dry weight)
IT-B7-1	1178534014	10/16/2017	10/20/2017	Soil/Solid (dry weight)
IT-B7-2	1178534015	10/16/2017	10/20/2017	Soil/Solid (dry weight)
IT-B6-2	1178534016	10/15/2017	10/20/2017	Soil/Solid (dry weight)
IT-B8-1	1178534017	10/16/2017	10/20/2017	Soil/Solid (dry weight)
IT-B8-2	1178534018	10/16/2017	10/20/2017	Soil/Solid (dry weight)
IT-B9-1	1178534019	10/17/2017	10/20/2017	Soil/Solid (dry weight)
IT-B9-2	1178534020	10/17/2017	10/20/2017	Soil/Solid (dry weight)
IT-B10-1	1178534021	10/17/2017	10/20/2017	Soil/Solid (dry weight)
IT-B10-2	1178534022	10/17/2017	10/20/2017	Soil/Solid (dry weight)
IT-B11-1	1178534023	10/17/2017	10/20/2017	Soil/Solid (dry weight)
IT-B11-2	1178534024	10/17/2017	10/20/2017	Soil/Solid (dry weight)
Trip Blank	1178534025	10/19/2017	10/20/2017	Soil/Solid (dry weight)

Method

8270D SIM (PAH)
 AK101
 SW8021B
 AK102
 AK103
 SM21 2540G

Method Description

8270 PAH SIM Semi-Volatiles GC/MS
 AK101/8021 Combo. (S)
 AK101/8021 Combo. (S)
 Diesel/Residual Range Organics
 Diesel/Residual Range Organics
 Percent Solids SM2540G

Detectable Results Summary

Client Sample ID: **IT-B1-1**
 Lab Sample ID: 1178534001
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	5300	mg/Kg
Residual Range Organics	170	mg/Kg
Benzene	0.439	mg/Kg
Ethylbenzene	3.13	mg/Kg
Gasoline Range Organics	990	mg/Kg
o-Xylene	263	mg/Kg
P & M -Xylene	314	mg/Kg
Toluene	14.7	mg/Kg

Client Sample ID: **IT-B1-2**
 Lab Sample ID: 1178534002
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	41.1	mg/Kg
Residual Range Organics	12.8J	mg/Kg
Benzene	0.0169	mg/Kg
Ethylbenzene	0.0123J	mg/Kg
Gasoline Range Organics	2.36	mg/Kg
o-Xylene	0.148	mg/Kg
P & M -Xylene	0.217	mg/Kg
Toluene	0.242	mg/Kg

Client Sample ID: **IT-B2-1**
 Lab Sample ID: 1178534003
Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	65.3	mg/Kg
2-Methylnaphthalene	91.7	mg/Kg
Acenaphthene	1.55	mg/Kg
Anthracene	0.577	mg/Kg
Benzo(a)Anthracene	0.213J	mg/Kg
Chrysene	0.222J	mg/Kg
Fluoranthene	0.992	mg/Kg
Fluorene	2.67	mg/Kg
Naphthalene	91.4	mg/Kg
Phenanthrene	3.76	mg/Kg
Pyrene	0.839	mg/Kg
Diesel Range Organics	7750	mg/Kg
Residual Range Organics	235	mg/Kg
Benzene	0.0155J	mg/Kg
Ethylbenzene	0.865	mg/Kg
Gasoline Range Organics	1780	mg/Kg
o-Xylene	461	mg/Kg
P & M -Xylene	226	mg/Kg
Toluene	0.210	mg/Kg

Detectable Results Summary

Client Sample ID: **IT-B2-3**
 Lab Sample ID: 1178534004

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	46.4	mg/Kg
2-Methylnaphthalene	65.0	mg/Kg
Acenaphthene	1.22	mg/Kg
Anthracene	0.482J	mg/Kg
Benzo(a)Anthracene	0.186J	mg/Kg
Chrysene	0.198J	mg/Kg
Fluoranthene	0.872	mg/Kg
Fluorene	2.12	mg/Kg
Naphthalene	63.3	mg/Kg
Phenanthrene	3.12	mg/Kg
Pyrene	0.731	mg/Kg
Diesel Range Organics	6250	mg/Kg
Residual Range Organics	219	mg/Kg

Semivolatile Organic Fuels

Volatile Fuels

Benzene	0.00956J	mg/Kg
Ethylbenzene	0.420	mg/Kg
Gasoline Range Organics	1380	mg/Kg
o-Xylene	395	mg/Kg
P & M -Xylene	187	mg/Kg
Toluene	0.130	mg/Kg

Client Sample ID: **IT-B2-2**
 Lab Sample ID: 1178534005

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	201	mg/Kg
Residual Range Organics	41.3	mg/Kg
Gasoline Range Organics	1.28J	mg/Kg
o-Xylene	0.0325	mg/Kg
P & M -Xylene	0.0260J	mg/Kg
Toluene	0.0156J	mg/Kg

Client Sample ID: **IT-B3-1**
 Lab Sample ID: 1178534006

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	10.4J	mg/Kg
Residual Range Organics	47.4	mg/Kg
Gasoline Range Organics	1.68J	mg/Kg
o-Xylene	0.106	mg/Kg
P & M -Xylene	0.0656J	mg/Kg

Client Sample ID: **IT-B3-2**
 Lab Sample ID: 1178534007

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	6.97J	mg/Kg
Residual Range Organics	10.8J	mg/Kg
Benzene	0.00847J	mg/Kg
Gasoline Range Organics	1.65J	mg/Kg
o-Xylene	0.105	mg/Kg
P & M -Xylene	0.132	mg/Kg
Toluene	0.125	mg/Kg

Detectable Results Summary

Client Sample ID: **IT-B4-1**
 Lab Sample ID: 1178534008
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1930	mg/Kg
Residual Range Organics	274	mg/Kg
Benzene	0.0117J	mg/Kg
Ethylbenzene	0.292	mg/Kg
Gasoline Range Organics	162	mg/Kg
o-Xylene	0.896	mg/Kg
P & M -Xylene	11.0	mg/Kg
Toluene	0.229	mg/Kg

Client Sample ID: **IT-B4-2**
 Lab Sample ID: 1178534009
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	195	mg/Kg
Residual Range Organics	21.3	mg/Kg
Ethylbenzene	0.00904J	mg/Kg
Gasoline Range Organics	3.70	mg/Kg
o-Xylene	0.0458	mg/Kg
P & M -Xylene	0.0740	mg/Kg
Toluene	0.0305	mg/Kg

Client Sample ID: **IT-B5-1**
 Lab Sample ID: 1178534010
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	12000	mg/Kg
Residual Range Organics	430	mg/Kg
Ethylbenzene	0.236	mg/Kg
Gasoline Range Organics	160	mg/Kg
o-Xylene	3.44	mg/Kg
P & M -Xylene	4.92	mg/Kg
Toluene	0.0332J	mg/Kg

Client Sample ID: **IT-B5-2**
 Lab Sample ID: 1178534011
Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	11.0J	mg/Kg
Residual Range Organics	20.9	mg/Kg
Benzene	0.00560J	mg/Kg
Ethylbenzene	0.0101J	mg/Kg
Gasoline Range Organics	5.88	mg/Kg
o-Xylene	0.0504	mg/Kg
P & M -Xylene	0.0923	mg/Kg
Toluene	0.0528	mg/Kg

Detectable Results Summary

Client Sample ID: **IT-B6-1**
 Lab Sample ID: 1178534012

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	11.0	mg/Kg
2-Methylnaphthalene	16.1	mg/Kg
Acenaphthene	0.119	mg/Kg
Anthracene	0.0551	mg/Kg
Benzo(a)Anthracene	0.00919J	mg/Kg
Fluoranthene	0.0309	mg/Kg
Fluorene	0.309	mg/Kg
Naphthalene	17.8	mg/Kg
Phenanthrene	0.256	mg/Kg
Pyrene	0.0368	mg/Kg
Diesel Range Organics	1830	mg/Kg
Residual Range Organics	46.0	mg/Kg
Volatile Fuels		
Benzene	0.494	mg/Kg
Ethylbenzene	37.4	mg/Kg
Gasoline Range Organics	1570	mg/Kg
o-Xylene	221	mg/Kg
P & M -Xylene	525	mg/Kg
Toluene	74.7	mg/Kg

Client Sample ID: **IT-B6-3**
 Lab Sample ID: 1178534013

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	8.70	mg/Kg
2-Methylnaphthalene	12.9	mg/Kg
Acenaphthene	0.0954	mg/Kg
Acenaphthylene	0.0498	mg/Kg
Anthracene	0.0478	mg/Kg
Fluoranthene	0.0263J	mg/Kg
Fluorene	0.260	mg/Kg
Naphthalene	15.3	mg/Kg
Phenanthrene	0.228	mg/Kg
Pyrene	0.0301	mg/Kg
Diesel Range Organics	1190	mg/Kg
Residual Range Organics	46.7	mg/Kg
Volatile Fuels		
Benzene	0.647	mg/Kg
Ethylbenzene	33.9	mg/Kg
Gasoline Range Organics	1340	mg/Kg
o-Xylene	213	mg/Kg
P & M -Xylene	497	mg/Kg
Toluene	83.4	mg/Kg



Detectable Results Summary

Client Sample ID: **IT-B7-1**

Lab Sample ID: 1178534014

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2900	mg/Kg
Residual Range Organics	119	mg/Kg
Benzene	0.185	mg/Kg
Ethylbenzene	23.8	mg/Kg
Gasoline Range Organics	1210	mg/Kg
o-Xylene	212	mg/Kg
P & M -Xylene	405	mg/Kg
Toluene	29.5	mg/Kg

Client Sample ID: **IT-B7-2**

Lab Sample ID: 1178534015

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1870	mg/Kg
Benzene	0.0105	mg/Kg
Ethylbenzene	0.00639J	mg/Kg
Gasoline Range Organics	8.54	mg/Kg
o-Xylene	0.176	mg/Kg
P & M -Xylene	0.158	mg/Kg
Toluene	0.174	mg/Kg

Client Sample ID: **IT-B6-2**

Lab Sample ID: 1178534016

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1100	mg/Kg
Benzene	0.00721J	mg/Kg
Ethylbenzene	0.00842J	mg/Kg
Gasoline Range Organics	5.46	mg/Kg
o-Xylene	0.106	mg/Kg
P & M -Xylene	0.179	mg/Kg
Toluene	0.120	mg/Kg

Client Sample ID: **IT-B8-1**

Lab Sample ID: 1178534017

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	8.34J	mg/Kg
Toluene	0.0101J	mg/Kg

Client Sample ID: **IT-B8-2**

Lab Sample ID: 1178534018

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Toluene	0.00937J	mg/Kg

Client Sample ID: **IT-B9-1**

Lab Sample ID: 1178534019

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	130	mg/Kg
Benzene	0.0167	mg/Kg
Ethylbenzene	0.217	mg/Kg
Gasoline Range Organics	8.41	mg/Kg
o-Xylene	1.06	mg/Kg
P & M -Xylene	2.14	mg/Kg
Toluene	0.811	mg/Kg

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Detectable Results Summary

Client Sample ID: **IT-B9-2**
 Lab Sample ID: 1178534020

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	0.00923J	mg/Kg
P & M -Xylene	0.0214J	mg/Kg
Toluene	0.0196J	mg/Kg

Client Sample ID: **IT-B10-1**
 Lab Sample ID: 1178534021

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	5050	mg/Kg
Residual Range Organics	179J	mg/Kg

Volatile Fuels

Benzene	0.0716J	mg/Kg
Ethylbenzene	0.689	mg/Kg
Gasoline Range Organics	158	mg/Kg
o-Xylene	12.6	mg/Kg
P & M -Xylene	5.30	mg/Kg
Toluene	0.186J	mg/Kg

Client Sample ID: **IT-B10-2**
 Lab Sample ID: 1178534022

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	5120	mg/Kg
Residual Range Organics	83.7J	mg/Kg

Volatile Fuels

Ethylbenzene	0.0133J	mg/Kg
Gasoline Range Organics	32.8	mg/Kg
o-Xylene	0.410	mg/Kg
P & M -Xylene	0.173	mg/Kg

Client Sample ID: **IT-B11-1**
 Lab Sample ID: 1178534023

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	12100	mg/Kg
Residual Range Organics	281	mg/Kg

Volatile Fuels

Benzene	0.00931J	mg/Kg
Ethylbenzene	0.0588	mg/Kg
Gasoline Range Organics	143	mg/Kg
o-Xylene	0.549	mg/Kg
P & M -Xylene	11.0	mg/Kg
Toluene	0.0871	mg/Kg

Client Sample ID: **IT-B11-2**
 Lab Sample ID: 1178534024

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	7.00J	mg/Kg

Volatile Fuels

o-Xylene	0.0125J	mg/Kg
P & M -Xylene	0.0277J	mg/Kg
Toluene	0.0345	mg/Kg

Detectable Results Summary

Client Sample ID: **Trip Blank**

Lab Sample ID: 1178534025

Volatil Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.877J	mg/Kg
o-Xylene	0.0112J	mg/Kg
P & M -Xylene	0.0270J	mg/Kg
Toluene	0.0286	mg/Kg

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Results of IT-B1-1

Client Sample ID: IT-B1-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534001
Lab Project ID: 1178534

Collection Date: 10/12/17 12:55
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):83.1
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:19
Container ID: 1178534001-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.274 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:00
Container ID: 1178534001-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.274 g
Prep Extract Vol: 1 mL



Results of IT-B1-1

Client Sample ID: IT-B1-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534001
Lab Project ID: 1178534

Collection Date: 10/12/17 12:55
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):83.1
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 14:22
Container ID: 1178534001-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 12:55
Prep Initial Wt./Vol.: 69.69 g
Prep Extract Vol: 36.7945 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 14:22
Container ID: 1178534001-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 12:55
Prep Initial Wt./Vol.: 69.69 g
Prep Extract Vol: 36.7945 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 15:46
Container ID: 1178534001-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/12/17 12:55
Prep Initial Wt./Vol.: 69.69 g
Prep Extract Vol: 36.7945 mL



Results of IT-B1-2

Client Sample ID: IT-B1-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534002
Lab Project ID: 1178534

Collection Date: 10/12/17 14:54
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.0
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 41.1, 20.6, 6.37, mg/Kg, 1, 10/26/17 22:54

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 84.4, 50-150, %, 1, 10/26/17 22:54

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 22:54
Container ID: 1178534002-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.086 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 12.8 J, 20.6, 6.37, mg/Kg, 1, 10/26/17 22:54

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 84.3, 50-150, %, 1, 10/26/17 22:54

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 22:54
Container ID: 1178534002-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.086 g
Prep Extract Vol: 1 mL



Results of IT-B1-2

Client Sample ID: IT-B1-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534002
Lab Project ID: 1178534

Collection Date: 10/12/17 14:54
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.0
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 2.36, 2.20, 0.659, mg/Kg, 1, 10/24/17 14:41

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 73.7, 50-150, %, 1, 10/24/17 14:41

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 14:41
Container ID: 1178534002-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 14:54
Prep Initial Wt./Vol.: 63.135 g
Prep Extract Vol: 26.8986 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 98.6, 72-119, %, 1, 10/24/17 14:41

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 14:41
Container ID: 1178534002-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 14:54
Prep Initial Wt./Vol.: 63.135 g
Prep Extract Vol: 26.8986 mL



Results of IT-B2-1

Client Sample ID: **IT-B2-1**
 Client Project ID: **31-1-11809-009 Interior Texaco**
 Lab Sample ID: 1178534003
 Lab Project ID: 1178534

Collection Date: 10/12/17 17:54
 Received Date: 10/20/17 10:15
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.7
 Location:

Results by Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	65.3	5.68	1.70	mg/Kg	200		11/06/17 02:48
2-Methylnaphthalene	91.7	5.68	1.70	mg/Kg	200		11/06/17 02:48
Acenaphthene	1.55	0.568	0.170	mg/Kg	20		11/02/17 22:57
Acenaphthylene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Anthracene	0.577	0.568	0.170	mg/Kg	20		11/02/17 22:57
Benzo(a)Anthracene	0.213 J	0.568	0.170	mg/Kg	20		11/02/17 22:57
Benzo[a]pyrene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Benzo[b]Fluoranthene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Benzo[g,h,i]perylene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Benzo[k]fluoranthene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Chrysene	0.222 J	0.568	0.170	mg/Kg	20		11/02/17 22:57
Dibenzo[a,h]anthracene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Fluoranthene	0.992	0.568	0.170	mg/Kg	20		11/02/17 22:57
Fluorene	2.67	0.568	0.170	mg/Kg	20		11/02/17 22:57
Indeno[1,2,3-c,d] pyrene	0.284 U	0.568	0.170	mg/Kg	20		11/02/17 22:57
Naphthalene	91.4	4.54	1.36	mg/Kg	200		11/06/17 02:48
Phenanthrene	3.76	0.568	0.170	mg/Kg	20		11/02/17 22:57
Pyrene	0.839	0.568	0.170	mg/Kg	20		11/02/17 22:57
Surrogates							
2-Methylnaphthalene-d10 (surr)	259	*	50-150	%	20		11/02/17 22:57
Fluoranthene-d10 (surr)	83.1		50-150	%	20		11/02/17 22:57

Batch Information

Analytical Batch: XMS10533
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 11/06/17 02:48
 Container ID: 1178534003-A

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/17 07:27
 Prep Initial Wt./Vol.: 22.584 g
 Prep Extract Vol: 5 mL

Analytical Batch: XMS10528
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 11/02/17 22:57
 Container ID: 1178534003-A

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/17 07:27
 Prep Initial Wt./Vol.: 22.584 g
 Prep Extract Vol: 5 mL



Results of IT-B2-1

Client Sample ID: IT-B2-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534003
Lab Project ID: 1178534

Collection Date: 10/12/17 17:54
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.7
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:28
Container ID: 1178534003-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.401 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:10
Container ID: 1178534003-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.401 g
Prep Extract Vol: 1 mL



Results of IT-B2-1

Client Sample ID: IT-B2-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534003
Lab Project ID: 1178534

Collection Date: 10/12/17 17:54
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.7
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1780, 168, 50.4, mg/Kg, 50, 10/24/17 15:37

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 1420, *, 50-150, %, 50, 10/24/17 15:37

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 15:37
Container ID: 1178534003-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:54
Prep Initial Wt./Vol.: 53.636 g
Prep Extract Vol: 31.598 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.7, 72-119, %, 1, 10/23/17 16:24

Batch Information

Analytical Batch: VFC13964
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 10/25/17 13:52
Container ID: 1178534003-C

Prep Batch: VXX31598
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:54
Prep Initial Wt./Vol.: 53.636 g
Prep Extract Vol: 31.598 mL

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 15:37
Container ID: 1178534003-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:54
Prep Initial Wt./Vol.: 53.636 g
Prep Extract Vol: 31.598 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 16:24
Container ID: 1178534003-C

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:54
Prep Initial Wt./Vol.: 53.636 g
Prep Extract Vol: 31.598 mL



Results of IT-B2-3

Client Sample ID: **IT-B2-3**
 Client Project ID: **31-1-11809-009 Interior Texaco**
 Lab Sample ID: 1178534004
 Lab Project ID: 1178534

Collection Date: 10/12/17 17:44
 Received Date: 10/20/17 10:15
 Matrix: Soil/Solid (dry weight)
 Solids (%):89.0
 Location:

Results by Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	46.4	5.54	1.66	mg/Kg	200		11/06/17 03:08
2-Methylnaphthalene	65.0	5.54	1.66	mg/Kg	200		11/06/17 03:08
Acenaphthene	1.22	0.554	0.166	mg/Kg	20		11/02/17 23:17
Acenaphthylene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Anthracene	0.482 J	0.554	0.166	mg/Kg	20		11/02/17 23:17
Benzo(a)Anthracene	0.186 J	0.554	0.166	mg/Kg	20		11/02/17 23:17
Benzo[a]pyrene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Benzo[b]Fluoranthene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Benzo[g,h,i]perylene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Benzo[k]fluoranthene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Chrysene	0.198 J	0.554	0.166	mg/Kg	20		11/02/17 23:17
Dibenzo[a,h]anthracene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Fluoranthene	0.872	0.554	0.166	mg/Kg	20		11/02/17 23:17
Fluorene	2.12	0.554	0.166	mg/Kg	20		11/02/17 23:17
Indeno[1,2,3-c,d] pyrene	0.277 U	0.554	0.166	mg/Kg	20		11/02/17 23:17
Naphthalene	63.3	4.43	1.33	mg/Kg	200		11/06/17 03:08
Phenanthrene	3.12	0.554	0.166	mg/Kg	20		11/02/17 23:17
Pyrene	0.731	0.554	0.166	mg/Kg	20		11/02/17 23:17
Surrogates							
2-Methylnaphthalene-d10 (surr)	171	*	50-150	%	20		11/02/17 23:17
Fluoranthene-d10 (surr)	84.4		50-150	%	20		11/02/17 23:17

Batch Information

Analytical Batch: XMS10533
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 11/06/17 03:08
 Container ID: 1178534004-A

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/17 07:27
 Prep Initial Wt./Vol.: 22.822 g
 Prep Extract Vol: 5 mL

Analytical Batch: XMS10528
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 11/02/17 23:17
 Container ID: 1178534004-A

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/17 07:27
 Prep Initial Wt./Vol.: 22.822 g
 Prep Extract Vol: 5 mL



Results of IT-B2-3

Client Sample ID: IT-B2-3
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534004
Lab Project ID: 1178534

Collection Date: 10/12/17 17:44
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 6250, 885, 274, mg/Kg, 40, 10/28/17 20:38

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 0, *, 50-150, %, 40, 10/28/17 20:38

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:38
Container ID: 1178534004-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.462 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 219, 88.5, 27.4, mg/Kg, 4, 10/27/17 01:20

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 78.4, 50-150, %, 4, 10/27/17 01:20

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:20
Container ID: 1178534004-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.462 g
Prep Extract Vol: 1 mL



Results of IT-B2-3

Client Sample ID: IT-B2-3
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534004
Lab Project ID: 1178534

Collection Date: 10/12/17 17:44
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.0
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1380, 149, 44.8, mg/Kg, 50, 10/24/17 15:56

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 583, *, 50-150, %, 50, 10/24/17 15:56

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 15:56
Container ID: 1178534004-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:44
Prep Initial Wt./Vol.: 59.284 g
Prep Extract Vol: 31.5263 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.4, 72-119, %, 1, 10/23/17 16:43

