Earth Solutions NW LLC

Geotechnical Engineering
Geology
Environmental Scientists
Construction Monitoring

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FOURTH QUARTER GROUNDWATER MONITORING REPORT FORMER DRY CLEANING BUILDING 1006 LAKE STREET SOUTH KIRKLAND, WASHINGTON

ES-2880.05

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PREPARED FOR

POTALA VILLAGE KIRKLAND, LLC

January 7, 2015

Ted W. Sykes
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Principal

FOURTH QUARTER GROUNDWATER MONITORING REPORT FORMER DRY CLEANING BUILDING 1006 LAKE STREET SOUTH KIRKLAND, WASHINGTON

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ES-2880.05

EXECUTIVE SUMMARY

This report summarizes the fourth quarter groundwater monitoring activity performed at 1006 Lake Street South, Kirkland, Washington by Earth Solutions NW, LLC (ESNW). The location of the site is shown on Plate 1.

On April 25, 2014, AMDO, Inc. removed approximately 140 tons (70 cubic yards) of PCE impacted underneath the former dry cleaning building occupying the site. The excavated soil was immediately loaded into plastic lined transport containers and transported by NRC to Columbia Ridge Landfill in Arlington, Oregon for disposal. Confirmation soil sample analytical results indicated that all PCE impacted soil was successfully removed from underneath the former dry cleaning building to concentrations below MTCA Method A soil cleanup levels.

Presented in this report are the results of the third quarter groundwater sampling event completed on December 23, 2014.

During the December 23, 2014 sampling event, groundwater samples were collected from monitoring wells MW-1 and MW-2 that were previously installed at the site by Aspect Consulting, LLC in 2008. A water sample could not be obtained from well MW-3 since it was severely damaged during site grading activities and was decommissioned on August 25, 2014. Locations of the groundwater monitoring wells are presented on Plate 2 in Appendix A.

The samples collected from monitoring wells MW-1 and MW-2 were analyzed for volatile organic compounds (VOCs). Analytical results for groundwater samples collected from monitoring wells MW-1 and MW-2 revealed the following:

- No VOCs were detected above the analytical method reporting limits in water samples obtained from monitoring wells MW-1 and MW-2.

1.0 INTRODUCTION

The subject property is located at the southeast corner of the intersection between Lake Street South and Tenth Street South in Kirkland, Washington (see Plate 1 in Appendix A). The property is currently listed with the address of 1006 Lake Street South. Re-development plans for the property include a multi-family apartment facility with subsurface parking.

Sewer and water services are provided to the site by the City of Kirkland. The surrounding land use consists primarily of apartment buildings, condominiums, and single-family residential homes.

1.1 Background

Between the mid-1990s and 2013, a former dry cleaner, known as Michaels Fine Dry Cleaning, operated out of a commercial building occupying the site. During this time period, volatile organic compounds (VOCs) were released into the environment. Previous site investigations performed between 2006 and 2008 revealed that the detected VOCs in shallow perched groundwater included Tetrachloroethene (PCE) at a concentration of 10 micrograms per liter (µg/L), Trichloroethene (TCE) at a concentration of 2.8 µg/L, and cis-1,2-Dichloroethene (cis-1,2-DCE) at a concentration of 5 µg/L. The concentrations of PCE exceeded the Washington State Model Toxics Control Act (MTCA) Method A groundwater cleanup level of 5 µg/L. Detected concentrations of TCE and cis-1,2-DCE were below their respective cleanup levels. Based on these results, previous site investigations concluded that a release of dry cleaning solvents had occurred, "resulting in adverse environmental impacts in the vicinity of the dry cleaning machine" and that the contamination had not migrated outside the building footprint or site boundaries.

In May 2014, An independent remedial action plan was developed by ESNW and implemented by the current owner of the property as part of Department of Ecology's (Ecology) Voluntary Cleanup Program (VCP) in accordance with the Washington State Model Toxics Control Act (MTCA) and the requirements of WAC 173-340-350 (Remedial Investigation and Feasibility Study) and WAC 173-340-515 (Independent Remedial Actions). The VCP identity number was NW2850.

