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December 20, 2018

Washington State Department of Ecology
Toxics Cleanup Program
3190 160th Avenue SE
Bellevue, Washington 98008

Attention: Michael R. Warfel

Subject: Request for Opinion
Former Park Lake Homes Maintenance Center
9800 8th Avenue SW
Seattle, Washington
VCP Project No. NW3033
GEI File No. 01329-003-25

On behalf of the King County Housing Authority (KCHA), we are submitting the Supplemental Groundwater Characterization report for the Former Park Lake Homes Maintenance Center (VCP Project No. NW3033) (Site) and requesting Ecology's written opinion as explained below.

The attached report documents the installation and quarterly sampling of two new Site groundwater monitoring wells requested by Ecology. Based on the quarterly groundwater monitoring results presented in the report, concentrations of contaminants of concern in the quarterly groundwater samples from monitoring well MW-1 are less than MTCA Method A cleanup levels. Therefore, we specifically request Ecology's opinion on KCHA's proposal to discontinue groundwater monitoring and sampling only at MW-1 and to decommission the well in the future.

KCHA will continue quarterly groundwater sampling at MW-2 and is evaluating potential supplemental cleanup actions for the Site.

Sincerely,
GeoEngineers, Inc.

Katy Ataktürk
Project Manager

Dana Carlisle, PE
Principal

KRA:DLC:lw

Attachment:
Supplemental Groundwater Characterization-- KCHA Former Park Lake Homes Maintenance Center Site

cc: John Eliason, Executive Director, King County Housing Authority

ATTACHMENT

Supplemental Groundwater Characterization Results – KCHA Former Park Lake Homes Maintenance Center Site

Supplemental Groundwater Characterization

KCHA Former Park Lake Homes
Maintenance Center Site
9800 8th Avenue SW
Seattle, Washington
VCP No. NW3033

for
King County Housing Authority

December 20, 2018

GeoEngineers
Earth Science + Technology

Supplemental Groundwater Characterization

KCHA Former Park Lake Homes
Maintenance Center Site
9800 8th Avenue SW
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Supplemental Groundwater Characterization

KCHA Former Park Lake Homes
Maintenance Center Site
9800 8th Avenue SW
Seattle, Washington

File No. 001329-003-25

December 20, 2018

Prepared for:

King County Housing Authority
600 Andover Park West
Seattle, Washington 98188

Attention: John Eliason

Prepared by:

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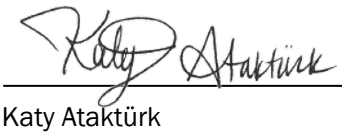

Katy Ataktürk
Staff Geologist II

Dana Carlisle, PE
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INTRODUCTION AND BACKGROUND

This report presents the results of groundwater monitoring well installation and groundwater monitoring completed in 2017 and 2018 at King County Housing Authority's (KCHA) Former Park Lake Homes Maintenance Center Site (Site) located at 9800 8th Avenue SW in Seattle, Washington (Figure 1). The Site is entered into Washington State Department of Ecology's (Ecology) Voluntary Cleanup Program (VCP), VCP Site No. NW3033. The location of the Site relative to surrounding physical features is shown on Figure 1. The general layout of the Site is shown on Figure 2.

The Maintenance Center was removed in 2004/2005 and an independent MTCA cleanup of contaminated soil at the Maintenance Center was completed by KCHA in 2005 (GeoEngineers 2005). The Site was substantially redeveloped beginning in 2006 with the construction of infrastructure, housing, parking and common areas associated with KCHA's Greenbridge project https://www.kcha.org/development/greenbridge/. Figure 2 shows the current layout of the Site relative to the footprint of the Maintenance Center building, 2005 remedial excavations and post-cleanup excavations completed during redevelopment for the purposes of KCHA infrastructure (i.e., temporary stormwater pond and permanent water quality vault). After the 2005 cleanup action, the majority of soil underlying the former Maintenance Center was subsequently removed to depths up to 16 feet below original grade for the temporary CV4 construction stormwater pond (later backfilled, area shown in orange shading in Figure 2) and for the permanent CV3 water quality vault (area shown in yellow shading in Figure 2). No evidence of contaminated soil was reported by KCHA representatives or contractors, or by GeoEngineers during geotechnical construction observation, during soil removal in both of these large areas. KCHA intends to own and manage the areas within the Site for the foreseeable future.

In September 2015, one-time grab water samples were obtained from the vicinity of the former Maintenance Center (GeoEngineers 2015). Based on the 2015 groundwater data, the Site was entered into the VCP in late 2015, with a request for a No Further Action (NFA) opinion on the completed cleanup. Ecology provided a "Further Action" letter to KCHA dated June 6, 2016. A modified scope of work for further action relative to supplemental Site groundwater characterization was developed based on a May 2, 2017 meeting with KCHA and Ecology, as documented in the May 30, 2017 email response from Ecology (VCP Site Manager Mike Warfel).

As presented in this report, monitoring wells MW-1 and MW-2 were installed in July 2017 and sampled for Site contaminants on a quarterly basis between August 2017 and July 2018.

PURPOSE AND SCOPE OF SERVICES

The purpose of the supplemental groundwater characterization was to evaluate groundwater quality in the vicinity of the 2005 soil cleanup areas. The scope of services completed for the supplemental groundwater characterization included the following:

- Monitor the drilling of two borings using hollow stem auger drilling techniques. Field screen soil samples from the borings at approximate 5-foot depth intervals using visual observation, water sheen testing and headspace vapor measurements with a photoionization detector (PID).

- Install 2-inch diameter PVC groundwater monitoring wells in the borings if evidence of groundwater is encountered during drilling. Complete the well installation within flush-grade surface monuments and develop the wells before sampling.
- Measure groundwater levels and collect groundwater samples from the two monitoring wells on a quarterly basis using low-flow sampling methods. Submit the first quarterly set of groundwater samples for chemical analysis of the following: Northwest Method NWTPH-Gx, Northwest Method NWTPH-Dx, VOCs including BTEX by EPA Method 8260, cPAHs and naphthalenes by EPA Method 8270/SIM, metals (arsenic, cadmium, chromium, nickel, lead, and zinc) by EPA Method 200.8, PCBs by EPA Method 8082, and organochlorine pesticides by EPA Method 8081. Submit the second, third and fourth quarterly sets of groundwater samples for chemical analysis of petroleum hydrocarbons by NWTPH-Gx/BTEX and NWTPH-Dx, and other contaminants if detected above MTCA cleanup levels in the first round of samples.
- Evaluate the groundwater analytical results relative to MTCA Method A cleanup levels.
- Coordinate with a vactor truck subcontractor to conduct four successive bi-weekly events of groundwater pumping from MW-2 to remove groundwater from the well casing and surrounding formation.

MONITORING WELL INSTALLATION

General

The field investigation was conducted on July 19, 2017 and included two hollow-stem auger borings completed as monitoring wells. The borings extended to depths of approximately 21 feet bgs. The approximate locations of the monitoring wells are shown in Figure 2. Monitoring well MW-1 was positioned south and downgradient of one of the backfilled Maintenance Center remedial excavations and near the edge of backfilled CV4 stormwater pond. Monitoring well MW-2 was positioned downgradient of the removed 1,000-gallon Maintenance Center underground storage tank (UST) and within the backfilled CV4 stormwater pond. It is important to note that locations available and accessible for exploration drilling at the Site are severely limited due to the presence of structures and obstructions including: existing buildings, common areas, decorative concrete, the water quality vault beneath the CV3 Plaza, and coarse material at the base of the backfilled CV4 construction stormwater pond.

A representative of GeoEngineers observed and documented subsurface conditions in the borings and obtained soil samples for field screening. Exploration logs, well construction details, and sampling field procedures are presented in Appendix A.

Soil Conditions and Soil Field Screening

Soil conditions encountered in the hollow stem auger borings generally consisted of 6 to 12 feet of imported fill overlying native sand with varying silt content. The fill consisted of sand with varying amounts of gravel and silt. Lower portions of the CV4 stormwater pond excavation had been backfilled in part with recycled concrete; MW-2 was completed through the backfilled pond excavation; however, concrete was not evident during drilling.

Soil samples from the borings were field screened for physical evidence of petroleum or volatiles using visual, water sheen, and headspace vapor screening methods. Field screening did not indicate evidence of petroleum.

Groundwater Conditions

The local groundwater flow direction beneath the Site is likely to the south. Monitoring wells MW-1 and MW-2 were sampled on a quarterly basis between August 2017 and July 2018 as follows: August 28, 2017, December 1, 2017, April 30, 2018 and July 18, 2018. Depths to groundwater measured during each sampling event are summarized in Table 1. The wells have not yet been surveyed. Elevated pH was noted in MW-2 groundwater (Table A-1); elevated pH is suspected to be due to the proximity of recycled crushed concrete that had been used to stabilize the base of the CV4 stormwater pond excavation during backfill.

Groundwater samples were obtained using low-flow/low-turbidity sampling techniques during each monitoring event to minimize the suspension of sediment in groundwater samples. Field procedures are described in Appendix A. Analytical laboratory reports are included in Appendix B.

Groundwater Chemical Analytical Results

Groundwater samples obtained during each monitoring event were submitted to OnSite Environmental, Inc. in Redmond, Washington. Groundwater analytical results are summarized in Table 2.

MW-1: Gasoline-, diesel- and heavy oil-range petroleum hydrocarbons and VOCs were not detected in the quarterly monitoring events at MW-1. Other analytes (metals, PCBs, organochlorine pesticides and PAHs) either were not detected or the detected concentrations were less than MTCA cleanup levels. PCBs were analyzed only once (August 2017 sample) and were discontinued from additional quarterly sampling because PCBs were not detected.

MW-2: Gasoline-range petroleum hydrocarbons were not detected in the quarterly monitoring events at MW-2. Diesel-range hydrocarbons were detected during all four sampling events at concentrations greater than the MTCA Method A cleanup level except for July 2018 which was below the cleanup level. Concentrations of diesel-range hydrocarbons ranged from 0.89 to 0.49 mg/l and decreased over the course of monitoring. Heavy oil-range hydrocarbons were detected during all four sampling events at concentrations greater than the MTCA Method A cleanup level. Concentrations of heavy oil-range hydrocarbons ranged from 2.5 to 1.4 mg/l and decreased over the course of monitoring. Other analytes (metals, PCBs, organochlorine pesticides and PAHs) either were not detected or the detected concentrations were less than MTCA cleanup levels. PCBs were analyzed only once (August 2017 sample) and were discontinued from additional quarterly sampling because PCBs were not detected.

MW-2 GROUNDWATER REMOVAL EVENTS

Four events of groundwater removal at MW-2 were completed bi-weekly in February and March 2018. During each one-day event, 900 to 1,000 gallons of groundwater were pumped from the well using a vactor truck. The groundwater removal activities occurred in between the December 2017 and the April 2018 sampling events.

DISCUSSION AND CONCLUSIONS

Two new groundwater monitoring wells were installed in July 2017 in the vicinity of the Former Park Lake Homes Maintenance Center to assess groundwater quality relative to the soil cleanup performed at the Site in 2005. Based on quarterly groundwater monitoring between August 2017 and July 2018, groundwater at MW-1 meets MTCA Method A cleanup levels. Groundwater sampling at MW-2 indicated residual petroleum hydrocarbon impacts in the diesel- and heavy oil-ranges at concentrations greater than the MTCA Method A cleanup level. Based on the initial two rounds of sampling in August and December 2017, four intermittent bi-weekly events of groundwater removal occurred at MW-2, removing 900 to 1,000 gallons per event. The concentrations of diesel- and heavy oil-range petroleum hydrocarbons in MW-2 in February and March 2018 decreased over the course of the quarterly monitoring events, as indicated in the graph shown in Figure 2. VOCs, PCBs, PAHs, organochlorine pesticides and metals in the groundwater samples either were not detected or were detected at concentrations below MTCA Method A cleanup levels.

Based on the site historical information, the 2005 cleanup, and the extensive soil removal that occurred at the Site in connection with the Greenbridge redevelopment, the most likely source of residual petroleum hydrocarbons at MW-2 is an isolated pocket of residual petroleum-impacted soil that was not discovered during removal of the Maintenance Center and excavation of the CV4 stormwater pond. KCHA is evaluating options that may improve groundwater quality at MW-2.

Based on groundwater quality at MW-1 in compliance with MTCA Method A cleanup levels, KCHA plans to discontinue sampling MW-1 and decommission the well the near future. Quarterly groundwater sampling of MW-2 is ongoing.

REFERENCES

GeoEngineers, Inc., Independent Cleanup of Petroleum-Contaminated Soil, KCHA Maintenance Center Former Park Lake Homes, King County, Washington dated September 12, 2005.

GeoEngineers, Inc., Letter to Michael Warfel, KCHA Response to Ecology's June 2016 Further Action Letter, Former Park Lake Homes Maintenance Shop Site, VCP #NW3033, dated November 21, 2016.

GeoEngineers, Inc. Post-Cleanup Groundwater Confirmation Sampling Event, KCHA Former Park Lake Homes Maintenance Facility, Seattle, Washington, dated October 27, 2015.

Ecology, Email response from Warfel, Michael, Site Manager of Voluntary Cleanup Program, "VCP NW3033, Park Lake Homes Maintenance Facility - Follow up", dated May 30, 2017.

TABLES

GeoEngineers

Table 1

Monitoring Well Elevation Data

King County Housing Authority - Former Park Lake Homes Maintenance Center

9800 8th Avenue SW, Seattle, Washington

Monitoring Well Identification[1]	Date measured	Depth to Water (feet bgs)	Well Screen (feet bgs)	
			Top	Bottom
MW-1	08/28/17	9.64	5	20
	12/01/17	7.37		
	04/30/18	8.12		
	07/18/18	9.81		
MW-2	08/28/17	7.99	5	20
	12/01/17	6.57		
	04/30/18	7.27		
	07/18/18	8.96		

Notes:

[1]Monitoring well locations are shown on Figure 2.

bgs = below ground surface

Monitoring well survey not yet completed. Approximate ground surface elevation at MW-1 and MW-2 is 410 feet above mean sea level.

Table 2

Groundwater Chemical Analytical Data

King County Housing Authority - Former Park Lake Homes Maintenance Center

9800 8th Avenue SW, Seattle, Washington

Sample ID[1]		MW-1-170828	MW-1-171201	MW-1-180430	MW-1-180718	MW-2-170828	MW-2-171201	MW-2-180430	MW-2-180718	MTCA Method A or B Cleanup Level
Sample Date	**Units**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**	
Petroleum Hydrocarbons by NWTPH-G or NWTPH-Dx										
Gasoline-Range	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	800[2]
Diesel-Range	mg/L	<0.26	<0.25	<0.26	<0.25	**0.89**	**0.83**	**0.52**	**0.49**	0.5
Oil-Range	mg/L	<0.42	<0.41	<0.41	<0.41	**2.5**	**2.2**	**2.0**	**1.4**	0.5
Totals Metals by EPA 6000/7000 Series or EPA 200.8										
Arsenic	µg/L	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	5
Chromium	µg/L	<11	<11	30	<11	<11	<11	<11	<11	50
Nickel	µg/L	<22	<22	<22	<22	**23**	<22	<22	<22	320
Other (Cadium, Lead, Zinc)	µg/L	ND	ND	Lead- 2.1	ND	ND	ND	ND	ND	Lead - 15
Volatile Organic Compounds (VOCs) by EPA 8260[4]										
Benzene	µg/L	<0.20	<0.20	<0.20	<0.20	**0.77**	**0.68**	**0.40**	**0.47**	5
Toluene	µg/L	<1.0	<1.0	<1.0	<1.0	**1.1**	**1.0**	<1.0	<1.0	1,000
Ethylbenzene	µg/L	<0.20	<0.20	<0.20	<0.20	**0.24**	**0.24**	<0.20	**0.23**	700
Total Xylenes[3]	µg/L	<0.40	<0.40	<0.40	<0.40	**0.75**	**0.74**	**0.22**	**0.68**	1,000
Acetone[4]	µg/L	<5.0	<5.0	<5.0	<5.0	**11**	**6.6**	**10**	**9.6**	720
Carbon Disulfide	µg/L	<0.20	<0.20	<0.20	<0.20	**0.33**	<0.20	<0.20	<0.20	800
1,2,4-Trimethylbenzene	µg/L	<0.20	<0.20	<0.20	<0.20	**0.27**	**0.27**	**0.23**	**0.26**	NE
Naphthalene	µg/L	<1.0	<1.3	<1.3	<1.5	**1.2**	<1.3	<2.3	<1.5	160[5]
p-Isopropyltoluene	µg/L	<0.20	<0.20	<0.20	<0.20	**4.7**	**5.7**	**6.8**	**7.8**	NE
Polychlorinated Biphenyls (PCBs) by EPA 8082A										
PCBs	µg/L	ND	--	--	--	ND	--	--	--	varies
Organochlorine Pesticides by EPA 8081B[6]										
Endosulfan I	µg/L	**0.012**	<0.0047	<0.0048	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	NE
Heptachlor Epoxide	µg/L	<0.0047	<0.0047	<0.0048	<0.0047	<0.0047	**0.011**	<0.0047	**0.0053**	0.019

Sample ID[1]		MW-1-170828	MW-1-171201	MW-1-180430	MW-1-180718	MW-2-170828	MW-2-171201	MW-2-180430	MW-2-180718	MTCA Method A or B Cleanup Level
Sample Date	**Units**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**	
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA 8270D/SIM[6]										
Naphthalene	µg/L	<0.0094	<0.0047	<0.095	<0.096	**0.46**	**0.60**	**0.44**	**0.51**	160[5]
1-Methylnaphthalene	µg/L	<0.094	<0.0047	<0.095	<0.096	**0.30**	**0.37**	**0.30**	**0.35**	
2-Methylnaphthalene	µg/L	<0.094	<0.0047	<0.095	<0.096	**0.30**	**0.42**	**0.27**	**0.37**	
Benzo[a]anthracene (cPAH)	µg/L	<0.0094	<0.0047	<0.0095	**0.0100**	<0.094	<0.0094	**0.012**	<0.0096	see cPAHs (TEQ)
Benzo[a]pyrene (cPAH)	µg/L	<0.0094	<0.0047	<0.0095	**0.0110**	<0.0094	<0.0094	<0.0097	<0.0096	see cPAHs (TEQ)
Benzo[b]fluoranthene (cPAH)	µg/L	<0.0094	<0.0047	**0.0098**	**0.0130**	<0.0094	<0.0094	**0.0100**	<0.0096	see cPAHs (TEQ)
Benzo(k)fluoranthene (cPAH)	µg/L	<0.0094	<0.0047	<0.0095	<0.0096	<0.0094	<0.0094	<0.0097	<0.0096	see cPAHs (TEQ)
Chrysene (cPAH)	µg/L	<0.0094	<0.0047	**0.0110**	<0.0096	<0.094	<0.0094	<0.0097	<0.0096	see cPAHs (TEQ)
Dibenz[a,h]anthracene (cPAH)	µg/L	<0.0094	<0.0047	<0.0095	<0.0096	<0.0094	<0.0094	<0.0097	<0.0096	see cPAHs (TEQ)
Indeno(1,2,3-c,d)pyrene (cPAH)	µg/L	<0.0094	<0.0047	<0.0095	<0.0096	<0.0094	<0.0094	<0.0097	<0.0096	see cPAHs (TEQ)
Total cPAHs (TEQ)[7]	µg/L	ND	ND	**0.007**	**0.015**	ND	ND	**0.008**	ND	0.1

Notes:

[1]Monitoring well locations are shown on Figure 2.

[2]When benzene is present the gasoline range cleanup level is 800 µg/L. When benzene is not present the range cleanup level is 1000 µg/L.

[3]Total xylenes is of the sum of m,p- and o- xylene. The higher detection limit is shown when xylenes were not detected.

[4]Acetone is a common laboratory solvent.

[5]Cleanup level for naphthalenes is the sum of naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.

[6]Only analytes detected in one or more samples were listed. See Laboratory reports in Appendex B for complete list of method analytes and detection limits.

[7]Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated using the toxicity equivalency (TEQ) methodology defined in WAC 173-340-708 (e)(iii)(A)(II). Where analytes were not detected, one half the detected limit was used for the calculation, except when all analytes were non-detect.

EPA = U.S. Environmental Protection Agency
mg/L = milligrams per liter
µg/L = micrograms per liter
ND = Not Detected
"–" = Not tested
NA = Not Applicable

Bold indicates analyte was detected.

Shading indicates analyte was detected at a concentration greater than the MTCA Cleanup Level.