Batch Information

Analytical Batch: VFC13964
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 10/25/17 14:48
Container ID: 1178534004-C

Prep Batch: VXX31598
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:44
Prep Initial Wt./Vol.: 59.284 g
Prep Extract Vol: 31.5263 mL

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 15:56
Container ID: 1178534004-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:44
Prep Initial Wt./Vol.: 59.284 g
Prep Extract Vol: 31.5263 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 16:43
Container ID: 1178534004-C

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/12/17 17:44
Prep Initial Wt./Vol.: 59.284 g
Prep Extract Vol: 31.5263 mL



Results of IT-B2-2

Client Sample ID: IT-B2-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534005
Lab Project ID: 1178534

Collection Date: 10/12/17 19:58
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 23:04
Container ID: 1178534005-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.457 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:04
Container ID: 1178534005-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.457 g
Prep Extract Vol: 1 mL



Results of IT-B2-2

Client Sample ID: IT-B2-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534005
Lab Project ID: 1178534

Collection Date: 10/12/17 19:58
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.28 J, 2.48, 0.743, mg/Kg, 1, 10/24/17 16:15

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 79, 50-150, %, 1, 10/24/17 16:15

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 16:15
Container ID: 1178534005-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 19:58
Prep Initial Wt./Vol.: 61.176 g
Prep Extract Vol: 28.55 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.1, 72-119, %, 1, 10/24/17 16:15

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 16:15
Container ID: 1178534005-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/12/17 19:58
Prep Initial Wt./Vol.: 61.176 g
Prep Extract Vol: 28.55 mL



Results of IT-B3-1

Client Sample ID: IT-B3-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534006
Lab Project ID: 1178534

Collection Date: 10/13/17 12:39
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 10.4 J, 22.4, 6.93, mg/Kg, 1, 10/26/17 23:13

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 74.6, 50-150, %, 1, 10/26/17 23:13

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 23:13
Container ID: 1178534006-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.087 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 47.4, 22.4, 6.93, mg/Kg, 1, 10/26/17 23:13

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 75.3, 50-150, %, 1, 10/26/17 23:13

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:13
Container ID: 1178534006-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.087 g
Prep Extract Vol: 1 mL



Results of IT-B3-1

Client Sample ID: IT-B3-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534006
Lab Project ID: 1178534

Collection Date: 10/13/17 12:39
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.68 J, 3.38, 1.01, mg/Kg, 1, 10/23/17 17:59

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 82.1, 50-150, %, 1, 10/23/17 17:59

Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/23/17 17:59
Container ID: 1178534006-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/13/17 12:39
Prep Initial Wt./Vol.: 50.489 g
Prep Extract Vol: 30.4477 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 91.9, 72-119, %, 1, 10/23/17 17:59

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 17:59
Container ID: 1178534006-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/13/17 12:39
Prep Initial Wt./Vol.: 50.489 g
Prep Extract Vol: 30.4477 mL



Results of IT-B3-2

Client Sample ID: IT-B3-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534007
Lab Project ID: 1178534

Collection Date: 10/13/17 12:22
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 23:23
Container ID: 1178534007-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.476 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:23
Container ID: 1178534007-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.476 g
Prep Extract Vol: 1 mL



Results of IT-B3-2

Client Sample ID: IT-B3-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534007
Lab Project ID: 1178534

Collection Date: 10/13/17 12:22
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.65 J, 2.82, 0.847, mg/Kg, 1, 10/23/17 18:18

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 88.3, 50-150, %, 1, 10/23/17 18:18

Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/23/17 18:18
Container ID: 1178534007-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/13/17 12:22
Prep Initial Wt./Vol.: 48.073 g
Prep Extract Vol: 26.3619 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 88.5, 72-119, %, 1, 10/23/17 18:18

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 18:18
Container ID: 1178534007-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/13/17 12:22
Prep Initial Wt./Vol.: 48.073 g
Prep Extract Vol: 26.3619 mL



Results of IT-B4-1

Client Sample ID: IT-B4-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534008
Lab Project ID: 1178534

Collection Date: 10/13/17 17:50
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 1930, 90.4, 28.0, mg/Kg, 4, 10/27/17 01:29

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 72.1, 50-150, %, 4, 10/27/17 01:29

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 01:29
Container ID: 1178534008-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.428 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 274, 90.4, 28.0, mg/Kg, 4, 10/27/17 01:29

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 78.6, 50-150, %, 4, 10/27/17 01:29

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:29
Container ID: 1178534008-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.428 g
Prep Extract Vol: 1 mL



Results of IT-B4-1

Client Sample ID: IT-B4-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534008
Lab Project ID: 1178534

Collection Date: 10/13/17 17:50
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 16:33
Container ID: 1178534008-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/13/17 17:50
Prep Initial Wt./Vol.: 54.645 g
Prep Extract Vol: 31.9922 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 19:34
Container ID: 1178534008-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/13/17 17:50
Prep Initial Wt./Vol.: 54.645 g
Prep Extract Vol: 31.9922 mL



Results of IT-B4-2

Client Sample ID: IT-B4-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534009
Lab Project ID: 1178534

Collection Date: 10/14/17 11:12
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):94.5
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 23:33
Container ID: 1178534009-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.376 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:33
Container ID: 1178534009-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.376 g
Prep Extract Vol: 1 mL



Results of IT-B4-2

Client Sample ID: IT-B4-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534009
Lab Project ID: 1178534

Collection Date: 10/14/17 11:12
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):94.5
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 3.70, 2.10, 0.631, mg/Kg, 1, 10/23/17 19:53

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 115, 50-150, %, 1, 10/23/17 19:53

Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/23/17 19:53
Container ID: 1178534009-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/14/17 11:12
Prep Initial Wt./Vol.: 73.004 g
Prep Extract Vol: 29.0152 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 91.1, 72-119, %, 1, 10/23/17 19:53

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 19:53
Container ID: 1178534009-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/14/17 11:12
Prep Initial Wt./Vol.: 73.004 g
Prep Extract Vol: 29.0152 mL



Results of IT-B5-1

Client Sample ID: IT-B5-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534010
Lab Project ID: 1178534

Collection Date: 10/14/17 13:24
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.0
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 12000, 939, 291, mg/Kg, 40, 10/28/17 20:48

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 0, *, 50-150, %, 40, 10/28/17 20:48

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:48
Container ID: 1178534010-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.046 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 430, 93.9, 29.1, mg/Kg, 4, 10/27/17 01:39

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 85, 50-150, %, 4, 10/27/17 01:39

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:39
Container ID: 1178534010-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.046 g
Prep Extract Vol: 1 mL



Results of IT-B5-1

Client Sample ID: IT-B5-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534010
Lab Project ID: 1178534

Collection Date: 10/14/17 13:24
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):85.0
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Includes Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 16:52
Container ID: 1178534010-B
Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/14/17 13:24
Prep Initial Wt./Vol.: 53.08 g
Prep Extract Vol: 32.9445 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Includes Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 20:12
Container ID: 1178534010-B
Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/14/17 13:24
Prep Initial Wt./Vol.: 53.08 g
Prep Extract Vol: 32.9445 mL



Results of IT-B5-2

Client Sample ID: IT-B5-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534011
Lab Project ID: 1178534

Collection Date: 10/14/17 15:30
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.4
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 11.0 J, 20.7, 6.42, mg/Kg, 1, 10/26/17 23:43

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 81.5, 50-150, %, 1, 10/26/17 23:43

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/26/17 23:43
Container ID: 1178534011-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.064 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 20.9, 20.7, 6.42, mg/Kg, 1, 10/26/17 23:43

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 83.8, 50-150, %, 1, 10/26/17 23:43

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:43
Container ID: 1178534011-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.064 g
Prep Extract Vol: 1 mL



Results of IT-B5-2

Client Sample ID: IT-B5-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534011
Lab Project ID: 1178534

Collection Date: 10/14/17 15:30
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.4
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 5.88, 2.67, 0.800, mg/Kg, 1, 10/23/17 20:31

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 129, 50-150, %, 1, 10/23/17 20:31

Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/23/17 20:31
Container ID: 1178534011-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/14/17 15:30
Prep Initial Wt./Vol.: 52.253 g
Prep Extract Vol: 26.8769 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 91.9, 72-119, %, 1, 10/23/17 20:31

Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 20:31
Container ID: 1178534011-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/14/17 15:30
Prep Initial Wt./Vol.: 52.253 g
Prep Extract Vol: 26.8769 mL



Results of IT-B6-1

Client Sample ID: IT-B6-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534012
Lab Project ID: 1178534

Collection Date: 10/15/17 09:17
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):84.4
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS10504
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/24/17 19:57
Container ID: 1178534012-A

Prep Batch: XXX38731
Prep Method: SW3550C
Prep Date/Time: 10/24/17 09:17
Prep Initial Wt./Vol.: 22.854 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS10506
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/25/17 23:20
Container ID: 1178534012-A

Prep Batch: XXX38731
Prep Method: SW3550C
Prep Date/Time: 10/24/17 09:17
Prep Initial Wt./Vol.: 22.854 g
Prep Extract Vol: 5 mL



Results of IT-B6-1

Client Sample ID: IT-B6-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534012
Lab Project ID: 1178534

Collection Date: 10/15/17 09:17
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):84.4
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:09
Container ID: 1178534012-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.088 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 00:31
Container ID: 1178534012-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.088 g
Prep Extract Vol: 1 mL



Results of IT-B6-1

Client Sample ID: IT-B6-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534012
Lab Project ID: 1178534

Collection Date: 10/15/17 09:17
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):84.4
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1570, 198, 59.5, mg/Kg, 50, 10/24/17 17:10

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 2070, *, 50-150, %, 50, 10/24/17 17:10

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 17:10
Container ID: 1178534012-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:17
Prep Initial Wt./Vol.: 48.673 g
Prep Extract Vol: 32.5819 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 98.9, 72-119, %, 1, 10/23/17 20:50

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 17:10
Container ID: 1178534012-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:17
Prep Initial Wt./Vol.: 48.673 g
Prep Extract Vol: 32.5819 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 20:50
Container ID: 1178534012-C

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:17
Prep Initial Wt./Vol.: 48.673 g
Prep Extract Vol: 32.5819 mL



Results of IT-B6-3

Client Sample ID: IT-B6-3
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534013
Lab Project ID: 1178534

Collection Date: 10/15/17 09:07
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.2
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS10504
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/24/17 20:17
Container ID: 1178534013-A

Prep Batch: XXX38731
Prep Method: SW3550C
Prep Date/Time: 10/24/17 09:17
Prep Initial Wt./Vol.: 22.821 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS10506
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/25/17 23:40
Container ID: 1178534013-A

Prep Batch: XXX38731
Prep Method: SW3550C
Prep Date/Time: 10/24/17 09:17
Prep Initial Wt./Vol.: 22.821 g
Prep Extract Vol: 5 mL



Results of IT-B6-3

Client Sample ID: IT-B6-3
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534013
Lab Project ID: 1178534

Collection Date: 10/15/17 09:07
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 1190, 91.1, 28.2, mg/Kg, 4, 10/28/17 19:59

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 88.1, 50-150, %, 4, 10/28/17 19:59

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 19:59
Container ID: 1178534013-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.237 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 46.7, 22.8, 7.06, mg/Kg, 1, 10/26/17 23:52

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 84.6, 50-150, %, 1, 10/26/17 23:52

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/26/17 23:52
Container ID: 1178534013-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.237 g
Prep Extract Vol: 1 mL



Results of IT-B6-3

Client Sample ID: IT-B6-3
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534013
Lab Project ID: 1178534

Collection Date: 10/15/17 09:07
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):87.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1340, 164, 49.1, mg/Kg, 50, 10/24/17 17:29

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 1370, *, 50-150, %, 50, 10/24/17 17:29

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 17:29
Container ID: 1178534013-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:07
Prep Initial Wt./Vol.: 56.557 g
Prep Extract Vol: 32.2584 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 102, 72-119, %, 1, 10/23/17 21:09

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 17:29
Container ID: 1178534013-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:07
Prep Initial Wt./Vol.: 56.557 g
Prep Extract Vol: 32.2584 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 21:09
Container ID: 1178534013-C

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/15/17 09:07
Prep Initial Wt./Vol.: 56.557 g
Prep Extract Vol: 32.2584 mL



Results of IT-B7-1

Client Sample ID: IT-B7-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534014
Lab Project ID: 1178534

Collection Date: 10/16/17 13:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13924
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/28/17 20:57
Container ID: 1178534014-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.332 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:49
Container ID: 1178534014-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.332 g
Prep Extract Vol: 1 mL



Results of IT-B7-1

Client Sample ID: IT-B7-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534014
Lab Project ID: 1178534

Collection Date: 10/16/17 13:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1210, 175, 52.5, mg/Kg, 50, 10/24/17 17:48

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 2280, *, 50-150, %, 50, 10/24/17 17:48

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 17:48
Container ID: 1178534014-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 13:45
Prep Initial Wt./Vol.: 52.594 g
Prep Extract Vol: 31.9533 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 104, 72-119, %, 1, 10/23/17 21:28

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 17:48
Container ID: 1178534014-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 13:45
Prep Initial Wt./Vol.: 52.594 g
Prep Extract Vol: 31.9533 mL

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 21:28
Container ID: 1178534014-B

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/16/17 13:45
Prep Initial Wt./Vol.: 52.594 g
Prep Extract Vol: 31.9533 mL



Results of IT-B7-2

Client Sample ID: IT-B7-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534015
Lab Project ID: 1178534

Collection Date: 10/16/17 15:05
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.1
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 01:59
Container ID: 1178534015-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.113 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 01:59
Container ID: 1178534015-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.113 g
Prep Extract Vol: 1 mL



Results of IT-B7-2

Client Sample ID: IT-B7-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534015
Lab Project ID: 1178534

Collection Date: 10/16/17 15:05
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.1
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 8.54, 1.94, 0.581, mg/Kg, 1, 10/24/17 18:44

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 133, 50-150, %, 1, 10/24/17 18:44

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 18:44
Container ID: 1178534015-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 15:05
Prep Initial Wt./Vol.: 78.327 g
Prep Extract Vol: 28.8611 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 94.8, 72-119, %, 1, 10/24/17 18:44

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 18:44
Container ID: 1178534015-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 15:05
Prep Initial Wt./Vol.: 78.327 g
Prep Extract Vol: 28.8611 mL



Results of IT-B6-2

Client Sample ID: IT-B6-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534016
Lab Project ID: 1178534

Collection Date: 10/15/17 11:27
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 1100, 82.5, 25.6, mg/Kg, 4, 10/27/17 02:08

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 86.7, 50-150, %, 4, 10/27/17 02:08

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 02:08
Container ID: 1178534016-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.237 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 41.3 U, 82.5, 25.6, mg/Kg, 4, 10/27/17 02:08

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 88.1, 50-150, %, 4, 10/27/17 02:08

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 02:08
Container ID: 1178534016-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.237 g
Prep Extract Vol: 1 mL



Results of IT-B6-2

Client Sample ID: **IT-B6-2**
Client Project ID: **31-1-11809-009 Interior Texaco**
Lab Sample ID: 1178534016
Lab Project ID: 1178534

Collection Date: 10/15/17 11:27
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.2
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	5.46	2.00	0.601	mg/Kg	1		10/24/17 19:02

Surrogates

4-Bromofluorobenzene (surr)	109	50-150		%	1		10/24/17 19:02
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Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 19:02
Container ID: 1178534016-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 11:27
Prep Initial Wt./Vol.: 71.806 g
Prep Extract Vol: 27.6998 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.00721 J	0.0100	0.00321	mg/Kg	1		10/24/17 19:02
Ethylbenzene	0.00842 J	0.0200	0.00625	mg/Kg	1		10/24/17 19:02
o-Xylene	0.106	0.0200	0.00625	mg/Kg	1		10/24/17 19:02
P & M -Xylene	0.179	0.0401	0.0120	mg/Kg	1		10/24/17 19:02
Toluene	0.120	0.0200	0.00625	mg/Kg	1		10/24/17 19:02

Surrogates

1,4-Difluorobenzene (surr)	93.4	72-119		%	1		10/24/17 19:02
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Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 19:02
Container ID: 1178534016-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/15/17 11:27
Prep Initial Wt./Vol.: 71.806 g
Prep Extract Vol: 27.6998 mL



Results of IT-B8-1

Client Sample ID: IT-B8-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534017
Lab Project ID: 1178534

Collection Date: 10/16/17 11:40
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 10.2 U, 20.3, 6.28, mg/Kg, 1, 10/27/17 00:02

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 77.6, 50-150, %, 1, 10/27/17 00:02

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 00:02
Container ID: 1178534017-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.493 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 8.34 J, 20.3, 6.28, mg/Kg, 1, 10/27/17 00:02

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 80.6, 50-150, %, 1, 10/27/17 00:02

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 00:02
Container ID: 1178534017-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.493 g
Prep Extract Vol: 1 mL



Results of IT-B8-1

Client Sample ID: **IT-B8-1**
 Client Project ID: **31-1-11809-009 Interior Texaco**
 Lab Sample ID: 1178534017
 Lab Project ID: 1178534

Collection Date: 10/16/17 11:40
 Received Date: 10/20/17 10:15
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.21 U	2.41	0.723	mg/Kg	1		10/24/17 19:21

Surrogates

4-Bromofluorobenzene (surr)	73.9	50-150		%	1		10/24/17 19:21
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Batch Information

Analytical Batch: VFC13963
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/24/17 19:21
 Container ID: 1178534017-B

Prep Batch: VXX31591
 Prep Method: SW5035A
 Prep Date/Time: 10/16/17 11:40
 Prep Initial Wt./Vol.: 56.853 g
 Prep Extract Vol: 26.6254 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.00605 U	0.0121	0.00386	mg/Kg	1		10/24/17 19:21
Ethylbenzene	0.0121 U	0.0241	0.00752	mg/Kg	1		10/24/17 19:21
o-Xylene	0.0121 U	0.0241	0.00752	mg/Kg	1		10/24/17 19:21
P & M -Xylene	0.0241 U	0.0482	0.0145	mg/Kg	1		10/24/17 19:21
Toluene	0.0101 J	0.0241	0.00752	mg/Kg	1		10/24/17 19:21

Surrogates

1,4-Difluorobenzene (surr)	95	72-119		%	1		10/24/17 19:21
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Batch Information

Analytical Batch: VFC13963
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/24/17 19:21
 Container ID: 1178534017-B

Prep Batch: VXX31591
 Prep Method: SW5035A
 Prep Date/Time: 10/16/17 11:40
 Prep Initial Wt./Vol.: 56.853 g
 Prep Extract Vol: 26.6254 mL



Results of IT-B8-2

Client Sample ID: IT-B8-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534018
Lab Project ID: 1178534

Collection Date: 10/16/17 11:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 00:12
Container ID: 1178534018-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.041 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 00:12
Container ID: 1178534018-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.041 g
Prep Extract Vol: 1 mL



Results of IT-B8-2

Client Sample ID: IT-B8-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534018
Lab Project ID: 1178534

Collection Date: 10/16/17 11:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.34 U, 2.68, 0.803, mg/Kg, 1, 10/24/17 19:40

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 74.7, 50-150, %, 1, 10/24/17 19:40

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 19:40
Container ID: 1178534018-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 11:45
Prep Initial Wt./Vol.: 51.419 g
Prep Extract Vol: 26.6506 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.5, 72-119, %, 1, 10/24/17 19:40

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 19:40
Container ID: 1178534018-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/16/17 11:45
Prep Initial Wt./Vol.: 51.419 g
Prep Extract Vol: 26.6506 mL



Results of IT-B9-1

Client Sample ID: IT-B9-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534019
Lab Project ID: 1178534

Collection Date: 10/17/17 09:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.3
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 44.6 U, 89.3, 27.7, mg/Kg, 4, 10/27/17 02:18

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 73.2, 50-150, %, 4, 10/27/17 02:18

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 02:18
Container ID: 1178534019-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.096 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 130, 89.3, 27.7, mg/Kg, 4, 10/27/17 02:18

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 76, 50-150, %, 4, 10/27/17 02:18

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 02:18
Container ID: 1178534019-A

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.096 g
Prep Extract Vol: 1 mL



Results of IT-B9-1

Client Sample ID: IT-B9-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534019
Lab Project ID: 1178534

Collection Date: 10/17/17 09:45
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):89.3
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 8.41, 3.04, 0.911, mg/Kg, 1, 10/24/17 19:58

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 84.8, 50-150, %, 1, 10/24/17 19:58

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 19:58
Container ID: 1178534019-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 09:45
Prep Initial Wt./Vol.: 57.442 g
Prep Extract Vol: 31.1421 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 93.6, 72-119, %, 1, 10/24/17 19:58

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 19:58
Container ID: 1178534019-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 09:45
Prep Initial Wt./Vol.: 57.442 g
Prep Extract Vol: 31.1421 mL



Results of IT-B9-2

Client Sample ID: IT-B9-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534020
Lab Project ID: 1178534

Collection Date: 10/17/17 09:50
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.0
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/27/17 00:21
Container ID: 1178534020-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.44 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/27/17 00:21
Container ID: 1178534020-A
Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/17 09:17
Prep Initial Wt./Vol.: 30.44 g
Prep Extract Vol: 1 mL



Results of IT-B9-2

Client Sample ID: IT-B9-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534020
Lab Project ID: 1178534

Collection Date: 10/17/17 09:50
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):97.0
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.45 U, 2.89, 0.866, mg/Kg, 1, 10/24/17 20:17

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 73.7, 50-150, %, 1, 10/24/17 20:17

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 20:17
Container ID: 1178534020-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 09:50
Prep Initial Wt./Vol.: 47.23 g
Prep Extract Vol: 26.4331 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.3, 72-119, %, 1, 10/24/17 20:17

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 20:17
Container ID: 1178534020-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 09:50
Prep Initial Wt./Vol.: 47.23 g
Prep Extract Vol: 26.4331 mL



Results of IT-B10-1

Client Sample ID: IT-B10-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534021
Lab Project ID: 1178534

Collection Date: 10/17/17 12:23
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.5
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 5050, 209, 64.7, mg/Kg, 10, 10/24/17 19:47

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 94.9, 50-150, %, 10, 10/24/17 19:47

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/24/17 19:47
Container ID: 1178534021-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.11 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 179 J, 209, 64.7, mg/Kg, 10, 10/24/17 19:47

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 94.6, 50-150, %, 10, 10/24/17 19:47