The Cleanup Action Plan (CAP), developed by ESNW outlined the planned remedial actions for the impacted soil and shallow perched water on site.

1.2 Current and Historic Property Uses

According to an October 15, 2010 *Phase I Environmental Site Assessment* (ESA) prepared by Aspect Consulting (Aspect), the dry cleaning facility formerly occupying the subject site was constructed in 1958 with additions to the eastern and southern parts of the building during the 1960s. A commercial tire store (called "OK Tire Store") operated on the property from 1958 until the mid-1970s. According to historical records, OK Tire Store provided the following services: new tires, tire recapping, wheel alignment, and sale of automotive batteries. Reportedly no hydraulic lifts were on record as being used with the tire service. Other records indicated that the subsequent restaurant tenant (Asia Kitchen) and the dry cleaning tenant (Michaels Fine Dry Cleaning) began occupying the site in the mid-1970s and mid-1990s, respectively. The commercial building was demolished in early 2014 in preparation for site re-development as a multi-family apartment facility.

1.3 Geologic and Hydrologic Setting

According to a December 1, 2010 Geotechnical Engineering Services report prepared for the subject property by GeoEngineers and a December 13, 2013 Geotechnical Engineering Study report prepared for the subject property by ESNW, soil conditions generally concur with the mapped conditions noted above. Specifically, the site is underlain by localized deposits of shallow fill, outwash deposits (primarily upper east half of site), and dense to very dense glacial till and transitional bed silt. At the locations of the recent remedial and soil removal activities, the underlying native soil deposits exposed in excavations were observed to consist of dense to very dense (cemented) glacial till and transitional bed silts.

Based on the December 13, 2013 Geotechnical Engineering Study report prepared for the subject property by ESNW, localized and discrete zones of groundwater seepage exist at depths of approximately 4 to 51.5 feet bgs. Groundwater flow across the site is generally to the west. Throughout the westerly portions of the property where recent remedial activities were focused, groundwater conditions are characterized as a near surface (shallow) perched condition. This conclusion is supported by the observed dense to very dense native soils, and absence of an established groundwater table during recent soil removal activities.

To further characterize the site hydrogeology where recent remedial activities occurred, a deep test pit was excavated in the west – central portion of the site. The test pit was excavated on May 7, 2014 (following unusually heavy March and April rainfall amounts). Very dense (and cemented) glacial till underlain by dense transitional bed silt (below 15 feet) was encountered to the maximum exploration depth of 22 feet bgs. No groundwater seepage was observed. The test excavation was left open for 30 minutes following excavation to further assess potential groundwater seepage condition. No evidence of groundwater seepage (or associated excavation instability) was observed.

Based on the above findings, shallow zones of perched groundwater seepage develop seasonally along the upper contact of the very dense till and transitional bed deposits. These shallow zones of seepage are discrete and not indicative of a regional groundwater table.

Previous environmental exploration activities on the subject property encountered perched groundwater at approximately 4.0 feet below the ground surface. During this groundwater sampling event, groundwater levels were measured within monitoring wells MW-1 and MW-2 at depths ranging between 1' 9" to 2' 3" below the top of the well casings.

2.0 MONITORING WELL SAMPLING PROCEDURES

Sampling activities were conducted on December 23, 2014 by ESNW. Groundwater samples were obtained from wells MW-1 and MW-2 that were previously installed at the site by Aspect Consulting, LLC in 2008. A water sample could not be obtained from well MW-3 since it was severely damaged during site grading activities and was decommissioned on August 25, 2014. Locations of the groundwater monitoring wells are presented on Plate 2 in Appendix A.