FIGURES

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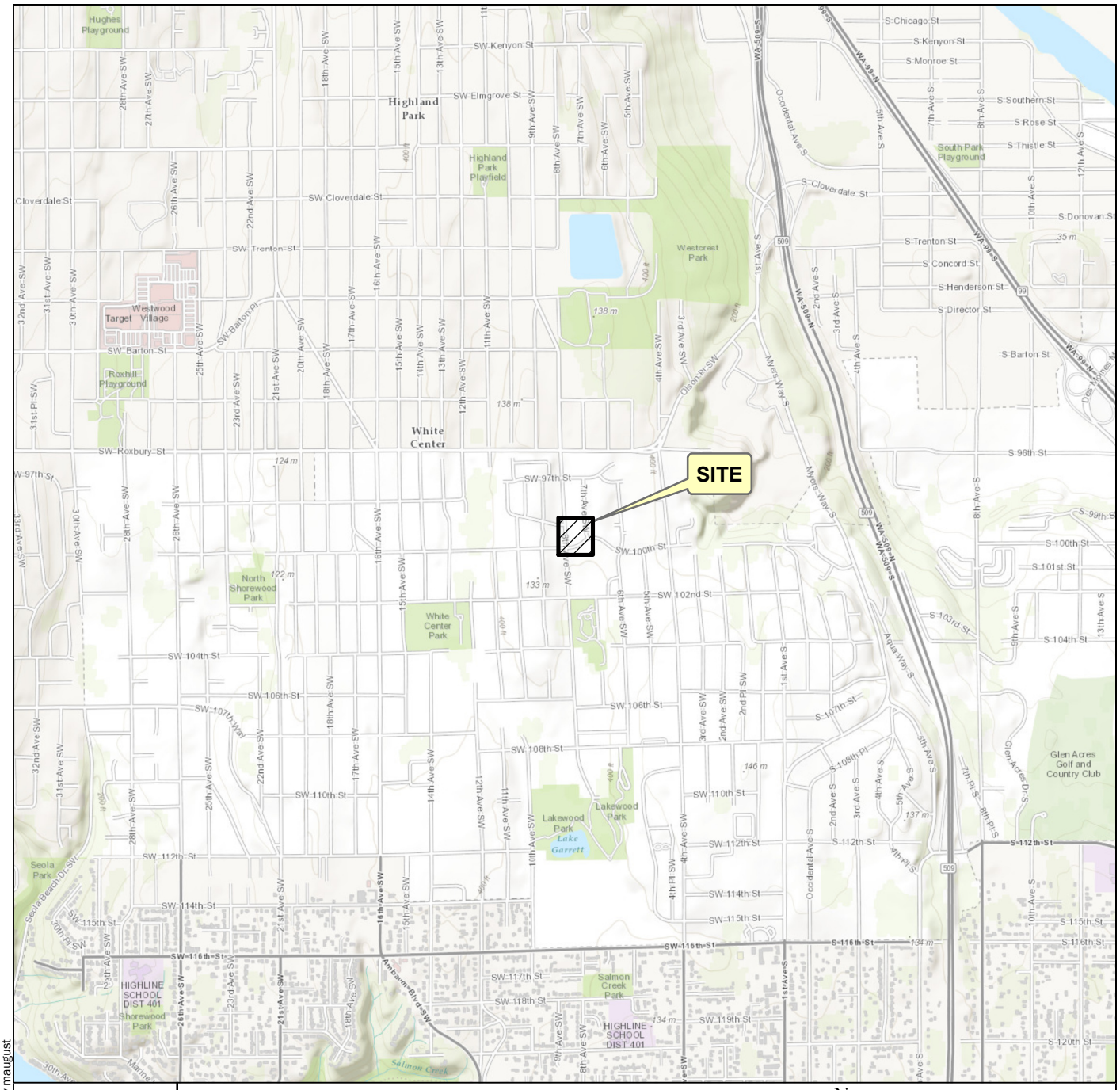

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Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2015

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

Former Park Lake Homes Maintenance Center
Seattle, Washington

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Figure 1

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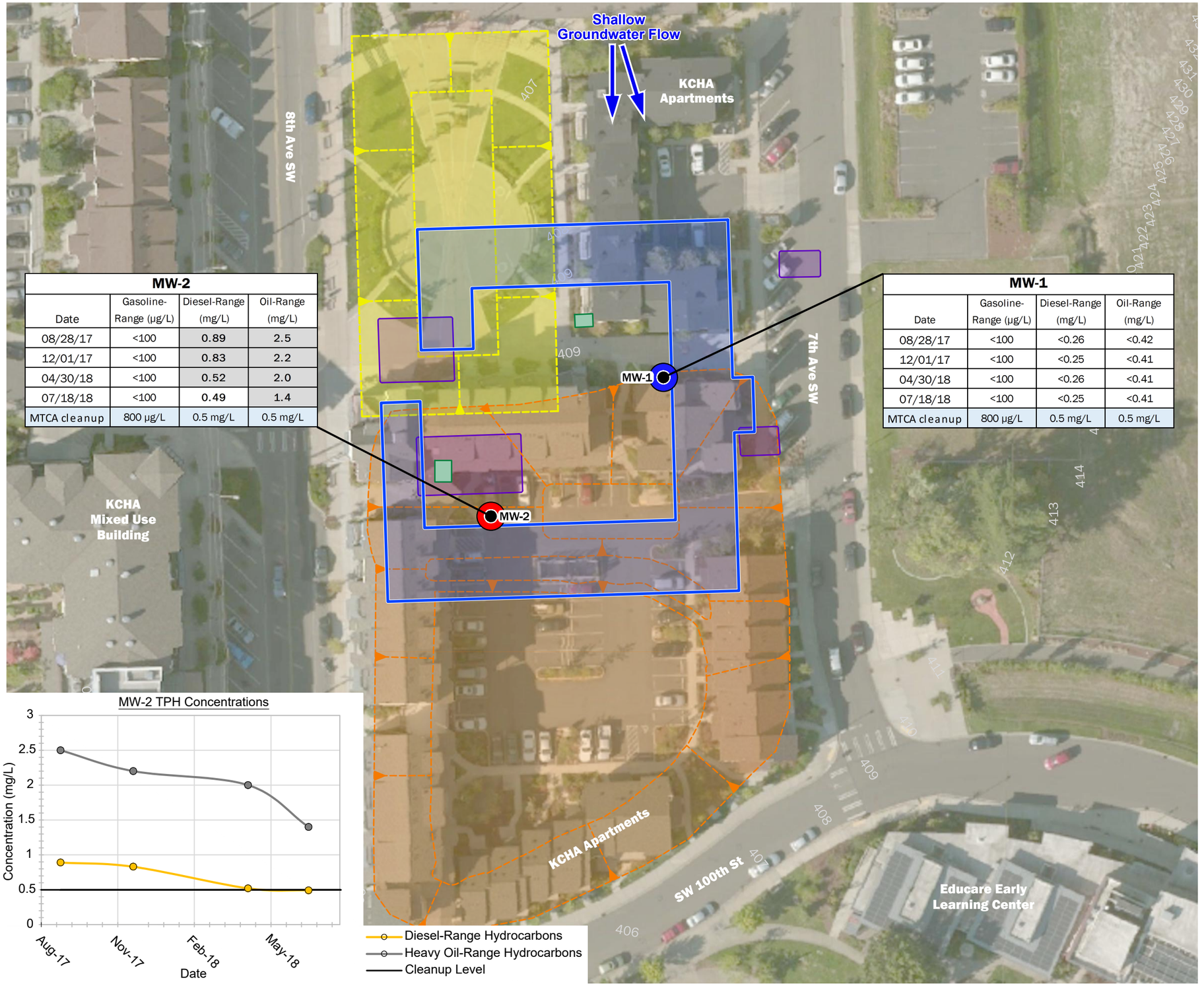

MW-2

Date	Gasoline-Range (µg/L)	Diesel-Range (mg/L)	Oil-Range (mg/L)
08/28/17	<100	0.89	2.5
12/01/17	<100	0.83	2.2
04/30/18	<100	0.52	2.0
07/18/18	<100	0.49	1.4
MTCA cleanup	800 µg/L	0.5 mg/L	0.5 mg/L

MW-1

Date	Gasoline-Range (µg/L)	Diesel-Range (mg/L)	Oil-Range (mg/L)
08/28/17	<100	<0.26	<0.42
12/01/17	<100	<0.25	<0.41
04/30/18	<100	<0.26	<0.41
07/18/18	<100	<0.25	<0.41
MTCA cleanup	800 µg/L	0.5 mg/L	0.5 mg/L

MW-2 TPH Concentrations

Legend

- MW-1 ● Monitoring Well
- Approximate Footprint of Former Park Lake Homes Maintenance Center Building
- Approximate Location of Removed UST
- Approximate Location of 2005 Remedial Excavations - MTCA Cleanup at Maintenance Center
- Approximate Boundary of Backfilled CV4 Stormwater Pond Excavation
- Excavation for existing Water Quality Vault

Groundwater Chemical Analytical Results

- One or more analytes detected at concentrations greater than MTCA Method A cleanup levels.
- Analytes either not detected or detected at concentrations less than MTCA Method A cleanup levels.
- 2.0 Shading indicates analyte was detected at a concentration greater than the MTCA Cleanup Level for Unrestricted Land Use.

N W E S

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FEET

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:

- Aerial from Microsoft Bing dated September 2013
- Stormwater Vault and Excavation from "Lake Garrett Sub-Basin Water Quality Vault Plan and Section", Sheet DF-3 by Goldsmith & Associates dated 10/25/2004
- Location of 2005 Remedial Excavations from "Final Cleanup Report, KCHA Maintenance Facility, Former Park Lake Homes, 9900 8th Avenue SW, Seattle, Washington," dated September 7, 2005 for King County Housing Authority, GEI File 1329-003-04
- CV4 Stormwater Pond Excavation Boundary and 2003/2004 Borings from "Geotechnical Engineering Services Greenbridge Hope VI Redevelopment Update Report" by GeoEngineers dated 1/12/2007
- Waterline Connection Location from "BDR Greenbridge Park Water Plan and Profile", Sheet WA-02 by ESM Consulting Engineers dated 4/26/2016

Site Plan with Groundwater Chemical Analytical Data

Former Park Lake Homes Maintenance Center
9800 8th Ave SW. Seattle, Washington

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Figure 2

P:\1\1329003\CAD\25\GW Assessment SAP\1329003325_F02_Site Plan with Groundwater Chemical Analytical Data.dwg TAB:F02 Site Plan Date Exported: 08/29/18 - 7:39 by mwoods

APPENDICES

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APPENDIX A
Exploration Logs and Field Procedures

APPENDIX A
FIELD PROCEDURES AND EXPLORATION LOGS

Underground Utility Locate

Prior to drilling activities, an underground utility locate was conducted in the area of the proposed boring locations to identify subsurface utilities and/or potential underground physical hazards. The underground utility check consisted of contacting a local utility alert service (1-call) and hiring a private utility locating service.

Groundwater Monitoring Well Installation

Drilling and construction of the monitoring wells was conducted by a Washington State licensed driller in accordance with the Minimum Standards for Construction and Maintenance of Wells (Chapter 173-160 Washington Administrative Code [WAC]). Installation of the monitoring wells was observed by a GeoEngineers representative who maintained a detailed log of the materials and depths of the wells.

The wells were constructed in the hollow stem auger borings. The wells were constructed using 2-inch-diameter, flush-threaded Schedule 40 polyvinyl chloride (PVC) casing with machine-slotted PVC screen (0.010 inch). Following placement of the well screen and casing in the borehole, a sand pack was installed around the well screen. Sand pack material consisted of commercially prepared 10-20 silica sand.

A minimum of a 1-foot-thick bentonite seal was placed above the sand pack. The surface of each well was completed with a concrete seal and surface pad extending from the top of neat cement/bentonite mix to slightly above the ground surface. Steel flush-mount monuments were used for each monitoring well.

Monitoring Well Development

The monitoring wells were developed to stabilize the filter pack and formation materials surrounding the well screens and to establish the hydraulic connection between the well screens and the surrounding soil. The wells were developed using a PVC slug. The wells were gently surged the slug starting at the bottom of the well screen interval. Surging continued to the top of the well screen interval. The wells were purged in between rounds of surging to reduce turbidity. The wells continued to be developed until a minimum of five casing volumes of water was removed and turbidity of the discharged water was relatively low. The volume of groundwater removed was recorded during well development procedures.

Groundwater Sample Collection and Handling

Four groundwater samples were collected using a peristaltic pump with dedicated Teflon tubing at low-flow sampling rates. The groundwater was pumped at approximately 0.5 liter per minute until the water purged clear, after which the samples were collected at a flow rate of approximately 0.5 liter per minute (low-flow). A YSI water quality meter with flow-through-cell was used to monitor the following parameters during purging:

- Acidity (pH);
- Electrical conductivity (EC);
- Turbidity;
- Dissolved oxygen (DO);

- Temperature;
- Total dissolved solids (TDS);
- Oxygen reduction potential (ORP); and
- Salinity.

Collection of water samples began once these parameters were observed to vary by less than 10 percent on three consecutive measurements. Purge water generated during these activities was transferred the onsite dedicated purge water drum labeled with the date and origin of contents. Incidental waste generated during sampling activities such as gloves, plastic sheeting, paper towels and similar expended and discarded field supplies were disposed of in the local trash receptacle.

The groundwater samples were transferred directly from the tubing outlet to laboratory-prepared sample containers. New nitrile gloves were worn when collecting the groundwater samples. The sample containers were filled completely and placed in a cooler with ice pending transport to the analytical laboratory. Sample labels were completed for each sample. Chain-of-custody procedures were followed in transporting the samples to the laboratory.

Field Screening of Soil Samples

Soil samples obtained from the borings were screened in the field for evidence of contamination using: 1) visual examination; 2) sheen screening and 3) vapor headspace screening with a photoionization detector (PID).

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons, such as motor oil or hydraulic oil, or when hydrocarbon concentrations are high. Sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup guidelines. Sheen screening involves placing soil in a pan of water and observing the water surface for signs of sheen. Sheen classifications are as follows:

- No Sheen (NS) — No visible sheen on water surface.
- Slight Sheen (SS) — Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.
- Moderate Sheen (MS) — Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
- Heavy Sheen (HS) — Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic sample bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a PID is inserted in the bag and the instrument measures the concentration of combustible vapor in the air removed from the sample headspace. The PID measures concentrations in ppm (parts per million) and is calibrated to isobutylene. The PID is designed to quantify combustible gas and organic vapor concentrations up to 2,500 ppm. A lower threshold of significance of 1 ppm was used in this application. Field screening results are Site-specific and vary with soil type, soil moisture content, temperature and type of contaminant.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

Key to Exploration Logs

GeoEngineers

Figure A-1

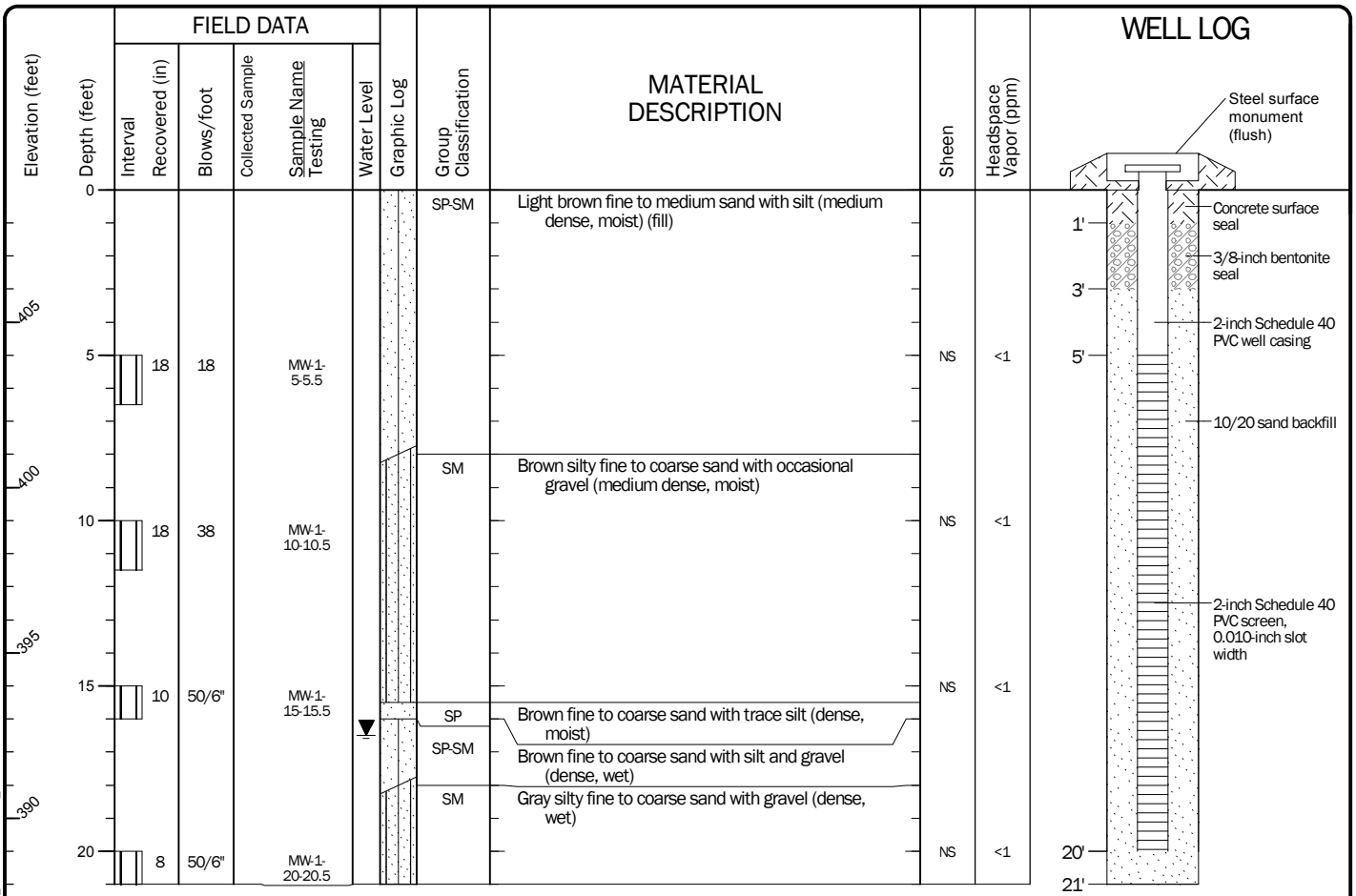
Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
7/19/2017	7/19/2017	21	CMD / DLC	Cascade Drilling, LP	Hollow-stem Auger

Hammer Data	340 (lbs) / 30 (in) Drop	Drilling Equipment	CME 75
Surface Elevation (ft) Vertical Datum	409 NAVD88	Top of Casing Elevation (ft)	
Latitude Longitude	47.514681 -122.344481	Horizontal Datum	Decimal Degrees WGS84

DOE Well I.D.: BKA 252
A 2 (in) well was installed on 7/19/2017 to a depth of 20 (ft).

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
7/19/2017	16.50	392.50

Notes:



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on imagery from Microsoft Bing dated September 2013. Vertical approximated based on topography from Puget Sound Lidar Consortium.

Log of Monitoring Well MW-1

GeoEngineers

Project: Former Park Lake Homes Maintenance Center
Project Location: 9800 8th Avenue SW, Seattle, Washington
Project Number: 1329-003-25

Figure A-2
Sheet 1 of 1

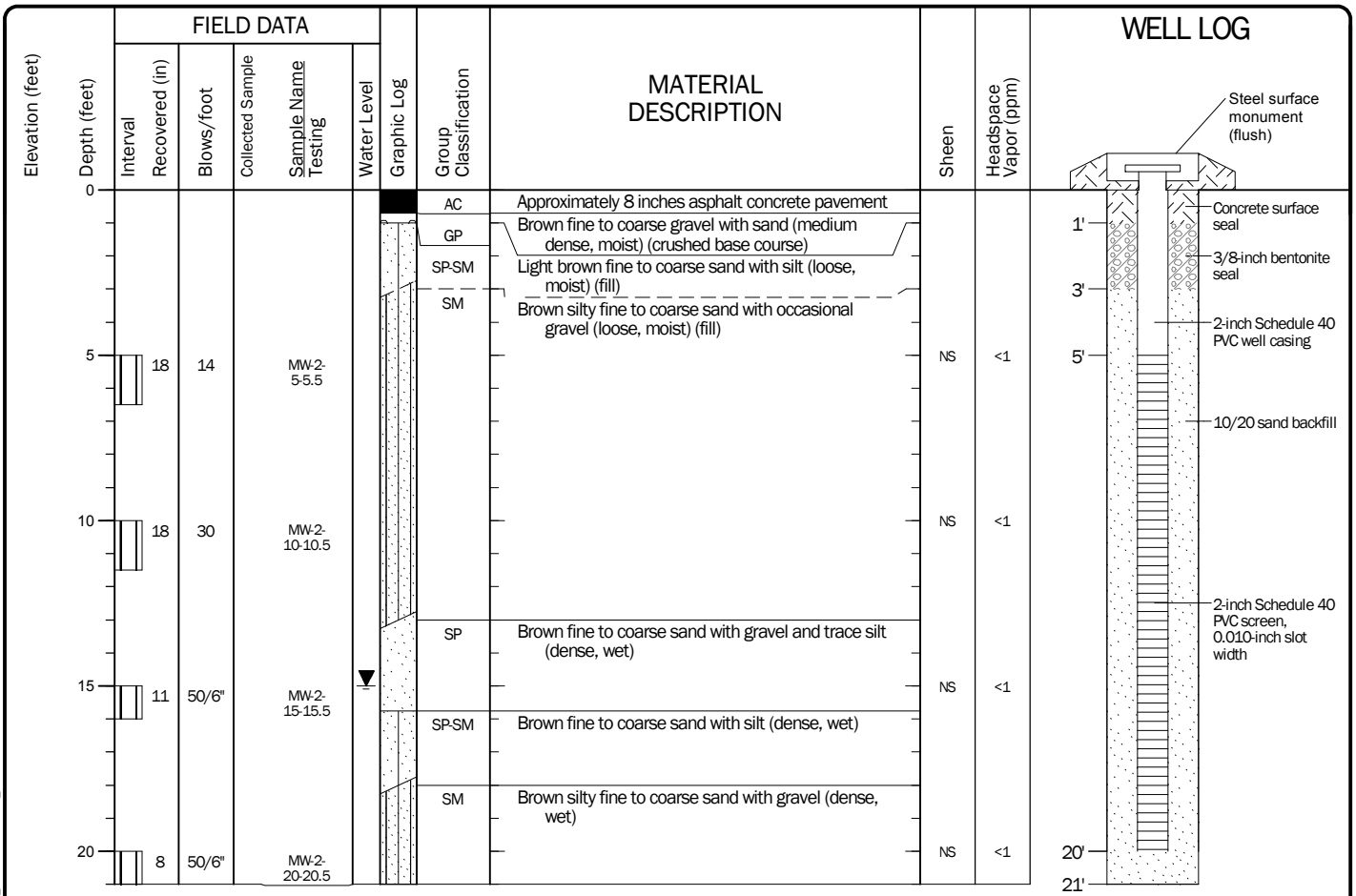
Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	7/19/2017	7/19/2017	21	CMD	DLC	Cascade Drilling, LP	Hollow-stem Auger

Hammer Data	340 (lbs) / 30 (in) Drop	Drilling Equipment	CME 75
Surface Elevation (ft) Vertical Datum	Undetermined NAVD88	Top of Casing Elevation (ft)	
Latitude Longitude	47.514481 -122.344806	Horizontal Datum	Decimal Degrees WGS84

DOE Well I.D.: BKA 253
A 2 (in) well was installed on 7/19/2017 to a depth of 20 (ft).

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
7/19/2017	15.00	

Notes:



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on imagery from Microsoft Bing dated September 2013. Vertical approximated based on topography from Puget Sound Lidar Consortium.

Log of Monitoring Well MW-2

GeoEngineers

Project: Former Park Lake Homes Maintenance Center
Project Location: 9800 8th Avenue SW, Seattle, Washington
Project Number: 1329-003-25

Figure A-3
Sheet 1 of 1

Table A-1

Groundwater Field Parameter Data

King County Housing Authority - Former Park Lake Homes Maintenance Center

9800 8th Avenue SW, Seattle, Washington

Sample ID[1]		MW-1-170828	MW-1-171201	MW-1-180430	MW-1-180718	MW-2-170828	MW-2-171201	MW-2-180430	MW-2-180718
Sample Date	**Units**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**	**08/28/17**	**12/01/17**	**04/30/18**	**07/18/18**
Groundwater Field Parameters									
pH	pH	6.76	7.91	8.18	7.77	12.59	12.72	12.88	12.84
Specific Conductivity	µS/cm	310.9	257.5	234.9	239.2	2,463	2,106	1,839	2,081
Dissolved Oxygen	µg/L	2.56	4.41	4.64	3.26	0.06	0.07	0.17	0.08
Redox Potential	mV	198.2	188.2	186.7	146.5	-324.9	-202.5	-91.3	-213.6
Turbidity	NTU	4.0	4.1	4.30	4.60	3.1	3.7	3.1	4.7

Notes:

[1]Monitoring well locations are shown on Figure 2.

µg/L = micrograms per liter

µS/cm = microSiemens per centir

mV = millivolts

NTU = nephelometric turbidity units;

NA = Not Applicable

APPENDIX B
Chemical Analytical Data

APPENDIX B
CHEMICAL ANALYTICAL DATA

Analytical Methods

Chain-of-custody procedures were followed during the transport of the soil and groundwater samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control (QC) records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers. Based on our data quality review, it is our opinion that the laboratory data qualifiers listed are not significant with regard to the use of the data for characterization purposes. The samples/results were considered of acceptable quality for their intended use in this report.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 7, 2017

Callan Driscoll
GeoEngineers, Inc.
523 East 2nd Avenue
Spokane, WA 99202

Re: Analytical Data for Project 1329-003-25
Laboratory Reference No. 1708-341

Dear Callan:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2017.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

Case Narrative

Samples were collected on August 28, 2017 and received by the laboratory on August 28, 2017. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

PCBs EPA 8082A Analysis

The percent recovery for 1260 in the Spike Blank duplicate was 117%, above the quality control limits of 63-116%. Because these recoveries demonstrate a high bias and the samples were non-detect for PCBs, no further action was performed. All other QC parameters were in control.