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/24/17 19:47
Container ID: 1178534021-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.11 g
Prep Extract Vol: 1 mL



Results of IT-B10-1

Client Sample ID: IT-B10-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534021
Lab Project ID: 1178534

Collection Date: 10/17/17 12:23
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):95.5
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 20:35
Container ID: 1178534021-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 12:23
Prep Initial Wt./Vol.: 72.413 g
Prep Extract Vol: 28.2717 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 20:35
Container ID: 1178534021-C

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 12:23
Prep Initial Wt./Vol.: 72.413 g
Prep Extract Vol: 28.2717 mL



Results of IT-B10-2

Client Sample ID: IT-B10-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534022
Lab Project ID: 1178534

Collection Date: 10/17/17 12:30
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):92.7
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/24/17 19:57
Container ID: 1178534022-A
Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.078 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/24/17 19:57
Container ID: 1178534022-A
Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.078 g
Prep Extract Vol: 1 mL



Results of IT-B10-2

Client Sample ID: IT-B10-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534022
Lab Project ID: 1178534

Collection Date: 10/17/17 12:30
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):92.7
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/24/17 20:54
Container ID: 1178534022-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 12:30
Prep Initial Wt./Vol.: 70.757 g
Prep Extract Vol: 30.1741 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/24/17 20:54
Container ID: 1178534022-B

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/17/17 12:30
Prep Initial Wt./Vol.: 70.757 g
Prep Extract Vol: 30.1741 mL



Results of IT-B11-1

Client Sample ID: IT-B11-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534023
Lab Project ID: 1178534

Collection Date: 10/17/17 17:00
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):83.8
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 12100, 942, 292, mg/Kg, 40, 10/25/17 15:41

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 0, *, 50-150, %, 40, 10/25/17 15:41

Batch Information

Analytical Batch: XFC13910
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/25/17 15:41
Container ID: 1178534023-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.408 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 281, 236, 73.0, mg/Kg, 10, 10/24/17 20:07

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 93.6, 50-150, %, 10, 10/24/17 20:07

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/24/17 20:07
Container ID: 1178534023-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.408 g
Prep Extract Vol: 1 mL



Results of IT-B11-1

Client Sample ID: IT-B11-1
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534023
Lab Project ID: 1178534

Collection Date: 10/17/17 17:00
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):83.8
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 143, 3.72, 1.12, mg/Kg, 1, 10/25/17 01:53

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 268, *, 50-150, %, 1, 10/25/17 01:53

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/17 01:53
Container ID: 1178534023-B

Prep Batch: VXX31593
Prep Method: SW5035A
Prep Date/Time: 10/17/17 17:00
Prep Initial Wt./Vol.: 54.173 g
Prep Extract Vol: 33.7977 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 96.5, 72-119, %, 1, 10/25/17 01:53

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/25/17 01:53
Container ID: 1178534023-B

Prep Batch: VXX31593
Prep Method: SW5035A
Prep Date/Time: 10/17/17 17:00
Prep Initial Wt./Vol.: 54.173 g
Prep Extract Vol: 33.7977 mL



Results of IT-B11-2

Client Sample ID: IT-B11-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534024
Lab Project ID: 1178534

Collection Date: 10/17/17 17:10
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.6
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 7.00 J, 20.6, 6.39, mg/Kg, 1, 10/24/17 18:20

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 89.8, 50-150, %, 1, 10/24/17 18:20

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/24/17 18:20
Container ID: 1178534024-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.139 g
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 10.3 U, 20.6, 6.39, mg/Kg, 1, 10/24/17 18:20

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 90.5, 50-150, %, 1, 10/24/17 18:20

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 10/24/17 18:20
Container ID: 1178534024-A

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/17 14:49
Prep Initial Wt./Vol.: 30.139 g
Prep Extract Vol: 1 mL



Results of IT-B11-2

Client Sample ID: IT-B11-2
Client Project ID: 31-1-11809-009 Interior Texaco
Lab Sample ID: 1178534024
Lab Project ID: 1178534

Collection Date: 10/17/17 17:10
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):96.6
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.49 U, 2.97, 0.892, mg/Kg, 1, 10/25/17 00:01

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 74.1, 50-150, %, 1, 10/25/17 00:01

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/17 00:01
Container ID: 1178534024-B

Prep Batch: VXX31593
Prep Method: SW5035A
Prep Date/Time: 10/17/17 17:10
Prep Initial Wt./Vol.: 46.316 g
Prep Extract Vol: 26.5963 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.3, 72-119, %, 1, 10/25/17 00:01

Batch Information

Analytical Batch: VFC13963
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/25/17 00:01
Container ID: 1178534024-B

Prep Batch: VXX31593
Prep Method: SW5035A
Prep Date/Time: 10/17/17 17:10
Prep Initial Wt./Vol.: 46.316 g
Prep Extract Vol: 26.5963 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **31-1-11809-009 Interior Texaco**
Lab Sample ID: 1178534025
Lab Project ID: 1178534

Collection Date: 10/19/17 11:30
Received Date: 10/20/17 10:15
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.877 J	2.60	0.780	mg/Kg	1		10/23/17 14:30

Surrogates

4-Bromofluorobenzene (surr)	90.3	50-150		%	1		10/23/17 14:30
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Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/23/17 14:30
Container ID: 1178534025-A

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/19/17 11:30
Prep Initial Wt./Vol.: 48.07 g
Prep Extract Vol: 25 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.00650 U	0.0130	0.00416	mg/Kg	1		10/23/17 14:30
Ethylbenzene	0.0130 U	0.0260	0.00811	mg/Kg	1		10/23/17 14:30
o-Xylene	0.0112 J	0.0260	0.00811	mg/Kg	1		10/23/17 14:30
P & M -Xylene	0.0270 J	0.0520	0.0156	mg/Kg	1		10/23/17 14:30
Toluene	0.0286	0.0260	0.00811	mg/Kg	1		10/23/17 14:30

Surrogates

1,4-Difluorobenzene (surr)	89.9	72-119		%	1		10/23/17 14:30
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Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 14:30
Container ID: 1178534025-A

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/19/17 11:30
Prep Initial Wt./Vol.: 48.07 g
Prep Extract Vol: 25 mL



Method Blank

Blank ID: MB for HBN 1770655 [SPT/10352]
Blank Lab ID: 1421580

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009,
1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018,
1178534019, 1178534020, 1178534021, 1178534022, 1178534023, 1178534024

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10352
Analytical Method: SM21 2540G
Instrument:
Analyst: MWJ
Analytical Date/Time: 10/21/2017 4:02:00PM

Print Date: 11/08/2017 4:21:53PM

Duplicate Sample Summary

Original Sample ID: 1178534002

Analysis Date: 10/21/2017 16:02

Duplicate Sample ID: 1421581

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	97.0	96.9	%	0.07	(< 15)

Batch Information

Analytical Batch: SPT10352

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 11/08/2017 4:21:54PM

Duplicate Sample Summary

Original Sample ID: 1178534013

Analysis Date: 10/21/2017 16:02

Duplicate Sample ID: 1421582

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	87.2	87.2	%	0.08	(< 15)

Batch Information

Analytical Batch: SPT10352

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 11/08/2017 4:21:54PM



Method Blank

Blank ID: MB for HBN 1770799 [VXX/31582]
Blank Lab ID: 1421936

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534003, 1178534004, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534025

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	76	50-150		%

Batch Information

Analytical Batch: VFC13962
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/23/2017 2:11:00PM

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/23/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31582]
 Blank Spike Lab ID: 1421939
 Date Analyzed: 10/23/2017 13:33

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31582]
 Spike Duplicate Lab ID: 1421940
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534003, 1178534004, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534025

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	12.9	103	12.5	13.4	107	(60-120)	3.90	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	1.25	82.6	83	1.25	85.2	85	(50-150)	3.00	
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Batch Information

Analytical Batch: **VFC13962**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31582**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/23/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL



Method Blank

Blank ID: MB for HBN 1770799 [VXX/31582]
Blank Lab ID: 1421936

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534003, 1178534004, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534025

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg

Surrogates

1,4-Difluorobenzene (surr)	88.7	72-119	%
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Batch Information

Analytical Batch: VFC13962
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/23/2017 2:11:00PM

Prep Batch: VXX31582
Prep Method: SW5035A
Prep Date/Time: 10/23/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/08/2017 4:21:57PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31582]
 Blank Spike Lab ID: 1421937
 Date Analyzed: 10/23/2017 12:55

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31582]
 Spike Duplicate Lab ID: 1421938
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534003, 1178534004, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534025

Results by SW8021B

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1.25	1.10	88	1.25	1.17	94	(75-125)	6.00	(< 20)
Ethylbenzene	1.25	1.11	89	1.25	1.18	94	(75-125)	6.20	(< 20)
o-Xylene	1.25	1.08	86	1.25	1.16	93	(75-125)	7.90	(< 20)
P & M -Xylene	2.50	2.21	89	2.50	2.37	95	(80-125)	6.90	(< 20)
Toluene	1.25	1.14	91	1.25	1.17	93	(70-125)	2.40	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	95.8	96	1.25	96.5	97	(72-119)	0.69	

Batch Information

Analytical Batch: **VFC13962**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31582**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/23/2017 08:00**
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1421941
 MS Sample ID: 1421942 MS
 MSD Sample ID: 1421943 MSD

Analysis Date: 10/23/2017 17:02
 Analysis Date: 10/23/2017 17:21
 Analysis Date: 10/23/2017 17:40
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1178534001, 1178534003, 1178534004, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534025

Results by SW8021B

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.00510U	1.02	1.00	98	1.02	1.03	101	75-125	2.40	(< 20)
Ethylbenzene	0.0114J	1.02	0.970	94	1.02	1.01	97	75-125	3.70	(< 20)
o-Xylene	1.26	1.02	1.05	-20 *	1.02	1.07	-19 *	75-125	1.50	(< 20)
P & M -Xylene	0.675	2.04	2.01	65 *	2.04	2.07	68 *	80-125	3.30	(< 20)
Toluene	0.0123J	1.02	1.00	97	1.02	1.03	100	70-125	2.80	(< 20)
Surrogates										
1,4-Difluorobenzene (surr)		1.02	0.990	97	1.02	0.974	95	72-119	1.60	

Batch Information

Analytical Batch: VFC13962
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: ST
 Analytical Date/Time: 10/23/2017 5:21:00PM

Prep Batch: VXX31582
 Prep Method: AK101 Extraction (S)
 Prep Date/Time: 10/23/2017 8:00:00AM
 Prep Initial Wt./Vol.: 61.18g
 Prep Extract Vol: 25.00mL



Method Blank

Blank ID: MB for HBN 1770896 [VXX/31591]
Blank Lab ID: 1422159

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534008, 1178534010, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020, 1178534021, 1178534022

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.31J	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	80	50-150		%

Batch Information

Analytical Batch: VFC13963
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/24/2017 1:27:00PM

Prep Batch: VXX31591
Prep Method: SW5035A
Prep Date/Time: 10/24/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/08/2017 4:22:00PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31591]
 Blank Spike Lab ID: 1422162
 Date Analyzed: 10/24/2017 12:49

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31591]
 Spike Duplicate Lab ID: 1422163
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534008, 1178534010, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020, 1178534021, 1178534022

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	11.1	89	12.5	10.4	84	(60-120)	6.60	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	1.25	85.6	86	1.25	82.6	83	(50-150)	3.50	
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Batch Information

Analytical Batch: **VFC13963**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31591**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/24/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1770896 [VXX/31591]
 Blank Lab ID: 1422159

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534008, 1178534010, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020, 1178534021, 1178534022

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg

Surrogates

1,4-Difluorobenzene (surr)	95.5	72-119		%
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Batch Information

Analytical Batch: VFC13963
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: ST
 Analytical Date/Time: 10/24/2017 1:27:00PM

Prep Batch: VXX31591
 Prep Method: SW5035A
 Prep Date/Time: 10/24/2017 8:00:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31591]
 Blank Spike Lab ID: 1422160
 Date Analyzed: 10/24/2017 12:12

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31591]
 Spike Duplicate Lab ID: 1422161
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534008, 1178534010, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020, 1178534021, 1178534022

Results by SW8021B

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1.25	1.36	109	1.25	1.34	107	(75-125)	1.80	(< 20)
Ethylbenzene	1.25	1.34	107	1.25	1.32	105	(75-125)	1.90	(< 20)
o-Xylene	1.25	1.31	105	1.25	1.27	102	(75-125)	2.50	(< 20)
P & M -Xylene	2.50	2.66	107	2.50	2.61	104	(80-125)	2.10	(< 20)
Toluene	1.25	1.36	109	1.25	1.35	108	(70-125)	1.10	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	99.7	100	1.25	98.2	98	(72-119)	1.60	

Batch Information

Analytical Batch: **VFC13963**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31591**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/24/2017 08:00**
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1178534002
 MS Sample ID: 1422164 MS
 MSD Sample ID: 1422165 MSD

Analysis Date: 10/24/2017 14:41
 Analysis Date: 10/24/2017 15:00
 Analysis Date: 10/24/2017 15:18
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534008, 1178534010, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020, 1178534021, 1178534022

Results by SW8021B

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.0169	1.02	1.19	115	1.02	1.19	114	75-125	0.29	(< 20)
Ethylbenzene	0.0123J	1.02	1.15	112	1.02	1.14	111	75-125	0.52	(< 20)
o-Xylene	0.148	1.02	1.21	104	1.02	1.20	103	75-125	0.49	(< 20)
P & M -Xylene	0.217	2.04	2.42	108	2.04	2.41	107	80-125	0.53	(< 20)
Toluene	0.242	1.02	1.36	110	1.02	1.36	109	70-125	0.24	(< 20)
Surrogates										
1,4-Difluorobenzene (surr)		1.02	1.02	100	1.02	1.04	102	72-119	1.90	

Batch Information

Analytical Batch: VFC13963
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: ST
 Analytical Date/Time: 10/24/2017 3:00:00PM

Prep Batch: VXX31591
 Prep Method: AK101 Extraction (S)
 Prep Date/Time: 10/24/2017 8:00:00AM
 Prep Initial Wt./Vol.: 63.14g
 Prep Extract Vol: 25.00mL

Method Blank

Blank ID: MB for HBN 1770899 [VXX/31593]

Blank Lab ID: 1422172

QC for Samples:

1178534023, 1178534024

Matrix: Soil/Solid (dry weight)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	79.1	50-150		%

Batch Information

Analytical Batch: VFC13963

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: ST

Analytical Date/Time: 10/24/2017 10:46:00PM

Prep Batch: VXX31593

Prep Method: SW5035A

Prep Date/Time: 10/24/2017 8:00:00AM

Prep Initial Wt./Vol.: 50 g

Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31593]
 Blank Spike Lab ID: 1422175
 Date Analyzed: 10/24/2017 22:09

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31593]
 Spike Duplicate Lab ID: 1422176
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534023, 1178534024

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	10.8	87	12.5	10.5	84	(60-120)	3.10	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	1.25	82.1	82	1.25	83.8	84	(50-150)	2.00	
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Batch Information

Analytical Batch: **VFC13963**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31593**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/24/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1770899 [VXX/31593]

Blank Lab ID: 1422172

QC for Samples:

1178534023, 1178534024

Matrix: Soil/Solid (dry weight)

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg

Surrogates

1,4-Difluorobenzene (surr)	96.7	72-119		%
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Batch Information

Analytical Batch: VFC13963

Analytical Method: SW8021B

Instrument: Agilent 7890A PID/FID

Analyst: ST

Analytical Date/Time: 10/24/2017 10:46:00PM

Prep Batch: VXX31593

Prep Method: SW5035A

Prep Date/Time: 10/24/2017 8:00:00AM

Prep Initial Wt./Vol.: 50 g

Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31593]
 Blank Spike Lab ID: 1422173
 Date Analyzed: 10/24/2017 21:31

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31593]
 Spike Duplicate Lab ID: 1422174
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534023, 1178534024

Results by SW8021B

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1.25	1.45	116	1.25	1.43	114	(75-125)	1.70	(< 20)
Ethylbenzene	1.25	1.41	113	1.25	1.39	112	(75-125)	1.30	(< 20)
o-Xylene	1.25	1.36	109	1.25	1.32	106	(75-125)	2.40	(< 20)
P & M -Xylene	2.50	2.77	111	2.50	2.72	109	(80-125)	1.90	(< 20)
Toluene	1.25	1.45	116	1.25	1.43	114	(70-125)	1.40	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	102	102	1.25	101	101	(72-119)	1.60	

Batch Information

Analytical Batch: VFC13963
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: ST

Prep Batch: VXX31593
 Prep Method: SW5035A
 Prep Date/Time: 10/24/2017 08:00
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1178534024
 MS Sample ID: 1422177 MS
 MSD Sample ID: 1422178 MSD

Analysis Date: 10/25/2017 0:01
 Analysis Date: 10/25/2017 0:19
 Analysis Date: 10/25/2017 1:15
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534023, 1178534024

Results by SW8021B

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.00745U	1.40	1.52	109	1.40	1.57	113	75-125	3.10	(< 20)
Ethylbenzene	0.0149U	1.40	1.49	107	1.40	1.53	110	75-125	3.20	(< 20)
o-Xylene	0.0125J	1.40	1.43	101	1.40	1.47	104	75-125	2.50	(< 20)
P & M -Xylene	0.0277J	2.80	2.92	103	2.80	3.00	106	80-125	2.80	(< 20)
Toluene	0.0345	1.40	1.55	109	1.40	1.59	112	70-125	3.10	(< 20)
Surrogates										
1,4-Difluorobenzene (surr)		1.40	1.39	99	1.40	1.40	100	72-119	0.76	

Batch Information

Analytical Batch: VFC13963
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: ST
 Analytical Date/Time: 10/25/2017 12:19:00AM

Prep Batch: VXX31593
 Prep Method: AK101 Extraction (S)
 Prep Date/Time: 10/24/2017 8:00:00AM
 Prep Initial Wt./Vol.: 46.32g
 Prep Extract Vol: 25.00mL

Method Blank

Blank ID: MB for HBN 1770952 [VXX/31598]

Blank Lab ID: 1422400

QC for Samples:

1178534003, 1178534004

Matrix: Soil/Solid (dry weight)

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
Surrogates				
1,4-Difluorobenzene (surr)	97.1	72-119		%

Batch Information

Analytical Batch: VFC13964
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: NRB
Analytical Date/Time: 10/25/2017 1:15:00PM

Prep Batch: VXX31598
Prep Method: SW5035A
Prep Date/Time: 10/25/2017 10:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/08/2017 4:22:17PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [VXX31598]
 Blank Spike Lab ID: 1422401
 Date Analyzed: 10/25/2017 12:00

Spike Duplicate ID: LCSD for HBN 1178534 [VXX31598]
 Spike Duplicate Lab ID: 1422402
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534003, 1178534004

Results by SW8021B

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
o-Xylene	1.25	1.32	106	1.25	1.30	104	(75-125)	1.40	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	101	101	1.25	101	101	(72-119)	0.18	

Batch Information

Analytical Batch: **VFC13964**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **NRB**

Prep Batch: **VXX31598**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/25/2017 10:00**
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1422405
 MS Sample ID: 1422406 MS
 MSD Sample ID: 1422407 MSD

Analysis Date: 10/25/2017 13:52
 Analysis Date: 10/25/2017 14:11
 Analysis Date: 10/25/2017 14:29
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1178534003, 1178534004

Results by SW8021B

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
o-Xylene	405	295	736	113	295	678	93	75-125	8.20	(< 20)
Surrogates										
1,4-Difluorobenzene (surr)		295	275	93	295	276	94	72-119	0.30	

Batch Information

Analytical Batch: VFC13964
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: NRB
 Analytical Date/Time: 10/25/2017 2:11:00PM

Prep Batch: VXX31598
 Prep Method: AK101 Extraction (S)
 Prep Date/Time: 10/25/2017 10:00:00AM
 Prep Initial Wt./Vol.: 53.64g
 Prep Extract Vol: 31.60mL



Method Blank

Blank ID: MB for HBN 1770660 [XXX/38718]
Blank Lab ID: 1421596

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	80.6	60-120		%

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: JMG
Analytical Date/Time: 10/26/2017 10:25:00PM

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/2017 9:17:22AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38718]
 Blank Spike Lab ID: 1421597
 Date Analyzed: 10/26/2017 22:34

Spike Duplicate ID: LCSD for HBN 1178534 [XXX38718]
 Spike Duplicate Lab ID: 1421598
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	134	80	167	146	88	(75-125)	8.80	(< 20)

Surrogates

5a Androstane (surr)	3.33	82.6	83	3.33	83.9	84	(60-120)	1.50	
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Batch Information

Analytical Batch: **XFC13921**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **JMG**

Prep Batch: **XXX38718**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/22/2017 09:17**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL



Method Blank

Blank ID: MB for HBN 1770660 [XXX/38718]
Blank Lab ID: 1421596

Matrix: Soil/Solid (dry weight)

QC for Samples:

1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	86.5	60-120		%

Batch Information

Analytical Batch: XFC13921
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: JMG
Analytical Date/Time: 10/26/2017 10:25:00PM

Prep Batch: XXX38718
Prep Method: SW3550C
Prep Date/Time: 10/22/2017 9:17:22AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 11/08/2017 4:22:22PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38718]
 Blank Spike Lab ID: 1421597
 Date Analyzed: 10/26/2017 22:34

Spike Duplicate ID: LCSD for HBN 1178534 [XXX38718]
 Spike Duplicate Lab ID: 1421598
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534001, 1178534002, 1178534003, 1178534004, 1178534005, 1178534006, 1178534007, 1178534008, 1178534009, 1178534010, 1178534011, 1178534012, 1178534013, 1178534014, 1178534015, 1178534016, 1178534017, 1178534018, 1178534019, 1178534020

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	167	133	80	167	143	86	(60-120)	7.20	(< 20)

Surrogates

n-Triacontane-d62 (surr)	3.33	77.9	78	3.33	83.8	84	(60-120)	7.30	
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Batch Information

Analytical Batch: **XFC13921**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **JMG**

Prep Batch: **XXX38718**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/22/2017 09:17**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 11/08/2017 4:22:24PM

Method Blank

Blank ID: MB for HBN 1770675 [XXX/38723]

Blank Lab ID: 1421667

QC for Samples:

1178534003, 1178534004

Matrix: Soil/Solid (dry weight)

Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00750	mg/Kg
2-Methylnaphthalene	0.0125U	0.0250	0.00750	mg/Kg
Acenaphthene	0.0125U	0.0250	0.00750	mg/Kg
Acenaphthylene	0.0125U	0.0250	0.00750	mg/Kg
Anthracene	0.0125U	0.0250	0.00750	mg/Kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[a]pyrene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Chrysene	0.0125U	0.0250	0.00750	mg/Kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00750	mg/Kg
Fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Fluorene	0.0125U	0.0250	0.00750	mg/Kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00750	mg/Kg
Naphthalene	0.0100U	0.0200	0.00600	mg/Kg
Phenanthrene	0.0125U	0.0250	0.00750	mg/Kg
Pyrene	0.0125U	0.0250	0.00750	mg/Kg

Surrogates

2-Methylnaphthalene-d10 (surr)	84.6	50-150		%
Fluoranthene-d10 (surr)	82.3	50-150		%

Batch Information

Analytical Batch: XMS10528
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 11/2/2017 3:48:00PM

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/2017 7:27:53AM
 Prep Initial Wt./Vol.: 22.5 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38723]
 Blank Spike Lab ID: 1421668
 Date Analyzed: 11/02/2017 16:08

Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534003, 1178534004

Results by 8270D SIM (PAH)

Parameter	Blank Spike (mg/Kg)			CL
	Spike	Result	Rec (%)	
1-Methylnaphthalene	0.111	0.101	91	(43-111)
2-Methylnaphthalene	0.111	0.0914	82	(39-114)
Acenaphthene	0.111	0.100	90	(44-111)
Acenaphthylene	0.111	0.0972	87	(39-116)
Anthracene	0.111	0.0961	87	(50-114)
Benzo(a)Anthracene	0.111	0.101	91	(54-122)
Benzo[a]pyrene	0.111	0.0904	81	(50-125)
Benzo[b]Fluoranthene	0.111	0.106	96	(53-128)
Benzo[g,h,i]perylene	0.111	0.108	97	(49-127)
Benzo[k]fluoranthene	0.111	0.106	95	(56-123)
Chrysene	0.111	0.108	97	(57-118)
Dibenzo[a,h]anthracene	0.111	0.106	95	(50-129)
Fluoranthene	0.111	0.103	93	(55-119)
Fluorene	0.111	0.100	90	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.108	98	(49-130)
Naphthalene	0.111	0.0945	85	(38-111)
Phenanthrene	0.111	0.103	93	(49-113)
Pyrene	0.111	0.106	95	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	0.111	80.9	81	(50-150)
Fluoranthene-d10 (surr)	0.111	79	79	(50-150)

Batch Information

Analytical Batch: XMS10528
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD

Prep Batch: XXX38723
 Prep Method: SW3550C
 Prep Date/Time: 10/23/2017 07:27
 Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL
 Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1178526001
 MS Sample ID: 1421669 MS
 MSD Sample ID: 1421670 MSD

Analysis Date: 11/02/2017 16:29
 Analysis Date: 11/02/2017 16:49
 Analysis Date: 11/02/2017 17:10
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534003, 1178534004

Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0157U	0.138	0.118	86	0.139	0.124	90	43-111	5.40	(< 20)
2-Methylnaphthalene	0.0157U	0.138	0.108	79	0.139	0.113	82	39-114	4.30	(< 20)
Acenaphthene	0.0157U	0.138	0.117	85	0.139	0.126	90	44-111	7.40	(< 20)
Acenaphthylene	0.0157U	0.138	0.118	85	0.139	0.125	90	39-116	5.90	(< 20)
Anthracene	0.0157U	0.138	0.116	84	0.139	0.121	87	50-114	4.00	(< 20)
Benzo(a)Anthracene	0.0157U	0.138	0.121	87	0.139	0.124	89	54-122	2.40	(< 20)
Benzo(a)pyrene	0.0157U	0.138	0.113	82	0.139	0.115	83	50-125	2.10	(< 20)
Benzo(b)Fluoranthene	0.0157U	0.138	0.124	90	0.139	0.125	90	53-128	0.81	(< 20)
Benzo(g,h,i)perylene	0.0157U	0.138	0.129	93	0.139	0.131	95	49-127	2.10	(< 20)
Benzo(k)fluoranthene	0.0157U	0.138	0.123	89	0.139	0.126	91	56-123	2.90	(< 20)
Chrysene	0.0157U	0.138	0.124	90	0.139	0.126	91	57-118	2.10	(< 20)
Dibenzo(a,h)anthracene	0.0157U	0.138	0.128	93	0.139	0.131	94	50-129	2.10	(< 20)
Fluoranthene	0.0157U	0.138	0.124	90	0.139	0.128	92	55-119	2.80	(< 20)
Fluorene	0.0157U	0.138	0.116	84	0.139	0.124	89	47-114	6.40	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0157U	0.138	0.129	94	0.139	0.131	95	49-130	2.10	(< 20)
Naphthalene	0.0126U	0.138	0.110	80	0.139	0.114	82	38-111	4.10	(< 20)
Phenanthrene	0.0157U	0.138	0.119	87	0.139	0.126	91	49-113	5.40	(< 20)
Pyrene	0.0157U	0.138	0.126	92	0.139	0.130	94	55-117	2.30	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.138	0.107	78	0.139	0.108	78	50-150	1.10	
Fluoranthene-d10 (surr)		0.138	0.108	78	0.139	0.108	78	50-150	0.42	

Batch Information

Analytical Batch: XMS10528
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 11/2/2017 4:49:00PM

Prep Batch: XXX38723
 Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
 Prep Date/Time: 10/23/2017 7:27:53AM
 Prep Initial Wt./Vol.: 22.92g
 Prep Extract Vol: 5.00mL

Method Blank

Blank ID: MB for HBN 1770694 [XXX/38728]
Blank Lab ID: 1421730

Matrix: Soil/Solid (dry weight)

QC for Samples:
1178534021, 1178534022, 1178534023, 1178534024

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	81.6	60-120		%

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/24/2017 4:12:00PM

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/2017 2:49:52PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 11/08/2017 4:22:28PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38728]
 Blank Spike Lab ID: 1421731
 Date Analyzed: 10/24/2017 16:21

Spike Duplicate ID: LCSD for HBN 1178534 [XXX38728]
 Spike Duplicate Lab ID: 1421732
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534021, 1178534022, 1178534023, 1178534024

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	156	94	167	165	99	(75-125)	5.50	(< 20)

Surrogates

5a Androstane (surr)	3.33	91.2	91	3.33	95.1	95	(60-120)	4.20	
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Batch Information

Analytical Batch: **XFC13907**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38728**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/23/2017 14:49**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770694 [XXX/38728]
Blank Lab ID: 1421730

Matrix: Soil/Solid (dry weight)

QC for Samples:
1178534021, 1178534022, 1178534023, 1178534024

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	89.4	60-120		%

Batch Information

Analytical Batch: XFC13907
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/24/2017 4:12:00PM

Prep Batch: XXX38728
Prep Method: SW3550C
Prep Date/Time: 10/23/2017 2:49:52PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 11/08/2017 4:22:31PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38728]
 Blank Spike Lab ID: 1421731
 Date Analyzed: 10/24/2017 16:21

Spike Duplicate ID: LCSD for HBN 1178534
 [XXX38728]
 Spike Duplicate Lab ID: 1421732
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534021, 1178534022, 1178534023, 1178534024

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Residual Range Organics	167	170	102	167	179	107	(60-120)	4.70	(< 20)	
Surrogates										
n-Triacontane-d62 (surr)	3.33	85.4	85	3.33	91.9	92	(60-120)	7.30		

Batch Information

Analytical Batch: **XFC13907**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38728**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/23/2017 14:49**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770777 [XXX/38731]
 Blank Lab ID: 1421841

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1178534012, 1178534013

Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0125U	0.0250	0.00750	mg/Kg
2-Methylnaphthalene	0.0125U	0.0250	0.00750	mg/Kg
Acenaphthene	0.0125U	0.0250	0.00750	mg/Kg
Acenaphthylene	0.0125U	0.0250	0.00750	mg/Kg
Anthracene	0.0125U	0.0250	0.00750	mg/Kg
Benzo(a)Anthracene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[a]pyrene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[b]Fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[g,h,i]perylene	0.0125U	0.0250	0.00750	mg/Kg
Benzo[k]fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Chrysene	0.0125U	0.0250	0.00750	mg/Kg
Dibenzo[a,h]anthracene	0.0125U	0.0250	0.00750	mg/Kg
Fluoranthene	0.0125U	0.0250	0.00750	mg/Kg
Fluorene	0.0125U	0.0250	0.00750	mg/Kg
Indeno[1,2,3-c,d] pyrene	0.0125U	0.0250	0.00750	mg/Kg
Naphthalene	0.0100U	0.0200	0.00600	mg/Kg
Phenanthrene	0.0125U	0.0250	0.00750	mg/Kg
Pyrene	0.0125U	0.0250	0.00750	mg/Kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	78.7	50-150		%
Fluoranthene-d10 (surr)	76.7	50-150		%

Batch Information

Analytical Batch: XMS10504
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/24/2017 4:53:00PM

Prep Batch: XXX38731
 Prep Method: SW3550C
 Prep Date/Time: 10/24/2017 9:17:35AM
 Prep Initial Wt./Vol.: 22.5 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1178534 [XXX38731]

Blank Spike Lab ID: 1421842

Date Analyzed: 10/24/2017 17:13

Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534012, 1178534013

Results by 8270D SIM (PAH)

Blank Spike (mg/Kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	0.111	0.0975	88	(43-111)
2-Methylnaphthalene	0.111	0.0892	80	(39-114)
Acenaphthene	0.111	0.0947	85	(44-111)
Acenaphthylene	0.111	0.0934	84	(39-116)
Anthracene	0.111	0.0891	80	(50-114)
Benzo(a)Anthracene	0.111	0.0945	85	(54-122)
Benzo[a]pyrene	0.111	0.0865	78	(50-125)
Benzo[b]Fluoranthene	0.111	0.0974	88	(53-128)
Benzo[g,h,i]perylene	0.111	0.104	94	(49-127)
Benzo[k]fluoranthene	0.111	0.0994	90	(56-123)
Chrysene	0.111	0.0992	89	(57-118)
Dibenzo[a,h]anthracene	0.111	0.103	93	(50-129)
Fluoranthene	0.111	0.0973	88	(55-119)
Fluorene	0.111	0.0952	86	(47-114)
Indeno[1,2,3-c,d] pyrene	0.111	0.104	94	(49-130)
Naphthalene	0.111	0.0915	82	(38-111)
Phenanthrene	0.111	0.0943	85	(49-113)
Pyrene	0.111	0.101	91	(55-117)

Surrogates

2-Methylnaphthalene-d10 (surr)	0.111	82	82	(50-150)
Fluoranthene-d10 (surr)	0.111	79.3	79	(50-150)

Batch Information

Analytical Batch: XMS10504

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: DSD

Prep Batch: XXX38731

Prep Method: SW3550C

Prep Date/Time: 10/24/2017 09:17

Spike Init Wt./Vol.: 0.111 mg/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:



Matrix Spike Summary

Original Sample ID: 1177474028
 MS Sample ID: 1421843 MS
 MSD Sample ID: 1421844 MSD

Analysis Date: 10/24/2017 18:15
 Analysis Date: 10/24/2017 18:35
 Analysis Date: 10/24/2017 18:56
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1178534012, 1178534013

Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0140U	0.124	0.112	90	0.125	0.114	91	43-111	1.90	(< 20)
2-Methylnaphthalene	0.0140U	0.124	0.102	83	0.125	0.105	84	39-114	2.70	(< 20)
Acenaphthene	0.0140U	0.124	0.111	89	0.125	0.111	89	44-111	0.08	(< 20)
Acenaphthylene	0.0140U	0.124	0.109	88	0.125	0.111	89	39-116	1.90	(< 20)
Anthracene	0.0140U	0.124	0.106	86	0.125	0.109	87	50-114	2.40	(< 20)
Benzo(a)Anthracene	0.0140U	0.124	0.111	90	0.125	0.111	89	54-122	0.26	(< 20)
Benzo(a)pyrene	0.0140U	0.124	0.105	85	0.125	0.105	85	50-125	0.64	(< 20)
Benzo(b)Fluoranthene	0.0140U	0.124	0.112	91	0.125	0.114	91	53-128	1.30	(< 20)
Benzo(g,h,i)perylene	0.0140U	0.124	0.120	97	0.125	0.120	97	49-127	0.50	(< 20)
Benzo(k)fluoranthene	0.0140U	0.124	0.115	93	0.125	0.116	93	56-123	0.45	(< 20)
Chrysene	0.0140U	0.124	0.115	93	0.125	0.115	92	57-118	0.12	(< 20)
Dibenzo(a,h)anthracene	0.0140U	0.124	0.119	96	0.125	0.120	97	50-129	1.00	(< 20)
Fluoranthene	0.0140U	0.124	0.113	91	0.125	0.111	89	55-119	1.30	(< 20)
Fluorene	0.0140U	0.124	0.109	88	0.125	0.110	88	47-114	0.67	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0140U	0.124	0.120	97	0.125	0.120	97	49-130	0.39	(< 20)
Naphthalene	0.0112U	0.124	0.105	85	0.125	0.111	89	38-111	5.20	(< 20)
Phenanthrene	0.0140U	0.124	0.109	88	0.125	0.110	88	49-113	1.70	(< 20)
Pyrene	0.0140U	0.124	0.117	94	0.125	0.117	93	55-117	0.27	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		0.124	0.102	83	0.125	0.101	81	50-150	0.86	
Fluoranthene-d10 (surr)		0.124	0.101	81	0.125	0.101	81	50-150	0.66	

Batch Information

Analytical Batch: XMS10504
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/24/2017 6:35:00PM

Prep Batch: XXX38731
 Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
 Prep Date/Time: 10/24/2017 9:17:35AM
 Prep Initial Wt./Vol.: 22.94g
 Prep Extract Vol: 5.00mL

Print Date: 11/08/2017 4:22:36PM



SC
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1178534



Locations Nationwide
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New Jersey
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West Virginia
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CLIENT: Shannon & Wilson
CONTACT: Val Webb
PHONE NO: 458-3152
PROJECT: Interior
PWSID/PERMIT#: 31-1-11809-009
NAME: Texaco
REPORTS TO: Val Webb
E-MAIL: vew@shanwil.com
INVOICE TO: SQW
QUOTE #:
P.O. #:

Section 1

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	#	Type C = COMP G = GRAB M = Multi I = Incre- mental S = Soils	Meth	Meth	Preservative	REMARKS/ LOC ID
①	A-B IT-B5-2	10/14/17	1530	SU1	2		X	X		
②	A-C IT-B6-1	10/15/17	917		3		X	X		
③	A-C IT-B6-3	10/15/17	907		3		X	X		
④	A-B IT-B7-1	10/16/17	1345		2		X	X		
⑤	A-B IT-B7-2	10/16/17	1505		2		X	X		
⑥	A-B IT-B6-2	10/15/17	1127		2		X	X		
⑦	A-B IT-B8-1	10/16/17	1140		2		X	X		
⑧	A-B IT-B8-2	10/16/17	1145		2		X	X		
⑨	A-B IT-B9-1	10/17/17	945		2		X	X		
⑩	A-B IT-B9-2	10/17/17	950		2		X	X		

Section 3

Section 4

Section 5

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page 2 of 3

Relinquished By: (1) [Signature]
Relinquished By: (2) [Signature]
Relinquished By: (3) [Signature]
Relinquished By: (4) [Signature]

Received By: [Signature] 10/19/17 11:51
 [Signature] 10/19/17 1600
 [Signature] 10/20/17 1015

Temp Blank °C: 39
 or Ambient []

Chain of Custody Seal: (Circle) **INTACT** **BROKEN** **ABSENT**

Requested Turnaround Time and/or Special Instructions: Studied

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions: Studied

Temp Blank °C: 39
 or Ambient []

Chain of Custody Seal: (Circle) **INTACT** **BROKEN** **ABSENT**

Requested Turnaround Time and/or Special Instructions: Studied

Data Deliverable Requirements: Level II



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Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Shannon & Wilson
 CONTACT: Val Webb
 PROJECT NAME: Interior Texaco
 REPORTS TO: Val Webb
 INVOICE TO: S4W

PHONE NO: 458-3152
 PROJECT PWSID/PERMIT#: 31-1-11809-008
 E-MAIL: vew@shonwil.com
 QUOTE #:
 P.O. #:

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX MATRIX CODE
① A-C	IT-B10-1	10/17/17	1223	SUN
② A-B	IT-B10-2	10/17/17	1230	I
③ A-B	IT-B11-1	10/17/17	1700	I
④ A-B	IT-B11-2	10/17/17	1710	I
⑤ A	Trip Blank	10/19/17	1130	

Section 2

#	CONTAINERS	Type C = COMP G = GRAB MI = Multi-Incre-mental Soils	MOF	MOF	Preservative	Section 4		REMARKS/LOC ID
						DOD Project? Yes No	Yes No	
			X	X				
			X	X				
			X	X				
			X	X				
			X	X				

Section 3

Relinquished By: (1)

Relinquished By: (2)

Relinquished By: (3)

Relinquished By: (4)

Date: 10/19/17 Time: 1151 Received By:

Date: 10/19/17 Time: 1600 Received By:

Date: 10/20/17 Time: 1015 Received For Laboratory By:

Section 4

Section 5

Section 5

Requested Turnaround Time and/or Special Instructions: *Stalled*

Temp Blank °C: 39 or Ambient []

Chain of Custody Seal: (Circle) ABSENT INTACT ABSENT BROKEN

Data Deliverable Requirements: *Level II*

Requested Turnaround Time and/or Special Instructions: *Stalled*

Temp Blank °C: 39 or Ambient []

Chain of Custody Seal: (Circle) ABSENT INTACT ABSENT BROKEN

Data Deliverable Requirements: *Level II*

Section 5



Cooler Packing Form For Fairbanks

Cooler ID 2

Cooler Temperature 0.7#D20

Please list the WOs and associated samples packed in this Cooler

WO #	Samples	Special Notes
1178529	HW17027	
1178534	IT-B1-1	
	IT-B1-2	
	IT-B2-1	
	IT-B2-3	
	IT-B2-2	
	IT-B3-1	
	<u>IT-B3-2</u>	
	IT-B4-1	
	IT-B4-2	
	IT-B5-1	
	IT-B5-2	
	IT-B6-1	
	IT-B6-3	
	IT-B7-1	
	IT-B7-2	
	IT-B6-2	
	IT-B8-1	
	IT-B8-2	
	IT-B9-1	
	IT-B9-2	
	IT-B10-1	
	IT-B10-2	
	IT-B11-1	
	IT-B11-2	
	TRIP BLANK	



e-Sample Receipt Form

SGS Workorder #:

1178534



1 1 7 8 5 3 4

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F 1B
COC accompanied samples?	Yes	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 2 @ 0.7 °C Therm. ID: D20
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
	N/A	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)? **Note: If times differ <1hr, record details & login per COC.	Yes	Sample 21 had an extra jar marked "extra vol" that was not written on COC.
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g.200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	Yes	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1178534001-A	No Preservative Required	OK	1178534020-A	No Preservative Required	OK
1178534001-B	Methanol field pres. 4 C	OK	1178534020-B	Methanol field pres. 4 C	OK
1178534002-A	No Preservative Required	OK	1178534021-A	No Preservative Required	OK
1178534002-B	Methanol field pres. 4 C	OK	1178534021-B	No Preservative Required	OK
1178534003-A	No Preservative Required	OK	1178534021-C	Methanol field pres. 4 C	OK
1178534003-B	No Preservative Required	OK	1178534022-A	No Preservative Required	OK
1178534003-C	Methanol field pres. 4 C	OK	1178534022-B	Methanol field pres. 4 C	OK
1178534004-A	No Preservative Required	OK	1178534023-A	No Preservative Required	OK
1178534004-B	No Preservative Required	OK	1178534023-B	Methanol field pres. 4 C	OK
1178534004-C	Methanol field pres. 4 C	OK	1178534024-A	No Preservative Required	OK
1178534005-A	No Preservative Required	OK	1178534024-B	Methanol field pres. 4 C	OK
1178534005-B	Methanol field pres. 4 C	OK	1178534025-A	Methanol field pres. 4 C	OK
1178534006-A	No Preservative Required	OK			
1178534006-B	Methanol field pres. 4 C	OK			
1178534007-A	No Preservative Required	OK			
1178534007-B	Methanol field pres. 4 C	OK			
1178534008-A	No Preservative Required	OK			
1178534008-B	Methanol field pres. 4 C	OK			
1178534009-A	No Preservative Required	OK			
1178534009-B	Methanol field pres. 4 C	OK			
1178534010-A	No Preservative Required	OK			
1178534010-B	Methanol field pres. 4 C	OK			
1178534011-A	No Preservative Required	OK			
1178534011-B	Methanol field pres. 4 C	OK			
1178534012-A	No Preservative Required	OK			
1178534012-B	No Preservative Required	OK			
1178534012-C	Methanol field pres. 4 C	OK			
1178534013-A	No Preservative Required	OK			
1178534013-B	No Preservative Required	OK			
1178534013-C	Methanol field pres. 4 C	OK			
1178534014-A	No Preservative Required	OK			
1178534014-B	Methanol field pres. 4 C	OK			
1178534015-A	No Preservative Required	OK			
1178534015-B	Methanol field pres. 4 C	OK			
1178534016-A	No Preservative Required	OK			
1178534016-B	Methanol field pres. 4 C	OK			
1178534017-A	No Preservative Required	OK			
1178534017-B	Methanol field pres. 4 C	OK			
1178534018-A	No Preservative Required	OK			
1178534018-B	Methanol field pres. 4 C	OK			
1178534019-A	No Preservative Required	OK			
1178534019-B	Methanol field pres. 4 C	OK			

Container Id Preservative

Container
Condition

Container Id Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

11/20/2017

Ms. Sheila Hinckley
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Interior Texaco

Project #: 1809-008

Workorder #: 1711116

Dear Ms. Sheila Hinckley

The following report includes the data for the above referenced project for sample(s) received on 11/7/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1711116

Work Order Summary

CLIENT: Ms. Sheila Hinckley
Shannon & Wilson, Inc.
2355 Hill Road
Fairbanks, AK 99709

BILL TO: Ms. Sheila Hinckley
Shannon & Wilson, Inc.
2355 Hill Road
Fairbanks, AK 99709

PHONE: 907-479-0600
FAX: 907-479-5691
DATE RECEIVED: 11/07/2017
DATE COMPLETED: 11/20/2017

P.O. #
PROJECT # 1809-008 Interior Texaco
CONTACT: Kelly Buettner

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SS-01	Modified TO-15	8 "Hg	5.1 psi
02A	SS-02	Modified TO-15	1.2 "Hg	5.4 psi
02B	SS-02	Modified TO-15	1.2 "Hg	5.4 psi
03A	SS-03	Modified TO-15	6.7 "Hg	5.3 psi
03B	SS-03	Modified TO-15	6.7 "Hg	5.3 psi
04A	SS-102	Modified TO-15	5.7 "Hg	5.2 psi
04B	SS-102	Modified TO-15	5.7 "Hg	5.2 psi
05A	Lab Blank	Modified TO-15	NA	NA
05B	Lab Blank	Modified TO-15	NA	NA
05C	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
06B	CCV	Modified TO-15	NA	NA
06C	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCS	Modified TO-15	NA	NA
07B	LCS	Modified TO-15	NA	NA
07BB	LCS	Modified TO-15	NA	NA
07C	LCS	Modified TO-15	NA	NA
07CC	LCS	Modified TO-15	NA	NA

CERTIFIED BY: 

Technical Director

DATE: 11/20/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Shannon & Wilson, Inc.
Workorder# 1711116

Four 6 Liter Summa Canister (SIM Certified) samples were received on November 07, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to <math>< 40\%</math> RSD	For Full Scan: 30% RSD with 4 compounds allowed out to <math>< 40\%</math> RSD For SIM: Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to <math>< 40\%</math> RSD
Daily Calibration	+/- 30% Difference	For Full Scan: $\leq 30\%$ Difference with four allowed out up to $\leq 40\%$; flag and narrate outliers For SIM: Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There was a difference (greater than or equal to 5.0" Hg) between the measured canister receipt vacuum and that which was reported on the Chain of Custody (COC) for sample SS-02. A leak test indicated that the valve was functioning properly.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a

"sim" extension on the SIM data file.