Prior to sample collection, each monitoring well was purged using Ecology's October 2011 Standard Operation Procedure for Low Flow Purging and Sampling Monitoring Wells (Version 1.0). The wells were purged until monitored field parameters stabilized. The monitoring wells were allowed to recharge and were then sampled to collect the most representative groundwater sample possible.

Static water levels were measured in the monitoring wells using a water level meter prior to and during well purging and sampling. The probe was decontaminated between measurements. Plastic tubing associated with the peristaltic pump was replaced with new tubing between wells.

Groundwater samples were collected from the wells using a peristaltic pump. Groundwater samples to be analyzed for Volatiles using 8260C were collected free of headspace in three 40 mL glass vials with Teflon-lined septa lid and preserved with 1:1 hydrochloric acid. Groundwater samples were submitted to the laboratory for a five day turn-around time.

All water samples collected at the site were properly labeled with adhesive labels which were affixed to the sample containers containing the following information:

- Collector's initials;
- Sample identification;
- Analytical methods requested;
- Company;
- Sample date; and
- Sample time.

Sampling tools and equipment were protected from contamination sources prior to sampling and were not reused between samples. Sample containers were also protected from contamination sources. Sampling personnel wore clean chemical resistant gloves when handling sampling equipment and samples. Gloves were disposed of between samples.

Sample containers were immediately stored in an ice-filled cooler and were kept cold (2° Celsius to 6° Celsius). The samples were then transported to the laboratory for testing and analysis of Environmental Protection Agency (EPA) method 8260C volatiles.

Sealed glass sampling containers and chain-of-custody forms were provided by an accredited laboratory, (OnSite Environmental, Redmond, WA). Documentation of sample collection and location was completed immediately following sampling.

Chain-of-custody (COC) forms were used and procedures were followed to track possession of the samples from the time they were collected until the analytical data from the samples were received and recorded. The following information was recorded using an ink pen on triplicate forms when samples were collected:

- The names and signatures of the sampler;
- The sample identification number and the date and time of sample collection;
- The site designation and analysis required; and
- The names of any persons involved in transferring samples.

No additional sample seals were necessary as samples were delivered directly to the analytical laboratory by ESNW. Analytical QA/QC results were provided along with the laboratory report to validate data usability. The data was evaluated in accordance with *USEPA National Functional Guidelines for Organic Data Review* and found to meet all requirements for accuracy and precision. A summary of analytical results are provided in Section 4.0 and the complete laboratory report is included in Appendix B.

3.0 ANALYTICAL RESULTS

Laboratory analytical results revealed that no VOCs were detected above the analytical method reporting limits in water samples obtained from monitoring wells MW-1 and MW-2. A copy of the laboratory analytical report is included in Appendix B.

4.0 QUALITY ASSURANCE

Data quality was checked by running laboratory duplicates and matrix spikes. Appendix B shows the results from laboratory quality control efforts. Duplicate results had good correlation to the original sample results.

5.0 DISCUSSION AND CONCLUSIONS

This report summarizes the third quarterly groundwater monitoring activity performed at 1006 Lake Street South, Kirkland, Washington by ESNW. The location of the site is shown on Plate 1.

On April 25, 2014, AMDO, Inc. removed approximately 140 tons (70 cubic yards) of PCE impacted underneath the former dry cleaning building occupying the site. The excavated soil was immediately loaded into plastic lined transport containers and transported by NRC to Columbia Ridge Landfill in Arlington, Oregon for disposal. Confirmation soil sample analytical results indicated that all PCE impacted soil was successfully removed from underneath the former dry cleaning building to concentrations below MTCA Method A soil cleanup levels.

Presented in this report are the results of the third quarter groundwater sampling event completed on December 23, 2014.

During the December 23, 2014 sampling event, groundwater samples were collected from monitoring wells MW-1 and MW-2 that were previously installed at the site by Aspect Consulting, LLC in 2008. A water sample could not be obtained from well MW-3 since it was severely damaged during site grading activities and was decommissioned on August 25, 2014. Locations of the groundwater monitoring wells are presented on Plate 2 in Appendix A.