Organochlorine Pesticides by EPA 8081B Analysis

The percent recovery values (%R) for Aldrin, Dieldrin, Endrin, and 4,4'-DDT were above their respective quality control limits in the Spike Blank and Spike Blank Duplicate. Because these recoveries demonstrate a high bias and the fact the samples were non-detect for these analytes, no further action was performed. All other QC parameters were in control.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-170828	08-341-01	Water	8-28-17	8-28-17	
MW-2-170828	08-341-02	Water	8-28-17	8-28-17	
SS-170828	08-341-03	Soil	8-28-17	8-28-17	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

NWTPH-Gx

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
Gasoline	**ND**	100	NWTPH-Gx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
Gasoline	**ND**	100	NWTPH-Gx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*82*	*61-118*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

NWTPH-Gx

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-170828**					
Laboratory ID:	08-341-03					
Gasoline	**ND**	5.6	NWTPH-Gx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*63-124*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-29-17	8-29-17	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
Diesel Range Organics	**0.89**	0.26	NWTPH-Dx	8-29-17	8-29-17	
Lube Oil Range Organics	**2.5**	0.41	NWTPH-Dx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-170828**					
Laboratory ID:	08-341-03					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-29-17	8-29-17	
Lube Oil	**86**	58	NWTPH-Dx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

VOLATILES EPA 8260C
Page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
Dichlorodifluoromethane	ND	0.25	EPA 8260C	8-30-17	8-30-17	
Chloromethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Vinyl Chloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromomethane	ND	0.30	EPA 8260C	8-30-17	8-30-17	
Chloroethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Acetone	ND	5.0	EPA 8260C	8-30-17	8-30-17	
Iodomethane	ND	1.4	EPA 8260C	8-30-17	8-30-17	
Carbon Disulfide	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methylene Chloride	ND	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Vinyl Acetate	ND	1.0	EPA 8260C	8-30-17	8-30-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Butanone	ND	5.0	EPA 8260C	8-30-17	8-30-17	
Bromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chloroform	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Benzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Trichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Dibromomethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromodichloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chloroethyl Vinyl Ether	ND	1.6	EPA 8260C	8-30-17	8-30-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Toluene	ND	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

VOLATILES EPA 8260C
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Tetrachloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Hexanone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Dibromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Ethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
m,p-Xylene	ND	0.40	EPA 8260C	8-30-17	8-30-17	
o-Xylene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Styrene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromoform	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Isopropylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,2,2-Tetrachloroethane	ND	0.28	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Propylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
p-Isopropyltoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Naphthalene	ND	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*94*	*77-129*				
Toluene-d8	*98*	*80-127*				
4-Bromofluorobenzene	*86*	*78-125*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
Dichlorodifluoromethane	ND	0.25	EPA 8260C	8-30-17	8-30-17	
Chloromethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Vinyl Chloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromomethane	ND	0.30	EPA 8260C	8-30-17	8-30-17	
Chloroethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Acetone	11	5.0	EPA 8260C	8-30-17	8-30-17	
Iodomethane	ND	1.4	EPA 8260C	8-30-17	8-30-17	
Carbon Disulfide	0.33	0.20	EPA 8260C	8-30-17	8-30-17	
Methylene Chloride	ND	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Vinyl Acetate	ND	1.0	EPA 8260C	8-30-17	8-30-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Butanone	ND	5.0	EPA 8260C	8-30-17	8-30-17	
Bromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chloroform	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Benzene	0.77	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Trichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Dibromomethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromodichloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chloroethyl Vinyl Ether	ND	1.6	EPA 8260C	8-30-17	8-30-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Toluene	1.1	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	

Date of Report: September 7, 2017
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Tetrachloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Hexanone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Dibromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Ethylbenzene	0.24	0.20	EPA 8260C	8-30-17	8-30-17	
m,p-Xylene	0.46	0.40	EPA 8260C	8-30-17	8-30-17	
o-Xylene	0.29	0.20	EPA 8260C	8-30-17	8-30-17	
Styrene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromoform	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Isopropylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,2,2-Tetrachloroethane	ND	0.28	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Propylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trimethylbenzene	0.27	0.20	EPA 8260C	8-30-17	8-30-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
p-Isopropyltoluene	4.7	0.20	EPA 8260C	8-30-17	8-30-17	Y
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Naphthalene	1.2	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*77-129*				
Toluene-d8	*100*	*80-127*				
4-Bromofluorobenzene	*106*	*78-125*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-170828**					
Laboratory ID:	08-341-03					
Dichlorodifluoromethane	ND	0.0013	EPA 8260C	8-31-17	8-31-17	
Chloromethane	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Vinyl Chloride	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Bromomethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Chloroethane	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Trichlorofluoromethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloroethene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Acetone	0.0057	0.0049	EPA 8260C	8-31-17	8-31-17	
Iodomethane	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Carbon Disulfide	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Methylene Chloride	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
(trans) 1,2-Dichloroethene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Methyl t-Butyl Ether	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Vinyl Acetate	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
2,2-Dichloropropane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
(cis) 1,2-Dichloroethene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
2-Butanone	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Bromochloromethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Chloroform	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1,1-Trichloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Carbon Tetrachloride	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloropropene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Benzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2-Dichloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Trichloroethene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2-Dichloropropane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Dibromomethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Bromodichloromethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
2-Chloroethyl Vinyl Ether	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
(cis) 1,3-Dichloropropene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Methyl Isobutyl Ketone	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Toluene	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
(trans) 1,3-Dichloropropene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-170828**					
Laboratory ID:	08-341-03					
1,1,2-Trichloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Tetrachloroethene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,3-Dichloropropane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
2-Hexanone	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Dibromochloromethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2-Dibromoethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Chlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1,1,2-Tetrachloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Ethylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
m,p-Xylene	0.0023	0.0020	EPA 8260C	8-31-17	8-31-17	
o-Xylene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Styrene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Bromoform	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Isopropylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Bromobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,1,2,2-Tetrachloroethane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2,3-Trichloropropane	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
n-Propylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
2-Chlorotoluene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
4-Chlorotoluene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,3,5-Trimethylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
tert-Butylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2,4-Trimethylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
sec-Butylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,3-Dichlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
p-Isopropyltoluene	0.0025	0.00098	EPA 8260C	8-31-17	8-31-17	
1,4-Dichlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2-Dichlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
n-Butylbenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2-Dibromo-3-chloropropane	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
1,2,4-Trichlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Hexachlorobutadiene	ND	0.0049	EPA 8260C	8-31-17	8-31-17	
Naphthalene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
1,2,3-Trichlorobenzene	ND	0.00098	EPA 8260C	8-31-17	8-31-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*73-134*				
Toluene-d8	*108*	*81-124*				
4-Bromofluorobenzene	*101*	*80-131*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PCBs
EPA 8082A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
Aroclor 1016	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1221	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1232	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1242	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1248	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1254	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1260	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*138*	*26-154*				
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
Aroclor 1016	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1221	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1232	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1242	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1248	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1254	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Aroclor 1260	**ND**	0.047	EPA 8082A	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*128*	*26-154*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
alpha-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
gamma-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
beta-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
delta-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Heptachlor	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Aldrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Heptachlor Epoxide	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDE	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endosulfan I	**0.012**	0.0047	EPA 8081B	8-30-17	8-31-17	
Dieldrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDD	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endosulfan II	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDT	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Methoxychlor	**ND**	0.0093	EPA 8081B	8-30-17	8-31-17	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin Ketone	**ND**	0.019	EPA 8081B	8-30-17	8-31-17	
Toxaphene	**ND**	0.047	EPA 8081B	8-30-17	8-31-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*86*	*41-98*				
DCB	*101*	*42-128*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
alpha-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
gamma-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
beta-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
delta-BHC	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Heptachlor	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Aldrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Heptachlor Epoxide	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDE	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endosulfan I	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Dieldrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDD	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endosulfan II	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
4,4'-DDT	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Methoxychlor	**ND**	0.0093	EPA 8081B	8-30-17	8-31-17	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	8-30-17	8-31-17	
Endrin Ketone	**ND**	0.019	EPA 8081B	8-30-17	8-31-17	
Toxaphene	**ND**	0.047	EPA 8081B	8-30-17	8-31-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*68*	*41-98*				
DCB	*85*	*42-128*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-341-03					
Client ID:	**SS-170828**					
Arsenic	**ND**	12	6010C	8-31-17	8-31-17	
Barium	**52**	2.9	6010C	8-31-17	8-31-17	
Cadmium	**ND**	0.58	6010C	8-31-17	8-31-17	
Chromium	**36**	0.58	6010C	8-31-17	8-31-17	
Lead	**ND**	5.8	6010C	8-31-17	8-31-17	
Mercury	**ND**	0.29	7471B	8-30-17	8-30-17	
Selenium	**ND**	12	6010C	8-31-17	8-31-17	
Silver	**ND**	1.2	6010C	8-31-17	8-31-17	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-170828**					
Laboratory ID:	08-341-01					
Naphthalene	**ND**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
2-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
1-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Chrysene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*30 - 124*				
Pyrene-d10	*82*	*40 - 143*				
Terphenyl-d14	*114*	*27 - 127*				

Date of Report: September 7, 2017
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Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-170828**					
Laboratory ID:	08-341-02					
Naphthalene	**0.46**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
2-Methylnaphthalene	**0.30**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
1-Methylnaphthalene	**0.30**	0.094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]anthracene	**ND**	0.094	EPA 8270D/SIM	8-30-17	8-31-17	
Chrysene	**ND**	0.094	EPA 8270D/SIM	8-30-17	8-31-17	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*30 - 124*				
Pyrene-d10	*71*	*40 - 143*				
Terphenyl-d14	*97*	*27 - 127*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
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Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-170828**					
Laboratory ID:	08-341-03					
Naphthalene	**ND**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
2-Methylnaphthalene	**ND**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
1-Methylnaphthalene	**ND**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]anthracene	**0.010**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Chrysene	**0.015**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[b]fluoranthene	**0.016**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo(j,k)fluoranthene	**ND**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]pyrene	**0.011**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Indeno(1,2,3-c,d)pyrene	**0.0088**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Dibenz[a,h]anthracene	**ND**	0.0077	EPA 8270D/SIM	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*54*	*32 - 122*				
Pyrene-d10	*49*	*33 - 125*				
Terphenyl-d14	*57*	*36 - 118*				

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TOTAL METALS
EPA 200.8/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-341-01					
Client ID:	**MW-1-170828**					
Arsenic	**ND**	3.3	200.8	8-31-17	8-31-17	
Cadmium	**ND**	4.4	200.8	8-31-17	8-31-17	
Chromium	**ND**	11	200.8	8-31-17	8-31-17	
Lead	**ND**	1.1	200.8	8-31-17	8-31-17	
Nickel	**ND**	22	200.8	8-31-17	8-31-17	
Zinc	**ND**	28	200.8	8-31-17	8-31-17	
Lab ID:	08-341-02					
Client ID:	**MW-2-170828**					
Arsenic	**ND**	3.3	200.8	8-31-17	8-31-17	
Cadmium	**ND**	4.4	200.8	8-31-17	8-31-17	
Chromium	**ND**	11	200.8	8-31-17	8-31-17	
Lead	**ND**	1.1	200.8	8-31-17	8-31-17	
Nickel	**23**	22	200.8	8-31-17	8-31-17	
Zinc	**ND**	28	200.8	8-31-17	8-31-17	

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NWTPH-Gx
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0829W1					
Gasoline	**ND**	100	NWTPH-Gx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*61-118*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-341-01										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*88*	*80*	*61-118*			

Date of Report: September 7, 2017
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NWTPH-Gx
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0829S1					
Gasoline	**ND**	5.0	NWTPH-Gx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*63-124*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-341-03										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*97*	*99*	*63-124*			

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NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0829W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-29-17	8-29-17	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-341-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*111*	*101*	*50-150*			

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NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0829S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-29-17	8-29-17	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-29-17	8-29-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-321-01										
	ORIG	DUP									
Diesel Range Organics	**77.8**	**63.4**	NA	NA		NA		NA	20	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*127*	*115*	*50-150*			

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Project: 1329-003-25

VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0830W1					
Dichlorodifluoromethane	ND	0.25	EPA 8260C	8-30-17	8-30-17	
Chloromethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Vinyl Chloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromomethane	ND	0.30	EPA 8260C	8-30-17	8-30-17	
Chloroethane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Acetone	ND	5.0	EPA 8260C	8-30-17	8-30-17	
Iodomethane	ND	1.4	EPA 8260C	8-30-17	8-30-17	
Carbon Disulfide	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methylene Chloride	ND	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Vinyl Acetate	ND	1.0	EPA 8260C	8-30-17	8-30-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Butanone	ND	5.0	EPA 8260C	8-30-17	8-30-17	
Bromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chloroform	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Benzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Trichloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Dibromomethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromodichloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chloroethyl Vinyl Ether	ND	1.6	EPA 8260C	8-30-17	8-30-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Toluene	ND	1.0	EPA 8260C	8-30-17	8-30-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	8-30-17	8-30-17	

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VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0830W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Tetrachloroethene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Hexanone	ND	2.0	EPA 8260C	8-30-17	8-30-17	
Dibromochloromethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Chlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Ethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
m,p-Xylene	ND	0.40	EPA 8260C	8-30-17	8-30-17	
o-Xylene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Styrene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromoform	ND	1.0	EPA 8260C	8-30-17	8-30-17	
Isopropylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Bromobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,1,2,2-Tetrachloroethane	ND	0.28	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Propylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
p-Isopropyltoluene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
n-Butylbenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Naphthalene	ND	1.0	EPA 8260C	8-30-17	8-30-17	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*88*	*77-129*				
Toluene-d8	*101*	*80-127*				
4-Bromofluorobenzene	*112*	*78-125*				

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Project: 1329-003-25

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0830W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**11.2**	**11.6**	10.0	10.0	112	116	63-127	4	17	
Benzene	**10.5**	**9.74**	10.0	10.0	105	97	76-121	8	12	
Trichloroethene	**8.94**	**8.84**	10.0	10.0	89	88	64-120	1	15	
Toluene	**10.8**	**9.89**	10.0	10.0	108	99	82-120	9	13	
Chlorobenzene	**10.1**	**9.92**	10.0	10.0	101	99	80-120	2	14	
Surrogate:										
Dibromofluoromethane					*93*	*95*	*77-129*			
Toluene-d8					*104*	*100*	*80-127*			
4-Bromofluorobenzene					*95*	*99*	*78-125*			

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VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0831S1					
Dichlorodifluoromethane	ND	0.0013	EPA 8260C	8-31-17	8-31-17	
Chloromethane	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Vinyl Chloride	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Bromomethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Chloroethane	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Acetone	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Iodomethane	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Carbon Disulfide	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Methylene Chloride	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Vinyl Acetate	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
2-Butanone	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Bromochloromethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Chloroform	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Benzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Trichloroethene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Dibromomethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Bromodichloromethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Toluene	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	

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VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0831S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Tetrachloroethene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
2-Hexanone	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Dibromochloromethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Chlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Ethylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
m,p-Xylene	ND	0.0020	EPA 8260C	8-31-17	8-31-17	
o-Xylene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Styrene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Bromoform	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Isopropylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Bromobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
n-Propylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
2-Chlorotoluene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
4-Chlorotoluene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
tert-Butylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
sec-Butylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
n-Butylbenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	8-31-17	8-31-17	
Naphthalene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	8-31-17	8-31-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*73-134*				
Toluene-d8	*111*	*81-124*				
4-Bromofluorobenzene	*107*	*80-131*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0831S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0491**	**0.0468**	0.0500	0.0500	98	94	66-127	5	15	
Benzene	**0.0506**	**0.0489**	0.0500	0.0500	101	98	76-122	3	15	
Trichloroethene	**0.0525**	**0.0487**	0.0500	0.0500	105	97	78-120	8	15	
Toluene	**0.0513**	**0.0482**	0.0500	0.0500	103	96	83-120	6	15	
Chlorobenzene	**0.0502**	**0.0479**	0.0500	0.0500	100	96	81-120	5	15	
Surrogate:										
Dibromofluoromethane					*104*	*91*	*73-134*			
Toluene-d8					*106*	*93*	*81-124*			
4-Bromofluorobenzene					*103*	*90*	*80-131*			

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0830W1					
Aroclor 1016	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1221	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1232	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1242	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1248	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1254	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Aroclor 1260	**ND**	0.050	EPA 8082A	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*138*	*26-154*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0830W1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.581**	**0.585**	0.500	0.500	N/A	**116**	**117**	63-116	1	12	I
Surrogate:											
DCB						*139*	*133*	*26-154*			

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

ORGANOCHLORINE
PESTICIDES EPA 8081B
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0830W1					
alpha-BHC	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
gamma-BHC	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
beta-BHC	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
delta-BHC	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Heptachlor	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Aldrin	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Heptachlor Epoxide	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
gamma-Chlordane	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
alpha-Chlordane	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
4,4'-DDE	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Endosulfan I	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Dieldrin	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Endrin	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
4,4'-DDD	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Endosulfan II	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
4,4'-DDT	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Endrin Aldehyde	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Methoxychlor	**ND**	0.010	EPA 8081B	8-30-17	8-30-17	
Endosulfan Sulfate	**ND**	0.0050	EPA 8081B	8-30-17	8-30-17	
Endrin Ketone	**ND**	0.020	EPA 8081B	8-30-17	8-30-17	
Toxaphene	**ND**	0.050	EPA 8081B	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*90*	*41-98*				
DCB	*115*	*42-128*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0830W1										
	SB	SBD	SB	SBD		SB	SBD				
alpha-BHC	**0.0833**	**0.0880**	0.100	0.100	N/A	**83**	**88**	50-130	5	15	
gamma-BHC	**0.0897**	**0.0949**	0.100	0.100	N/A	**90**	**95**	33-107	6	15	
beta-BHC	**0.105**	**0.109**	0.100	0.100	N/A	**105**	**109**	50-130	4	15	
delta-BHC	**0.0592**	**0.0596**	0.100	0.100	N/A	**59**	**60**	50-130	1	15	
Heptachlor	**0.0986**	**0.106**	0.100	0.100	N/A	**99**	**106**	32-109	7	15	
Aldrin	**0.112**	**0.117**	0.100	0.100	N/A	**112**	**117**	30-114	4	15	I
Heptachlor Epoxide	**0.112**	**0.113**	0.100	0.100	N/A	**112**	**113**	50-130	1	15	
gamma-Chlordane	**0.110**	**0.112**	0.100	0.100	N/A	**110**	**112**	50-130	2	15	
alpha-Chlordane	**0.109**	**0.111**	0.100	0.100	N/A	**109**	**111**	50-130	2	15	
4,4'-DDE	**0.121**	**0.118**	0.100	0.100	N/A	**121**	**118**	50-130	3	15	
Endosulfan I	**0.117**	**0.120**	0.100	0.100	N/A	**117**	**120**	50-130	3	15	
Dieldrin	**0.108**	**0.108**	0.100	0.100	N/A	**108**	**108**	63-100	0	15	I,I
Endrin	**0.116**	**0.117**	0.100	0.100	N/A	**116**	**117**	66-105	1	15	I,I
4,4'-DDD	**0.123**	**0.123**	0.100	0.100	N/A	**123**	**123**	50-130	0	15	
Endosulfan II	**0.113**	**0.111**	0.100	0.100	N/A	**113**	**111**	50-130	2	15	
4,4'-DDT	**0.113**	**0.112**	0.100	0.100	N/A	**113**	**112**	55-112	1	15	I
Endrin Aldehyde	**0.110**	**0.109**	0.100	0.100	N/A	**110**	**109**	50-130	1	15	
Methoxychlor	**0.130**	**0.128**	0.100	0.100	N/A	**130**	**128**	50-130	2	15	
Endosulfan Sulfate	**0.0973**	**0.0960**	0.100	0.100	N/A	**97**	**96**	50-130	1	15	
Endrin Ketone	**0.110**	**0.108**	0.100	0.100	N/A	**110**	**108**	50-130	2	15	
Surrogate:											
TCMX						*84*	*90*	*41-98*			
DCB						*114*	*114*	*42-128*			

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0831SM1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-30-17
Date Analyzed:	8-30-17
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0830S1

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-341-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**44.4**	**45.5**	2	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**31.3**	**31.5**	0	0.50	
Lead	**ND**	**ND**	NA	5.0	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-30-17
Date Analyzed: 8-30-17

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-343-12

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-341-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**95.2**	95	**95.3**	95	0	
Barium	100	**151**	106	**153**	109	2	
Cadmium	50.0	**47.0**	94	**46.9**	94	0	
Chromium	100	**130**	99	**147**	115	12	
Lead	250	**235**	94	**238**	95	1	
Selenium	100	**95.7**	96	**95.4**	95	0	
Silver	25.0	**21.2**	85	**20.5**	82	3	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 8-30-17
Date Analyzed: 8-30-17

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-343-12

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.522**	104	**0.504**	101	4	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0830W1					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	8-30-17	8-30-17	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-30-17	8-30-17	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Chrysene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*67*	*30 - 124*				
Pyrene-d10	*74*	*40 - 143*				
Terphenyl-d14	*92*	*27 - 127*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0830W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.321**	**0.341**	0.500	0.500	64	68	29 - 101	6	47	
Benzo[a]anthracene	**0.446**	**0.468**	0.500	0.500	89	94	71 - 117	5	28	
Chrysene	**0.404**	**0.427**	0.500	0.500	81	85	53 - 110	6	25	
Benzo[b]fluoranthene	**0.402**	**0.432**	0.500	0.500	80	86	53 - 123	7	37	
Benzo(j,k)fluoranthene	**0.422**	**0.437**	0.500	0.500	84	87	52 - 119	3	41	
Benzo[a]pyrene	**0.395**	**0.418**	0.500	0.500	79	84	37 - 129	6	33	
Indeno(1,2,3-c,d)pyrene	**0.343**	**0.376**	0.500	0.500	69	75	45 - 128	9	31	
Dibenz[a,h]anthracene	**0.346**	**0.378**	0.500	0.500	69	76	54 - 120	9	30	
Surrogate:										
2-Fluorobiphenyl					*70*	*73*	*30 - 124*			
Pyrene-d10					*76*	*79*	*40 - 143*			
Terphenyl-d14					*99*	*98*	*27 - 127*			

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0830S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-30-17	8-30-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*32 - 122*				
Pyrene-d10	*73*	*33 - 125*				
Terphenyl-d14	*91*	*36 - 118*				

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0830S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0590**	**0.0599**	0.0833	0.0833	71	72	58 - 114	2	18	
Benzo[a]anthracene	**0.0698**	**0.0686**	0.0833	0.0833	84	82	56 - 137	2	15	
Chrysene	**0.0699**	**0.0710**	0.0833	0.0833	84	85	59 - 122	2	15	
Benzo[b]fluoranthene	**0.0604**	**0.0612**	0.0833	0.0833	73	73	46 - 133	1	21	
Benzo(j,k)fluoranthene	**0.0718**	**0.0702**	0.0833	0.0833	86	84	47 - 129	2	21	
Benzo[a]pyrene	**0.0649**	**0.0643**	0.0833	0.0833	78	77	54 - 132	1	15	
Indeno(1,2,3-c,d)pyrene	**0.0635**	**0.0620**	0.0833	0.0833	76	74	54 - 129	2	15	
Dibenz[a,h]anthracene	**0.0700**	**0.0691**	0.0833	0.0833	84	83	59 - 122	1	15	
Surrogate:										
2-Fluorobiphenyl					*76*	*75*	*32 - 122*			
Pyrene-d10					*75*	*72*	*33 - 125*			
Terphenyl-d14					*90*	*88*	*36 - 118*			