Dilution was performed on samples SS-01 and SS-03 due to the presence of high level target species.

Sample SS-01 was transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target compounds.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS

Client Sample ID: SS-01

Lab ID#: 1711116-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	18	1500	90	7600
Freon 11	18	160	100	880
Tetrachloroethene	18	980	120	6600
Chlorobenzene	18	25	84	110
m,p-Xylene	18	110	79	490
o-Xylene	18	75	79	320
Cumene	18	21	90	100
Propylbenzene	18	39	90	190
4-Ethyltoluene	18	210	90	1000
1,3,5-Trimethylbenzene	18	180	90	900
1,2,4-Trimethylbenzene	18	250	90	1200

Client Sample ID: SS-02

Lab ID#: 1711116-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.18	2.2	1.0	12
Ethanol	0.89	18	1.7	33
Acetone	0.89	6.3	2.1	15
2-Propanol	0.89	0.99	2.2	2.4
Hexane	0.18	0.23	0.63	0.81
2-Butanone (Methyl Ethyl Ketone)	0.89	3.2	2.6	9.3
Cyclohexane	0.18	0.29	0.61	1.0
Heptane	0.18	0.34	0.73	1.4
4-Ethyltoluene	0.18	0.41	0.88	2.0
1,3,5-Trimethylbenzene	0.18	0.19	0.88	0.92
1,2,4-Trimethylbenzene	0.18	0.46	0.88	2.3

Client Sample ID: SS-02

Lab ID#: 1711116-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.036	0.86	0.18	4.2

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: SS-02

Lab ID#: 1711116-02B

Chloroform	0.036	0.061	0.17	0.30
1,1,1-Trichloroethane	0.036	0.043	0.19	0.24
Carbon Tetrachloride	0.036	0.057	0.22	0.36
Benzene	0.089	0.41	0.28	1.3
1,2-Dichloroethane	0.036	0.14	0.14	0.58
Toluene	0.036	5.1	0.13	19
Tetrachloroethene	0.036	24	0.24	170
Ethyl Benzene	0.036	0.54	0.15	2.3
m,p-Xylene	0.071	2.1	0.31	9.2
o-Xylene	0.036	0.70	0.15	3.0

Client Sample ID: SS-03

Lab ID#: 1711116-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.8	6.5	9.8	36
Ethanol	8.8	22	16	42
Acetone	8.8	41	21	98

Client Sample ID: SS-03

Lab ID#: 1711116-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.35	24	1.7	120
Chloroform	0.35	0.36	1.7	1.8
Benzene	0.88	0.90	2.8	2.9
Toluene	0.35	8.2	1.3	31
Tetrachloroethene	0.35	210	2.4	1400
Ethyl Benzene	0.35	1.3	1.5	5.5
m,p-Xylene	0.70	4.8	3.0	21
o-Xylene	0.35	1.8	1.5	7.9

Client Sample ID: SS-102

Lab ID#: 1711116-04A

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: SS-102

Lab ID#: 1711116-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.17	2.9	0.94	16
Ethanol	0.84	7.4	1.6	14
Acetone	0.84	6.7	2.0	16
2-Butanone (Methyl Ethyl Ketone)	0.84	4.6	2.5	14
Heptane	0.17	0.30	0.68	1.2
4-Ethyltoluene	0.17	0.41	0.82	2.0
1,2,4-Trimethylbenzene	0.17	0.43	0.82	2.1

Client Sample ID: SS-102

Lab ID#: 1711116-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.033	0.57	0.16	2.8
Chloroform	0.033	0.061	0.16	0.30
1,1,1-Trichloroethane	0.033	0.058	0.18	0.32
Carbon Tetrachloride	0.033	0.052	0.21	0.33
Benzene	0.084	0.34	0.27	1.1
Toluene	0.033	4.3	0.12	16
Tetrachloroethene	0.033	25	0.23	170
Ethyl Benzene	0.033	0.54	0.14	2.3
m,p-Xylene	0.067	2.2	0.29	9.8
o-Xylene	0.033	0.73	0.14	3.2



Air Toxics

Client Sample ID: SS-01

Lab ID#: 1711116-01A

EPA METHOD TO-15 GC/MS

File Name:	14111409	Date of Collection:	11/2/17 10:28:00 AM
Dil. Factor:	3.66	Date of Analysis:	11/14/17 01:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	18	1500	90	7600
Freon 114	18	Not Detected	130	Not Detected
Chloromethane	73	Not Detected	150	Not Detected
Vinyl Chloride	18	Not Detected	47	Not Detected
1,3-Butadiene	18	Not Detected	40	Not Detected
Bromomethane	73	Not Detected	280	Not Detected
Chloroethane	73	Not Detected	190	Not Detected
Freon 11	18	160	100	880
Ethanol	73	Not Detected	140	Not Detected
Freon 113	18	Not Detected	140	Not Detected
1,1-Dichloroethene	18	Not Detected	72	Not Detected
Acetone	73	Not Detected	170	Not Detected
2-Propanol	73	Not Detected	180	Not Detected
Carbon Disulfide	73	Not Detected	230	Not Detected
3-Chloropropene	73	Not Detected	230	Not Detected
Methylene Chloride	73	Not Detected	250	Not Detected
Methyl tert-butyl ether	18	Not Detected	66	Not Detected
trans-1,2-Dichloroethene	18	Not Detected	72	Not Detected
Hexane	18	Not Detected	64	Not Detected
1,1-Dichloroethane	18	Not Detected	74	Not Detected
2-Butanone (Methyl Ethyl Ketone)	73	Not Detected	220	Not Detected
cis-1,2-Dichloroethene	18	Not Detected	72	Not Detected
Tetrahydrofuran	18	Not Detected	54	Not Detected
Chloroform	18	Not Detected	89	Not Detected
1,1,1-Trichloroethane	18	Not Detected	100	Not Detected
Cyclohexane	18	Not Detected	63	Not Detected
Carbon Tetrachloride	18	Not Detected	120	Not Detected
2,2,4-Trimethylpentane	18	Not Detected	85	Not Detected
Benzene	18	Not Detected	58	Not Detected
1,2-Dichloroethane	18	Not Detected	74	Not Detected
Heptane	18	Not Detected	75	Not Detected
Trichloroethene	18	Not Detected	98	Not Detected
1,2-Dichloropropane	18	Not Detected	84	Not Detected
1,4-Dioxane	73	Not Detected	260	Not Detected
Bromodichloromethane	18	Not Detected	120	Not Detected
cis-1,3-Dichloropropene	18	Not Detected	83	Not Detected
4-Methyl-2-pentanone	18	Not Detected	75	Not Detected
Toluene	18	Not Detected	69	Not Detected
trans-1,3-Dichloropropene	18	Not Detected	83	Not Detected
1,1,2-Trichloroethane	18	Not Detected	100	Not Detected
Tetrachloroethene	18	980	120	6600
2-Hexanone	73	Not Detected	300	Not Detected



Air Toxics

Client Sample ID: SS-01

Lab ID#: 1711116-01A

EPA METHOD TO-15 GC/MS

File Name:	14111409	Date of Collection:	11/2/17 10:28:00 AM
Dil. Factor:	3.66	Date of Analysis:	11/14/17 01:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	18	Not Detected	160	Not Detected
1,2-Dibromoethane (EDB)	18	Not Detected	140	Not Detected
Chlorobenzene	18	25	84	110
Ethyl Benzene	18	Not Detected	79	Not Detected
m,p-Xylene	18	110	79	490
o-Xylene	18	75	79	320
Styrene	18	Not Detected	78	Not Detected
Bromoform	18	Not Detected	190	Not Detected
Cumene	18	21	90	100
1,1,2,2-Tetrachloroethane	18	Not Detected	120	Not Detected
Propylbenzene	18	39	90	190
4-Ethyltoluene	18	210	90	1000
1,3,5-Trimethylbenzene	18	180	90	900
1,2,4-Trimethylbenzene	18	250	90	1200
1,3-Dichlorobenzene	18	Not Detected	110	Not Detected
1,4-Dichlorobenzene	18	Not Detected	110	Not Detected
alpha-Chlorotoluene	18	Not Detected	95	Not Detected
1,2-Dichlorobenzene	18	Not Detected	110	Not Detected
1,2,4-Trichlorobenzene	73	Not Detected	540	Not Detected
Hexachlorobutadiene	73	Not Detected	780	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SS-02

Lab ID#: 1711116-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110814	Date of Collection:	11/2/17 11:54:00 AM
Dil. Factor:	1.78	Date of Analysis:	11/8/17 08:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.18	Not Detected	0.39	Not Detected
Bromomethane	0.89	Not Detected	3.4	Not Detected
Freon 11	0.18	2.2	1.0	12
Ethanol	0.89	18	1.7	33
Freon 113	0.18	Not Detected	1.4	Not Detected
Acetone	0.89	6.3	2.1	15
2-Propanol	0.89	0.99	2.2	2.4
Carbon Disulfide	0.89	Not Detected	2.8	Not Detected
3-Chloropropene	0.89	Not Detected	2.8	Not Detected
Methylene Chloride	0.36	Not Detected	1.2	Not Detected
Hexane	0.18	0.23	0.63	0.81
2-Butanone (Methyl Ethyl Ketone)	0.89	3.2	2.6	9.3
Tetrahydrofuran	0.89	Not Detected	2.6	Not Detected
Cyclohexane	0.18	0.29	0.61	1.0
2,2,4-Trimethylpentane	0.89	Not Detected	4.2	Not Detected
Heptane	0.18	0.34	0.73	1.4
1,2-Dichloropropane	0.18	Not Detected	0.82	Not Detected
1,4-Dioxane	0.18	Not Detected	0.64	Not Detected
Bromodichloromethane	0.18	Not Detected	1.2	Not Detected
cis-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
4-Methyl-2-pentanone	0.18	Not Detected	0.73	Not Detected
trans-1,3-Dichloropropene	0.18	Not Detected	0.81	Not Detected
2-Hexanone	0.89	Not Detected	3.6	Not Detected
Dibromochloromethane	0.18	Not Detected	1.5	Not Detected
Chlorobenzene	0.18	Not Detected	0.82	Not Detected
Styrene	0.18	Not Detected	0.76	Not Detected
Bromoform	0.18	Not Detected	1.8	Not Detected
Cumene	0.18	Not Detected	0.88	Not Detected
Propylbenzene	0.18	Not Detected	0.88	Not Detected
4-Ethyltoluene	0.18	0.41	0.88	2.0
1,3,5-Trimethylbenzene	0.18	0.19	0.88	0.92
1,2,4-Trimethylbenzene	0.18	0.46	0.88	2.3
1,3-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
alpha-Chlorotoluene	0.18	Not Detected	0.92	Not Detected
1,2-Dichlorobenzene	0.18	Not Detected	1.1	Not Detected
1,2,4-Trichlorobenzene	0.89	Not Detected	6.6	Not Detected
Hexachlorobutadiene	0.89	Not Detected	9.5	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130



Air Toxics

Client Sample ID: SS-02

Lab ID#: 1711116-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110814	Date of Collection:	11/2/17 11:54:00 AM
Dil. Factor:	1.78	Date of Analysis:	11/8/17 08:07 PM

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SS-02

Lab ID#: 1711116-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110814sim	Date of Collection:	11/2/17 11:54:00 AM
Dil. Factor:	1.78	Date of Analysis:	11/8/17 08:07 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.036	0.86	0.18	4.2
Freon 114	0.036	Not Detected	0.25	Not Detected
Chloromethane	0.89	Not Detected	1.8	Not Detected
Vinyl Chloride	0.018	Not Detected	0.046	Not Detected
Chloroethane	0.089	Not Detected	0.23	Not Detected
1,1-Dichloroethene	0.018	Not Detected	0.070	Not Detected
trans-1,2-Dichloroethene	0.18	Not Detected	0.70	Not Detected
Methyl tert-butyl ether	0.18	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.036	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.036	Not Detected	0.14	Not Detected
Chloroform	0.036	0.061	0.17	0.30
1,1,1-Trichloroethane	0.036	0.043	0.19	0.24
Carbon Tetrachloride	0.036	0.057	0.22	0.36
Benzene	0.089	0.41	0.28	1.3
1,2-Dichloroethane	0.036	0.14	0.14	0.58
Trichloroethene	0.036	Not Detected	0.19	Not Detected
Toluene	0.036	5.1	0.13	19
1,1,2-Trichloroethane	0.036	Not Detected	0.19	Not Detected
Tetrachloroethene	0.036	24	0.24	170
1,2-Dibromoethane (EDB)	0.036	Not Detected	0.27	Not Detected
Ethyl Benzene	0.036	0.54	0.15	2.3
m,p-Xylene	0.071	2.1	0.31	9.2
o-Xylene	0.036	0.70	0.15	3.0
1,1,2,2-Tetrachloroethane	0.036	Not Detected	0.24	Not Detected
1,4-Dichlorobenzene	0.036	Not Detected	0.21	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SS-03

Lab ID#: 1711116-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110815	Date of Collection:	11/2/17 1:37:00 PM
Dil. Factor:	17.5	Date of Analysis:	11/8/17 08:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.8	Not Detected	3.9	Not Detected
Bromomethane	8.8	Not Detected	34	Not Detected
Freon 11	1.8	6.5	9.8	36
Ethanol	8.8	22	16	42
Freon 113	1.8	Not Detected	13	Not Detected
Acetone	8.8	41	21	98
2-Propanol	8.8	Not Detected	22	Not Detected
Carbon Disulfide	8.8	Not Detected	27	Not Detected
3-Chloropropene	8.8	Not Detected	27	Not Detected
Methylene Chloride	3.5	Not Detected	12	Not Detected
Hexane	1.8	Not Detected	6.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	8.8	Not Detected	26	Not Detected
Tetrahydrofuran	8.8	Not Detected	26	Not Detected
Cyclohexane	1.8	Not Detected	6.0	Not Detected
2,2,4-Trimethylpentane	8.8	Not Detected	41	Not Detected
Heptane	1.8	Not Detected	7.2	Not Detected
1,2-Dichloropropane	1.8	Not Detected	8.1	Not Detected
1,4-Dioxane	1.8	Not Detected	6.3	Not Detected
Bromodichloromethane	1.8	Not Detected	12	Not Detected
cis-1,3-Dichloropropene	1.8	Not Detected	7.9	Not Detected
4-Methyl-2-pentanone	1.8	Not Detected	7.2	Not Detected
trans-1,3-Dichloropropene	1.8	Not Detected	7.9	Not Detected
2-Hexanone	8.8	Not Detected	36	Not Detected
Dibromochloromethane	1.8	Not Detected	15	Not Detected
Chlorobenzene	1.8	Not Detected	8.0	Not Detected
Styrene	1.8	Not Detected	7.4	Not Detected
Bromoform	1.8	Not Detected	18	Not Detected
Cumene	1.8	Not Detected	8.6	Not Detected
Propylbenzene	1.8	Not Detected	8.6	Not Detected
4-Ethyltoluene	1.8	Not Detected	8.6	Not Detected
1,3,5-Trimethylbenzene	1.8	Not Detected	8.6	Not Detected
1,2,4-Trimethylbenzene	1.8	Not Detected	8.6	Not Detected
1,3-Dichlorobenzene	1.8	Not Detected	10	Not Detected
alpha-Chlorotoluene	1.8	Not Detected	9.0	Not Detected
1,2-Dichlorobenzene	1.8	Not Detected	10	Not Detected
1,2,4-Trichlorobenzene	8.8	Not Detected	65	Not Detected
Hexachlorobutadiene	8.8	Not Detected	93	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130



Air Toxics

Client Sample ID: SS-03

Lab ID#: 1711116-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110815	Date of Collection:	11/2/17 1:37:00 PM
Dil. Factor:	17.5	Date of Analysis:	11/8/17 08:46 PM

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SS-03

Lab ID#: 1711116-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110815sim	Date of Collection:	11/2/17 1:37:00 PM
Dil. Factor:	17.5	Date of Analysis:	11/8/17 08:46 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.35	24	1.7	120
Freon 114	0.35	Not Detected	2.4	Not Detected
Chloromethane	8.8	Not Detected	18	Not Detected
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
Chloroethane	0.88	Not Detected	2.3	Not Detected
1,1-Dichloroethene	0.18	Not Detected	0.69	Not Detected
trans-1,2-Dichloroethene	1.8	Not Detected	6.9	Not Detected
Methyl tert-butyl ether	1.8	Not Detected	6.3	Not Detected
1,1-Dichloroethane	0.35	Not Detected	1.4	Not Detected
cis-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Chloroform	0.35	0.36	1.7	1.8
1,1,1-Trichloroethane	0.35	Not Detected	1.9	Not Detected
Carbon Tetrachloride	0.35	Not Detected	2.2	Not Detected
Benzene	0.88	0.90	2.8	2.9
1,2-Dichloroethane	0.35	Not Detected	1.4	Not Detected
Trichloroethene	0.35	Not Detected	1.9	Not Detected
Toluene	0.35	8.2	1.3	31
1,1,2-Trichloroethane	0.35	Not Detected	1.9	Not Detected
Tetrachloroethene	0.35	210	2.4	1400
1,2-Dibromoethane (EDB)	0.35	Not Detected	2.7	Not Detected
Ethyl Benzene	0.35	1.3	1.5	5.5
m,p-Xylene	0.70	4.8	3.0	21
o-Xylene	0.35	1.8	1.5	7.9
1,1,2,2-Tetrachloroethane	0.35	Not Detected	2.4	Not Detected
1,4-Dichlorobenzene	0.35	Not Detected	2.1	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SS-102

Lab ID#: 1711116-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110816	Date of Collection:	11/2/17 11:44:00 AM
Dil. Factor:	1.67	Date of Analysis:	11/8/17 09:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.17	Not Detected	0.37	Not Detected
Bromomethane	0.84	Not Detected	3.2	Not Detected
Freon 11	0.17	2.9	0.94	16
Ethanol	0.84	7.4	1.6	14
Freon 113	0.17	Not Detected	1.3	Not Detected
Acetone	0.84	6.7	2.0	16
2-Propanol	0.84	Not Detected	2.0	Not Detected
Carbon Disulfide	0.84	Not Detected	2.6	Not Detected
3-Chloropropene	0.84	Not Detected	2.6	Not Detected
Methylene Chloride	0.33	Not Detected	1.2	Not Detected
Hexane	0.17	Not Detected	0.59	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.84	4.6	2.5	14
Tetrahydrofuran	0.84	Not Detected	2.5	Not Detected
Cyclohexane	0.17	Not Detected	0.57	Not Detected
2,2,4-Trimethylpentane	0.84	Not Detected	3.9	Not Detected
Heptane	0.17	0.30	0.68	1.2
1,2-Dichloropropane	0.17	Not Detected	0.77	Not Detected
1,4-Dioxane	0.17	Not Detected	0.60	Not Detected
Bromodichloromethane	0.17	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
4-Methyl-2-pentanone	0.17	Not Detected	0.68	Not Detected
trans-1,3-Dichloropropene	0.17	Not Detected	0.76	Not Detected
2-Hexanone	0.84	Not Detected	3.4	Not Detected
Dibromochloromethane	0.17	Not Detected	1.4	Not Detected
Chlorobenzene	0.17	Not Detected	0.77	Not Detected
Styrene	0.17	Not Detected	0.71	Not Detected
Bromoform	0.17	Not Detected	1.7	Not Detected
Cumene	0.17	Not Detected	0.82	Not Detected
Propylbenzene	0.17	Not Detected	0.82	Not Detected
4-Ethyltoluene	0.17	0.41	0.82	2.0
1,3,5-Trimethylbenzene	0.17	Not Detected	0.82	Not Detected
1,2,4-Trimethylbenzene	0.17	0.43	0.82	2.1
1,3-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
alpha-Chlorotoluene	0.17	Not Detected	0.86	Not Detected
1,2-Dichlorobenzene	0.17	Not Detected	1.0	Not Detected
1,2,4-Trichlorobenzene	0.84	Not Detected	6.2	Not Detected
Hexachlorobutadiene	0.84	Not Detected	8.9	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130



Air Toxics

Client Sample ID: SS-102

Lab ID#: 1711116-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110816	Date of Collection:	11/2/17 11:44:00 AM
Dil. Factor:	1.67	Date of Analysis:	11/8/17 09:25 PM