The samples collected from monitoring wells MW-1 and MW-2 were analyzed for volatile organic compounds (VOCs). Analytical results for groundwater samples collected from monitoring wells MW-1 and MW-2 revealed the following:

- No VOCs were detected above the analytical method reporting limits in the water samples obtained from monitoring wells MW-1 and MW-2.

This analytical data supports the fact that PCE impacted soil has been successfully removed from the site. No VOC impacts to groundwater have been identified during four quarterly sampling events conducted at monitoring wells MW-1 and MW-2. This completes the fourth and final quarterly groundwater monitoring activity at the site. No additional groundwater monitoring is recommended.

Appendix A

Plates

ES-2880.05

Reference:
King County, Washington
Map 536
By The Thomas Guide
Rand McNally
32nd Edition

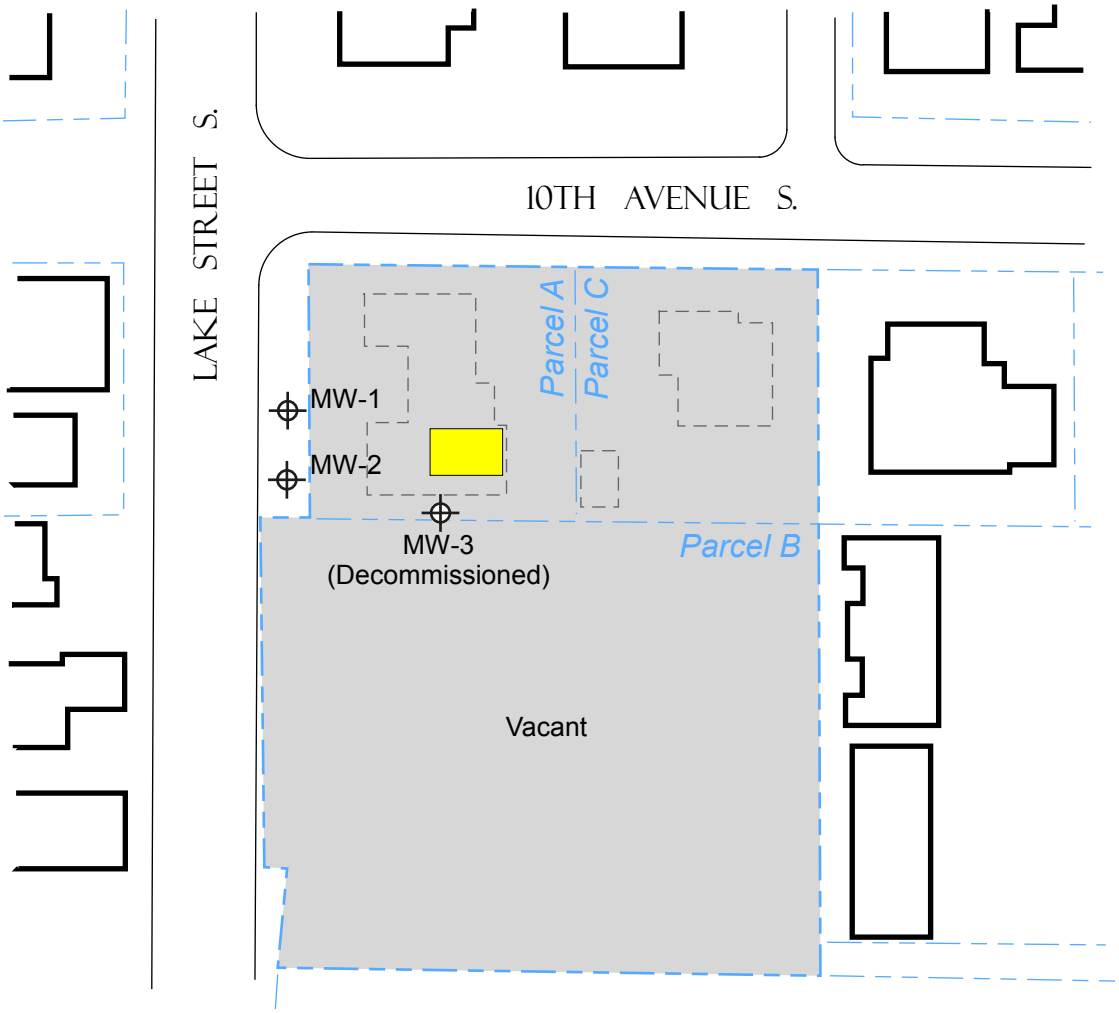
NORTH

NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

Earth Solutions NW LLC
Geotechnical Engineering, Construction Monitoring and Environmental Sciences

Vicinity Map
Potala Village
Kirkland, Washington

Drwn. GLS	Date 01/07/2015	Proj. No. 2880.05
Checked TWS	Date Jan. 2015	Plate 1



LEGEND

- Subject Site
- Former Building Location (Demolished)
- Former Dry Cleaner Excavation Area
- Groundwater Monitoring Well Location

Not - To - Scale

Earth Solutions NW LLC

Geotechnical Engineering, Construction Monitoring and Environmental Sciences

Site Plan / Well Location Plan
Potala Village
Kirkland, Washington

Drwn. GLS	Date 01/07/2014	Proj. No. 2880.05
Checked TWS	Date Jan. 2015	Plate 2

Appendix B

Analytical Results

ES-2880.05

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

January 6, 2015

Ted Sykes
Earth Solutions NW, LLC
1805 136th Place NE, Suite #201
Bellevue, WA 98005

Re: Analytical Data for Project ES-2880.05
Laboratory Reference No. 1412-261

Dear Ted:

Enclosed are the analytical results and associated quality control data for samples submitted on December 23, 2014.

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: January 6, 2015
Samples Submitted: December 23, 2014
Laboratory Reference: 1412-261
Project: ES-2880.05

Case Narrative

Samples were collected on December 23, 2014 and received by the laboratory on December 23, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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: January 6, 2015
Samples Submitted: December 23, 2014
Laboratory Reference: 1412-261
Project: ES-2880.05

VOLATILES EPA 8260C
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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1**					
Laboratory ID:	12-261-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloromethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Vinyl Chloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Trichlorofluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Acetone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Iodomethane	ND	1.3	EPA 8260C	1-5-15	1-5-15	
Carbon Disulfide	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methylene Chloride	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Vinyl Acetate	ND	1.0	EPA 8260C	1-5-15	1-5-15	
2,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Butanone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Bromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroform	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Carbon Tetrachloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Benzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Trichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Dibromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromodichloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Toluene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	

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VOLATILES EPA 8260C
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1**					
Laboratory ID:	12-261-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Tetrachloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Hexanone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Dibromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromoethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Ethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
m,p-Xylene	ND	0.40	EPA 8260C	1-5-15	1-5-15	
o-Xylene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Styrene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromoform	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Isopropylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Propylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
4-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
tert-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
sec-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
p-Isopropyltoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Hexachlorobutadiene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Naphthalene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*79-122*				
Toluene-d8	*103*	*80-120*				
4-Bromofluorobenzene	*98*	*80-120*				

Date of Report: January 6, 2015
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Laboratory Reference: 1412-261
Project: ES-2880.05

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Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2**					
Laboratory ID:	12-261-02					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloromethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Vinyl Chloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Trichlorofluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Acetone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Iodomethane	ND	1.3	EPA 8260C	1-5-15	1-5-15	
Carbon Disulfide	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methylene Chloride	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Vinyl Acetate	ND	1.0	EPA 8260C	1-5-15	1-5-15	
2,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Butanone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Bromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroform	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Carbon Tetrachloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Benzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Trichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Dibromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromodichloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Toluene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	

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VOLATILES EPA 8260C
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-2**					
Laboratory ID:	12-261-02					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Tetrachloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Hexanone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Dibromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromoethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Ethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
m,p-Xylene	ND	0.40	EPA 8260C	1-5-15	1-5-15	
o-Xylene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Styrene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromoform	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Isopropylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Propylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
4-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
tert-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
sec-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
p-Isopropyltoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Hexachlorobutadiene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Naphthalene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*112*	*79-122*				
Toluene-d8	*102*	*80-120*				
4-Bromofluorobenzene	*100*	*80-120*				

Date of Report: January 6, 2015
Samples Submitted: December 23, 2014
Laboratory Reference: 1412-261
Project: ES-2880.05

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:	MB0105W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloromethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Vinyl Chloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroethane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Trichlorofluoromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Acetone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Iodomethane	ND	1.3	EPA 8260C	1-5-15	1-5-15	
Carbon Disulfide	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methylene Chloride	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Vinyl Acetate	ND	1.0	EPA 8260C	1-5-15	1-5-15	
2,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Butanone	ND	5.0	EPA 8260C	1-5-15	1-5-15	
Bromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chloroform	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Carbon Tetrachloride	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Benzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Trichloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Dibromomethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromodichloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Toluene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	1-5-15	1-5-15	

Date of Report: January 6, 2015
Samples Submitted: December 23, 2014
Laboratory Reference: 1412-261
Project: ES-2880.05

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

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0105W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Tetrachloroethene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Hexanone	ND	2.0	EPA 8260C	1-5-15	1-5-15	
Dibromochloromethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromoethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Chlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Ethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
m,p-Xylene	ND	0.40	EPA 8260C	1-5-15	1-5-15	
o-Xylene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Styrene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromoform	ND	1.0	EPA 8260C	1-5-15	1-5-15	
Isopropylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Bromobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Propylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
2-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
4-Chlorotoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
tert-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
sec-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
p-Isopropyltoluene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
n-Butylbenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Hexachlorobutadiene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Naphthalene	ND	1.0	EPA 8260C	1-5-15	1-5-15	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	1-5-15	1-5-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*79-122*				
Toluene-d8	*103*	*80-120*				
4-Bromofluorobenzene	*102*	*80-120*				

Date of Report: January 6, 2015
Samples Submitted: December 23, 2014
Laboratory Reference: 1412-261
Project: ES-2880.05

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:	SB0105W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**9.58**	**8.69**	10.0	10.0	96	87	64-138	10	16	
Benzene	**10.2**	**9.28**	10.0	10.0	102	93	76-125	9	14	
Trichloroethene	**8.28**	**7.75**	10.0	10.0	83	78	70-125	7	16	
Toluene	**9.75**	**9.42**	10.0	10.0	98	94	75-125	3	15	
Chlorobenzene	**9.32**	**8.94**	10.0	10.0	93	89	80-140	4	15	
Surrogate:										
Dibromofluoromethane					*104*	*103*	*79-122*			
Toluene-d8					*97*	*101*	*80-120*			
4-Bromofluorobenzene					*96*	*100*	*80-120*			

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

Laboratory Number: 12-261

Company: EARTH SOLUTIONS NW
Project Number: ES-2880.05
Project Name: POTALA VILLAGE KIRKLAND
Project Manager: TED SYKES
Sampled by: TED SYKES

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

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	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	% Moisture
1	MW-1	12/23/14		WATER	3					X												
2	MW-2	"		"	3					X												

	Signature	Company	Date	Time
Relinquished		ESNW	12/23/14	12:30
Received		CORE	12/23/14	1030
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

Report Distribution

ES-2880.05

EMAIL ONLY

Potala Village Kirkland, LLC
2804 Grand Avenue, Suite 308
Everett, Washington 98201

Attention: Mr. Joe Zlab