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 200.8/7470A
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0831WM1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	11
Lead	200.8	**ND**	1.1
Nickel	200.8	**ND**	22
Zinc	200.8	**ND**	28

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 200.8/7470A
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-379-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	3.3	
Cadmium	**ND**	**ND**	NA	4.4	
Chromium	**ND**	**ND**	NA	11	
Lead	**ND**	**ND**	NA	1.1	
Nickel	**ND**	**ND**	NA	22	
Zinc	**ND**	**ND**	NA	28	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

TOTAL METALS
EPA 200.8/7470A
MS/MSD QUALITY CONTROL

Date Extracted: 8-31-17
Date Analyzed: 8-31-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-379-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	222	**228**	103	**223**	100	2	
Cadmium	222	**215**	97	**217**	98	1	
Chromium	222	**221**	99	**217**	98	2	
Lead	222	**212**	96	**209**	94	1	
Nickel	222	**220**	99	**221**	99	0	
Zinc	222	**230**	104	**229**	103	0	

Date of Report: September 7, 2017
Samples Submitted: August 28, 2017
Laboratory Reference: 1708-341
Project: 1329-003-25

% MOISTURE

Date Analyzed: 8-29-17

Client ID	Lab ID	% Moisture
SS-170828	08-341-03	14

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 1329-003-25
Project Name: KCHA
Project Manager: CALLAN DRISCOLL
Sampled by: BRIAN ANDERSON

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-341

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C w-BTEX	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs 8270 SIM	NAPHTHALENES 8270 SIM	METALS - TOTAL	METALS - DISSOLVED HOLD	% Moisture
1	MW-1-170828	8-28-17	1032	W	15			X	X	X					X	X							X	X	X	X	
2	MW-2-170828	8-28-17	1202	W	15			X	X	X					X	X							X	X	X	X	
3	SS-170828	8-28-17	1254	~~W~~ S	6			X	X	X									X				X	X			X

	Signature	Company	Date	Time
Relinquished	B. Anderson	GEOENGINEERS	8-28-17	1804
Received		CCS	8/28/17	1804
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

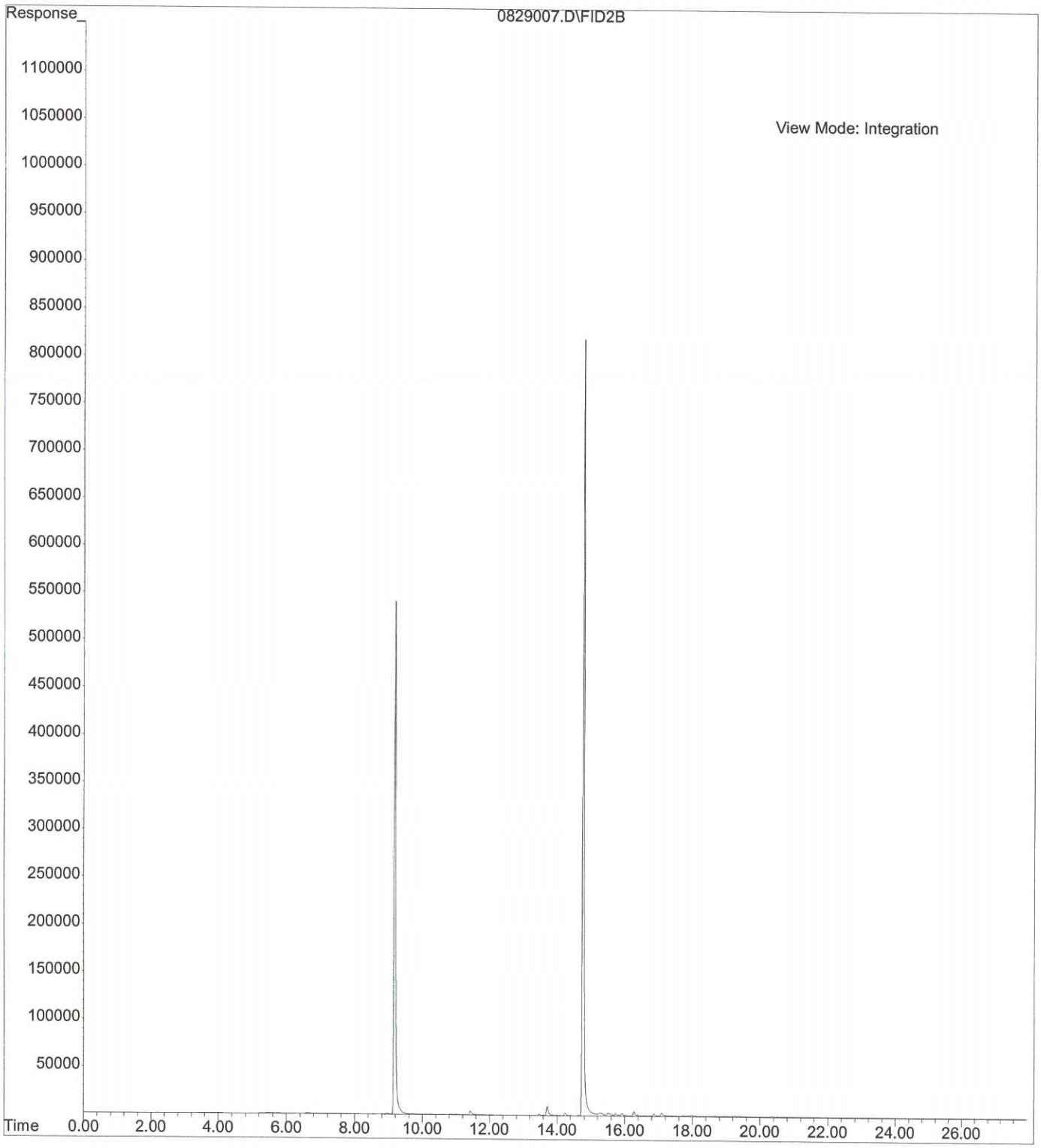
TOTAL - METALS:
As, Cd, Cr, Ni, Pb, Zn
EPA 200.8

HOLD DISSOLVED METALS

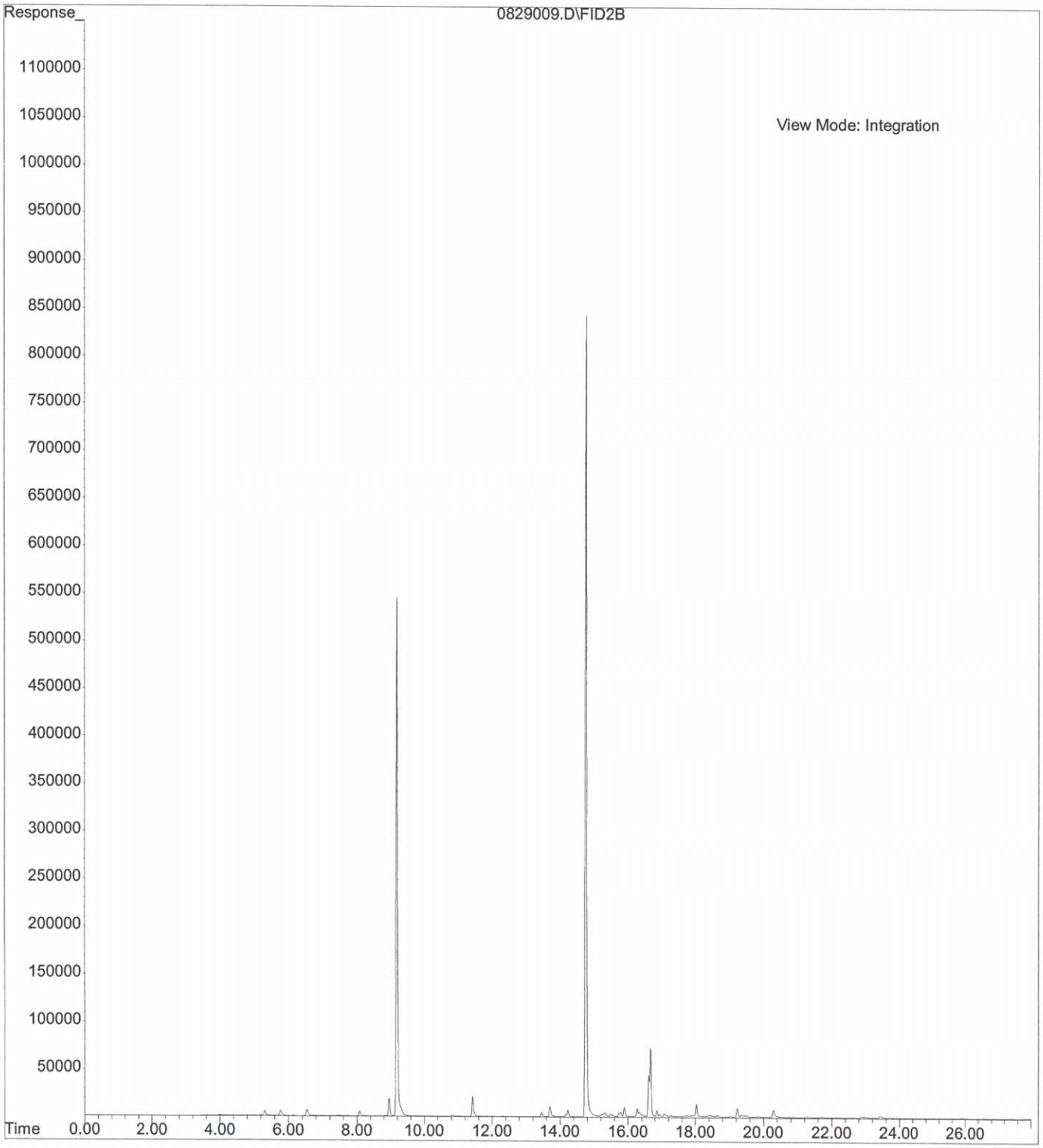
Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

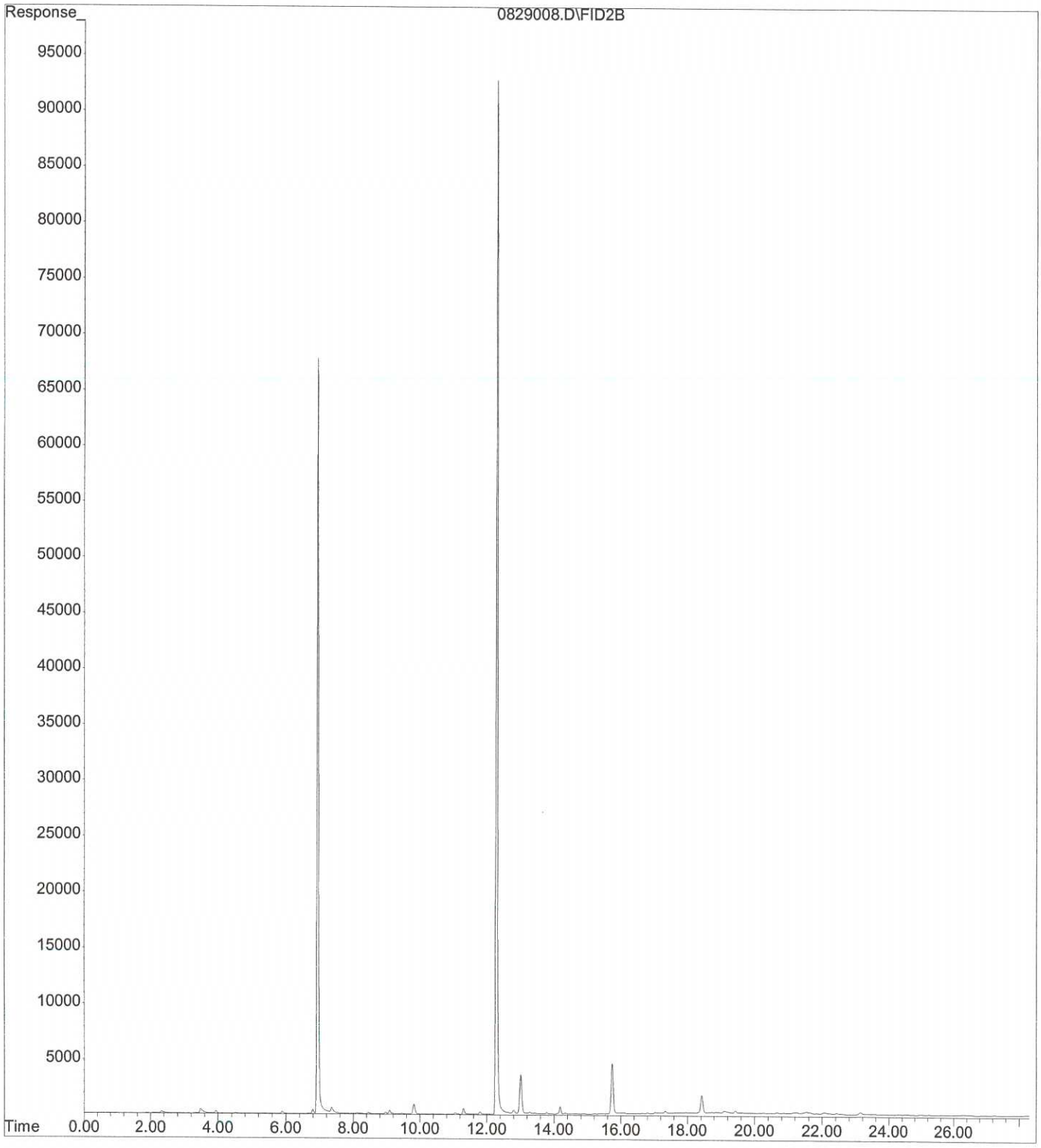
File : X:\BTEX\HOPE\DATA\H170829\0829007.D
Operator :
Acquired : 29 Aug 2017 13:50 using AcqMethod 170803GB.M
Instrument : Hope
Sample Name: 08-341-01k
Misc Info :
Vial Number: 7



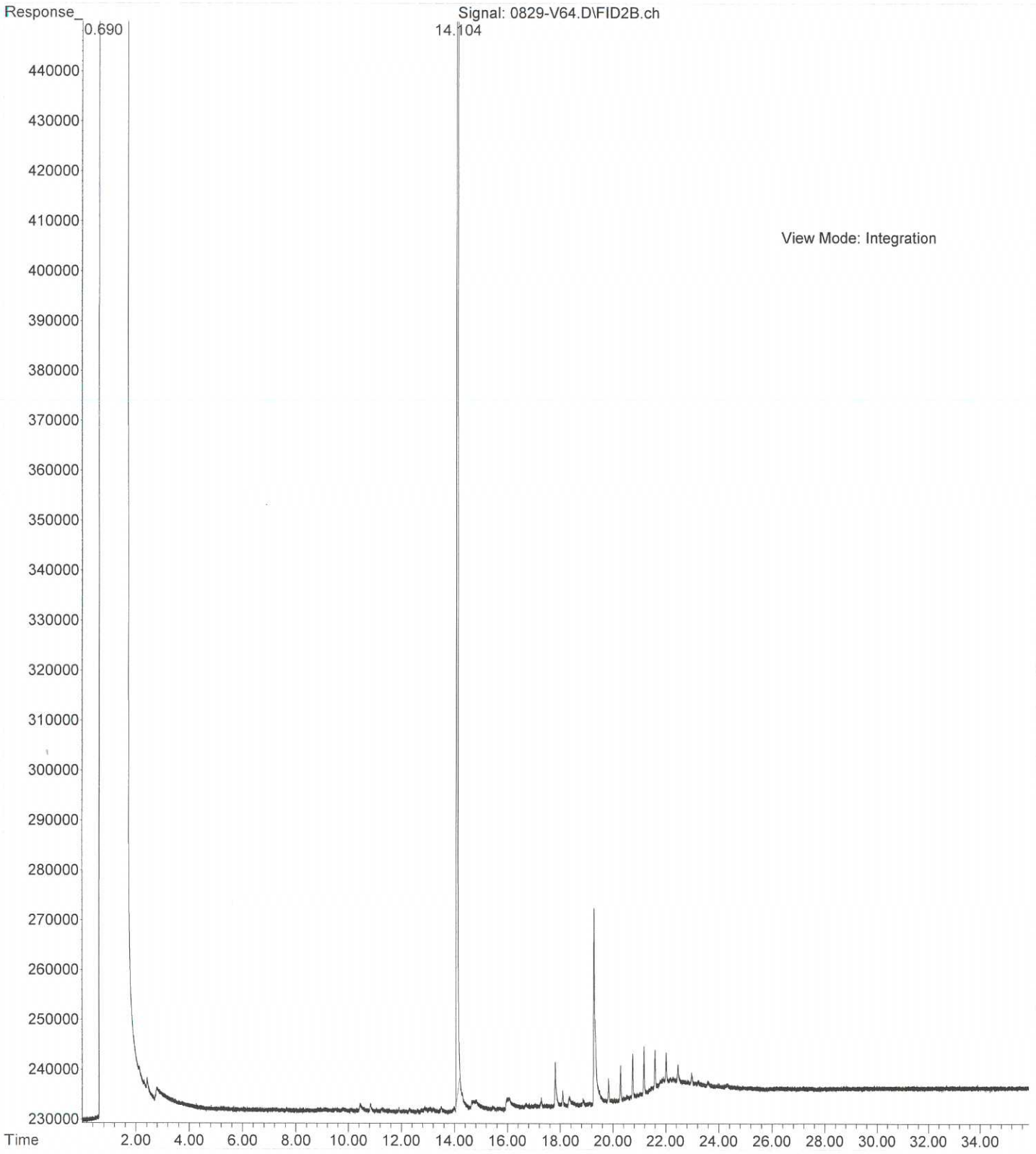
File : X:\BTEX\HOPE\DATA\H170829\0829009.D
Operator :
Acquired : 29 Aug 2017 15:03 using AcqMethod 170803GB.M
Instrument : Hope
Sample Name: 08-341-02k
Misc Info :
Vial Number: 9



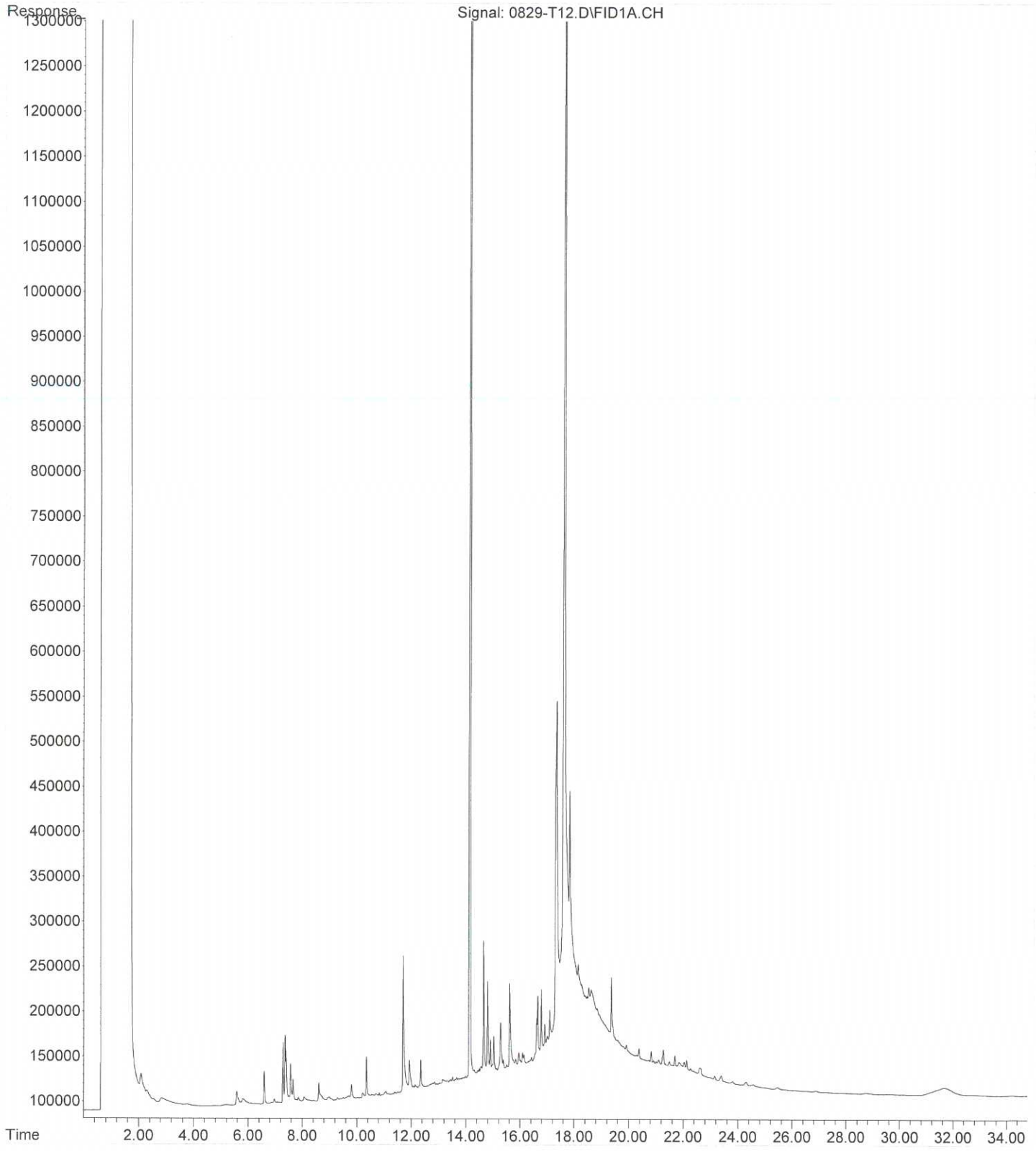
File : X:\BTEX\DARYL\DATA\D170829\0829008.D
Operator :
Acquired : 29 Aug 2017 13:57 using AcqMethod 170818B.M
Instrument : Daryl
Sample Name: 08-341-03s
Misc Info :
Vial Number: 8