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: SS-102

Lab ID#: 1711116-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110816sim	Date of Collection:	11/2/17 11:44:00 AM
Dil. Factor:	1.67	Date of Analysis:	11/8/17 09:25 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.033	0.57	0.16	2.8
Freon 114	0.033	Not Detected	0.23	Not Detected
Chloromethane	0.84	Not Detected	1.7	Not Detected
Vinyl Chloride	0.017	Not Detected	0.043	Not Detected
Chloroethane	0.084	Not Detected	0.22	Not Detected
1,1-Dichloroethene	0.017	Not Detected	0.066	Not Detected
trans-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Methyl tert-butyl ether	0.17	Not Detected	0.60	Not Detected
1,1-Dichloroethane	0.033	Not Detected	0.14	Not Detected
cis-1,2-Dichloroethene	0.033	Not Detected	0.13	Not Detected
Chloroform	0.033	0.061	0.16	0.30
1,1,1-Trichloroethane	0.033	0.058	0.18	0.32
Carbon Tetrachloride	0.033	0.052	0.21	0.33
Benzene	0.084	0.34	0.27	1.1
1,2-Dichloroethane	0.033	Not Detected	0.14	Not Detected
Trichloroethene	0.033	Not Detected	0.18	Not Detected
Toluene	0.033	4.3	0.12	16
1,1,2-Trichloroethane	0.033	Not Detected	0.18	Not Detected
Tetrachloroethene	0.033	25	0.23	170
1,2-Dibromoethane (EDB)	0.033	Not Detected	0.26	Not Detected
Ethyl Benzene	0.033	0.54	0.14	2.3
m,p-Xylene	0.067	2.2	0.29	9.8
o-Xylene	0.033	0.73	0.14	3.2
1,1,2,2-Tetrachloroethane	0.033	Not Detected	0.23	Not Detected
1,4-Dichlorobenzene	0.033	Not Detected	0.20	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1711116-05A

EPA METHOD TO-15 GC/MS

File Name:	14111407	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/14/17 10:33 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1711116-05A

EPA METHOD TO-15 GC/MS

File Name:	14111407	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/14/17 10:33 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1711116-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110807	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/8/17 01:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected
Dibromochloromethane	0.10	Not Detected	0.85	Not Detected
Chlorobenzene	0.10	Not Detected	0.46	Not Detected
Styrene	0.10	Not Detected	0.42	Not Detected
Bromoform	0.10	Not Detected	1.0	Not Detected
Cumene	0.10	Not Detected	0.49	Not Detected
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,3-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
alpha-Chlorotoluene	0.10	Not Detected	0.52	Not Detected
1,2-Dichlorobenzene	0.10	Not Detected	0.60	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected	3.7	Not Detected
Hexachlorobutadiene	0.50	Not Detected	5.3	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130

Client Sample ID: Lab Blank

Lab ID#: 1711116-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110807	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 01:02 PM

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1711116-05C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110807sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 01:02 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.020	Not Detected	0.099	Not Detected
Freon 114	0.020	Not Detected	0.14	Not Detected
Chloromethane	0.50	Not Detected	1.0	Not Detected
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,2-Dibromoethane (EDB)	0.020	Not Detected	0.15	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
1,4-Dichlorobenzene	0.020	Not Detected	0.12	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711116-06A

EPA METHOD TO-15 GC/MS

File Name:	14111402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/14/17 07:46 AM

Compound	%Recovery
Freon 12	97
Freon 114	97
Chloromethane	95
Vinyl Chloride	100
1,3-Butadiene	94
Bromomethane	111
Chloroethane	93
Freon 11	104
Ethanol	98
Freon 113	103
1,1-Dichloroethene	102
Acetone	107
2-Propanol	109
Carbon Disulfide	97
3-Chloropropene	102
Methylene Chloride	103
Methyl tert-butyl ether	104
trans-1,2-Dichloroethene	93
Hexane	102
1,1-Dichloroethane	103
2-Butanone (Methyl Ethyl Ketone)	101
cis-1,2-Dichloroethene	102
Tetrahydrofuran	99
Chloroform	102
1,1,1-Trichloroethane	101
Cyclohexane	102
Carbon Tetrachloride	103
2,2,4-Trimethylpentane	100
Benzene	98
1,2-Dichloroethane	96
Heptane	88
Trichloroethene	96
1,2-Dichloropropane	98
1,4-Dioxane	105
Bromodichloromethane	97
cis-1,3-Dichloropropene	97
4-Methyl-2-pentanone	88
Toluene	95
trans-1,3-Dichloropropene	99
1,1,2-Trichloroethane	96
Tetrachloroethene	100
2-Hexanone	101



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711116-06A

EPA METHOD TO-15 GC/MS

File Name:	14111402	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/14/17 07:46 AM

Compound	%Recovery
Dibromochloromethane	102
1,2-Dibromoethane (EDB)	102
Chlorobenzene	97
Ethyl Benzene	97
m,p-Xylene	101
o-Xylene	99
Styrene	101
Bromoform	103
Cumene	99
1,1,2,2-Tetrachloroethane	99
Propylbenzene	101
4-Ethyltoluene	102
1,3,5-Trimethylbenzene	106
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	103
1,4-Dichlorobenzene	104
alpha-Chlorotoluene	110
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	118
Hexachlorobutadiene	109

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711116-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 09:24 AM

Compound	%Recovery
1,3-Butadiene	107
Bromomethane	107
Freon 11	100
Ethanol	95
Freon 113	97
Acetone	85
2-Propanol	108
Carbon Disulfide	103
3-Chloropropene	105
Methylene Chloride	97
Hexane	107
2-Butanone (Methyl Ethyl Ketone)	103
Tetrahydrofuran	102
Cyclohexane	107
2,2,4-Trimethylpentane	100
Heptane	110
1,2-Dichloropropane	103
1,4-Dioxane	100
Bromodichloromethane	105
cis-1,3-Dichloropropene	105
4-Methyl-2-pentanone	106
trans-1,3-Dichloropropene	109
2-Hexanone	107
Dibromochloromethane	105
Chlorobenzene	102
Styrene	112
Bromoform	108
Cumene	110
Propylbenzene	106
4-Ethyltoluene	106
1,3,5-Trimethylbenzene	104
1,2,4-Trimethylbenzene	102
1,3-Dichlorobenzene	102
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	97
Hexachlorobutadiene	104

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711116-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 09:24 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1711116-06C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110802sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 09:24 AM

Compound	%Recovery
Freon 12	100
Freon 114	98
Chloromethane	92
Vinyl Chloride	101
Chloroethane	101
1,1-Dichloroethene	98
trans-1,2-Dichloroethene	100
Methyl tert-butyl ether	110
1,1-Dichloroethane	102
cis-1,2-Dichloroethene	101
Chloroform	99
1,1,1-Trichloroethane	100
Carbon Tetrachloride	86
Benzene	99
1,2-Dichloroethane	102
Trichloroethene	100
Toluene	102
1,1,2-Trichloroethane	105
Tetrachloroethene	103
1,2-Dibromoethane (EDB)	105
Ethyl Benzene	109
m,p-Xylene	111
o-Xylene	111
1,1,2,2-Tetrachloroethane	104
1,4-Dichlorobenzene	101

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711116-07A

EPA METHOD TO-15 GC/MS

File Name:	14111403	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/14/17 08:19 AM

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	105	70-130
Chloromethane	97	70-130
Vinyl Chloride	105	70-130
1,3-Butadiene	92	70-130
Bromomethane	113	70-130
Chloroethane	98	70-130
Freon 11	110	70-130
Ethanol	111	70-130
Freon 113	105	70-130
1,1-Dichloroethene	103	70-130
Acetone	105	70-130
2-Propanol	115	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	96	70-130
Methylene Chloride	103	70-130
Methyl tert-butyl ether	104	70-130
trans-1,2-Dichloroethene	82	70-130
Hexane	103	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	105	70-130
cis-1,2-Dichloroethene	115	70-130
Tetrahydrofuran	99	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	102	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	105	70-130
2,2,4-Trimethylpentane	102	70-130
Benzene	102	70-130
1,2-Dichloroethane	97	70-130
Heptane	92	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	102	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	96	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	98	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	102	70-130
2-Hexanone	104	70-130

Client Sample ID: LCS

Lab ID#: 1711116-07A

EPA METHOD TO-15 GC/MS

File Name:	14111403	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/14/17 08:19 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	105	70-130
1,2-Dibromoethane (EDB)	104	70-130
Chlorobenzene	98	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	101	70-130
o-Xylene	104	70-130
Styrene	107	70-130
Bromoform	81	70-130
Cumene	100	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	104	70-130
1,3,5-Trimethylbenzene	106	70-130
1,2,4-Trimethylbenzene	104	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	124	70-130
Hexachlorobutadiene	110	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1711116-07AA

EPA METHOD TO-15 GC/MS

File Name:	14111404	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/14/17 08:50 AM

Compound	%Recovery	Method Limits
Freon 12	99	70-130
Freon 114	104	70-130
Chloromethane	94	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	95	70-130
Bromomethane	118	70-130
Chloroethane	101	70-130
Freon 11	109	70-130
Ethanol	108	70-130
Freon 113	105	70-130
1,1-Dichloroethene	104	70-130
Acetone	103	70-130
2-Propanol	113	70-130
Carbon Disulfide	86	70-130
3-Chloropropene	97	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	102	70-130
trans-1,2-Dichloroethene	84	70-130
Hexane	102	70-130
1,1-Dichloroethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	101	70-130
cis-1,2-Dichloroethene	115	70-130
Tetrahydrofuran	99	70-130
Chloroform	102	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	101	70-130
Carbon Tetrachloride	102	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	100	70-130
1,2-Dichloroethane	97	70-130
Heptane	90	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	107	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	94	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	100	70-130
1,1,2-Trichloroethane	98	70-130
Tetrachloroethene	102	70-130
2-Hexanone	105	70-130

Client Sample ID: LCSD

Lab ID#: 1711116-07AA

EPA METHOD TO-15 GC/MS

File Name:	14111404	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/14/17 08:50 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	104	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	100	70-130
m,p-Xylene	100	70-130
o-Xylene	103	70-130
Styrene	106	70-130
Bromoform	80	70-130
Cumene	101	70-130
1,1,2,2-Tetrachloroethane	101	70-130
Propylbenzene	105	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	108	70-130
1,2,4-Trimethylbenzene	104	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	116	70-130
1,2-Dichlorobenzene	108	70-130
1,2,4-Trichlorobenzene	128	70-130
Hexachlorobutadiene	115	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711116-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:12 AM

Compound	%Recovery	Method Limits
1,3-Butadiene	107	70-130
Bromomethane	120	70-130
Freon 11	103	70-130
Ethanol	103	70-130
Freon 113	96	70-130
Acetone	85	70-130
2-Propanol	113	70-130
Carbon Disulfide	92	70-130
3-Chloropropene	97	70-130
Methylene Chloride	96	70-130
Hexane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
Tetrahydrofuran	110	70-130
Cyclohexane	108	70-130
2,2,4-Trimethylpentane	104	70-130
Heptane	109	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	102	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	99	70-130
4-Methyl-2-pentanone	108	70-130
trans-1,3-Dichloropropene	110	70-130
2-Hexanone	112	70-130
Dibromochloromethane	108	70-130
Chlorobenzene	100	70-130
Styrene	112	70-130
Bromoform	110	70-130
Cumene	110	70-130
Propylbenzene	108	70-130
4-Ethyltoluene	109	70-130
1,3,5-Trimethylbenzene	106	70-130
1,2,4-Trimethylbenzene	106	70-130
1,3-Dichlorobenzene	104	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	105	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	106	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711116-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:12 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1711116-07BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:51 AM

Compound	%Recovery	Method Limits
1,3-Butadiene	115	70-130
Bromomethane	130	70-130
Freon 11	111	70-130
Ethanol	113	70-130
Freon 113	104	70-130
Acetone	92	70-130
2-Propanol	124	70-130
Carbon Disulfide	100	70-130
3-Chloropropene	104	70-130
Methylene Chloride	105	70-130
Hexane	116	70-130
2-Butanone (Methyl Ethyl Ketone)	111	70-130
Tetrahydrofuran	112	70-130
Cyclohexane	115	70-130
2,2,4-Trimethylpentane	112	70-130
Heptane	112	70-130
1,2-Dichloropropane	108	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	115	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	112	70-130
trans-1,3-Dichloropropene	114	70-130
2-Hexanone	117	70-130
Dibromochloromethane	113	70-130
Chlorobenzene	106	70-130
Styrene	117	70-130
Bromoform	117	70-130
Cumene	116	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	112	70-130
1,3,5-Trimethylbenzene	106	70-130
1,2,4-Trimethylbenzene	106	70-130
1,3-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	118	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	104	70-130
Hexachlorobutadiene	111	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1711116-07BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:51 AM

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711116-07C

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110803sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:12 AM

Compound	%Recovery	Method Limits
Freon 12	104	70-130
Freon 114	105	70-130
Chloromethane	93	70-130
Vinyl Chloride	107	70-130
Chloroethane	107	70-130
1,1-Dichloroethene	101	70-130
trans-1,2-Dichloroethene	89	70-130
Methyl tert-butyl ether	110	70-130
1,1-Dichloroethane	104	70-130
cis-1,2-Dichloroethene	113	70-130
Chloroform	100	70-130
1,1,1-Trichloroethane	101	70-130
Carbon Tetrachloride	94	60-140
Benzene	100	70-130
1,2-Dichloroethane	103	70-130
Trichloroethene	101	70-130
Toluene	103	70-130
1,1,2-Trichloroethane	105	70-130
Tetrachloroethene	103	70-130
1,2-Dibromoethane (EDB)	106	70-130
Ethyl Benzene	110	70-130
m,p-Xylene	113	70-130
o-Xylene	116	70-130
1,1,2,2-Tetrachloroethane	105	70-130
1,4-Dichlorobenzene	104	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130

Client Sample ID: LCSD

Lab ID#: 1711116-07CC

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20110804sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/8/17 10:51 AM

Compound	%Recovery	Method Limits
Freon 12	108	70-130
Freon 114	109	70-130
Chloromethane	96	70-130
Vinyl Chloride	110	70-130
Chloroethane	112	70-130
1,1-Dichloroethene	105	70-130
trans-1,2-Dichloroethene	92	70-130
Methyl tert-butyl ether	114	70-130
1,1-Dichloroethane	108	70-130
cis-1,2-Dichloroethene	118	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	105	70-130
Carbon Tetrachloride	98	60-140
Benzene	103	70-130
1,2-Dichloroethane	106	70-130
Trichloroethene	104	70-130
Toluene	105	70-130
1,1,2-Trichloroethane	110	70-130
Tetrachloroethene	108	70-130
1,2-Dibromoethane (EDB)	111	70-130
Ethyl Benzene	114	70-130
m,p-Xylene	115	70-130
o-Xylene	118	70-130
1,1,2,2-Tetrachloroethane	109	70-130
1,4-Dichlorobenzene	106	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	102	70-130

11/20/2017

Ms. Sheila Hinckley
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Interior Texaco

Project #: 1809-008

Workorder #: 1711121

Dear Ms. Sheila Hinckley

The following report includes the data for the above referenced project for sample(s) received on 11/7/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1711121

Work Order Summary

CLIENT:	Ms. Sheila Hinckley Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709	BILL TO:	Ms. Sheila Hinckley Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709
PHONE:	907-479-0600	P.O. #	
FAX:	907-479-5691	PROJECT #	1809-008 Interior Texaco
DATE RECEIVED:	11/07/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/20/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	IA-01	Passive S.E. RAD130/SKC
02A	IA-02	Passive S.E. RAD130/SKC
03A	IA-03	Passive S.E. RAD130/SKC
04A	IA-04	Passive S.E. RAD130/SKC
05A	IA-05	Passive S.E. RAD130/SKC
06A	Lab Blank	Passive S.E. RAD130/SKC
07A	LCS	Passive S.E. RAD130/SKC
07AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: 
 Technical Director

DATE: 11/20/17

LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
Shannon & Wilson, Inc.
Workorder# 1711121

Five Radiello 130 (Solvent) samples were received on November 07, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

To calculate ug/m³ concentrations in the Lab Blank, a sampling duration of 1455 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-01

Lab ID#: 1711121-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.2	8.1	58
Acetone	0.20	1.9	2.2	21
Hexane	0.10	1.1	0.62	6.9
Cyclohexane	0.10	1.4	0.36	4.9
Benzene	0.40	3.6	0.56	5.2
Heptane	0.10	1.3	0.66	8.4
Trichloroethene	0.10	1.0	0.12	1.2
4-Methyl-2-pentanone	0.20	2.2	0.30	3.2
Toluene	0.10	0.99	2.9	28
Tetrachloroethene	0.10	1.2	65	800
Ethyl Benzene	0.10	1.1	0.63	6.8
m,p-Xylene	0.10	1.0	1.7	18
o-Xylene	0.10	1.1	0.62	6.9
Propylbenzene	0.10	1.3	0.17	2.2

Client Sample ID: IA-02

Lab ID#: 1711121-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	7.7	54
Acetone	0.20	1.9	2.5	23
Hexane	0.10	1.1	0.60	6.5
Cyclohexane	0.10	1.3	0.36	4.7
Benzene	0.40	3.6	0.57	5.1
Heptane	0.10	1.2	0.66	8.2
Trichloroethene	0.10	1.0	0.12	1.2
4-Methyl-2-pentanone	0.20	2.1	0.29	3.1
Toluene	0.10	0.97	2.9	28
Tetrachloroethene	0.10	1.2	72	870
Ethyl Benzene	0.10	1.0	0.62	6.6
m,p-Xylene	0.10	1.0	1.7	17
o-Xylene	0.10	1.1	0.62	6.8
Propylbenzene	0.10	1.2	0.16	2.0

Summary of Detected Compounds VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: IA-03

Lab ID#: 1711121-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	18	130
Acetone	0.20	1.8	4.4	41
Hexane	0.10	1.1	0.34	3.7
Cyclohexane	0.10	1.3	0.22	3.0
Heptane	0.10	1.2	0.34	4.2
Toluene	0.10	0.97	1.3	12
Tetrachloroethene	0.10	1.2	10	130
Ethyl Benzene	0.10	1.0	0.34	3.6
m,p-Xylene	0.10	1.0	0.84	8.6
o-Xylene	0.10	1.1	0.33	3.6
Propylbenzene	0.10	1.2	0.13	1.6

Client Sample ID: IA-04

Lab ID#: 1711121-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	53	360
Acetone	0.20	1.8	2.7	24
Hexane	0.10	1.1	0.54	5.8
Chloroform	0.10	0.94	0.10	0.97
Cyclohexane	0.10	1.3	0.37	4.8
Benzene	0.40	3.5	0.48	4.2
Heptane	0.10	1.2	0.59	7.1
Toluene	0.10	0.95	2.3	22
Tetrachloroethene	0.10	1.2	23	270
Ethyl Benzene	0.10	1.0	0.62	6.4
m,p-Xylene	0.10	1.0	1.5	15
o-Xylene	0.10	1.1	0.55	5.9
Propylbenzene	0.10	1.2	0.18	2.2

Client Sample ID: IA-05

Lab ID#: 1711121-05A

**Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS**

Client Sample ID: IA-05

Lab ID#: 1711121-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	35	240
Acetone	0.20	1.8	2.7	25
Hexane	0.10	1.1	0.58	6.2
Cyclohexane	0.10	1.3	0.34	4.4
Benzene	0.40	3.5	0.55	4.8
Heptane	0.10	1.2	0.53	6.4
Toluene	0.10	0.95	2.3	22
Tetrachloroethene	0.10	1.2	30	360
Ethyl Benzene	0.10	1.0	0.73	7.5
m,p-Xylene	0.10	1.0	1.5	15
o-Xylene	0.10	1.1	0.54	5.8
Propylbenzene	0.10	1.2	0.18	2.2



Client Sample ID: IA-01

Lab ID#: 1711121-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110917sim	Date of Collection:	11/2/17 1:00:00 PM
Dil. Factor:	1.00	Date of Analysis:	11/9/17 02:31 PM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.2	8.1	58
Acetone	0.20	1.9	2.2	21
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	0.62	6.9
Ethyl Acetate	0.40	3.7	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.92	Not Detected	Not Detected
Chloroform	0.10	0.97	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.2	Not Detected	Not Detected
Cyclohexane	0.10	1.4	0.36	4.9
Carbon Tetrachloride	0.10	1.1	Not Detected	Not Detected
Benzene	0.40	3.6	0.56	5.2
1,2-Dichloroethane	0.10	0.95	Not Detected	Not Detected
Heptane	0.10	1.3	0.66	8.4
Trichloroethene	0.10	1.0	0.12	1.2
4-Methyl-2-pentanone	0.20	2.2	0.30	3.2
Toluene	0.10	0.99	2.9	28
Tetrachloroethene	0.10	1.2	65	800
Chlorobenzene	0.10	1.1	Not Detected	Not Detected
Ethyl Benzene	0.10	1.1	0.63	6.8
m,p-Xylene	0.10	1.0	1.7	18
o-Xylene	0.10	1.1	0.62	6.9
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.3	0.17	2.2
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.9	Not Detected	Not Detected

Temperature = 55.0F , duration time = 1455 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130

Client Sample ID: IA-02

Lab ID#: 1711121-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110918sim	Date of Collection:	11/2/17 1:01:00 PM
Dil. Factor:	1.00	Date of Analysis:	11/9/17 02:56 PM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	7.7	54
Acetone	0.20	1.9	2.5	23
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	0.60	6.5
Ethyl Acetate	0.40	3.7	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.91	Not Detected	Not Detected
Chloroform	0.10	0.95	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.2	Not Detected	Not Detected
Cyclohexane	0.10	1.3	0.36	4.7
Carbon Tetrachloride	0.10	1.1	Not Detected	Not Detected
Benzene	0.40	3.6	0.57	5.1
1,2-Dichloroethane	0.10	0.93	Not Detected	Not Detected
Heptane	0.10	1.2	0.66	8.2
Trichloroethene	0.10	1.0	0.12	1.2
4-Methyl-2-pentanone	0.20	2.1	0.29	3.1
Toluene	0.10	0.97	2.9	28
Tetrachloroethene	0.10	1.2	72	870
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.62	6.6
m,p-Xylene	0.10	1.0	1.7	17
o-Xylene	0.10	1.1	0.62	6.8
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	0.16	2.0
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.9	Not Detected	Not Detected

Temperature = 65.0F , duration time = 1447 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: IA-03