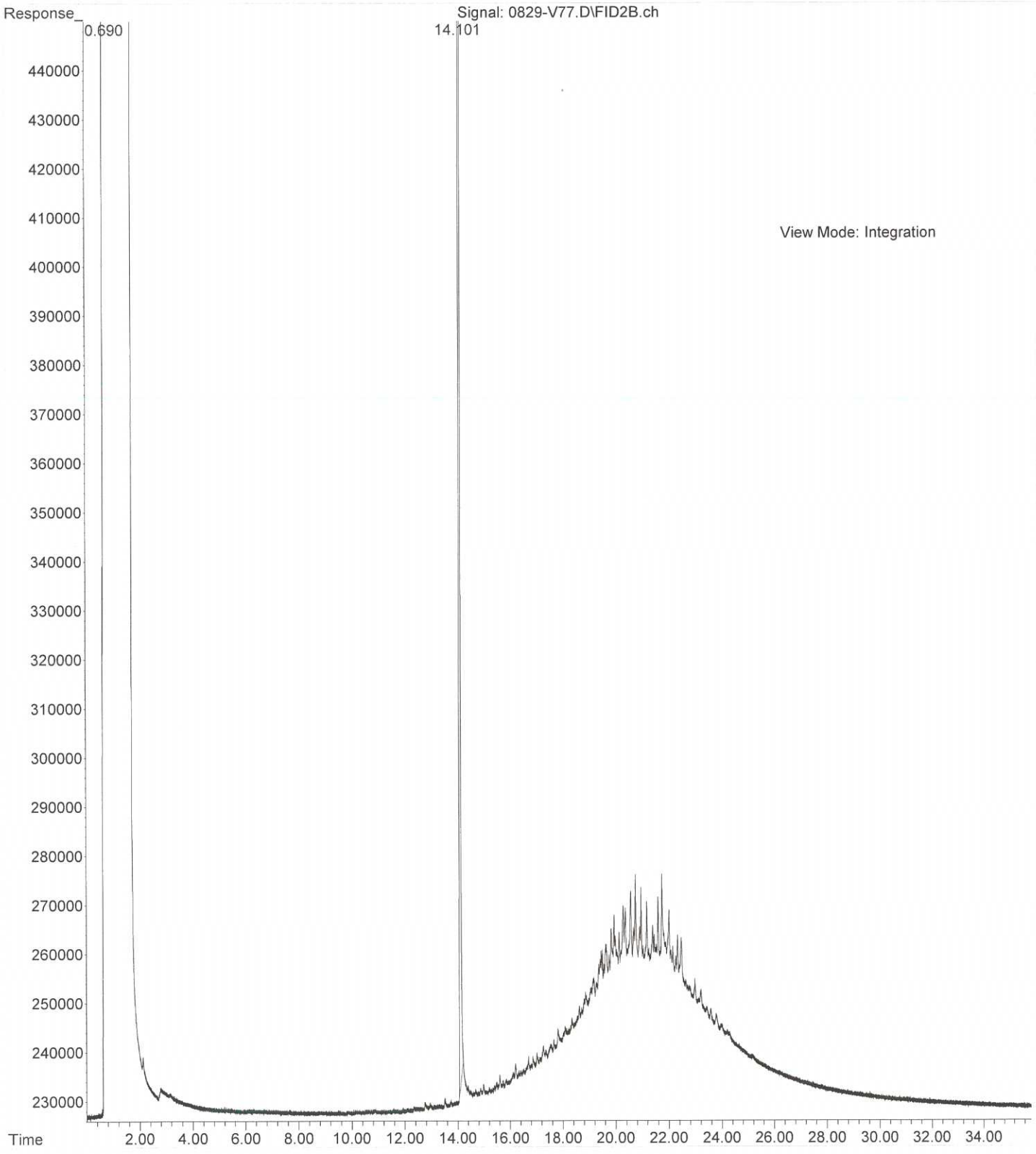
File :X:\DIESELS\VIGO\DATA\V170829.SEC\0829-V64.D
Operator :
Acquired : 29 Aug 2017 16:13 using AcqMethod V170721F.M
Instrument : Vigo
Sample Name: 08-341-01
Misc Info :
Vial Number: 64



File :X:\DIESELS\TERI\DATA\T170829\0829-T12.D
Operator : ZT
Acquired : 29 Aug 2017 15:30 using AcqMethod T161216F.M
Instrument : Teri
Sample Name: 08-341-02
Misc Info :
Vial Number: 12



File :X:\DIESELS\VIGO\DATA\V170829.SEC\0829-V77.D
Operator :
Acquired : 30 Aug 2017 00:58 using AcqMethod V170721F.M
Instrument : Vigo
Sample Name: 08-341-03
Misc Info :
Vial Number: 77



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

December 8, 2017

Callan Driscoll
GeoEngineers, Inc.
17425 Union Hill Road, Suite 250
Redmond, WA 98052

Re: Analytical Data for Project 1329-003-25
Laboratory Reference No. 1712-010

Dear Callan:

Enclosed are the analytical results and associated quality control data for samples submitted on December 1, 2017.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

Case Narrative

Samples were collected on December 1, 2017 and received by the laboratory on December 1, 2017. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-171201	12-010-01	Water	12-1-17	12-1-17	
MW-2-171201	12-010-02	Water	12-1-17	12-1-17	

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

NWTPH-Gx

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
Gasoline	**ND**	100	NWTPH-Gx	12-7-17	12-7-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*66-114*				
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
Gasoline	**ND**	100	NWTPH-Gx	12-7-17	12-7-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*66-114*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	12-4-17	12-5-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	12-4-17	12-5-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
Diesel Range Organics	**0.83**	0.25	NWTPH-Dx	12-4-17	12-5-17	N
Lube Oil Range Organics	**2.2**	0.41	NWTPH-Dx	12-4-17	12-5-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloromethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Vinyl Chloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Acetone	ND	5.0	EPA 8260C	12-4-17	12-4-17	
Iodomethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Carbon Disulfide	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methylene Chloride	ND	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Vinyl Acetate	ND	1.0	EPA 8260C	12-4-17	12-4-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Butanone	ND	5.0	EPA 8260C	12-4-17	12-4-17	
Bromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroform	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Benzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Trichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Dibromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromodichloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chloroethyl Vinyl Ether	ND	2.7	EPA 8260C	12-4-17	12-4-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Toluene	ND	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Tetrachloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Hexanone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Dibromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Ethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
m,p-Xylene	ND	0.40	EPA 8260C	12-4-17	12-4-17	
o-Xylene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Styrene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromoform	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Isopropylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Propylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
p-Isopropyltoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Naphthalene	ND	1.3	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichlorobenzene	ND	0.27	EPA 8260C	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*97*	*75-127*				
Toluene-d8	*97*	*80-127*				
4-Bromofluorobenzene	*95*	*78-125*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloromethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Vinyl Chloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Acetone	6.6	5.0	EPA 8260C	12-4-17	12-4-17	
Iodomethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Carbon Disulfide	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methylene Chloride	ND	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Vinyl Acetate	ND	1.0	EPA 8260C	12-4-17	12-4-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Butanone	ND	5.0	EPA 8260C	12-4-17	12-4-17	
Bromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroform	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Benzene	0.68	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Trichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Dibromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromodichloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chloroethyl Vinyl Ether	ND	2.7	EPA 8260C	12-4-17	12-4-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Toluene	1.0	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Tetrachloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Hexanone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Dibromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Ethylbenzene	0.24	0.20	EPA 8260C	12-4-17	12-4-17	
m,p-Xylene	0.46	0.40	EPA 8260C	12-4-17	12-4-17	
o-Xylene	0.28	0.20	EPA 8260C	12-4-17	12-4-17	
Styrene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromoform	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Isopropylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Propylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trimethylbenzene	0.27	0.20	EPA 8260C	12-4-17	12-4-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
p-Isopropyltoluene	5.7	0.20	EPA 8260C	12-4-17	12-4-17	Y
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Naphthalene	ND	1.3	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichlorobenzene	ND	0.27	EPA 8260C	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*97*	*75-127*				
Toluene-d8	*97*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				

Date of Report: December 8, 2017
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Laboratory Reference: 1712-010
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
alpha-BHC	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
gamma-BHC	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
beta-BHC	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
delta-BHC	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Heptachlor	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Aldrin	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Heptachlor Epoxide	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
4,4'-DDE	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Endosulfan I	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Dieldrin	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Endrin	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
4,4'-DDD	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Endosulfan II	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
4,4'-DDT	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Methoxychlor	**ND**	0.0094	EPA 8081B	12-6-17	12-6-17	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	12-6-17	12-6-17	
Endrin Ketone	**ND**	0.019	EPA 8081B	12-6-17	12-6-17	
Toxaphene	**ND**	0.047	EPA 8081B	12-6-17	12-6-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*58*	*31-116*				
DCB	*72*	*42-126*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
alpha-BHC	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
gamma-BHC	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
beta-BHC	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
delta-BHC	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Heptachlor	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Aldrin	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Heptachlor Epoxide	**0.011**	0.0048	EPA 8081B	12-6-17	12-6-17	
gamma-Chlordane	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
alpha-Chlordane	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
4,4'-DDE	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Endosulfan I	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Dieldrin	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Endrin	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
4,4'-DDD	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Endosulfan II	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
4,4'-DDT	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Endrin Aldehyde	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Methoxychlor	**ND**	0.0095	EPA 8081B	12-6-17	12-6-17	
Endosulfan Sulfate	**ND**	0.0048	EPA 8081B	12-6-17	12-6-17	
Endrin Ketone	**ND**	0.019	EPA 8081B	12-6-17	12-6-17	
Toxaphene	**ND**	0.048	EPA 8081B	12-6-17	12-6-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*40*	*31-116*				
DCB	*56*	*42-126*				

Date of Report: December 8, 2017
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TOTAL METALS
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	12-010-01					
Client ID:	**MW-1-171201**					
Arsenic	**ND**	3.3	200.8	12-5-17	12-5-17	
Cadmium	**ND**	4.4	200.8	12-5-17	12-5-17	
Chromium	**ND**	11	200.8	12-5-17	12-5-17	
Lead	**ND**	1.1	200.8	12-5-17	12-5-17	
Nickel	**ND**	22	200.8	12-5-17	12-5-17	
Zinc	**ND**	28	200.8	12-5-17	12-5-17	
Lab ID:	12-010-02					
Client ID:	**MW-2-171201**					
Arsenic	**ND**	3.3	200.8	12-5-17	12-5-17	
Cadmium	**ND**	4.4	200.8	12-5-17	12-5-17	
Chromium	**ND**	11	200.8	12-5-17	12-5-17	
Lead	**ND**	1.1	200.8	12-5-17	12-5-17	
Nickel	**ND**	22	200.8	12-5-17	12-5-17	
Zinc	**ND**	28	200.8	12-5-17	12-5-17	

Date of Report: December 8, 2017
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Laboratory Reference: 1712-010
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-171201**					
Laboratory ID:	12-010-01					
Naphthalene	**ND**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
2-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
1-Methylnaphthalene	**ND**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Chrysene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*25 - 107*				
Pyrene-d10	*80*	*28 - 103*				
Terphenyl-d14	*88*	*36 - 129*				

Date of Report: December 8, 2017
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PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-171201**					
Laboratory ID:	12-010-02					
Naphthalene	**0.60**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
2-Methylnaphthalene	**0.42**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
1-Methylnaphthalene	**0.37**	0.094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]anthracene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Chrysene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[b]fluoranthene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]pyrene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*25 - 107*				
Pyrene-d10	*90*	*28 - 103*				
Terphenyl-d14	*84*	*36 - 129*				

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NWTPH-Gx
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1207W2					
Gasoline	**ND**	100	NWTPH-Gx	12-7-17	12-7-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*66-114*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-010-02										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*94*	*91*	*66-114*			

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NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1204W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	12-4-17	12-5-17	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	12-4-17	12-5-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-350-03										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*81*	*79*	*50-150*			

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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1204W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloromethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Vinyl Chloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Trichlorofluoromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Acetone	ND	5.0	EPA 8260C	12-4-17	12-4-17	
Iodomethane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Carbon Disulfide	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methylene Chloride	ND	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Vinyl Acetate	ND	1.0	EPA 8260C	12-4-17	12-4-17	
2,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Butanone	ND	5.0	EPA 8260C	12-4-17	12-4-17	
Bromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chloroform	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Carbon Tetrachloride	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Benzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Trichloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Dibromomethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromodichloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chloroethyl Vinyl Ether	ND	2.7	EPA 8260C	12-4-17	12-4-17	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Toluene	ND	1.0	EPA 8260C	12-4-17	12-4-17	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	12-4-17	12-4-17	

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METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1204W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Tetrachloroethene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Hexanone	ND	2.0	EPA 8260C	12-4-17	12-4-17	
Dibromochloromethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromoethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Chlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Ethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
m,p-Xylene	ND	0.40	EPA 8260C	12-4-17	12-4-17	
o-Xylene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Styrene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromoform	ND	1.0	EPA 8260C	12-4-17	12-4-17	
Isopropylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Bromobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Propylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
2-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
4-Chlorotoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
tert-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
sec-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
p-Isopropyltoluene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
n-Butylbenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	12-4-17	12-4-17	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Hexachlorobutadiene	ND	0.20	EPA 8260C	12-4-17	12-4-17	
Naphthalene	ND	1.3	EPA 8260C	12-4-17	12-4-17	
1,2,3-Trichlorobenzene	ND	0.27	EPA 8260C	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*75-127*				
Toluene-d8	*98*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1204W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**9.89**	**9.83**	10.0	10.0	99	98	63-126	1	21	
Benzene	**10.1**	**10.2**	10.0	10.0	101	102	78-122	1	19	
Trichloroethene	**10.1**	**9.82**	10.0	10.0	101	98	63-120	3	20	
Toluene	**10.5**	**10.4**	10.0	10.0	105	104	79-124	1	19	
Chlorobenzene	**10.4**	**10.1**	10.0	10.0	104	101	78-120	3	19	
Surrogate:										
Dibromofluoromethane					*96*	*99*	*75-127*			
Toluene-d8					*97*	*97*	*80-127*			
4-Bromofluorobenzene					*96*	*96*	*78-125*			

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1206W1					
alpha-BHC	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
gamma-BHC	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
beta-BHC	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
delta-BHC	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Heptachlor	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Aldrin	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Heptachlor Epoxide	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
gamma-Chlordane	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
alpha-Chlordane	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
4,4'-DDE	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Endosulfan I	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Dieldrin	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Endrin	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
4,4'-DDD	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Endosulfan II	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
4,4'-DDT	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Endrin Aldehyde	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Methoxychlor	**ND**	0.010	EPA 8081B	12-6-17	12-6-17	
Endosulfan Sulfate	**ND**	0.0050	EPA 8081B	12-6-17	12-6-17	
Endrin Ketone	**ND**	0.020	EPA 8081B	12-6-17	12-6-17	
Toxaphene	**ND**	0.050	EPA 8081B	12-6-17	12-6-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*67*	*31-116*				
DCB	*90*	*42-126*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1206W1										
	SB	SBD	SB	SBD		SB	SBD				
alpha-BHC	**0.0730**	**0.0775**	0.100	0.100	N/A	**73**	**77**	50-130	6	15	
gamma-BHC	**0.0748**	**0.0791**	0.100	0.100	N/A	**75**	**79**	36-100	6	15	
beta-BHC	**0.0740**	**0.0786**	0.100	0.100	N/A	**74**	**79**	50-130	6	15	
delta-BHC	**0.0617**	**0.0617**	0.100	0.100	N/A	**62**	**62**	50-130	0	15	
Heptachlor	**0.0793**	**0.0847**	0.100	0.100	N/A	**79**	**85**	39-108	7	15	
Aldrin	**0.0726**	**0.0775**	0.100	0.100	N/A	**73**	**78**	36-108	7	15	
Heptachlor Epoxide	**0.0714**	**0.0734**	0.100	0.100	N/A	**71**	**73**	50-130	3	15	
gamma-Chlordane	**0.0720**	**0.0746**	0.100	0.100	N/A	**72**	**75**	50-130	4	15	
alpha-Chlordane	**0.0714**	**0.0741**	0.100	0.100	N/A	**71**	**74**	50-130	4	15	
4,4'-DDE	**0.0866**	**0.0876**	0.100	0.100	N/A	**87**	**88**	50-130	1	15	
Endosulfan I	**0.0753**	**0.0777**	0.100	0.100	N/A	**75**	**78**	50-130	3	15	
Dieldrin	**0.0779**	**0.0804**	0.100	0.100	N/A	**78**	**80**	63-100	3	15	
Endrin	**0.0757**	**0.0784**	0.100	0.100	N/A	**76**	**78**	67-108	4	15	
4,4'-DDD	**0.0884**	**0.0901**	0.100	0.100	N/A	**88**	**90**	50-130	2	15	
Endosulfan II	**0.0767**	**0.0771**	0.100	0.100	N/A	**77**	**77**	50-130	1	15	
4,4'-DDT	**0.0791**	**0.0797**	0.100	0.100	N/A	**79**	**80**	56-107	1	15	
Endrin Aldehyde	**0.0759**	**0.0765**	0.100	0.100	N/A	**76**	**76**	50-130	1	15	
Methoxychlor	**0.0884**	**0.0873**	0.100	0.100	N/A	**88**	**87**	50-130	1	15	
Endosulfan Sulfate	**0.0757**	**0.0760**	0.100	0.100	N/A	**76**	**76**	50-130	0	15	
Endrin Ketone	**0.0764**	**0.0758**	0.100	0.100	N/A	**76**	**76**	50-130	1	15	
Surrogate:											
TCMX						*67*	*70*	*31-116*			
DCB						*91*	*88*	*42-126*			

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

TOTAL METALS
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted: 12-5-17
Date Analyzed: 12-5-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB1205WM1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	11
Lead	200.8	**ND**	1.1
Nickel	200.8	**ND**	22
Zinc	200.8	**ND**	28

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

TOTAL METALS
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 12-5-17
Date Analyzed: 12-5-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: 11-240-09

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	3.3	
Cadmium	**ND**	**ND**	NA	4.4	
Chromium	**ND**	**ND**	NA	11	
Lead	**ND**	**ND**	NA	1.1	
Nickel	**ND**	**ND**	NA	22	
Zinc	**ND**	**ND**	NA	28	

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

TOTAL METALS
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 12-5-17
Date Analyzed: 12-5-17

Matrix: Water
Units: ug/L (ppb)

Lab ID: 11-240-09

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	222	**231**	104	**222**	100	4	
Cadmium	222	**223**	100	**216**	97	3	
Chromium	222	**223**	100	**212**	96	5	
Lead	222	**224**	101	**216**	97	4	
Nickel	222	**216**	97	**208**	94	3	
Zinc	222	**224**	101	**216**	97	4	

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1204W1					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	12-4-17	12-4-17	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	12-4-17	12-4-17	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Chrysene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	12-4-17	12-4-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*25 - 107*				
Pyrene-d10	*81*	*28 - 103*				
Terphenyl-d14	*90*	*36 - 129*				

Date of Report: December 8, 2017
Samples Submitted: December 1, 2017
Laboratory Reference: 1712-010
Project: 1329-003-25

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1204W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.410**	**0.419**	0.500	0.500	82	84	27 - 106	2	35	
Acenaphthylene	**0.480**	**0.483**	0.500	0.500	96	97	20 - 117	1	34	
Acenaphthene	**0.457**	**0.477**	0.500	0.500	91	95	30 - 114	4	32	
Fluorene	**0.482**	**0.503**	0.500	0.500	96	101	36 - 116	4	28	
Phenanthrene	**0.493**	**0.493**	0.500	0.500	99	99	31 - 122	0	26	
Anthracene	**0.500**	**0.504**	0.500	0.500	100	101	33 - 144	1	26	
Fluoranthene	**0.534**	**0.526**	0.500	0.500	107	105	44 - 120	2	25	
Pyrene	**0.538**	**0.533**	0.500	0.500	108	107	40 - 130	1	29	
Benzo[a]anthracene	**0.586**	**0.568**	0.500	0.500	117	114	47 - 131	3	27	
Chrysene	**0.520**	**0.514**	0.500	0.500	104	103	48 - 120	1	29	
Benzo[b]fluoranthene	**0.560**	**0.545**	0.500	0.500	112	109	42 - 128	3	29	
Benzo(j,k)fluoranthene	**0.539**	**0.521**	0.500	0.500	108	104	46 - 121	3	27	
Benzo[a]pyrene	**0.553**	**0.535**	0.500	0.500	111	107	34 - 121	3	29	
Indeno(1,2,3-c,d)pyrene	**0.545**	**0.530**	0.500	0.500	109	106	39 - 128	3	28	
Dibenz[a,h]anthracene	**0.544**	**0.530**	0.500	0.500	109	106	39 - 125	3	30	
Benzo[g,h,i]perylene	**0.539**	**0.515**	0.500	0.500	108	103	41 - 122	5	29	
Surrogate:										
2-Fluorobiphenyl					*70*	*62*	*25 - 107*			
Pyrene-d10					*88*	*81*	*28 - 103*			
Terphenyl-d14					*101*	*93*	*36 - 129*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 1329-003-25
Project Name: KCHA
Project Manager: CALLAN DRISCOLL
Sampled by: BRIAN ANDERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☑ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 12-010

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	TOTAL METALS-NOTES	cPAHs 8270 SIM	NAPHTHALENE 8270 SIM		% Moisture
1	MW-1-171201	12-1-17	1044	W	3		X		X	X						X							X	X	X		
2	MW-2-171201	12-1-17	0936	W	3		X		X	X						X							X	X	X		

	Signature	Company	Date	Time
Relinquished		GEOENGINEERS	12-1-17	1326
Received		OES	12/1/17	1326
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