Lab ID#: 1711121-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110919sim	Date of Collection:	11/2/17 1:06:00 PM
Dil. Factor:	1.00	Date of Analysis:	11/9/17 03:21 PM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	18	130
Acetone	0.20	1.8	4.4	41
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	0.34	3.7
Ethyl Acetate	0.40	3.7	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.90	Not Detected	Not Detected
Chloroform	0.10	0.95	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.2	Not Detected	Not Detected
Cyclohexane	0.10	1.3	0.22	3.0
Carbon Tetrachloride	0.10	1.1	Not Detected	Not Detected
Benzene	0.40	3.6	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.93	Not Detected	Not Detected
Heptane	0.10	1.2	0.34	4.2
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.97	1.3	12
Tetrachloroethene	0.10	1.2	10	130
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.34	3.6
m,p-Xylene	0.10	1.0	0.84	8.6
o-Xylene	0.10	1.1	0.33	3.6
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	0.13	1.6
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.9	Not Detected	Not Detected

Temperature = 65.0F , duration time = 1449 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

Client Sample ID: IA-04

Lab ID#: 1711121-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110920sim	Date of Collection:	11/2/17 1:10:00 PM
Dil. Factor:	1.00	Date of Analysis:	11/9/17 03:45 PM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	53	360
Acetone	0.20	1.8	2.7	24
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	0.54	5.8
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	Not Detected	Not Detected
Chloroform	0.10	0.94	0.10	0.97
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	0.37	4.8
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	0.48	4.2
1,2-Dichloroethane	0.10	0.91	Not Detected	Not Detected
Heptane	0.10	1.2	0.59	7.1
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	2.3	22
Tetrachloroethene	0.10	1.2	23	270
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.62	6.4
m,p-Xylene	0.10	1.0	1.5	15
o-Xylene	0.10	1.1	0.55	5.9
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	0.18	2.2
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 70.0F , duration time = 1452 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

Client Sample ID: IA-05

Lab ID#: 1711121-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110921sim	Date of Collection:	11/2/17 1:13:00 PM
Dil. Factor:	1.00	Date of Analysis:	11/9/17 04:10 PM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	35	240
Acetone	0.20	1.8	2.7	25
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	0.58	6.2
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	Not Detected	Not Detected
Chloroform	0.10	0.94	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	0.34	4.4
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	0.55	4.8
1,2-Dichloroethane	0.10	0.91	Not Detected	Not Detected
Heptane	0.10	1.2	0.53	6.4
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	2.3	22
Tetrachloroethene	0.10	1.2	30	360
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.73	7.5
m,p-Xylene	0.10	1.0	1.5	15
o-Xylene	0.10	1.1	0.54	5.8
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	0.18	2.2
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 70.0F , duration time = 1453 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130

Client Sample ID: Lab Blank

Lab ID#: 1711121-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110905sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/9/17 09:26 AM
		Date of Extraction:	11/9/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	Not Detected	Not Detected
Acetone	0.20	1.8	Not Detected	Not Detected
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	Not Detected	Not Detected
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	Not Detected	Not Detected
Chloroform	0.10	0.94	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.91	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	Not Detected	Not Detected
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	1.0	Not Detected	Not Detected
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 70.0F , duration time = 1455 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1711121-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110903sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/9/17 08:33 AM
		Date of Extraction: 11/9/17

Compound	%Recovery	Method Limits
Ethanol	51	50-130
Acetone	79	70-130
Methyl tert-butyl ether	91	70-130
Hexane	93	70-130
Ethyl Acetate	89	70-130
2-Butanone (Methyl Ethyl Ketone)	83	70-130
Chloroform	94	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	87	70-130
Benzene	76	70-130
1,2-Dichloroethane	79	70-130
Heptane	103	70-130
Trichloroethene	88	70-130
4-Methyl-2-pentanone	87	70-130
Toluene	87	70-130
Tetrachloroethene	85	70-130
Chlorobenzene	77	70-130
Ethyl Benzene	87	70-130
m,p-Xylene	82	70-130
o-Xylene	83	70-130
Styrene	53	20-100
Propylbenzene	92	70-130
1,4-Dichlorobenzene	66	50-110
Naphthalene	11	5-80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1711121-07AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10110904sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/9/17 08:59 AM
		Date of Extraction: 11/9/17

Compound	%Recovery	Method Limits
Ethanol	50	50-130
Acetone	77	70-130
Methyl tert-butyl ether	89	70-130
Hexane	88	70-130
Ethyl Acetate	86	70-130
2-Butanone (Methyl Ethyl Ketone)	82	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	93	70-130
Carbon Tetrachloride	85	70-130
Benzene	81	70-130
1,2-Dichloroethane	78	70-130
Heptane	97	70-130
Trichloroethene	88	70-130
4-Methyl-2-pentanone	87	70-130
Toluene	86	70-130
Tetrachloroethene	84	70-130
Chlorobenzene	78	70-130
Ethyl Benzene	90	70-130
m,p-Xylene	83	70-130
o-Xylene	83	70-130
Styrene	54	20-100
Propylbenzene	89	70-130
1,4-Dichlorobenzene	66	50-110
Naphthalene	11	5-80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

APPENDIX F
ADEC LABORATORY-DATA REVIEW CHECKLISTS
WORK ORDERS NO. 1178533, 1178534, 1711116, 1711121

Laboratory Data Review Checklist

Completed By:

Adam Wyborny

Title:

Environmental Engineering Staff

Date:

November 17, 2017

CS Report Name:

31-1-11809-009 Interior Texaco

Report Date:

November 6, 2017

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America Laboratories, Inc. (SGS)

Laboratory Report Number:

1178533

ADEC File Number:

120.26.001

Hazard Identification Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and
- perform
- all of the submitted sample analyses?

 Yes No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

 Yes No

Comments:

Analyses were performed by SGS in Anchorage, AK.

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

 Yes No

Comments:

The sample *Kelly's DW* was not included on the COC. The sample was logged in for GRO/BTEX, DRO/RRO, and VOC analyses per the Shannon & Wilson project manager. The samples were analyzed within the recognized hold time and are not affected by this omission.

- b. Correct Analyses requested?

 Yes No

Comments:

The COC did not list the requested analyses for the sample *MW-13*. The laboratory analyzed the sample *MW-13* for GRO/BTEX and DRO/RRO after corresponding with Shannon & Wilson personnel. The samples were analyzed within the recognized hold time and are not affected by this omission.3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

 Yes No

Comments:

The temperature blank was recorded at -0.1° C upon receipt at the laboratory in Anchorage. The laboratory notes that the samples were free of ice at the time they were checked in. The sample results are not considered to be affected by this discrepancy.

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

 Yes No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

 Yes No

Comments:

The laboratory notes that the samples were received in good condition.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No

Comments:

The laboratory notes that the sample *Kelly's DW* was received despite it not being listed on the COC. The sample was logged-in and analyzed for GRO/BTEX, DRO/RRO, and VOCs at the request of the Shannon & Wilson project manager. The samples were analyzed within the recognized hold time and are not affected by this omission.

- e. Data quality or usability affected?

Comments:

No; see above.

4. Case Narrative

- a. Present and understandable?

Yes No

Comments:

- b. Discrepancies, errors, or QC failures identified by the lab?

Yes No

Comments:

The GRO surrogate 4-bromofluorobenzene was recovered outside of laboratory limits (biased high) in the sample *MW-13*. The laboratory attributes this recovery failure to a matrix interference.

The LCS/LCSD RPD associated with QC Batch VXX31639 was outside of the acceptable range for the VOC analyte dichlorodifluoromethane.

The LCS/LCSD RPD associated with QC Batch VXX31640 was outside of the acceptable range for the VOC analyte vinyl acetate.

DRO and RRO were detected in method blank 1421821 at estimated concentrations greater than one half of the LOQ.

- c. Were all corrective actions documented?

Yes No

Comments:

The case narrative does not specify any corrective actions were taken.

- d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative notes that the dichlorodifluoromethane results of samples associated with QC Batch VXX3163 may be biased high. See section 6 for further assessment.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

 Yes No

Comments:

b. All applicable holding times met?

 Yes No

Comments:

c. All soils reported on a dry weight basis?

 Yes No

Comments:

There were no soil samples included with this sample batch.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

 Yes No

Comments:

The reported limits of detection (LOD) were below the project-specific DQOs for the requested analytes, except for 1,2,3-trichloropropane in the sample *Kelly's DW*.

e. Data quality or usability affected?

 Yes No

Comments:

We cannot assess if the analyte 1,2,3-trichloropropane is present in the sample *Kelly's DW* at a concentration greater than the project-specific DQOs but less than the LOD.6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

 Yes No

Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

 Yes No

Comments:

However, the following MB samples had analyte detections at estimated concentrations less than the LOQ:

- MB 1422646 had a detection of 0.410J ug/L for toluene.
- MB 1422751 had a detection of 0.320J ug/L for toluene.
- MB 1421821 had detections of 0.453J mg/L for DRO and 0.411J mg/L for RRO.

iii. If above LOQ, what samples are affected?

Comments:

The project samples in the same preparatory batch with detections less than ten times the method blank detection are affected by the MB detections.

The following project samples had estimated detections for toluene that were less than ten times the MB detection: *MW-9*, *MW-109*, *MW-10*, *MW-11*, *MW-12*, and *Kelly's DW*. The sample results are considered non-detect and are flagged 'UB' in the analytical tables at the LOQ in the analytical tables.

The sample *Kelly's DW* had an estimated detection for RRO that was less than ten times the MB detection. The sample result is considered non-detect and flagged 'UB' at the LOQ in the analytical tables.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

The project samples affected by the method blank detections for toluene and RRO are considered non-detect and are flagged 'UB' in the analytical tables at the LOQ in the analytical tables.

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No

Comments:

LCS/LCSD samples were reported for GRO, BTEX, VOC, DRO and RRO analyses.

LCS and MS/MSD samples were reported for PAH analyses.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No

Comments:

Metals/inorganics were not reported for this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No

Comments:

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No

Comments:

The LCS/LCSD 1423399/400 had an RPD failure for dichlorodifluoromethane associated with preparatory batch VXX31639.

The LCS/LCSD 1423465/466 had an RPD failure for vinyl acetate associated with preparatory batch VXX31640.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The project sample associated with the LCS/LCSD RPD failure for dichlorodifluoromethane was *Kelly's DW*.

The sample results for vinyl acetate were not reported from preparatory batch VXX31640. Sample results are not affected by the LCS/LCSD RPD failure for this analyte.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

The dichlorodifluoromethane result for sample *Kelly's DW* is considered estimated, and the non-detect result is flagged 'UJ' in the analytical tables.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Yes; see above.

- c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No

Comments:

The GRO surrogate 4-bromofluorobenzene was recovered outside of laboratory limits in the sample *MW-13*.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

The GRO result of the sample *MW-13* is considered estimated with a high analytical bias. This result is flagged 'JH' in the analytical tables.

iv. Data quality or usability affected?

Comments:

Yes; see above.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No

Comments:

iii. All results less than LOQ?

Yes No

Comments:

iv. If above LOQ, what samples are affected?

Comments:

None; project analytes were not detected in the trip blank.

v. Data quality or usability affected?

Comments:

No; see above.

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

 Yes No

Comments:

- ii. Submitted blind to lab?

 Yes No

Comments:

The sample *MW-9* is a field-duplicate sample of *MW-109*.

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?
-
- (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate Concentration Yes No

Comments:

The field-duplicate RPDs were within the project-specific DQO of 30%, where calculable.

- iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No; see above.

- f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

 Yes No Not Applicable

Project samples were not collected with reusable equipment; an equipment blank was not required for this work order.

- i. All results less than LOQ?

 Yes No

Comments:

N/A; project samples were not collected with reusable equipment; an equipment blank was not required for this work order.

- ii. If above LOQ, what samples are affected?

Comments:

N/A; project samples were not collected with reusable equipment; an equipment blank was not required for this work order.

iii. Data quality or usability affected?

Comments:

No; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No

Comments:

Additional data flags or qualifiers are not required.

Laboratory Data Review Checklist

Completed By:

Adam Wyborny

Title:

Environmental Engineering Staff

Date:

November 20, 2017

CS Report Name:

31-1-11809-009 Interior Texaco

Report Date:

November 9, 2017

Consultant Firm:

Shannon & Wilson, Inc.

Laboratory Name:

SGS North America Laboratories, Inc. (SGS)

Laboratory Report Number:

1178534

ADEC File Number:

120.26.001

Hazard Identification Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and
- perform
- all of the submitted sample analyses?

 Yes No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

 Yes No

Comments:

Analyses were performed by SGS in Anchorage, AK.

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

 Yes No

Comments:

The trip blank analyses were not clearly identified on the COC. The laboratory analyzed the sample for the appropriate analyses. This omission does not affect the sample results.

- b. Correct Analyses requested?

 Yes No

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

 Yes No

Comments:

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

 Yes No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

 Yes No

Comments:

The laboratory notes that the samples were received in good condition.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No

Comments:

The laboratory notes that sample *IT-B10-1* had an extra jar marked “extra vol” that wasn’t listed on the COC. This discrepancy does not affect the sample results.

- e. Data quality or usability affected?

Comments:

No; see above.

4. Case Narrative

- a. Present and understandable?

Yes No

Comments:

- b. Discrepancies, errors, or QC failures identified by the lab?

Yes No

Comments:

The GRO surrogate 4-bromofluorobenzene was recovered outside of laboratory limits (biased high) in the samples *IT-B1-1*, *IT-B2-1*, *IT-B2-3*, *IT-B4-1*, *IT-B5-1*, *IT-B6-1*, *IT-B6-3*, *IT-B7-1*, *IT-B10-1*, *IT-B10-2*, and *IT-B11-1*. The laboratory attributes these recovery failures to a matrix interference.

The DRO surrogate 5a-androstane was recovered outside of laboratory limits (biased low) in the samples *IT-B1-1*, *IT-B2-1*, *IT-B2-3*, *IT-B5-1*, *IT-B7-1*, and *IT-B11-1*. The laboratory attributes these recovery failures to sample dilution.

The PAH surrogate 2-methylnaphthalene-d10 was recovered outside of laboratory limits (biased high) in the samples *IT-B2-1* and *IT-B2-3*. The laboratory attributes these recovery failures to sample dilution.

The LOQ for RRO is elevated in the samples *IT-B6-2*, *IT-B7-2*, *IT-B10-1*, and *IT-B10-2*. The laboratory states that these samples were diluted due to the dark color of the extract.

The LOQ for DRO is elevated in the sample *IT-B9-1*. The laboratory states that the sample was diluted due to the dark color of the extract.

The recoveries for p&m-xylene and o-xylene did not meet laboratory limits for the matrix spike (MS) 1421942, nor the MS duplicate (MSD) 1421943. The laboratory states that the LCS/LCSD should be referenced for accuracy requirements.

- c. Were all corrective actions documented?

Yes No

Comments:

The case narrative does not specify any corrective actions were taken.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not specify an effect on data quality or usability. See section 6 for further assessment.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No

Comments:

b. All applicable holding times met?

Yes No

Comments:

c. All soils reported on a dry weight basis?

Yes No

Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No

Comments:

The reported limits of detection (LOD) were below the project-specific DQOs for the requested analytes with the exceptions of benzo(a)pyrene and dibenzo(a,h)anthracene in the field-duplicate samples *IT-B2-1* and *IT-B2-3*.

e. Data quality or usability affected?

Yes No

Comments:

We cannot assess if the analytes benzo(a)pyrene and dibenzo(a,h)anthracene are present in the samples *IT-B2-1* and *IT-B2-3* at concentrations greater than the project-specific DQOs but less than the LOD.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No

Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

Yes No

Comments:

However, MB 1422159 associated with Prep Batch VXX31591 had an estimated detection of 1.31J ug/L for GRO.

iii. If above LOQ, what samples are affected?

Comments:

The project samples associated with Prep Batch VXX31591 containing GRO concentrations within 10 times the concentration detected in MB 1422159 include: *IT-B1-2*, *IT-B2-2*, *IT-B6-2*, *IT-B7-2*, and *IT-B9-1*.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

The GRO results of the samples *IT-B1-2*, *IT-B2-2*, and *IT-B6-2* are considered non-detect and are flagged 'UB' in the analytical tables at the detected results or the LOQ, whichever value is higher.

The GRO results of the samples *IT-B7-2* and *IT-B9-1* are considered estimated with a high analytical bias. These results are flagged 'JH' in the analytical tables.

v. Data quality or usability affected?

Comments:

Yes; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No

Comments:

LCS/LCSD samples were reported for GRO, DRO and RRO analyses.

LCS/LCSD and MS/MSD samples were reported for BTEX and o-xylene analyses.

LCS and MS/MSD samples were reported for PAH analyses.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No

Comments:

Metals/inorganics were not reported for this work order.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No

Comments:

The recoveries of o-xylene and p&m-xylene were outside of laboratory accuracy requirements for the MS sample 1421942 and the associated MSD sample 1421943.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No

Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

The parent sample associated with the MS/MSD samples is not included with this sample batch. The project sample results are not affected.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

Qualification of the data was not required; see above.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No; see above.

c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No

Comments:

The GRO surrogate 4-bromofluorobenzene was recovered outside of laboratory limits (biased high) in the samples *IT-B1-1*, *IT-B2-1*, *IT-B2-3*, *IT-B4-1*, *IT-B5-1*, *IT-B6-1*, *IT-B6-3*, *IT-B7-1*, *IT-B10-1*, *IT-B10-2*, and *IT-B11-1*.

The DRO surrogate 5a-androstane was recovered outside of laboratory limits (biased low) in the samples *IT-B1-1*, *IT-B2-1*, *IT-B2-3*, *IT-B5-1*, *IT-B7-1*, and *IT-B11-1*.

The PAH surrogate 2-methylnaphthalene-d10 was recovered outside of laboratory limits (biased high) in the samples *IT-B2-1* and *IT-B2-3*.

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No

Comments:

Surrogate recovery failures attributed to sample dilution do not affect the data quality or usability.

The GRO results of the samples *IT-B1-1*, *IT-B2-1*, *IT-B2-3*, *IT-B4-1*, *IT-B5-1*, *IT-B6-1*, *IT-B6-3*, *IT-B7-1*, *IT-B10-1*, *IT-B10-2*, and *IT-B11-1* are considered estimated with a high analytical bias. These results are flagged 'JH' in the analytical tables.

- iv. Data quality or usability affected?

Comments:

Yes; see above.

- d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No

Comments:

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No

Comments:

iii. All results less than LOQ?

Yes No

Comments:

GRO was detected below the LOQ at an estimated concentration of 0.877J mg/kg.

o-Xylene was detected below the LOQ at an estimated concentration of 0.0112J mg/kg.

p&m-Xylene was detected below the LOQ at an estimated concentration of 0.0270J mg/kg.

Toluene was detected at a concentration of 0.0286 mg/kg.

iv. If above LOQ, what samples are affected?

Comments:

The GRO results of the samples *IT-B1-2*, *IT-B2-2*, *IT-B3-1*, *IT-B3-2*, and *IT-B4-2* are within five times the detection in the trip blank and are thus considered non-detect. These results are flagged 'UB' at the detected results or the LOQ, whichever value is higher. The GRO results of the samples *IT-B5-2*, *IT-B6-2*, *IT-B7-2*, and *IT-B9-1* are greater than five times but less than ten times the detection in the trip blank. The results are considered estimated, biased high, and are flagged 'JH' in the analytical tables, unless previously qualified.

The o-xylene results of the samples *IT-B2-2*, *IT-B4-2*, *IT-B5-2*, *IT-B9-2*, and *IT-B11-2* are within five times the detection in the trip blank and are thus considered non-detect. These results are flagged 'UB' at the detected results or the LOQ, whichever value is higher. The o-xylene results of the samples *IT-B3-1*, *IT-B3-2*, and *IT-B6-2* are greater than five times but less than ten times the detection in the trip blank. The results are considered estimated, biased high, and are flagged 'JH' in the analytical tables.

The p&m-xylene results of the samples *IT-B2-2*, *IT-B3-1*, *IT-B3-2*, *IT-B4-2*, *IT-B5-2*, *IT-B9-2*, and *IT-B11-2* are within five times the detection in the trip blank and are thus considered non-detect. These results are flagged 'UB' at the detected results or the LOQ, whichever value is higher. The p&m-xylene results of the samples *IT-B1-2*, *IT-B6-2*, *IT-B7-2*, and *IT-B10-2* are greater than five times but less than ten times the detection in the trip blank. The results are considered estimated, biased high, and are flagged 'JH' in the analytical tables.

The toluene results of the samples *IT-B2-2*, *IT-B2-3*, *IT-B3-2*, *IT-B4-2*, *IT-B5-1*, *IT-B5-2*, *IT-B6-2*, *IT-B8-1*, *IT-B8-2*, *IT-B9-2*, *IT-B11-1*, and *IT-B11-2* are within five times the detection in the trip blank and are thus considered non-detect. These results are flagged 'UB' at the detected results or the LOQ, whichever value is higher. The toluene results of the samples *IT-B1-2*, *IT-B2-1*, *IT-B4-1*, *IT-B7-2*, and *IT-B10-1* are greater than five times but less than ten times the detection in the trip blank. The results are considered estimated, biased high, and are flagged 'JH' in the analytical tables.

v. Data quality or usability affected?

Comments:

Yes; see above.

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples?

 Yes No

Comments:

- ii. Submitted blind to lab?

 Yes No

Comments:

The field duplicate pairs “*IT-B2-1 / IT-B2-3*” and “*IT-B6-1 / IT-B6-3*” were submitted with this sample batch.

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?
-
- (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration R_2 = Field Duplicate Concentration Yes No

Comments:

The field-duplicate RPDs for samples *IT-B2-1* and *IT-B2-3* were within the project-specific DQO of 50% for all analytes, where calculable, except ethylbenzene.

The field-duplicate RPDs for samples *IT-B6-1* and *IT-B6-3* were within the project-specific DQO of 50% for all analytes, where calculable. However, analyte acenaphthylene was detected in the field-duplicate sample *IT-B6-3* above the LOQ, but not detected in the sample *IT-B5-1*. These results are considered estimated.

- iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The ethylbenzene results of the samples *IT-B2-1* and *IT-B2-3* are considered estimated, and are flagged ‘J’ in the analytical tables.

The acenaphthylene results of the samples *IT-B6-1* and *IT-B6-3* are considered estimated, and are flagged ‘J’ for detected results and ‘UJ’ for non-detect results.

- f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

 Yes No Not Applicable

Project samples were collected with individual sampling spoons that were decontaminated prior to use in the field. Since only one spoon was used per sample, there is no practical potential for sample cross-contamination. For this reason, an equipment blank was not required.

i. All results less than LOQ?