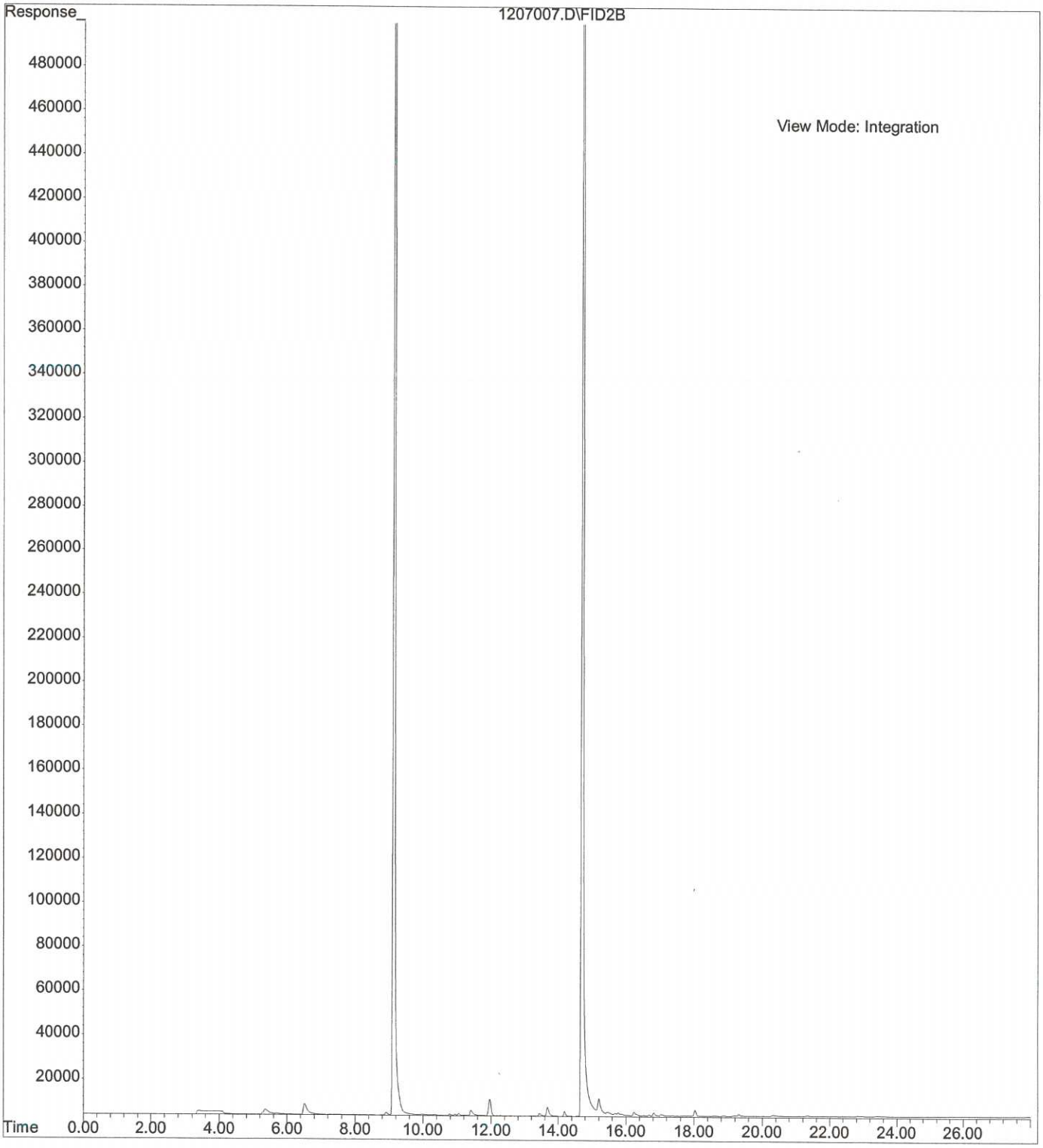
Comments/Special Instructions

TOTAL METALS: As, Cd, Cr, Ni, Pb, Zn EPA 200.8

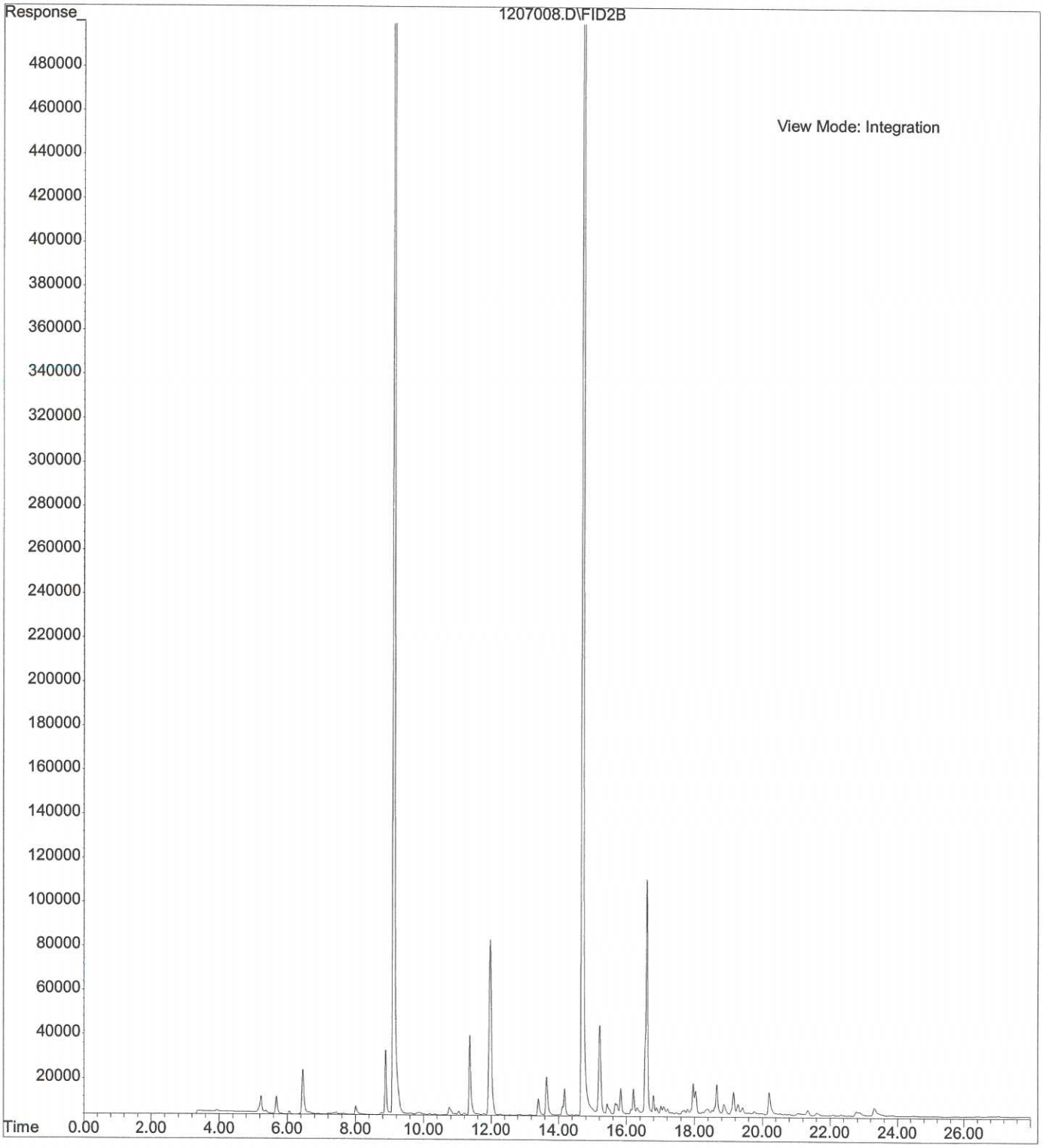
Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

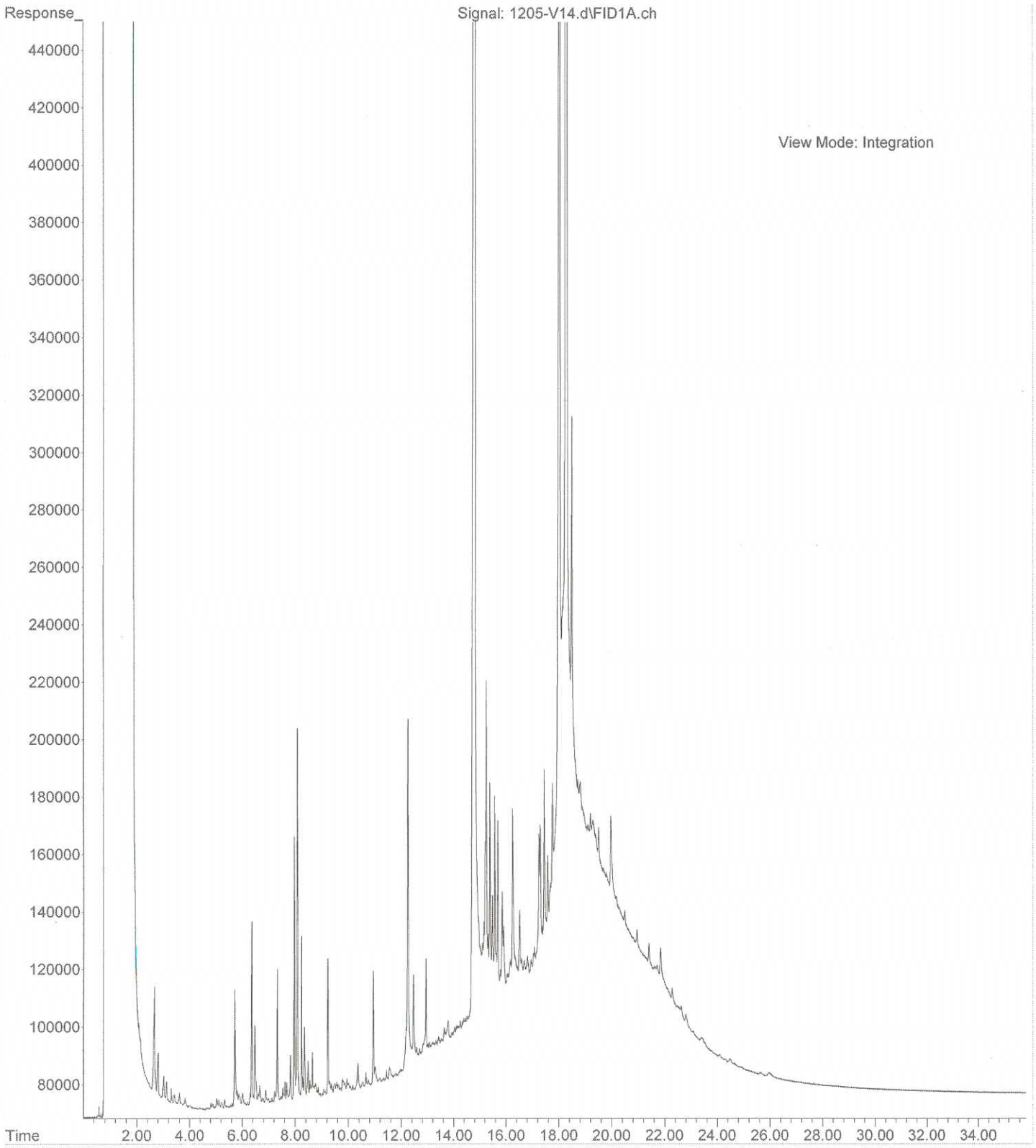
File : X:\BTEX\HOPE\DATA\H171207\1207007.D
Operator :
Acquired : 7 Dec 2017 13:37 using AcqMethod 171103B.M
Instrument : Hope
Sample Name: 12-010-01j
Misc Info :
Vial Number: 7



File : X:\BTEX\HOPE\DATA\H171207\1207008.D
Operator :
Acquired : 7 Dec 2017 14:11 using AcqMethod 171103B.M
Instrument : Hope
Sample Name: 12-010-02j
Misc Info :
Vial Number: 8

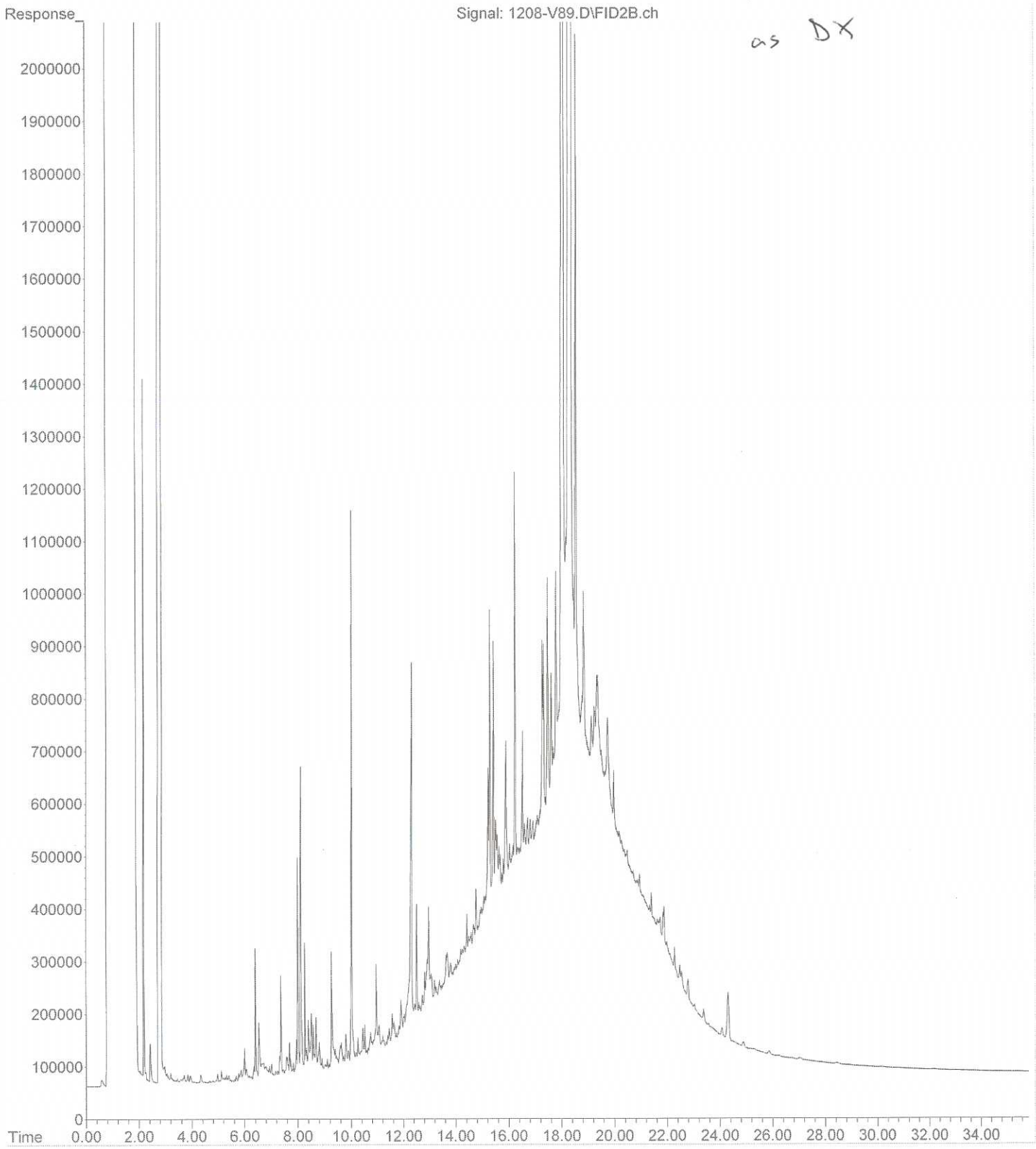


File :C:\msdchem\2\data\V171205\1205-V14.d
Operator :
Acquired : 5 Dec 2017 22:04 using AcqMethod V171020F.M
Instrument : Vigo
Sample Name: 12-010-02
Misc Info :
Vial Number: 14



File :C:\msdchem\2\data\V171208.SEC\1208-V89.D
Operator :
Acquired : 9 Dec 2017 14:02 using AcqMethod V171020F.M
Instrument : Vigo
Sample Name: 12-010-02
Misc Info :
Vial Number: 89

PAH run as DX



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 8, 2018

Dana Carlisle
GeoEngineers, Inc.
17425 NE Union Hill Road, Suite 250
Redmond, WA 98052

Re: Analytical Data for Project 1329-003-25
Laboratory Reference No. 1804-328

Dear Dana:

Enclosed are the analytical results and associated quality control data for samples submitted on April 30, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

Case Narrative

Samples were collected on April 30, 2018 and received by the laboratory on April 30, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-180430	04-328-01	Water	4-30-18	4-30-18	
MW-2-180430	04-328-02	Water	4-30-18	4-30-18	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

NWTPH-Gx

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
Gasoline	**ND**	100	NWTPH-Gx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*66-117*				
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
Gasoline	**ND**	100	NWTPH-Gx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*66-117*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-1-18	5-1-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
Diesel Range Organics	**0.52**	0.26	NWTPH-Dx	5-1-18	5-1-18	N
Lube Oil Range Organics	**2.0**	0.41	NWTPH-Dx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloromethane	ND	1.8	EPA 8260C	5-1-18	5-1-18	
Vinyl Chloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromomethane	ND	0.68	EPA 8260C	5-1-18	5-1-18	
Chloroethane	ND	1.0	EPA 8260C	5-1-18	5-1-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Acetone	ND	5.0	EPA 8260C	5-1-18	5-1-18	
Iodomethane	ND	3.3	EPA 8260C	5-1-18	5-1-18	
Carbon Disulfide	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methylene Chloride	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Vinyl Acetate	ND	1.0	EPA 8260C	5-1-18	5-1-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Butanone	ND	5.0	EPA 8260C	5-1-18	5-1-18	
Bromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloroform	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Benzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Trichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Dibromomethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromodichloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Toluene	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Tetrachloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Hexanone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Dibromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Ethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
m,p-Xylene	ND	0.40	EPA 8260C	5-1-18	5-1-18	
o-Xylene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Styrene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromoform	ND	1.4	EPA 8260C	5-1-18	5-1-18	
Isopropylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Propylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromo-3-chloropropane	ND	1.6	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trichlorobenzene	ND	0.37	EPA 8260C	5-1-18	5-1-18	
Hexachlorobutadiene	ND	1.9	EPA 8260C	5-1-18	5-1-18	
Naphthalene	ND	2.3	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichlorobenzene	ND	0.52	EPA 8260C	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*75-127*				
Toluene-d8	*98*	*80-127*				
4-Bromofluorobenzene	*97*	*78-125*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloromethane	ND	1.8	EPA 8260C	5-1-18	5-1-18	
Vinyl Chloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromomethane	ND	0.68	EPA 8260C	5-1-18	5-1-18	
Chloroethane	ND	1.0	EPA 8260C	5-1-18	5-1-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Acetone	10	5.0	EPA 8260C	5-1-18	5-1-18	
Iodomethane	ND	3.3	EPA 8260C	5-1-18	5-1-18	
Carbon Disulfide	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methylene Chloride	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Vinyl Acetate	ND	1.0	EPA 8260C	5-1-18	5-1-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Butanone	ND	5.0	EPA 8260C	5-1-18	5-1-18	
Bromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloroform	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Benzene	0.40	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Trichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Dibromomethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromodichloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Toluene	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	

Date of Report: May 8, 2018
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Project: 1329-003-25

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Tetrachloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Hexanone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Dibromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Ethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
m,p-Xylene	ND	0.40	EPA 8260C	5-1-18	5-1-18	
o-Xylene	0.22	0.20	EPA 8260C	5-1-18	5-1-18	
Styrene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromoform	ND	1.4	EPA 8260C	5-1-18	5-1-18	
Isopropylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Propylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trimethylbenzene	0.23	0.20	EPA 8260C	5-1-18	5-1-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
p-Isopropyltoluene	6.8	0.20	EPA 8260C	5-1-18	5-1-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromo-3-chloropropane	ND	1.6	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trichlorobenzene	ND	0.37	EPA 8260C	5-1-18	5-1-18	
Hexachlorobutadiene	ND	1.9	EPA 8260C	5-1-18	5-1-18	
Naphthalene	ND	2.3	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichlorobenzene	ND	0.52	EPA 8260C	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*99*	*75-127*				
Toluene-d8	*98*	*80-127*				
4-Bromofluorobenzene	*96*	*78-125*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
alpha-BHC	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
gamma-BHC	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
beta-BHC	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
delta-BHC	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Heptachlor	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Aldrin	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Heptachlor Epoxide	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
gamma-Chlordane	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
alpha-Chlordane	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
4,4'-DDE	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Endosulfan I	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Dieldrin	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Endrin	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
4,4'-DDD	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Endosulfan II	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
4,4'-DDT	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Endrin Aldehyde	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Methoxychlor	**ND**	0.0095	EPA 8081B	5-1-18	5-3-18	
Endosulfan Sulfate	**ND**	0.0048	EPA 8081B	5-1-18	5-3-18	
Endrin Ketone	**ND**	0.019	EPA 8081B	5-1-18	5-3-18	
Toxaphene	**ND**	0.048	EPA 8081B	5-1-18	5-3-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*92*	*28-110*				
DCB	*75*	*37-142*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
alpha-BHC	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
gamma-BHC	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
beta-BHC	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
delta-BHC	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Heptachlor	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Aldrin	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Heptachlor Epoxide	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
4,4'-DDE	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Endosulfan I	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Dieldrin	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Endrin	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
4,4'-DDD	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Endosulfan II	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
4,4'-DDT	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Methoxychlor	**ND**	0.0094	EPA 8081B	5-1-18	5-3-18	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	5-1-18	5-3-18	
Endrin Ketone	**ND**	0.019	EPA 8081B	5-1-18	5-3-18	
Toxaphene	**ND**	0.047	EPA 8081B	5-1-18	5-3-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*60*	*28-110*				
DCB	*56*	*37-142*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
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Project: 1329-003-25

TOTAL METALS
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	04-328-01					
Client ID:	**MW-1-180430**					
Arsenic	**ND**	3.3	200.8	5-3-18	5-3-18	
Cadmium	**ND**	4.4	200.8	5-3-18	5-3-18	
Chromium	**30**	11	200.8	5-3-18	5-3-18	
Lead	**2.1**	1.1	200.8	5-3-18	5-3-18	
Nickel	**ND**	22	200.8	5-3-18	5-3-18	
Zinc	**ND**	28	200.8	5-3-18	5-3-18	
Lab ID:	04-328-02					
Client ID:	**MW-2-180430**					
Arsenic	**ND**	3.3	200.8	5-3-18	5-3-18	
Cadmium	**ND**	4.4	200.8	5-3-18	5-3-18	
Chromium	**ND**	11	200.8	5-3-18	5-3-18	
Lead	**ND**	1.1	200.8	5-3-18	5-3-18	
Nickel	**ND**	22	200.8	5-3-18	5-3-18	
Zinc	**ND**	28	200.8	5-3-18	5-3-18	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180430**					
Laboratory ID:	04-328-01					
Naphthalene	**ND**	0.095	EPA 8270D/SIM	5-1-18	5-1-18	
2-Methylnaphthalene	**ND**	0.095	EPA 8270D/SIM	5-1-18	5-1-18	
1-Methylnaphthalene	**ND**	0.095	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]anthracene	**ND**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Chrysene	**0.011**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[b]fluoranthene	**0.0098**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo(j,k)fluoranthene	**ND**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]pyrene	**ND**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Dibenz[a,h]anthracene	**ND**	0.0095	EPA 8270D/SIM	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*62*	*21 - 110*				
Pyrene-d10	*86*	*19 - 111*				
Terphenyl-d14	*85*	*32 - 137*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180430**					
Laboratory ID:	04-328-02					
Naphthalene	**0.44**	0.097	EPA 8270D/SIM	5-1-18	5-1-18	
2-Methylnaphthalene	**0.30**	0.097	EPA 8270D/SIM	5-1-18	5-1-18	
1-Methylnaphthalene	**0.27**	0.097	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]anthracene	**0.012**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Chrysene	**ND**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[b]fluoranthene	**0.010**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo(j,k)fluoranthene	**ND**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]pyrene	**ND**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Dibenz[a,h]anthracene	**ND**	0.0097	EPA 8270D/SIM	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*21 - 110*				
Pyrene-d10	*78*	*19 - 111*				
Terphenyl-d14	*78*	*32 - 137*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

NWTPH-Gx
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0501W1					
Gasoline	**ND**	100	NWTPH-Gx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*66-117*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-302-01										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*91*	*89*	*66-117*			

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0501W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	5-1-18	5-1-18	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-327-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*98*	*97*	*50-150*			

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0501W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloromethane	ND	1.8	EPA 8260C	5-1-18	5-1-18	
Vinyl Chloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromomethane	ND	0.68	EPA 8260C	5-1-18	5-1-18	
Chloroethane	ND	1.0	EPA 8260C	5-1-18	5-1-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Acetone	ND	5.0	EPA 8260C	5-1-18	5-1-18	
Iodomethane	ND	3.3	EPA 8260C	5-1-18	5-1-18	
Carbon Disulfide	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methylene Chloride	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Vinyl Acetate	ND	1.0	EPA 8260C	5-1-18	5-1-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Butanone	ND	5.0	EPA 8260C	5-1-18	5-1-18	
Bromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chloroform	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Benzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Trichloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Dibromomethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromodichloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Toluene	ND	1.0	EPA 8260C	5-1-18	5-1-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	5-1-18	5-1-18	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
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Project: 1329-003-25

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0501W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Tetrachloroethene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Hexanone	ND	2.0	EPA 8260C	5-1-18	5-1-18	
Dibromochloromethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromoethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Chlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Ethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
m,p-Xylene	ND	0.40	EPA 8260C	5-1-18	5-1-18	
o-Xylene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Styrene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromoform	ND	1.4	EPA 8260C	5-1-18	5-1-18	
Isopropylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
Bromobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Propylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
n-Butylbenzene	ND	0.20	EPA 8260C	5-1-18	5-1-18	
1,2-Dibromo-3-chloropropane	ND	1.6	EPA 8260C	5-1-18	5-1-18	
1,2,4-Trichlorobenzene	ND	0.37	EPA 8260C	5-1-18	5-1-18	
Hexachlorobutadiene	ND	1.9	EPA 8260C	5-1-18	5-1-18	
Naphthalene	ND	2.3	EPA 8260C	5-1-18	5-1-18	
1,2,3-Trichlorobenzene	ND	0.52	EPA 8260C	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*75-127*				
Toluene-d8	*99*	*80-127*				
4-Bromofluorobenzene	*98*	*78-125*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0501W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**8.56**	**8.51**	10.0	10.0	86	85	63-126	1	21	
Benzene	**9.40**	**9.33**	10.0	10.0	94	93	78-122	1	19	
Trichloroethene	**8.82**	**8.95**	10.0	10.0	88	90	63-120	1	20	
Toluene	**9.34**	**9.49**	10.0	10.0	93	95	79-124	2	19	
Chlorobenzene	**8.29**	**8.45**	10.0	10.0	83	85	78-120	2	19	
Surrogate:										
Dibromofluoromethane					*103*	*100*	*75-127*			
Toluene-d8					*100*	*100*	*80-127*			
4-Bromofluorobenzene					*99*	*99*	*78-125*			

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0501W1					
alpha-BHC	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
gamma-BHC	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
beta-BHC	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
delta-BHC	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Heptachlor	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Aldrin	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Heptachlor Epoxide	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
gamma-Chlordane	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
alpha-Chlordane	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
4,4'-DDE	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Endosulfan I	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Dieldrin	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Endrin	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
4,4'-DDD	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Endosulfan II	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
4,4'-DDT	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Endrin Aldehyde	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Methoxychlor	**ND**	0.010	EPA 8081B	5-1-18	5-3-18	
Endosulfan Sulfate	**ND**	0.0050	EPA 8081B	5-1-18	5-3-18	
Endrin Ketone	**ND**	0.020	EPA 8081B	5-1-18	5-3-18	
Toxaphene	**ND**	0.050	EPA 8081B	5-1-18	5-3-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*97*	*28-110*				
DCB	*118*	*37-142*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0501W1										
	SB	SBD	SB	SBD		SB	SBD				
alpha-BHC	**0.0707**	**0.0737**	0.100	0.100	N/A	**71**	**74**	59-107	4	15	
gamma-BHC	**0.0758**	**0.0782**	0.100	0.100	N/A	**76**	**78**	61-109	3	15	
beta-BHC	**0.0910**	**0.0875**	0.100	0.100	N/A	**91**	**87**	61-122	4	15	
delta-BHC	**0.0607**	**0.0607**	0.100	0.100	N/A	**61**	**61**	30-130	0	15	
Heptachlor	**0.0930**	**0.0969**	0.100	0.100	N/A	**93**	**97**	51-126	4	15	
Aldrin	**0.0821**	**0.0846**	0.100	0.100	N/A	**82**	**85**	46-125	3	15	
Heptachlor Epoxide	**0.0966**	**0.0952**	0.100	0.100	N/A	**97**	**95**	52-132	1	15	
gamma-Chlordane	**0.0727**	**0.0674**	0.100	0.100	N/A	**73**	**67**	52-129	8	15	
alpha-Chlordane	**0.0898**	**0.0871**	0.100	0.100	N/A	**90**	**87**	53-129	3	15	
4,4'-DDE	**0.0954**	**0.0871**	0.100	0.100	N/A	**95**	**87**	66-126	9	15	
Endosulfan I	**0.0938**	**0.0899**	0.100	0.100	N/A	**94**	**90**	56-143	4	15	
Dieldrin	**0.0940**	**0.0899**	0.100	0.100	N/A	**94**	**90**	60-125	4	15	
Endrin	**0.108**	**0.104**	0.100	0.100	N/A	**108**	**104**	59-134	4	15	
4,4'-DDD	**0.0980**	**0.0975**	0.100	0.100	N/A	**98**	**97**	69-137	1	15	
Endosulfan II	**0.0915**	**0.0884**	0.100	0.100	N/A	**92**	**88**	58-128	3	15	
4,4'-DDT	**0.107**	**0.103**	0.100	0.100	N/A	**107**	**103**	60-132	4	15	
Endrin Aldehyde	**0.101**	**0.0983**	0.100	0.100	N/A	**101**	**98**	58-121	3	15	
Methoxychlor	**0.116**	**0.118**	0.100	0.100	N/A	**116**	**118**	67-137	2	15	
Endosulfan Sulfate	**0.0942**	**0.0893**	0.100	0.100	N/A	**94**	**89**	61-116	5	15	
Endrin Ketone	**0.104**	**0.102**	0.100	0.100	N/A	**104**	**102**	58-120	2	15	
Surrogate:											
TCMX						*87*	*95*	*28-110*			
DCB						*114*	*110*	*37-142*			

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

TOTAL METALS
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted: 5-3-18
Date Analyzed: 5-3-18

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0503WM1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.3
Cadmium	200.8	**ND**	4.4
Chromium	200.8	**ND**	11
Lead	200.8	**ND**	1.1
Nickel	200.8	**ND**	22
Zinc	200.8	**ND**	28

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

TOTAL METALS
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 5-3-18
Date Analyzed: 5-3-18

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-213-05

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**12.3**	**11.4**	8	3.3	
Cadmium	**ND**	**ND**	NA	4.4	
Chromium	**ND**	**ND**	NA	11	
Lead	**ND**	**ND**	NA	1.1	
Nickel	**ND**	**ND**	NA	22	
Zinc	**ND**	**ND**	NA	28	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

TOTAL METALS
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 5-3-18
Date Analyzed: 5-3-18

Matrix: Water
Units: ug/L (ppb)

Lab ID: 04-213-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	222	**224**	96	**222**	95	1	
Cadmium	222	**207**	93	**205**	92	1	
Chromium	222	**208**	94	**213**	96	2	
Lead	222	**201**	90	**203**	91	1	
Nickel	222	**202**	91	**202**	91	0	
Zinc	222	**207**	93	**204**	92	1	

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0501W1					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	5-1-18	5-1-18	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	5-1-18	5-1-18	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Chrysene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	5-1-18	5-1-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*21 - 110*				
Pyrene-d10	*89*	*19 - 111*				
Terphenyl-d14	*92*	*32 - 137*				

Date of Report: May 8, 2018
Samples Submitted: April 30, 2018
Laboratory Reference: 1804-328
Project: 1329-003-25

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0501W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.262**	**0.272**	0.500	0.500	52	54	28 - 109	4	38	
Benzo[a]anthracene	**0.390**	**0.391**	0.500	0.500	78	78	57 - 127	0	15	
Chrysene	**0.380**	**0.395**	0.500	0.500	76	79	51 - 120	4	15	
Benzo[b]fluoranthene	**0.381**	**0.380**	0.500	0.500	76	76	54 - 124	0	17	
Benzo(j,k)fluoranthene	**0.402**	**0.420**	0.500	0.500	80	84	50 - 127	4	18	
Benzo[a]pyrene	**0.361**	**0.372**	0.500	0.500	72	74	50 - 120	3	16	
Indeno(1,2,3-c,d)pyrene	**0.341**	**0.343**	0.500	0.500	68	69	46 - 132	1	20	
Dibenz[a,h]anthracene	**0.370**	**0.373**	0.500	0.500	74	75	49 - 129	1	18	
Surrogate:										
2-Fluorobiphenyl					*52*	*57*	*21 - 110*			
Pyrene-d10					*76*	*75*	*19 - 111*			
Terphenyl-d14					*77*	*77*	*32 - 137*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 1329-003-25
Project Name: KCHA
Project Manager: DANA CARLISLE
Sampled by: BRIAN ANDERSON

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 04-328

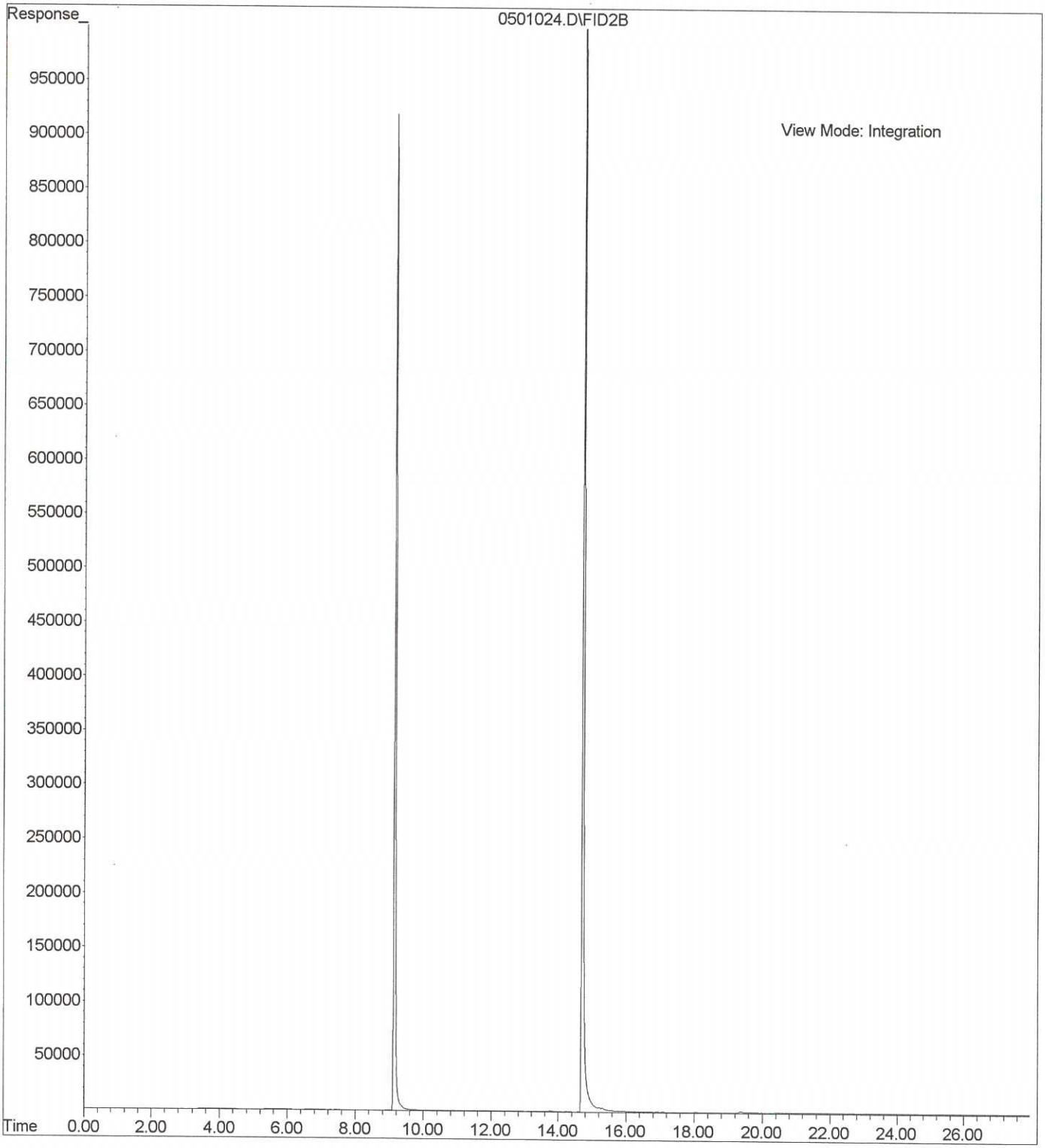
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	TOTAL METALS-NOTES	cPAHs 8270 SIM	NAPHTHALENES		% Moisture
1	MW-1-180430	4-30-18	1140	W	12		2		2	2						2							4	4	4		
2	MW-2-180430	4-30-18	1022	W	12		2		2	2						2						2	4	4	4		

	Signature	Company	Date	Time
Relinquished		GEOENGINEER	4-30-18	1530
Received		OSE	4/30/18	1530
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

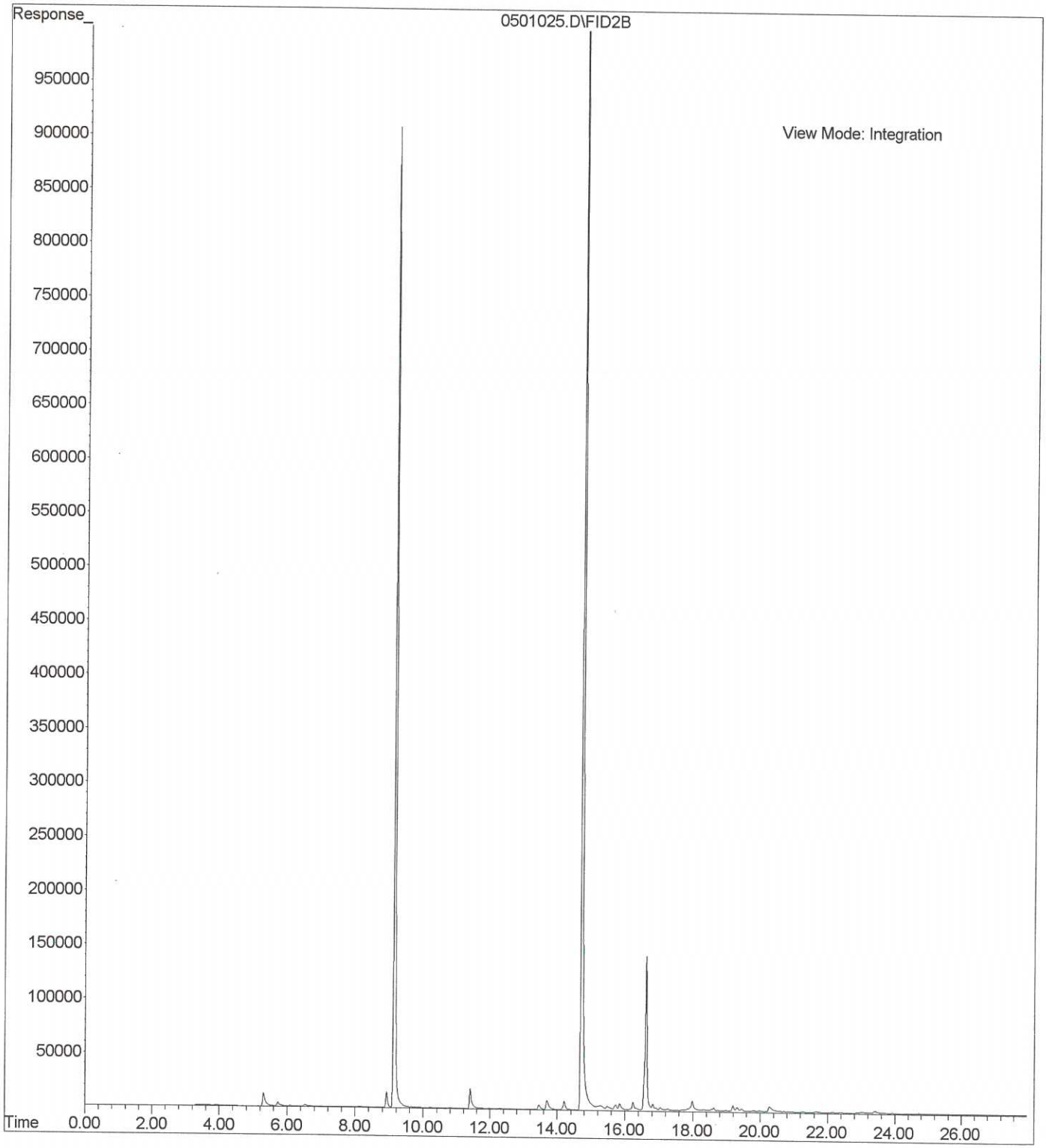
Comments/Special Instructions
As, Cd, Cr, Ni, Pb, Zn EPA 200.8

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

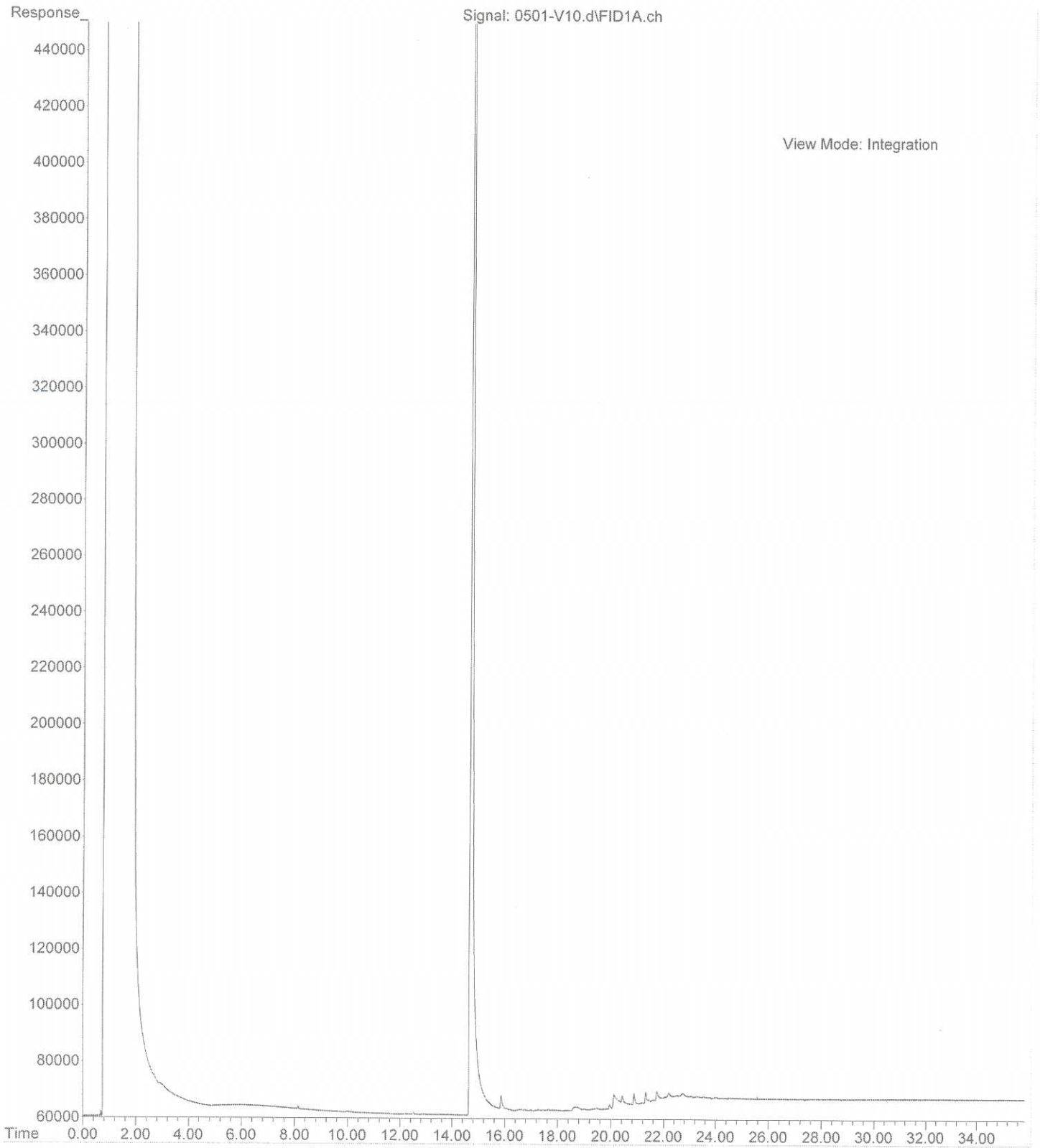
File : X:\BTEX\HOPE\DATA\H180501\0501024.D
Operator :
Acquired : 1 May 2018 23:48 using AcqMethod 180429B.M
Instrument : Hope
Sample Name: 04-328-01j
Misc Info :
Vial Number: 24



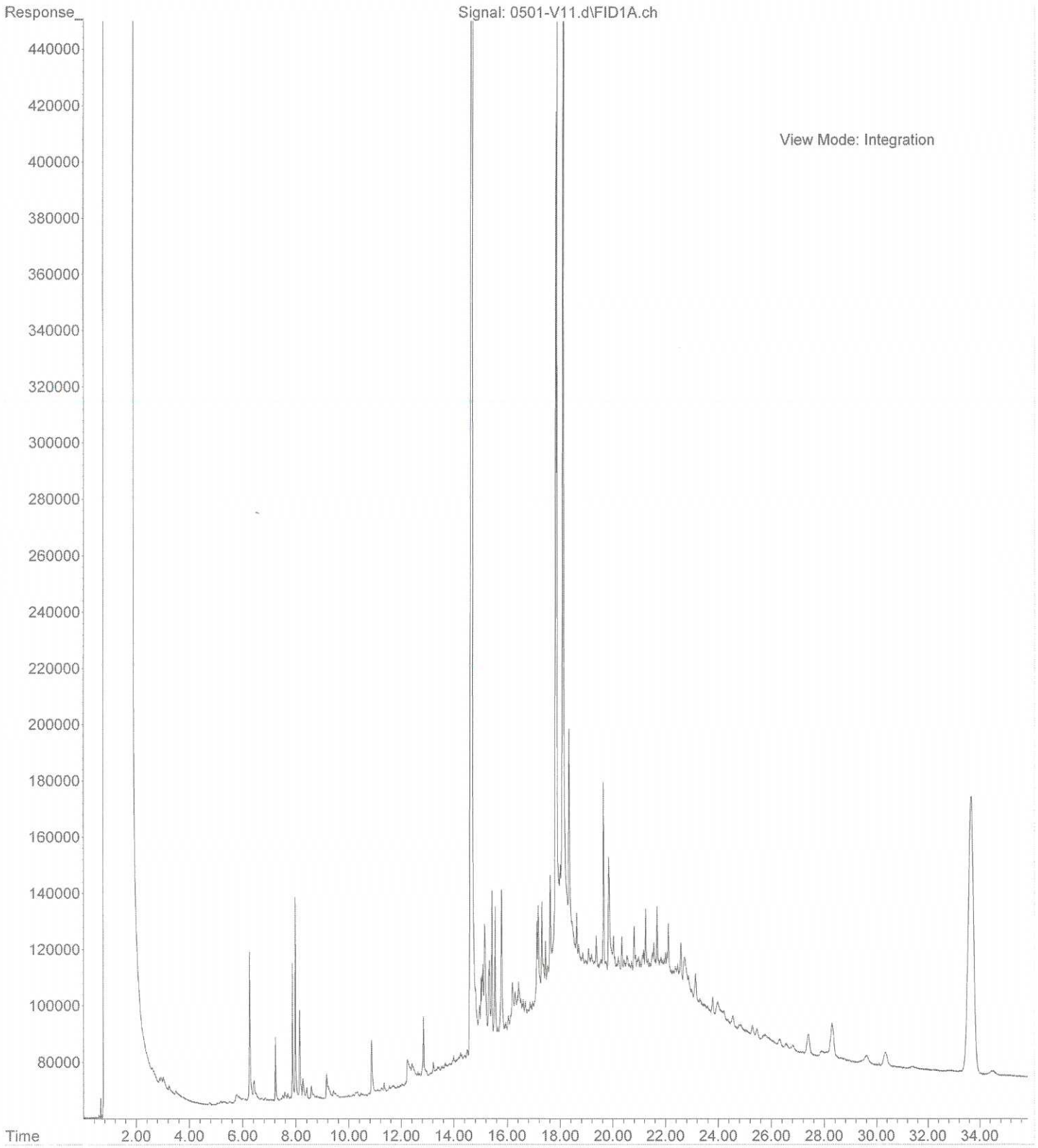
File : X:\BTEX\HOPE\DATA\H180501\0501025.D
Operator :
Acquired : 2 May 2018 00:18 using AcqMethod 180429B.M
Instrument : Hope
Sample Name: 04-328-02j
Misc Info :
Vial Number: 25



File :C:\msdchem\2\data\V180501\0501-V10.d
Operator : JT
Acquired : 1 May 2018 12:43 using AcqMethod V180313F.M
Instrument : Vigo
Sample Name: 04-328-01
Misc Info :
Vial Number: 10



File :C:\msdchem\2\data\V180501\0501-V11.d
Operator : JT
Acquired : 1 May 2018 13:23 using AcqMethod V180313F.M
Instrument : Vigo
Sample Name: 04-328-02
Misc Info :
Vial Number: 11



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 26, 2018

Katy Atakturk
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 1329-003-25
Laboratory Reference No. 1807-118

Dear Katy:

Enclosed are the analytical results and associated quality control data for samples submitted on July 18, 2018.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

Case Narrative

Samples were collected on July 18, 2018 and received by the laboratory on July 18, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

PAHs EPA 8270D/SIM Analysis

The method blank had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1-180718	07-118-01	Water	7-18-18	7-18-18	
MW-2-180718	07-118-02	Water	7-18-18	7-18-18	

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

NWTPH-Gx

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
Gasoline	**ND**	100	NWTPH-Gx	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*77*	*66-117*				
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
Gasoline	**ND**	100	NWTPH-Gx	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*74*	*66-117*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-19-18	7-19-18	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
Diesel Range Organics	**0.49**	0.26	NWTPH-Dx	7-19-18	7-19-18	
Lube Oil Range Organics	**1.4**	0.41	NWTPH-Dx	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloromethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Vinyl Chloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromomethane	ND	2.6	EPA 8260C	7-19-18	7-19-18	
Chloroethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Acetone	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Iodomethane	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Carbon Disulfide	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methylene Chloride	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Vinyl Acetate	ND	1.0	EPA 8260C	7-19-18	7-19-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Butanone	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Bromochloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloroform	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Benzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Trichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Dibromomethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Bromodichloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Toluene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
1,1,2-Trichloroethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Tetrachloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichloropropane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
2-Hexanone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Dibromochloromethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromoethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Chlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Ethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
m,p-Xylene	ND	0.40	EPA 8260C	7-19-18	7-19-18	
o-Xylene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Styrene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromoform	ND	1.3	EPA 8260C	7-19-18	7-19-18	
Isopropylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,2,2-Tetrachloroethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Propylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromo-3-chloropropane	ND	1.4	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trichlorobenzene	ND	0.28	EPA 8260C	7-19-18	7-19-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Naphthalene	ND	1.5	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichlorobenzene	ND	0.30	EPA 8260C	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*75-127*				
Toluene-d8	*99*	*80-127*				
4-Bromofluorobenzene	*95*	*78-125*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloromethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Vinyl Chloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromomethane	ND	2.6	EPA 8260C	7-19-18	7-19-18	
Chloroethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Acetone	9.6	5.0	EPA 8260C	7-19-18	7-19-18	
Iodomethane	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Carbon Disulfide	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methylene Chloride	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Vinyl Acetate	ND	1.0	EPA 8260C	7-19-18	7-19-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Butanone	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Bromochloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloroform	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Benzene	0.47	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Trichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Dibromomethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Bromodichloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Toluene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
1,1,2-Trichloroethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Tetrachloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichloropropane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
2-Hexanone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Dibromochloromethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromoethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Chlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Ethylbenzene	0.23	0.20	EPA 8260C	7-19-18	7-19-18	
m,p-Xylene	0.43	0.40	EPA 8260C	7-19-18	7-19-18	
o-Xylene	0.25	0.20	EPA 8260C	7-19-18	7-19-18	
Styrene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromoform	ND	1.3	EPA 8260C	7-19-18	7-19-18	
Isopropylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,2,2-Tetrachloroethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Propylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trimethylbenzene	0.26	0.20	EPA 8260C	7-19-18	7-19-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
p-Isopropyltoluene	7.8	0.20	EPA 8260C	7-19-18	7-19-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromo-3-chloropropane	ND	1.4	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trichlorobenzene	ND	0.28	EPA 8260C	7-19-18	7-19-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Naphthalene	ND	1.5	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichlorobenzene	ND	0.30	EPA 8260C	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*75-127*				
Toluene-d8	*96*	*80-127*				
4-Bromofluorobenzene	*94*	*78-125*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
alpha-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
gamma-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
beta-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
delta-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Heptachlor	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Aldrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Heptachlor Epoxide	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDE	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endosulfan I	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Dieldrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDD	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endosulfan II	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDT	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Methoxychlor	**ND**	0.0094	EPA 8081B	7-24-18	7-24-18	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin Ketone	**ND**	0.019	EPA 8081B	7-24-18	7-24-18	
Toxaphene	**ND**	0.047	EPA 8081B	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*54*	*28-110*				
DCB	*73*	*37-142*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
alpha-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
gamma-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
beta-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
delta-BHC	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Heptachlor	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Aldrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Heptachlor Epoxide	**0.0053**	0.0047	EPA 8081B	7-24-18	7-24-18	
gamma-Chlordane	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
alpha-Chlordane	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDE	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endosulfan I	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Dieldrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDD	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endosulfan II	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
4,4'-DDT	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin Aldehyde	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Methoxychlor	**ND**	0.0094	EPA 8081B	7-24-18	7-24-18	
Endosulfan Sulfate	**ND**	0.0047	EPA 8081B	7-24-18	7-24-18	
Endrin Ketone	**ND**	0.019	EPA 8081B	7-24-18	7-24-18	
Toxaphene	**ND**	0.047	EPA 8081B	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*33*	*28-110*				
DCB	*54*	*37-142*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
Naphthalene	**ND**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
2-Methylnaphthalene	**ND**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
1-Methylnaphthalene	**ND**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]anthracene	**0.010**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Chrysene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[b]fluoranthene	**0.013**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo(j,k)fluoranthene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]pyrene	**0.011**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Dibenz[a,h]anthracene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*66*	*21 - 110*				
Pyrene-d10	*97*	*19 - 111*				
Terphenyl-d14	*88*	*32 - 137*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

PAHs EPA 8270D/SIM

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
Naphthalene	**0.51**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
2-Methylnaphthalene	**0.37**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
1-Methylnaphthalene	**0.35**	0.096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]anthracene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Chrysene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[b]fluoranthene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo(j,k)fluoranthene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]pyrene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Dibenz[a,h]anthracene	**ND**	0.0096	EPA 8270D/SIM	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*21 - 110*				
Pyrene-d10	*106*	*19 - 111*				
Terphenyl-d14	*99*	*32 - 137*				

Date of Report: July 26, 2018
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TOTAL METALS
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-180718**					
Laboratory ID:	07-118-01					
Arsenic	**ND**	3.3	EPA 200.8	7-23-18	7-23-18	
Cadmium	**ND**	4.4	EPA 200.8	7-23-18	7-23-18	
Chromium	**ND**	11	EPA 200.8	7-23-18	7-23-18	
Lead	**ND**	1.1	EPA 200.8	7-23-18	7-23-18	
Nickel	**ND**	22	EPA 200.8	7-23-18	7-23-18	
Zinc	**ND**	28	EPA 200.8	7-23-18	7-23-18	
Client ID:	**MW-2-180718**					
Laboratory ID:	07-118-02					
Arsenic	**ND**	3.3	EPA 200.8	7-23-18	7-23-18	
Cadmium	**ND**	4.4	EPA 200.8	7-23-18	7-23-18	
Chromium	**ND**	11	EPA 200.8	7-23-18	7-23-18	
Lead	**ND**	1.1	EPA 200.8	7-23-18	7-23-18	
Nickel	**ND**	22	EPA 200.8	7-23-18	7-23-18	
Zinc	**ND**	28	EPA 200.8	7-23-18	7-23-18	

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
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Project: 1329-003-25

NWTPH-Gx
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0724W2					
Gasoline	**ND**	100	NWTPH-Gx	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*73*	*66-117*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-118-01										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*77*	*74*	*66-117*			

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0719W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-19-18	7-19-18	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*75*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-110-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*83*	*99*	*50-150*			

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0719W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloromethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Vinyl Chloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromomethane	ND	2.6	EPA 8260C	7-19-18	7-19-18	
Chloroethane	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Trichlorofluoromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Acetone	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Iodomethane	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Carbon Disulfide	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methylene Chloride	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Vinyl Acetate	ND	1.0	EPA 8260C	7-19-18	7-19-18	
2,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Butanone	ND	5.0	EPA 8260C	7-19-18	7-19-18	
Bromochloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Chloroform	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Carbon Tetrachloride	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Benzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Trichloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Dibromomethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Bromodichloromethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Toluene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	7-19-18	7-19-18	

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0719W1					
1,1,2-Trichloroethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Tetrachloroethene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichloropropane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
2-Hexanone	ND	2.0	EPA 8260C	7-19-18	7-19-18	
Dibromochloromethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromoethane	ND	0.26	EPA 8260C	7-19-18	7-19-18	
Chlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Ethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
m,p-Xylene	ND	0.40	EPA 8260C	7-19-18	7-19-18	
o-Xylene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Styrene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromoform	ND	1.3	EPA 8260C	7-19-18	7-19-18	
Isopropylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
Bromobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,1,2,2-Tetrachloroethane	ND	0.25	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Propylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
2-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
4-Chlorotoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
tert-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
sec-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
p-Isopropyltoluene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
n-Butylbenzene	ND	0.20	EPA 8260C	7-19-18	7-19-18	
1,2-Dibromo-3-chloropropane	ND	1.4	EPA 8260C	7-19-18	7-19-18	
1,2,4-Trichlorobenzene	ND	0.28	EPA 8260C	7-19-18	7-19-18	
Hexachlorobutadiene	ND	1.0	EPA 8260C	7-19-18	7-19-18	
Naphthalene	ND	1.5	EPA 8260C	7-19-18	7-19-18	
1,2,3-Trichlorobenzene	ND	0.30	EPA 8260C	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*75-127*				
Toluene-d8	*97*	*80-127*				
4-Bromofluorobenzene	*94*	*78-125*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0719W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**10.1**	**8.75**	10.0	10.0	101	88	62-129	14	15	
Benzene	**10.5**	**9.23**	10.0	10.0	105	92	77-127	13	15	
Trichloroethene	**9.66**	**8.49**	10.0	10.0	97	85	70-120	13	15	
Toluene	**10.1**	**8.87**	10.0	10.0	101	89	82-123	13	15	
Chlorobenzene	**9.39**	**8.15**	10.0	10.0	94	82	79-120	14	15	
Surrogate:										
Dibromofluoromethane					*102*	*102*	*75-127*			
Toluene-d8					*96*	*96*	*80-127*			
4-Bromofluorobenzene					*94*	*92*	*78-125*			

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0724W1					
alpha-BHC	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
gamma-BHC	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
beta-BHC	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
delta-BHC	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Heptachlor	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Aldrin	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Heptachlor Epoxide	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
gamma-Chlordane	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
alpha-Chlordane	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
4,4'-DDE	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Endosulfan I	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Dieldrin	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Endrin	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
4,4'-DDD	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Endosulfan II	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
4,4'-DDT	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Endrin Aldehyde	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Methoxychlor	**ND**	0.010	EPA 8081B	7-24-18	7-24-18	
Endosulfan Sulfate	**ND**	0.0050	EPA 8081B	7-24-18	7-24-18	
Endrin Ketone	**ND**	0.020	EPA 8081B	7-24-18	7-24-18	
Toxaphene	**ND**	0.050	EPA 8081B	7-24-18	7-24-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
TCMX	*59*	*28-110*				
DCB	*102*	*37-142*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

ORGANOCHLORINE PESTICIDES EPA 8081B SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0724W1										
	SB	SBD	SB	SBD		SB	SBD				
alpha-BHC	**0.0713**	**0.0696**	0.100	0.100	N/A	**71**	**70**	59-107	2	15	
gamma-BHC	**0.0714**	**0.0695**	0.100	0.100	N/A	**71**	**69**	61-109	3	15	
beta-BHC	**0.0836**	**0.0828**	0.100	0.100	N/A	**84**	**83**	61-122	1	15	
delta-BHC	**0.0573**	**0.0552**	0.100	0.100	N/A	**57**	**55**	30-130	4	15	
Heptachlor	**0.0756**	**0.0726**	0.100	0.100	N/A	**76**	**73**	51-126	4	15	
Aldrin	**0.0659**	**0.0624**	0.100	0.100	N/A	**66**	**62**	46-125	5	15	
Heptachlor Epoxide	**0.0862**	**0.0847**	0.100	0.100	N/A	**86**	**85**	52-132	2	15	
gamma-Chlordane	**0.0831**	**0.0819**	0.100	0.100	N/A	**83**	**82**	52-129	1	15	
alpha-Chlordane	**0.0882**	**0.0906**	0.100	0.100	N/A	**88**	**91**	53-129	3	15	
4,4'-DDE	**0.0748**	**0.0754**	0.100	0.100	N/A	**75**	**75**	66-126	1	15	
Endosulfan I	**0.0868**	**0.0852**	0.100	0.100	N/A	**87**	**85**	56-143	2	15	
Dieldrin	**0.0939**	**0.0934**	0.100	0.100	N/A	**94**	**93**	60-125	1	15	
Endrin	**0.0962**	**0.0968**	0.100	0.100	N/A	**96**	**97**	59-134	1	15	
4,4'-DDD	**0.0855**	**0.0870**	0.100	0.100	N/A	**86**	**87**	69-137	2	15	
Endosulfan II	**0.0873**	**0.0890**	0.100	0.100	N/A	**87**	**89**	58-128	2	15	
4,4'-DDT	**0.0858**	**0.0896**	0.100	0.100	N/A	**86**	**90**	60-132	4	15	
Endrin Aldehyde	**0.0930**	**0.0953**	0.100	0.100	N/A	**93**	**95**	58-121	2	15	
Methoxychlor	**0.0919**	**0.0957**	0.100	0.100	N/A	**92**	**96**	67-137	4	15	
Endosulfan Sulfate	**0.0857**	**0.0875**	0.100	0.100	N/A	**86**	**87**	61-116	2	15	
Endrin Ketone	**0.102**	**0.104**	0.100	0.100	N/A	**102**	**104**	58-120	2	15	
Surrogate:											
TCMX						*64*	*59*	*28-110*			
DCB						*102*	*102*	*37-142*			

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0719W1					
Naphthalene	**ND**	0.10	EPA 8270D/SIM	7-19-18	7-19-18	
2-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	7-19-18	7-19-18	
1-Methylnaphthalene	**ND**	0.10	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Chrysene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	7-19-18	7-19-18	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*116*	*21 - 110*				Q
Pyrene-d10	*95*	*19 - 111*				
Terphenyl-d14	*108*	*32 - 137*				

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
Laboratory Reference: 1807-118
Project: 1329-003-25

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0719W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.244**	**0.254**	0.500	0.500	49	51	28 - 109	4	38	
Benzo[a]anthracene	**0.493**	**0.517**	0.500	0.500	99	103	57 - 127	5	15	
Chrysene	**0.449**	**0.474**	0.500	0.500	90	95	51 - 120	5	15	
Benzo[b]fluoranthene	**0.461**	**0.475**	0.500	0.500	92	95	54 - 124	3	17	
Benzo(j,k)fluoranthene	**0.449**	**0.481**	0.500	0.500	90	96	50 - 127	7	18	
Benzo[a]pyrene	**0.463**	**0.485**	0.500	0.500	93	97	50 - 120	5	16	
Indeno(1,2,3-c,d)pyrene	**0.471**	**0.484**	0.500	0.500	94	97	46 - 132	3	20	
Dibenz[a,h]anthracene	**0.454**	**0.474**	0.500	0.500	91	95	49 - 129	4	18	
Surrogate:										
2-Fluorobiphenyl					*65*	*63*	*21 - 110*			
Pyrene-d10					*95*	*99*	*19 - 111*			
Terphenyl-d14					*99*	*99*	*32 - 137*			

Date of Report: July 26, 2018
Samples Submitted: July 18, 2018
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Project: 1329-003-25

TOTAL METALS
EPA 200.8
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0723WM1					
Arsenic	**ND**	3.3	EPA 200.8	7-23-18	7-23-18	
Cadmium	**ND**	4.4	EPA 200.8	7-23-18	7-23-18	
Chromium	**ND**	11	EPA 200.8	7-23-18	7-23-18	
Lead	**ND**	1.1	EPA 200.8	7-23-18	7-23-18	
Nickel	**ND**	22	EPA 200.8	7-23-18	7-23-18	
Zinc	**ND**	28	EPA 200.8	7-23-18	7-23-18	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	07-118-01									
	ORIG	DUP								
Arsenic	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Lead	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Nickel	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Zinc	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	07-118-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	**271**	**263**	222	222	ND	**122**	**118**	75-125	3	20
Cadmium	**234**	**241**	222	222	ND	**106**	**108**	75-125	3	20
Chromium	**221**	**222**	222	222	ND	**99**	**100**	75-125	1	20
Lead	**252**	**252**	222	222	ND	**113**	**114**	75-125	0	20
Nickel	**227**	**232**	222	222	ND	**102**	**105**	75-125	2	20
Zinc	**253**	**248**	222	222	ND	**114**	**112**	75-125	2	20

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 1329-003-25
Project Name: KCHA
Project Manager: KATY ATAKTURK
Sampled by: BRIAN ANDERSON

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☑ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 07-118

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/~~BTEX~~	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs 8270 SIM	NAPHTHALENES	TOTAL METALS - NOTES		% Moisture
1	MW-1-180718	7-18-18	1152	W	13		X		X	X						X							X	X	X		
2	MW-2-180718	7-18-18	1030	W	13		X		X	X						X							X	X	X		

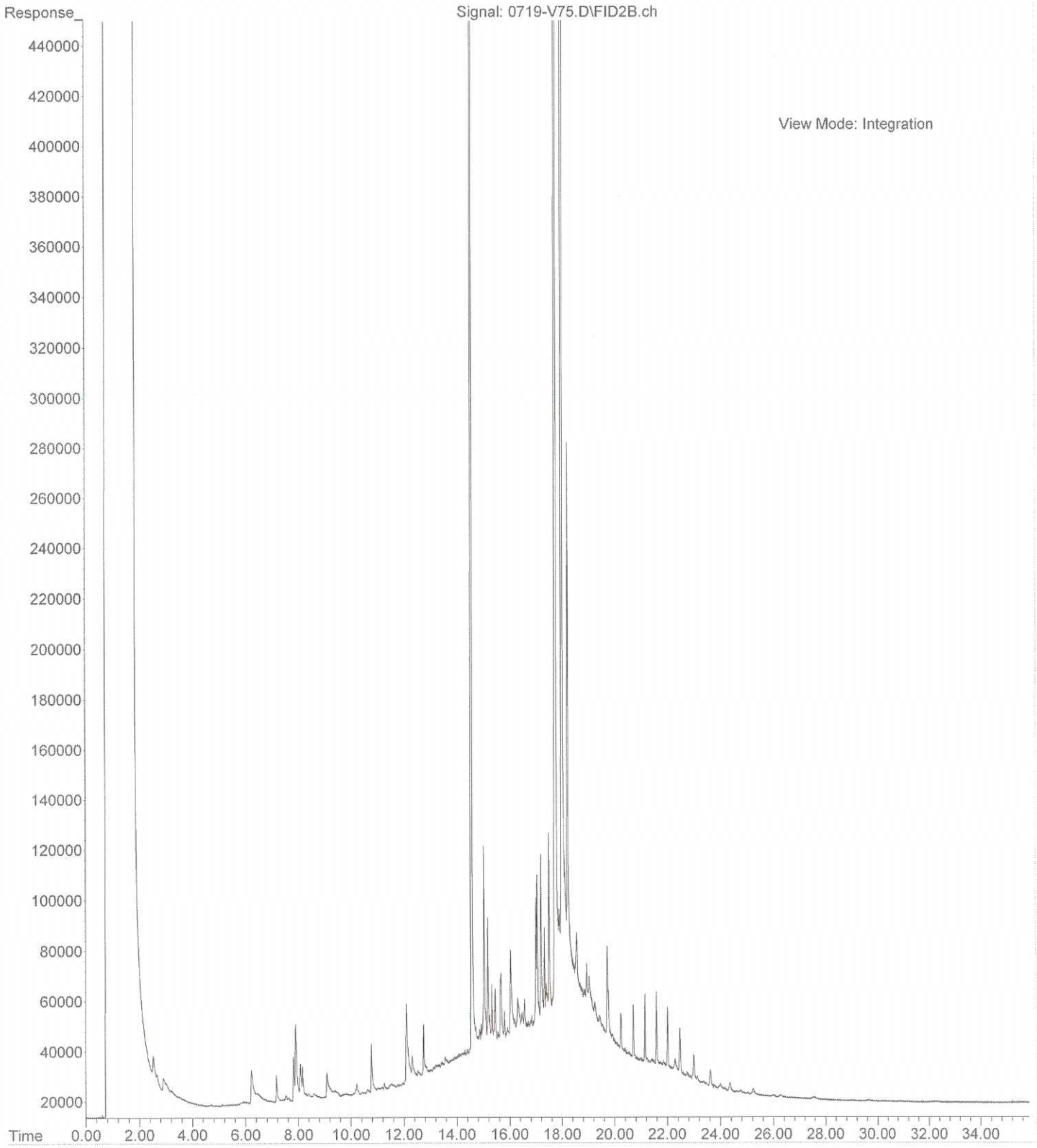
	Signature	Company	Date	Time
Relinquished	B. Anderson	GEOENGINEERS	7-18-18	1420
Received	Hattie Lieer	OSE	7/18/18	1420
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
METALS:
As, Cd, Cr, Ni, Pb, Zn EPA 200.8

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

File : X:\DIESELS\VIGO\DATA\V180719.SEC\0719-V75.D
Operator : JT
Acquired : 20 Jul 2018 1:02 using AcqMethod V180601F.M
Instrument : Vigo
Sample Name: 07-118-02
Misc Info :
Vial Number: 75



APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geosciences practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of King County Housing Authority (KCHA) and their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment or remedial action study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except KCHA should rely on this report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report Is Based on a Unique Set of Project-Specific Factors

This report applies to the Former Park Lake Homes Maintenance Center Site located at 9800 8th Avenue SW located in Seattle, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

---

[1] Developed based on material provided by ASFE, The GeoProfessional Association; www.asfe.org.

Reliance Conditions for Third Parties

No third party may rely on the product of our services unless GeoEngineers agrees in advance, and in writing to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

Environmental Regulations Are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Subsurface Conditions Can Change

This report is based on conditions that existed at the time our site studies were performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes and slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Client desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

Geotechnical, Geologic and Environmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on Site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject Site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

GeoEngineers