Yes No

Comments:

N/A; an equipment blank was not submitted with this work order.

ii. If above LOQ, what samples are affected?

Comments:

None; an equipment blank was not submitted with this work order.

iii. Data quality or usability affected?

Comments:

No; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No

Comments:

Additional data flags or qualifiers are not required.

Laboratory Data Review Checklist for Air Samples

Completed by:	Michael Jaramillo		
Title:	Environmental Chemist	Date:	Dec 4, 2017
CS Report Name:	Interior Texaco 1809-008	Report Date:	Nov 20, 2017
Consultant Firm:	Shannon & Wilson, Inc. (Shannon & Wilson)		
Laboratory Name:	Eurofins Air Toxics, Inc (Eurofins)	Laboratory Report Number:	1711116
ADEC File Number:	120.26.001	ADEC Haz ID:	22862

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

Yes No NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

Yes No NA (Please explain.) Comments:

Samples were analyzed by Eurofins of Folsom, CA; a NELAP certified laboratory.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No NA (Please explain.) Comments:

b. Correct analyses requested?

Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

Yes No NA (Please explain.) Comments:

Documentation of the sample condition was not provided in a sample receipt form. However, the case narrative noted that the samples were received in good condition and in the appropriate containers.

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

Yes No NA (Please explain) Comments:

The case narrative indicated that the measured receipt vacuum and that which was reported on the COC differed by 5.0" Hg or greater for sample SS-02. A leak test indicated that the valve was functioning properly.

c. Data quality or usability affected? (Please explain.)

Yes No NA (Please explain) Comments:

The laboratory did not specify any effect on the data quality or usability.

Further investigation indicated that the receiving vacuum was 1.2" Hg for SS-02 was less than the vacuum documented on the COC (9" Hg). This would indicate a possible low bias. However, the field-duplicate sample SS-102 was collected for this location and the sample results were comparable. In addition, there were some detections near the reporting limit in sample SS-02 that were not detected in the field-duplicate sample SS-102. The results are not considered affected by this discrepancy since the field-duplicate information was comparable.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain) Comments:

Dilution was performed on the samples SS-01 and SS-03 due to the presence of high levels of target analytes.

Sample SS-01 was transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target analytes.

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

Corrective actions were not required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No; see above.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

The COC also requested the analysis of vinyl chloride. However, the analyte cannot be reported when using passive adsorbent samplers. The Shannon & Wilson PM was notified and requested the analysis of the remaining analytes.

b. Samples analyzed within 30 days of collection or within the time required by the method?

Yes No NA (Please explain)

Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

Yes No NA (Please explain)

Comments:

Several analytes for project samples SS-01 and SS-03 had PQLs that were greater than the ADEC Commercial Soil Gas Target Screening Levels.

d. Data quality or usability affected?

Comments:

Yes; we cannot assess the analytes with PQLs greater than the Target Screening Levels are present in the samples at concentrations above the Target Screening Levels, but less the PQL. These samples were analyzed at a dilution due to high concentrations of target analytes in the samples.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

Yes No NA (Please explain)

Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

Project analytes were not detected in the method blanks.

iii. If above PQL, what samples are affected?

Comments:

None; project analytes were not detected in the method blanks.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

Yes No NA (Please explain)

Comments:

Project analytes were not detected in the method blanks.

v. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain) Comments:

The RPDs were calculated by Shannon & Wilson and were less than 20%.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Yes No NA (Please explain) Comments:

The percent recoveries and RPDs were within acceptance criteria.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

The percent recoveries and RPDs were within acceptance criteria.

vi. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

The surrogate recoveries were within acceptance criteria.

iv. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

Yes No NA (Please explain)

Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain)

Comments:

Sample SS-102 is a field-duplicate of sample SS-02.

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain)

Comments:

The field-duplicate RPDs were within the recommended DQO of 25%, where calculable, except for 1,1,1-trichloroethane, 2-butanone, dichlorodifluoromethane, ethanol, and trichlorofluoromethane. The sample results are considered estimated (no direction of bias) and are flagged 'J' in the analytical database and reporting tables.

iv. Data quality or usability affected? (Please explain.)

Comments:

Yes; see above.

e. Field Blank (If not used explain why).

Yes No NA (Please explain)

Comments:

A field blank sample was not required for this project.

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

A field blank sample was not required for this project.

ii. If above PQL, what samples are affected?

Comments:

N/A; a field blank sample was not required for this project.

iii. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

Additional data flags or qualifiers are not required.

Reset Form

Updated: 2/2015

Laboratory Data Review Checklist for Air Samples

Completed by:	Michael Jaramillo		
Title:	Environmental Chemist	Date:	Dec 4, 2017
CS Report Name:	Interior Texaco 1809-008	Report Date:	Nov 20, 2017
Consultant Firm:	Shannon & Wilson, Inc. (Shannon & Wilson)		
Laboratory Name:	Eurofins Air Toxics, Inc (Eurofins)	Laboratory Report Number:	1711121
ADEC File Number:	120.26.001	ADEC Haz ID:	22862

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

Yes No NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

Yes No NA (Please explain.) Comments:

Samples were analyzed by Eurofins of Folsom, CA; a NELAP certified laboratory.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No NA (Please explain.) Comments:

b. Correct analyses requested?

Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

Yes No NA (Please explain.) Comments:

Documentation of the sample condition was not provided in a sample receipt form. However, the case narrative noted that the samples were received in good condition and in the appropriate containers.

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

Yes No NA (Please explain) Comments:

A sample receipt form was not provided but the laboratory noted that the samples were received in good condition and in the appropriate containers.

c. Data quality or usability affected? (Please explain.)

Yes No NA (Please explain) Comments:

See above.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain) Comments:

Sample uptake rates were corrected based on the average temperatures provided.

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

Corrective actions were not required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None; see above.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain) Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

Yes No NA (Please explain) Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

Yes No NA (Please explain) Comments:

The reported PQLs are less than the ADEC Target Screening Levels for Indoor Air - Commercial Limits for non-detect results.

d. Data quality or usability affected?

Comments:

No; see above.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

Yes No NA (Please explain)

Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

Project analytes were not detected in the method blanks.

iii. If above PQL, what samples are affected?

Comments:

None; project analytes were not detected in the method blanks.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

Yes No NA (Please explain)

Comments:

Project analytes were not detected in the method blanks.

v. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

Yes No NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain)

Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain)

Comments:

The RPDs were calculated by Shannon & Wilson and were less than 20% as recommended for the method by the National Functional Guidelines.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Yes No NA (Please explain) Comments:

The percent recoveries and RPDs were within acceptance criteria.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

The percent recoveries and RPDs were within acceptance criteria.

vi. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

Yes No NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

Yes No NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain) Comments:

The surrogate recoveries were within acceptance criteria.

iv. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

Yes No NA (Please explain) Comments:

A field-duplicate for the indoor air samples was not required for the project.

ii. Submitted blind to lab?

Yes No NA (Please explain) Comments:

A field-duplicate for the indoor air samples was not required for the project.

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain) Comments:

TA field-duplicate for the indoor air samples was not required for the project.

iv. Data quality or usability affected? (Please explain.) Comments:

No; see above.

e. Field Blank (If not used explain why).

Yes No NA (Please explain) Comments:

A field blank sample was not required for this project.

i. All results less than PQL?

Yes No NA (Please explain) Comments:

A field blank sample was not required for this project.

ii. If above PQL, what samples are affected? Comments:

N/A; a field blank sample was not required for this project.

iii. Data quality or usability affected? (Please explain.) Comments:

No; see above.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

Yes No NA (Please explain) Comments:

Additional data flags or qualifiers are not required.

Reset Form

APPENDIX G
ADEC BUILDING INVENTORY AND INDOOR AIR
SAMPLING QUESTIONNAIRE

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BUILDING INVENTORY AND INDOOR AIR SAMPLING QUESTIONNAIRE

This form should be prepared by a person familiar with indoor air assessments with assistance from a person knowledgeable about the building. Complete this form for each building in which interior samples (e.g., indoor air, crawl space, or subslab soil gas samples) will be collected. Section I of this form should be used to assist in choosing an investigative strategy during workplan development. Section II should be used to assist in identification of complicating factors during a presampling building walkthrough.

Preparer's Name Sheila Hinckley Date/Time Prepared 11/01/17 at 1300
Preparer's Affiliation Shannon & Wilson, Inc Phone No. 907.479.0600
Purpose of Investigation Vapor Intrusion

SECTION I: BUILDING INVENTORY

1. OCCUPANT OR BUILDING PERSONNEL:

Interviewed: Y / N

Last Name Herman First Name Nick
Address PO Box 327 Delta Ju
County _____
Phone No. 907 590-1456
Number of Occupants/persons at this location 6 Age of Occupants 18 - 35

2. OWNER or LANDLORD: (Check if same as occupant _____)

Interviewed: Y / N

Last Name Sandy First Name Susie
Address PO Box 1162 Delta Junction 99737
County Delta
Phone No. 925-348-4524

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

- Residential School Commercial/Multi-use
Industrial Church Other _____

If the property is residential, type? (Circle appropriate response)

Ranch
Raised Ranch
Cape Cod
Duplex
Modular

2-Family
Split Level
Contemporary
Apartment House
Log Home

3-Family
Colonial
Mobile Home
Townhouses/Condos
Other _____

If multiple units, how many? _____

If the property is commercial, type?

Business Types(s) Gas Station and automotive service station

Does it include residences (i.e., multi-use)? Y/N Y

If yes, how many? _____

Other characteristics:

Number of floors two

Building age ~ 1969 - 1980

Is the building insulated? Y/N Y

How air tight? Tight / Average / Not Tight

Have occupants noticed chemical odors in the building? Y/N Y

If yes, please describe: petroleum products used daily

4. AIRFLOW

Use air current tubes, tracer smoke, or knowledge about the building to evaluate airflow patterns and qualitatively describe:

Airflow between floors

open stairwell leads to second floor

Airflow in building near suspected source

average

Outdoor air infiltration

average. Shop doors in garage are often open

Infiltration into air ducts

N/A

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame log ~~concrete~~ brick
 constructed on pilings with enclosed air space constructed on pilings with open air space
- b. Basement type: full crawlspace slab-on-grade other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: unsealed sealed sealed with _____
- e. Foundation walls: poured block stone other _____
- f. Foundation walls: unsealed sealed sealed with _____
- g. The basement is: wet damp dry
- h. The basement is: finished unfinished partially finished
- i. Sump present? Y/N
- j. Water in sump? Y/N/not applicable

Basement/Lowest level depth below grade slab-on-grade (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

floor cracks inside service station (garage/tire shop).

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (Circle all that apply – not primary)

- Hot air circulation Heat pump Hot water baseboard
 Space Heaters Stream radiation Radiant floor
 Electric baseboard Wood stove Outdoor wood boiler Other _____

The primary type of fuel used is:

- Natural Gas Fuel Oil Kerosene
 Electric Propane Solar
 Wood Coal

Domestic hot water tank fueled by electric

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Do any of the heating appliances have cold-air intakes? Y/N

Type of air conditioning or ventilation used in this building:

- Central Air Window units Open Windows None

2 upstairs

Commercial HVAC Heat-recovery system Passive air system

Are there air distribution ducts present? Y/N

Describe the ventilation system in the building, its condition where visible, and the tightness of duct joints. Indicate the locations of air supply and exhaust points on the floor plan.

Open doors & windows

Is there a radon mitigation system for the building/structure? Y / N Date of Installation _____

Is the system active or passive? Active/Passive

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	General Use of Each Floor (e.g. family room, bedroom, laundry, workshop, storage)
Ground Floor	
Basement	Gas station, Bathrooms, Automotive service station.
1 st Floor	2 office areas, One storage area, One bathroom
2 nd Floor	—
3 rd Floor	—

8. WATER AND SEWAGE

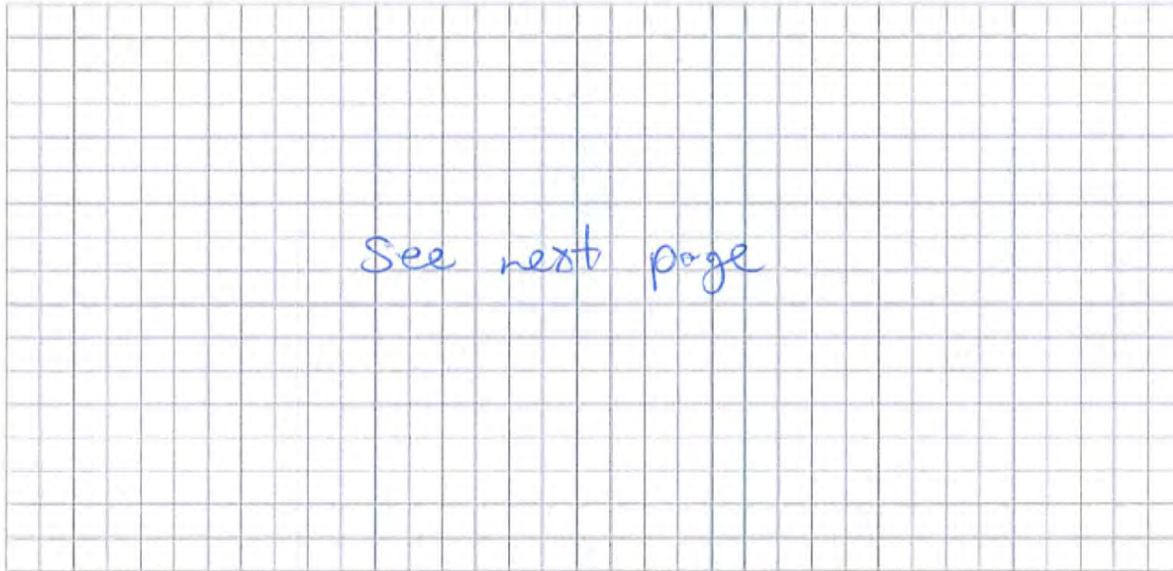
Water Supply: Public Water Drilled Well Driven Well Dug Well Other _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other _____

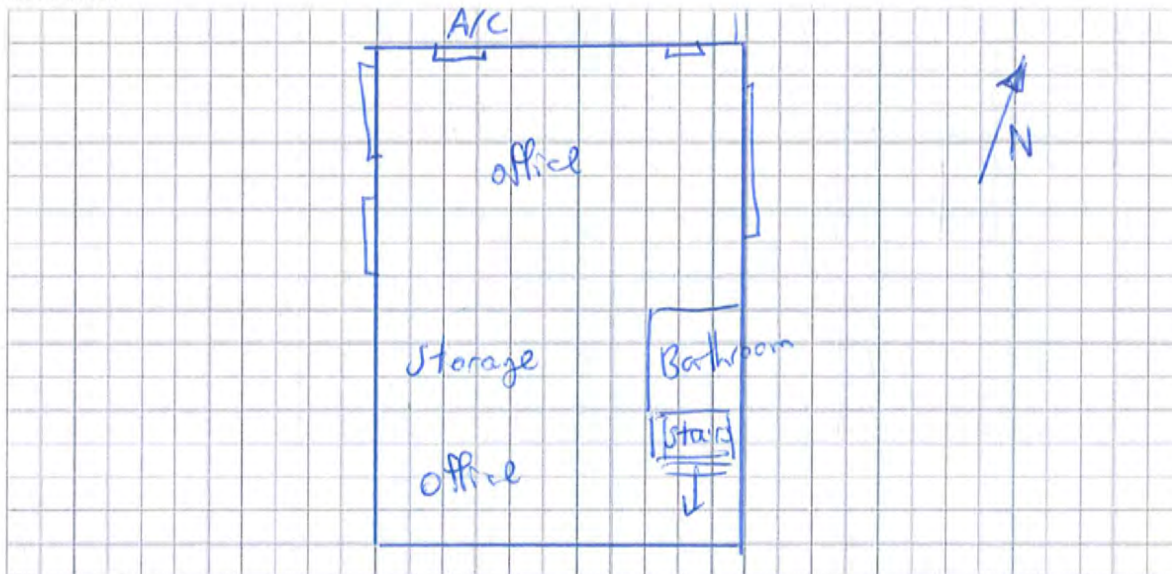
9. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



First Floor:

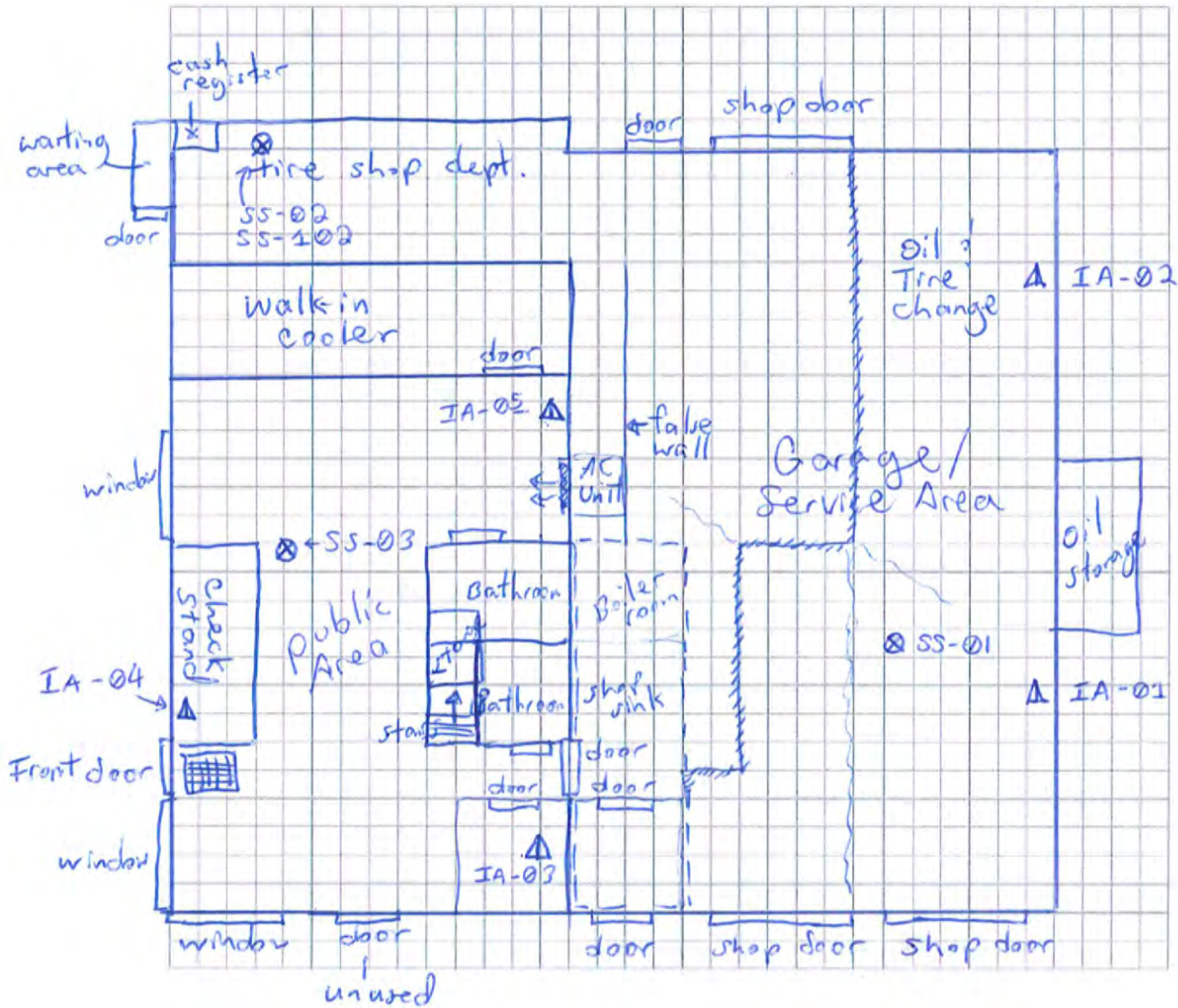


see report figure for outdoor plot

10. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



Notes:

- ⊗ = sub-slab sample port locations (with sample #)
- △ = Indoor-air passive sample locations (with sample #)

▣ = floor grate

⋯ = second story storage area I-6

~~~~~ = floor cracks

**SECTION II: INDOOR AIR SAMPLING QUESTIONNAIRE**

This section should be completed during a presampling walkthrough. If indoor air sources of COCs are identified and removed, consider ventilating the building prior to sampling. However, ventilation and heating systems should be operating normally for 24 hours prior to sampling.

**a) 1. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY**

- Is there an attached garage?  Y /  N
- Does the garage have a separate heating unit? Y /  N / NA
- Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, ATV, car)  Y /  N / NA  
Please specify Automobiles & trucks
- Has the building ever had a fire? Y /  N When? \_\_\_\_\_
- Is a kerosene or unvented gas space heater present? Y /  N Where? \_\_\_\_\_
- Is there a workshop or hobby/craft area?  Y /  N Where & Type Service station (Automotive)
- Is there smoking in the building? Y /  N How frequently? \_\_\_\_\_
- Has painting/staining been done in the last 6 months? Y /  N Where & When? \_\_\_\_\_
- Is there new carpet, drapes or other textiles? Y /  N Where & When? \_\_\_\_\_
- Is there a kitchen exhaust fan? ~~Y~~ /  N <sup>smth</sup> If yes, where vented? \_\_\_\_\_
- Is there a bathroom exhaust fan?  Y /  N If yes, where vented? outside - roof
- Is there a clothes dryer? Y /  N If yes, is it vented outside? Y / N
- Are cleaning products, cosmetic products, or pesticides used that could interfere with indoor air sampling? Y / N
- If yes, please describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Do any of the building occupants use solvents at work?  Y /  N  
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? Auto mechanic

If yes, are their clothes washed at work?  Y /  N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)  No

Yes, use dry-cleaning infrequently (monthly or less) Unknown

Yes, work at a dry-cleaning services



**APPENDIX H**  
**IMPORTANT INFORMATION ABOUT YOUR REPORT**

Date: March 7, 2018

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To: CEM Leasing  
Attn: Phil Tannehill

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Re: Interior Texaco Limited Site Characterization  
Report

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## **IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT**

### **CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.**

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

### **THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.**

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

### **SUBSURFACE CONDITIONS CAN CHANGE.**

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

### **MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.**

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

#### **A REPORT'S CONCLUSIONS ARE PRELIMINARY.**

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

#### **THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.**

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

#### **BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.**

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

#### **READ RESPONSIBILITY CLAUSES CLOSELY.**

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the  
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland