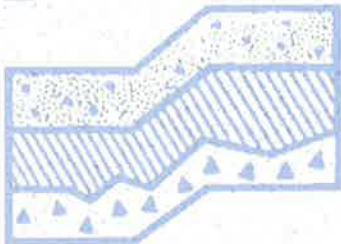


**Environmental Services  
Supplemental Site Sampling and Discussion  
5221 Ballard Avenue NW  
Seattle, Washington  
VCP NW2496**

**Project No. T-6552**



**Terra Associates, Inc.**

**Prepared for:**

**HALCO Properties, LLC  
Seattle, Washington**

**October 21, 2015**



# TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

October 21, 2015  
Project No. T-6552

HALCO Properties, LLC  
Mr. Brett Cowman  
c/o Mr. Livingston Wernecke  
Betts, Patterson & Mines, P.S.  
701 Pike Street, Suite 1400  
Seattle, Washington 98101-3927

Subject: Environmental Services  
Supplemental Site Sampling and Discussion  
5221 Ballard Avenue NW  
Seattle, Washington  
VCP NW2496

Dear Mr. Cowman:

This report documents our observations and the results of analytical testing of representative soil and vapor samples on the subject site. We have provided environmental services on this project starting since 2011. Our prior report was dated July 24, 2013 and is entitled Environmental Services/Feasibility Study/Remedial Action Summary. A report that summarizes current groundwater conditions has been submitted under separate cover.

The attached report describes the subsequent soils, sub slab vapor, and indoor air sampling that has been done in the interim period of time. Based on the data summarized in this report, the HALCO Properties, LLC team believes that the 5221 Ballard Avenue NW site is suitable for a No Further Action Determination.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call. We will request that the Washington State Department of Ecology review the report and offer their opinion of the proposed remedial action.

Sincerely yours,  
**TERRA ASSOCIATES, INC.**

  
Charles R. Lie, L.E.G., L.H.G.  
Project Manager

cc: Mr. Livingston Wernecke, BP and M  
Ms. Heather Vick, WDOE NWRO

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**Environmental Services  
Supplemental Site Sampling and Discussion  
5221 Ballard Avenue NW  
Seattle, Washington  
VCP NW2496**

## **1.0 INTRODUCTION**

This report presents a summary of our current environmental services at 5221 Ballard Avenue NW and updates proposed site cleanup and remediation levels. The site has been accepted into the voluntary cleanup program and is a portion of the former C and C Paints facility that includes other parcels not subject to this project. The voluntary cleanup number for the site is VCP NW2496. VCP NW2496 is limited to the releases from the UST cluster and distribution system at 5221 Ballard Avenue NW. We submitted a Remedial Investigation/Feasibility Study dated July 24, 2013 to the Washington State Department of Ecology. This report addresses concerns raised in the Ecology opinion letter dated April 10, 2014. The April 10, 2014 opinion letter comments on the discussion and proposed cleanup levels for the project that were outlined in our RI/FS dated July 24, 2013.

In the opinion letter dated April 10, 2014 Ecology presented the following comments:

1. No groundwater samples had been tested for carcinogenic poly cyclic aromatic hydrocarbons (cPAHs).
2. Supplemental groundwater characterization was needed to document the current groundwater quality and flow regime.
3. The use of Method B Surface Water Cleanup values was not appropriate since Lake Union is classified as a domestic water supply.

Groundwater is discussed in our report dated September 4, 2015. As documented in that report, the groundwater beneath the 5221 Ballard Avenue NW site meets the cleanup criteria developed for the site.

This report addresses the extent of soil contamination associated with the former UST cluster at 5221 Ballard Avenue NW. As summarized in this report, the soils meet the Method B cleanup level in regards to direct contact. Using empirical evidence, the soils meet the cleanup criteria for no impacts to groundwater. Soil vapor intrusion into the buildings on-site meets the site specific remediation levels.

Based on the analytical testing summarized in this report, it is our opinion that the 5221 Ballard Avenue NW site does not require any further remedial action.

The following report discusses the elements related to soils in more detail.

## **2.0 SCOPE OF WORK**

Our scope of our work for this phase of the project included:

- Review of the Ecology letter dated April 10, 2014.
- Monitoring the vapor extraction system on-site.
- Supplemental sub slab vapor reconnaissance in the building at 5232 Shilshole Avenue NW to assist in focused sampling to define the plume from 5221.
- Supplemental sub surface exploration in the basement of 5227 Ballard Avenue NW.
- Supplemental subsurface sampling in the building at 5232 Shilshole Avenue NW.
- Supplemental soil sampling from borings in the parking lot at 5221 Ballard Avenue NW.
- Sub slab vapor and indoor air sampling in the basements of 5221 and 5227 Ballard Avenue NW.
- Evaluation of the data.
- Preparation of this report.

The following sections of this report detail our site observations and the results of analytical testing.

## **3.0 SITE DESCRIPTION**

### **3.1 Surface**

The site is located at 5221 Ballard Avenue NW in Seattle, Washington. The site location is shown on Figures 1 and 2. Figure 3 is an ALTA map prepared for the site and adjacent parcels that comprise the C and C Paint facility. Figure 4 shows current groundwater flow conditions beneath the former C and C Paint facility and the site. Figure 5 is a generalized geologic section through the site. Figures 6 and 7 show the locations of the former USTs and of sampling performed for the 5221 Ballard Avenue NW project.

The adjacent land uses are all commercial and retail in nature. There are apartments located above the street level retail spaces in the buildings located north of the site across Ballard Avenue NW from the site. There are no broad areas of landscaping in the immediate vicinity of the project. With the exception of sidewalk tree planters, the entire area is covered by pavement, sidewalks, or roofs.

### ***5221 Ballard Avenue NW***

In general, the site consists of two elements, the parking lot and the building. The parking lot is relatively level at an elevation close to the elevation of Ballard Avenue NW. The building is a two-story brick building with a full basement. The basement level is about nine feet below the level of Ballard Avenue NW. There is a catch basin in the parking lot that drains to the combined stormwater/sewer system present in Ballard Avenue NW. There are no plumbing fixtures in the basement of the building. The plumbing fixtures in the building on-site all drain towards the sanitary sewer in Ballard Avenue NW. The sewer extends out through the northern basement wall of the building.

The USTs are present beneath the parking area. The USTs were closed in place. A pipe chase extends from the USTs towards the southwest and enters the northeastern retaining wall that forms the northern wall of the building southwest of the site, 5242 Shilshole Avenue NW. No pump islands or other dispensers for the USTs are present on the site. None of the three USTs were reported to store motor vehicle fuel. The distribution pipes are about one-foot below the ground surface in the parking lot adjacent to the USTs. The distribution system within the production building, 5242 Shilshole Avenue NW, south of 5221 Ballard Avenue NW was all aboveground. The USTs at 5221 are the source of the releases that are the subject of this remedial action.

#### ***5227 Ballard Avenue NW***

This property is immediately northwest of the 5221 Ballard Avenue NW property and has some impacts from the releases of paint thinner. This property has a two-story building with a basement level. The main floor of the building is in use as a bar and a hair salon. The basement is used for storage for the two businesses that are located on the street level of the building. The basement daylights on the south. The basement area beneath the bar has a door that opens to a narrow pathway area that leads towards the west.

#### ***5242 Shilshole Avenue NW***

This property is immediately southeast of 5221 Ballard Avenue Northwest. This masonry warehouse building was formerly part of the former C and C Paint complex. The building is currently in use as a warehouse for construction materials. Large freight doors open to both a paved parking lot east of the building as well as Shilshole Avenue NW. The distribution pipes from the USTs formerly in use at 5221 Ballard Avenue NW enter the building through the northeastern retaining wall. There is no evidence that the pipes extended below the slab in 5242 Shilshole Avenue NW. The floor level at 5242 Shilshole Avenue NW is approximately the same as the basement level in 5221 and 5227 Ballard Avenue NW.

### **3.2 Subsurface**

Subsurface conditions at the site consist of glacially derived sediments. Soil conditions have been explored and documented by Terra Associates, Inc. through explorations. The upper nine to ten feet of the soils consist of fills placed in the parking lot to raise site grades to match Ballard Avenue NW. Beneath the fills, our explorations encountered and were terminated within sands that appear to be till-like in nature or is an intercalated till. Deeper borings for an adjacent construction project encountered and were terminated within soils that appear to be Advance outwash present beneath the till. Figure 5 is a generalized geologic cross section that extends through the site. Figure 7 is a generalized geologic cross section through the UST cavity.

Subsurface explorations on the site are discussed in Appendix A attached to this report.

### **3.3 Geology**

The site is located in a glacial drift upland area. The Geologic Map of Northwest Seattle, 2005, by Booth D. B. et al, shows the site as being underlain by map unit Qvt, till. The cross section for the Geologic Map shows the till being underlain by Advance outwash. This is consistent with our on-site observations.

### **3.4 Groundwater**

Groundwater was initially present beneath the site at a depth of about ten feet below existing grade with a gradient towards Salmon Bay. Static water levels that have been measured on-site are presented in Table 1. Table 1 follows the text of this report. The current groundwater gradient is currently towards the north-east, inconsistent with the previous measurements. The gradient has reversed due to active dewatering at a new construction project northeast of the site. The dewatering at the new construction project is reported to consist of a permanent dewatering sump. It is not expected that the groundwater beneath the site will return to the prior conditions. The former and current groundwater conditions are discussed in our separate report dated September 4, 2015.

## **4.0 REMEDIAL OPTIONS**

### **4.1 General**

It is the goal of HALCO to obtain a No Further Action Determination for the site. The purpose of the NFA is to allow conventional bank financing of the real estate. The extent of the soil impacts is shown on Figure 5.

### **4.2 Contaminants of Concern**

The contaminants of concern are total petroleum hydrocarbons in the gasoline range, paint thinner. It appears that benzene was a minor contaminant of the paint thinner and was formerly present slightly above the method B cleanup values. Polycyclic aromatic hydrocarbons (PAHs) were also part of the initial analysis to assist in evaluating site specific cleanup calculations. The PAHs do not exceed MTCA Method B cleanup values. Testing has included lead due to the past mixing of paints on-site during the period when lead paints were still common. No lead has been found in soils or groundwater samples.

None of the USTs were used to store vehicle fuels thus gasoline constituents including lead additives and more contemporary gasoline additives.

The analytical testing of soils is summarized on Tables 2A through 2G. The analytical testing for soils done for this report are included in Appendix B. The analytical testing for groundwater is discussed in more detailing in our separate report dated September 4, 2015. The analytical testing for sub slab vapor samples is summarized on Table 3. The analytical test reports are included in Appendix C. The results of indoor air sampling are summarized on Table 4. The analytical test report is attached as Appendix D.

### **4.3 Remedial Options**

The following options were considered for site remedial action.

| <b>Option</b>                 | <b>Discussion</b>                                                                                                          |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| No action                     | Note feasible since it would preclude conventional commercial real estate financing. No NFA would result from this action. |
| Excavation and removal of PCS | Not economically feasible due to the presence of buildings on the historic register.                                       |

| Option                             | Discussion                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In situ oxidation                  | This option was considered however due to the location of the project close to surface water bodies the use of chemicals to oxide the PCS was not discussed further.                                                                                                                                                                                                                                   |
| Air Sparging and Vacuum Extraction | This option was not considered due to the presence of the contamination primarily within the capillary fringe and the lack of clear groundwater impacts. In addition, increase soil pore air pressures would have created concerns for off-site vapor intrusion. Additional engineering controls would have been needed.                                                                               |
| Enhanced bio degradation           | This is the chosen option. The initial interim action was planned to consist of a series of injections of calcium peroxide. Following the dramatic change in the groundwater regime, the remedial action was changed to consist of a vacuum extractions system to both remove volatile components of the PCS as well as to circulate atmospheric air through the soil mass to enhance bio degradation. |

## 5.0 Remediation/Cleanup Levels

### 5.1 Soils

The cleanup level of the remedial action is the Method B cleanup values of the MTCA for BETX and poly cyclic aromatic hydrocarbons (PAHs). We propose the use of a site specific cleanup value for gasoline range TPH. The Method B site specific soil cleanup values are based on seven samples that have been analyzed for TPH using the EPH/VPH testing procedures and the MTCATPH11 macro published by Ecology. Two of the soil samples used in the analysis were from the initial borings on-site, MW-102 (B-102) at 10 feet and MW-103 (B-103) at 10 feet. Three soil samples were from intermediate performance testing, DPT-3 at 9 feet, DPT-4 at 9 feet, and DPT-7 at 9 feet. One sample was from the final performance sampling B-301 at 10 feet. The MTCATPH11 spreadsheets are attached in Appendix E. The site specific cleanup values are summarized in the following table:

**Table 5.1.1**  
**Method B Soil Cleanup Values**  
**5221 Ballard Avenue NW**

| Exploration | Depth | TPH<br>NWTPHG<br>mg/kg | TPH<br>MTCATPH11<br>mg/kg | Direct Contact<br>Cleanup Value<br>mg/kg |
|-------------|-------|------------------------|---------------------------|------------------------------------------|
| B-102       | 10    | 3,900                  | 4,680                     | 2,151                                    |
| B-103       | 10    | 1,400                  | 1,973                     | 2,119                                    |
| DPT-3       | 9     | 250                    | 692                       | 2,119                                    |
| DPT-4       | 9     | 5,100                  | 4,742                     | 2,215                                    |
| DPT-7       | 9     | 920                    | 1,191                     | 1,974                                    |
| B-301       | 10    | 1,500                  | 2,371                     | 2,014                                    |
| Average     |       |                        |                           | 2,099                                    |

Table 5.1.2 summarizes the cleanup levels for soils on this site.

**Table 5.1.2**  
**Soil Remediation/Cleanup Levels**  
**5221 Ballard Avenue NW**

| <b>Compounds of Concern</b> | <b>MTCA Cleanup Level<br/>parts per million (ppm)</b> | <b>Notes</b>                                                                      |
|-----------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------|
| TPH gasoline range          | 2,000                                                 | Site Specific Value for direct contact from MTCATPH11 macro                       |
| Benzene                     | 18                                                    | Method B value                                                                    |
| Ethyl Benzene               | 8,000                                                 | Method B value                                                                    |
| Toluene                     | 640                                                   | Method B value                                                                    |
| Xylenes                     | 1,600                                                 | Method B value                                                                    |
| cPAHs                       | 0.14                                                  | See Table 708-2 in the MTCA for TEF values- the value shown is the Method B value |

## 5.2 Groundwater

The cleanup level for the remediation action are MTCA Method B groundwater standards. In the prior RI/FS, the use of surface water standards were proposed. The lack of any existing or foreseeable use of the groundwater for a drinking water resource resulted in the surface waters of Salmon Bay being the water body that would be impacted. Ecology pointed out in their letter dated April 10, 2014 that Lake Union and its associated water bodies are classified as a potential drinking water source. The groundwater beneath the site is being withdrawn through a dewatering system installed on a neighboring property. The dewatering system discharges to the municipal stormwater drainage system and then to Salmon Bay.

To address the change in the groundwater levels additional groundwater monitoring wells were constructed. These additional wells are discussed in the Groundwater Summary report dated September 4, 2015.

The TPH gasoline value is based on the cleanup value in the soil cleanup calculations discussed above under the soil remediation levels.

**Table 5.2.2**  
**Groundwater Remediation/Cleanup Levels**  
**5221 Ballard Avenue NW**

| <b>Compounds of Concern</b> | <b>MTCA Cleanup Level<br/>parts per million (ppm)</b> | <b>Notes</b>               |
|-----------------------------|-------------------------------------------------------|----------------------------|
| TPH gasoline range          | 0.25                                                  | From MTCATPH11 spreadsheet |
| TPH diesel range            | 0.28                                                  | Based on PQL               |
| TPH oil range               | 0.40                                                  | Based on PQL               |

**Table 5.2.2 (continued)**  
**Groundwater Remediation/Cleanup Levels**  
**5221 Ballard Avenue NW**

| Compounds of Concern | MTCA Cleanup Level<br>parts per million (ppm) | Notes              |
|----------------------|-----------------------------------------------|--------------------|
| Benzene              | 0.795                                         | MTCA B groundwater |
| Ethyl Benzene        | 800                                           | MTCA B groundwater |
| Toluene              | 640                                           | MTCA B groundwater |
| Xylenes              | 1,600                                         | MTCA B groundwater |

### 5.3 Petroleum Hydrocarbon Vapor

A reasonable maximum exposure level for indoor vapors was calculated for two constituents that did not meet the published Method B residential cleanup level for sub slab vapor. These reasonable maximum exposure levels are for the basement areas of the two adjacent buildings. The adjacent warehouse building at is not continuously occupied, has large doors that are usually open to the ambient air, and forklifts powered by internal combustion engines are used in the warehouses. The remediation levels are based on commercial exposure scenario. The basements of 5221 and of 5227 are not used for residential purposes. It is unlikely that the basements would meet current or projected building codes to allow sleeping spaces to be installed. The current RfD for TPHv (C9-C12 aliphatic) is 0.085 mg/kg-day. The modifications to equation 750-1 are shown below:

| [Equation 750-1]                                  |                                                               |                                                                                                                                                          |
|---------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air cleanup level<br>( $\mu\text{g}/\text{m}^3$ ) | =                                                             | $\frac{\text{RfD} \times \text{ABW} \times \text{UCF} \times \text{HQ} \times \text{AT}}{\text{BR} \times \text{ABS} \times \text{ED} \times \text{EF}}$ |
| :                                                 | MTCA Values                                                   | Commercial Exposure Values                                                                                                                               |
| Where                                             |                                                               |                                                                                                                                                          |
| RfD =                                             | Reference dose as specified in WAC 173-340-708(7) (mg/kg-day) | Unchanged                                                                                                                                                |
| ABW =                                             | Average body weight over the exposure duration (16 kg)        | 70 kg (conservative adult weight)                                                                                                                        |
| UCF =                                             | Unit conversion factor (1,000 $\mu\text{g}/\text{mg}$ )       | unchanged                                                                                                                                                |
| BR =                                              | Breathing rate (10 $\text{m}^3/\text{day}$ )                  | 6.66 $\text{m}^3/\text{day}$ (8 hour work day)                                                                                                           |
| ABS =                                             | Inhalation absorption fraction (1.0) (unitless)               | Unchanged                                                                                                                                                |
| HQ =                                              | Hazard quotient (1) (unitless)                                | Unchanged                                                                                                                                                |
| AT =                                              | Averaging time (6 years)                                      | 70                                                                                                                                                       |
| ED =                                              | Exposure duration (6 years)                                   | 30                                                                                                                                                       |
| EF =                                              | Exposure frequency (1.0) (unitless)                           | 0.68 (based on 50 eight-hour work days per year)                                                                                                         |

The modifications to equation 750-2 are shown below. The current Carcinogenic potency factor for benzene is:

| [Equation 750-2]                                  |                                                                                                         |                                                                                                                                                            |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air cleanup level<br>( $\mu\text{g}/\text{m}^3$ ) | =                                                                                                       | $\frac{\text{RISK} \times \text{ABW} \times \text{AT} \times \text{UCF}}{\text{CPF} \times \text{BR} \times \text{ABS} \times \text{ED} \times \text{EF}}$ |
|                                                   | MTCA Values                                                                                             | Commercial Exposure values                                                                                                                                 |
| Where:                                            |                                                                                                         |                                                                                                                                                            |
| RISK =                                            | Acceptable cancer risk level (1 in 1,000,000) (unitless)                                                | Unchanged                                                                                                                                                  |
| ABW =                                             | Average body weight over the exposure duration (70 kg)                                                  | Unchanged                                                                                                                                                  |
| AT =                                              | Averaging time (75 years)                                                                               | Unchanged                                                                                                                                                  |
| UCF =                                             | Unit conversion factor (1,000 $\mu\text{g}/\text{mg}$ )                                                 | Unchanged                                                                                                                                                  |
| CPF =                                             | Carcinogenic potency factor as specified in WAC 173-340-708(8) ( $\text{kg}\cdot\text{day}/\text{mg}$ ) | Unchanged                                                                                                                                                  |
| BR =                                              | Breathing rate (20 $\text{m}^3/\text{day}$ )                                                            | 6.66 (based on 8-hour day)                                                                                                                                 |
| ABS =                                             | Inhalation absorption fraction (1.0) (unitless)                                                         | Unchanged                                                                                                                                                  |
| ED =                                              | Exposure duration (30 years)                                                                            | Unchanged                                                                                                                                                  |
| EF =                                              | Exposure frequency (1.0) (unitless)                                                                     | 0.68 (based on 50 eight hour workdays per year)                                                                                                            |

**Table 5.2.3**  
**Sub Slab Vapor Remediation/Cleanup Values**

| Compounds of Concern    | MTCA Cleanup Level<br>Micro Grams per cubic<br>meter<br>( $\mu\text{g}/\text{M}^3$ ) | Site Specific<br>Commercial<br>Exposure Levels<br>( $\mu\text{g}/\text{M}^3$ ) | Notes                                                                                                                                 |
|-------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| TPHv (C5-C8) Aliphatic  | 27,000                                                                               | NC                                                                             | Ecology Draft Publication<br>Guidance For Evaluating<br>Soil Vapor Intrusion in<br>Washington State, Ecology<br>Publication 09-09-047 |
| TPHv (C9-C12) Aliphatic | 1,400                                                                                | 3,285                                                                          |                                                                                                                                       |
| TPHv (C9-C10) Aromatic  | 1,800                                                                                | NC                                                                             |                                                                                                                                       |
| Benzene                 | 0.32                                                                                 | 1.41                                                                           |                                                                                                                                       |
| Ethyl Benzene           | 4,600                                                                                | NC                                                                             |                                                                                                                                       |
| Toluene                 | 22,000                                                                               | NC                                                                             |                                                                                                                                       |
| m,p Xylene              | 460                                                                                  | NC                                                                             |                                                                                                                                       |
| o-Xylene                | 460                                                                                  | NC                                                                             |                                                                                                                                       |
| Methylene Chloride      | 53                                                                                   | NC                                                                             |                                                                                                                                       |

**NOTES:** All units are  $\mu\text{g}/\text{M}^3$ .

NC indicates that the commercial exposure level was not calculated for the individual compound.

## 6.0 REMEDIAL ACTION

As summarized in our prior reports, the residual contamination was found to be primarily in the capillary fringe zone alongside the UST cavities. The initial interim remedial action was intended to consist of enhanced in situ bio remediation through the use of calcium peroxide injected into the capillary fringe. The calcium peroxide would be a source of additional oxygen to enhance and accelerate natural degradation processes. One episode of the injections occurred in November of 2011. Subsequently, dewatering of a construction site north of the site lowered the groundwater to about 25 to 30 feet beneath the property. This left the former capillary fringe zone within the new vadose zone.



The subsequent change in static water levels required that the interim remedial operation switch to an active SVE that would physically remove paint thinner through volatilization as well as enhance bio degradation through the creation of air flows through the subsurface soils. The SVE operation is outlined in our report dated May 3, 2012. The initial operation of the SVE unit was focused on Monitoring Well 101. On June 14, 2012, the valves were turned on to draw from all 3 of the monitoring wells.

Based on the results of the performance soil sampling summarized in Table 2F, on January 13, 2013, the valve to Monitoring Well MW-101 was shut off. The system operated with a vacuum on Monitoring Wells MW-101 and MW-102 until February 28, 2013. Two new vapor extraction wells were built to enhance the recovery of vapors from the location of confirmation sample exploration DPT-4 at a depth of nine feet. The new wells were plumbed into the existing system and turned on February 28, 2013. The system operated drawing a vacuum on MW-101, MW-102, MW-105, and MW-106 after February 28, 2013.

The vacuum operated with a vacuum of 40 to 50 inches of water vacuum and a flow of about 80 cubic feet per minute. Due to Seattle Noise Ordinance requirements, the system operated 12 hours per day. The exhaust was sampled on a monthly basis. Table 5 summarizes the monthly analytical test results for the system. The lab reports are attached in Appendix E. Based on the data from the VES unit, about 180 gallons of paint thinner have been removed from the subsurface. This value does not include the mass of hydrocarbons that were degraded in place through enhanced bio degradation.

The recovery dropped below the method practical quantitation limit in 100 µg/l on December 15 of 2014 for the wells MW-104/105. The recovery dropped below the method practical quantitation limit in 100 µg/l on December 15 of 2014 for the wells MW-104/105. The vacuum unit was removed from the site on February 24, 2015.

## **7.0 DISCUSSION/CONCLUSIONS**

Based on the performance soil sampling and the sub slab vapor readings, the interim action remedial option chosen for this site was effective at reducing the contaminant levels in the site soils at and adjacent to the source zone. The VES system was chosen as the final remedial action. Additional indoor vapor performance samples will be taken to verify the initial results in the late fall of 2015. The letter from Ecology dated February 12, 2012 stated that Benzene would be a contaminant of concern. However, no testing subsequent to the January 2013 sub slab vapor sample of VP-1 has found benzene in soils, vapors, or groundwater from this site.

Based on our observations and performance testing documented in this report, it is our opinion that the project may be given a No Further Action Determination. Based on the performance testing done in 2013, there is no indication that any measurable levels of hydrocarbons were transported down through the soil column as the static water level decreased as a result of the adjacent dewatering project. With the residual soil contamination remaining well above the static water level, it is our opinion that the proposed remediation level that is suitable for direct contact is the appropriate cleanup level. Even in the time prior to the decreased static water level when the groundwater was in contact with the residual contamination in the capillary fringe, the groundwater generally met Method A cleanup criteria for groundwater.

It is our opinion that the leaching pathway suggested by the MTCATPH11 macros is conservative. No actual groundwater impacts are noted. The site is in an historic district where no changes to the site on the surface are allowed. It is very unlikely that any pavement would be removed to create an opportunity for surface infiltration to occur. The groundwater is not expected to return to its former levels in the foreseeable future. Ongoing degradation of the residual paint thinner will continue into the future even when the vacuum system is removed. The levels of oxygen measured in the sub slab areas demonstrate degradation is occurring.

## **8.0 LIMITATIONS**

The findings, conclusions, and recommendations presented in this report are based on our documented site observations, review of historical and regulatory information, interviews, and review of the referenced historic resources. Other information related to past site uses or current site conditions may exist. Our conclusions in part are based on information provided or prepared by others.

If the existing site uses change, or if further information on the site becomes available, Terra Associates, Inc. should review the information, as it may affect our conclusions.

We prepared our conclusions and recommendations in accordance with generally accepted professional engineering practices. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the 5221 Ballard Avenue Northwest project in Seattle, Washington. This report is for the exclusive use of HALCO Properties, LLC and their authorized representatives.

**Table 1**  
**Groundwater Measurements**

[illegible]

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 9-29-2011 |       | 10-17-2011 |       | 11-18-2011 |       | 11-29-2011 |       |
|-----------------|---------------|----------|-----------|-------|------------|-------|------------|-------|------------|-------|
|                 |               |          | Depth     | Elev. | Depth      | Elev. | Depth      | Elev. | Depth      | Elev. |
| MW-1            | 26.44         | 26.11    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-2            | 25.98         | 25.98    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-3            | 26.05         | 26.05    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-4            | 26.21         | 25.90    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-5            | 26.32         | 26.32    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-6            | 26.8          | 26.34    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-7            | 26.89         | 26.60    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-8            | 27.97         | 27.51    | NM        | NM    | NM         | NM    | 5.22       | 22.29 | NM         | NM    |
| MW-9            | 30.24         | 29.99    | NM        | NM    | NM         | NM    | 7.39       | 22.60 | NM         | NM    |
| MW-10           | 26.48         | 26.16    | NM        | NM    | NM         | NM    | NM         | NM    | NM         | NM    |
| MW-101          | 36.77         | 36.37    | 11.63     | 24.74 | 11.50      | 24.87 | 15.68      | 20.69 | 17.19      | 19.18 |
| MW-102          | 36.35         | 35.93    | 11        | 24.93 | 10.86      | 25.07 | 15.78      | 20.15 | 17.32      | 18.61 |
| MW-103          | 36.13         | 35.79    | 10.86     | 24.93 | 10.54      | 25.25 | 16.83      | 18.96 | 18.54      | 17.25 |
| MW-104          | 28.23         | 27.98    | 3.55      | 24.43 | NM         | NM    | 6.83       | 21.15 | NM         | NM    |

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 5-2-2012 |        | 8-14-2012 |        | 7-11-2013 |        | 9-27-13 |       |
|-----------------|---------------|----------|----------|--------|-----------|--------|-----------|--------|---------|-------|
|                 |               |          | Depth    | Elev.  | Depth     | Elev.  | Depth     | Elev.  | Depth   | Elev. |
| MW-1            | 26.44         | 26.11    | NM       | NM     | 7.52      | 18.59  | 7.3       | 18.81  |         |       |
| MW-2            | 25.98         | 25.98    | NM       | NM     | 6.88      | 19.10  |           |        | 19.73   | 19.73 |
| MW-3            | 26.05         | 26.05    | NM       | NM     | 7.07      | 18.98  | 6.89      | 19.16  |         |       |
| MW-4            | 26.21         | 25.90    | NM       | NM     | NM        | NM     | 6.95      | 18.95  | 18.12   | 18.12 |
| MW-5            | 26.32         | 26.32    | NM       | NM     | NM        | NM     |           |        |         |       |
| MW-6            | 26.8          | 26.34    | NM       | NM     | 5.87      | 20.47  | 6.91      | 19.43  | 18.69   | 18.69 |
| MW-7            | 26.89         | 26.60    | NM       | NM     | >8        | <18.60 | >8        | <18.60 |         |       |
| MW-8            | 27.97         | 27.51    | >8       | <18.60 | NM        | NM     | NM        | NM     |         |       |
| MW-9            | 30.24         | 29.99    | >8       | <19.51 | NM        | NM     | NM        | NM     |         |       |
| MW-10           | 26.48         | 26.16    | NM       | NM     | NM        | NM     | 7.7       | 18.46  |         |       |
| MW-101          | 36.77         | 36.37    | >20      | <16.37 | NM        | NM     | NM        | NM     |         |       |
| MW-102          | 36.35         | 35.93    | >20      | <15.93 | NM        | NM     | NM        | NM     |         |       |
| MW-103          | 36.13         | 35.79    | >20      | <15.79 | NM        | NM     | NM        | NM     |         |       |
| MW-104          | 28.23         | 27.98    | >15      | <12.98 | NM        | NM     | >15       | <12.98 |         |       |
| MW-107          | 26+/-         | 25.7+/-  |          |        |           |        | 7.53      | 18.17  | 18.08   | 18.08 |

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 2-26-14 |       | 9-24-14 |       | 11-7-14 |       |
|-----------------|---------------|----------|---------|-------|---------|-------|---------|-------|
|                 |               |          | Depth   | Elev. |         |       |         |       |
| MW-1            | 26.44         | 26.11    | Dry     |       | Closed  |       | Closed  |       |
| MW-2            | 25.98         | 25.98    | 6.25    | 19.73 | Closed  |       | Closed  |       |
| MW-3            | 26.05         | 26.05    | Dry     |       | Closed  |       | Closed  |       |
| MW-4            | 26.21         | 25.90    | 7.78    | 18.12 | Closed  |       | Closed  |       |
| MW-5            | 26.32         | 26.32    | dry     |       | Closed  |       | Closed  |       |
| MW-6            | 26.8          | 26.34    | 7.65    | 18.69 | NM      |       | NM      |       |
| MW-7            | 26.89         | 26.60    | Dry     |       | Dry     |       | NM      |       |
| MW-8            | 27.97         | 27.51    | Dry     |       | Dry     |       | NM      |       |
| MW-9            | 30.24         | 29.99    | Dry     |       | Dry     |       | NM      |       |
| MW-10           | 26.48         | 26.16    | Dry     |       | Closed  |       | Closed  |       |
| MW-101          | 36.77         | 36.37    | NM      |       | Dry     |       | Dry     |       |
| MW-102          | 36.35         | 35.93    | NM      |       | Dry     |       | Dry     |       |
| MW-103          | 36.13         | 35.79    | NM      |       | Dry     |       | Dry     |       |
| MW-104          | 28.23         | 27.98    | NM      |       | Dry     |       | Dry     |       |
| MW-105          |               |          | NM      |       | Dry     |       | Dry     |       |
| MW-106          |               |          | NM      |       | Dry     |       | Dry     |       |
| MW-107          | 26+/-         | 25.7+/-  | 7.62    | 18.08 | NM      | NM    | 8.03    | 18.17 |
| MW-201          |               |          |         |       | 15.36   | 12.52 | 13.29   | 14.59 |
| MW-202          |               |          |         |       | 9.57    | 17.1  | 9.37    | 17.3  |
| MW-203          |               |          |         |       | 8.62    | 17.55 | 8.93    | 17.24 |
| MW-204          |               |          |         |       | 8.47    | 17.77 | 8.52    | 17.72 |
| MW-205          |               |          |         |       |         |       |         |       |

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 2/20/2015 |       | 5/27/2015 |       | 6/17/2015 |  |
|-----------------|---------------|----------|-----------|-------|-----------|-------|-----------|--|
|                 |               |          | Depth     | Elev. |           |       |           |  |
| MW-6            | 26.8          | 26.34    | NM        | NM    | 7.43      | 18.91 |           |  |
| MW-7            | 26.89         | 26.60    | Dry       |       | Dry       |       |           |  |
| MW-8            | 27.97         | 27.51    | Dry       |       | Dry       |       |           |  |
| MW-9            | 30.24         | 29.99    | Dry       |       | Dry       |       |           |  |
| MW-101          | 36.77         | 36.37    | Dry       |       | Dry       |       |           |  |
| MW-102          | 36.35         | 35.93    | Dry       |       | Dry       |       |           |  |
| MW-103          | 36.13         | 35.79    | Dry       |       | Dry       |       |           |  |
| MW-104          | 28.23         | 27.98    | Dry       |       | Dry       |       |           |  |
| MW-105          |               |          | Dry       |       | Dry       |       |           |  |
| MW-106          |               |          | Dry       |       | Dry       |       |           |  |
| MW-107          | 26+/-         | 25.7+/-  | 7.56      | 18.64 | 7.45      | 18.75 |           |  |
| MW-201          |               | 27.88+/- | 13.24     | 14.64 | 12.7      | 15.18 |           |  |
| MW-202          |               | 26.67+/- | 8.63      | 18.04 | 8.76      | 17.91 |           |  |
| MW-203          |               | 26.17+/- | 8.19      | 17.98 | 8.6       | 17.57 |           |  |
| MW-204          |               | 26.24+/- | 7.95      | 18.29 | 8.96      | 17.28 |           |  |
| MW-205          |               | 35.88+/- | 22.77     | 13.11 | 22.9      | 12.98 |           |  |

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 5/27/15 |       | 6/17/15 |         | 7/14/2015 |       |
|-----------------|---------------|----------|---------|-------|---------|---------|-----------|-------|
|                 |               |          | Depth   | Elev. | Depth   | Elev.   | Depth     | Elev. |
| MW-6            | 26.8          | 26.34    | 7.43    | 18.91 | 7.74    | 18.60   | 8.2       | 18.14 |
| MW-7            | 26.89         | 26.60    |         |       | Dry     | < 18.41 |           |       |
| MW-8            | 27.97         | 27.51    |         |       | Dry     | <20.56  |           |       |
| MW-9            | 30.24         | 29.99    |         |       | Dry     | <21.74  |           |       |
| MW-101          | 36.77         | 36.37    |         |       |         |         |           |       |
| MW-102          | 36.35         | 35.93    |         |       |         |         |           |       |
| MW-103          | 36.13         | 35.79    |         |       |         |         |           |       |
| MW-104          | 28.23         | 27.98    |         |       |         |         |           |       |
| MW-105          |               |          |         |       |         |         |           |       |
| MW-106          |               |          |         |       |         |         |           |       |

**Table 1 (continued)**  
**Groundwater Measurements**

| Monitoring Well | Surface Elev. | MP Elev. | 5/27/15 |       | 6/17/15 |       | 7/14/2015 |       |
|-----------------|---------------|----------|---------|-------|---------|-------|-----------|-------|
|                 |               |          | Depth   | Elev. | Depth   | Elev. | Depth     | Elev. |
| MW-107          | 26+/-         | 25.7+/-  | 7.45    | 18.75 |         |       | 8.2       | 18    |
| MW-201          |               | 27.88+/- | 12.7    | 15.18 |         |       | 12.47     | 15.41 |
| MW-202          |               | 26.67+/- | 8.76    | 17.91 |         |       | 9.39      | 17.28 |
| MW-203          |               | 26.17+/- | 8.6     | 17.57 |         |       | 8.72      | 17.45 |
| MW-204          |               | 26.24+/- | 8.96    | 17.28 |         |       | 8.73      | 17.51 |
| MW-205          |               | 35.88+/- | 22.9    | 12.98 |         |       | 23.06     | 12.82 |

**Notes:** MP is the north side of the top of the PVC casing within the surface monument.  
Ground surface elevations are from a survey by Jim Hart and Associates.  
NM indicates that the well was not measured or was inaccessible on the day of the field work.  
MW-107, MW-201 through MW-205 have not been surveyed for horizontal or vertical control.  
Closed indicates wells that have been permanently abandoned in accordance with state regulations.

**Table 2A**  
**Petroleum Hydrocarbons**  
**Soil-Initial Samples**

| Well Number         | Date    | Depth (feet) | TPH Gasoline Range |
|---------------------|---------|--------------|--------------------|
| B-101<br>(MW-101)   | 5/6/11  | 9.0          | 82                 |
|                     |         | 14           | 4.8U               |
| B-102<br>(MW-102)   | 5/6/11  | 10           | <b>3,900</b>       |
|                     |         | 15           | 5.7U               |
| B-103<br>(MW-103)   | 5/6/11  | 10           | <b>1,400</b>       |
|                     |         | 15           | 5.1U               |
| B-104<br>(MW-104)   | 6/13/11 | 2.5          | 15                 |
|                     |         | 5            | 10                 |
| VP-1                | 6/13/11 | 1.5          | 5.8U               |
| VP-2                | 6/13/11 | 1.5          | 140                |
|                     |         | 3.5          | 9.7                |
| VP-3                | 6/13/11 | 1.5          | 5.5U               |
| MTCA Method A       |         |              | 100                |
| Site Specific Value |         |              | 2,000              |



**Table 2B**  
**Volatile Organic Compounds**  
**Soil-Initial Samples 2011**

| <b>Well Number</b> | <b>Depth</b> | <b>Benzene</b> | <b>Ethyl Benzene</b> | <b>Toluene</b> | <b>m,p Xylene</b> | <b>o-Xylene</b> |
|--------------------|--------------|----------------|----------------------|----------------|-------------------|-----------------|
| B-101<br>(MW-101)  | 9            | 0.0012U        | 0.0012U              | 0.006U         | 0.0024U           | 0.0012U         |
|                    | 14           | 0.00083U       | 0.00083U             | 0.0042U        | 0.0017U           | 0.00083U        |
| B-102<br>(MW-102)  | 10           | 0.058U         | 0.058U               | 0.29U          | 0.12U             | 0.058U          |
|                    | 15           | 0.00095U       | 0.00095U             | 0.0047U        | 0.0019U           | 0.00095U        |
| B-103<br>(MW-103)  | 10           | 0.056U         | 0.056U               | 0.28U          | 0.11U             | 0.056U          |
|                    | 15           | 0.00092U       | 0.00092U             | 0.0046U        | 0.0018U           | 0.00092U        |
| B-104<br>(MW-104)  | 2.5          | 0.0013U        | 0.0013U              | 0.0065U        | 0.0026U           | 0.0013U         |
| MTCA A             |              | 0.03           | 6.0                  | 7.0            | 9.0               |                 |
| MTCA B             |              | 18             | 8,000                | 6,400          | 16,000            |                 |

**Table 2B (continued)**  
**Volatile Organic Compounds**  
**Soil-Initial Samples 2011**

| Well Number       | Depth | Acetone  | isopropyl benzene | n-Propylbenzene | Sec-Butyl benzene |
|-------------------|-------|----------|-------------------|-----------------|-------------------|
| B-101<br>(MW-101) | 9     | 0.022    | 0.0035            | 0.0049          | 0.0012U           |
|                   | 14    | 0.013    | 0.00083U          | 0.00083U        | 0.00083U          |
| B-102<br>(MW-102) | 10    | 0.29U    | 0.058U            | 0.058U          | 0.058U            |
|                   | 15    | 0.0084   | 0.00095U          | 0.00095U        | 0.00095U          |
| B-103<br>(MW-103) | 10    | 0.28U    | 0.056U            | 0.056U          | 0.056U            |
|                   | 15    | 0.0082   | 0.0092U           | 0.0092U         | 0.0092U           |
| B-104<br>(MW-104) | 2.5   | 0.037    | 0.0013U           | 0.0013U         | 0.0013U           |
| VP-2              | 1.5   | 0.0056   | 0.0034            | 0.0040          | 0.0048            |
| MTCA              |       | (72,000) | np                | (8,000)         | np                |

**Notes for Tables 1 and 2:**

All levels are reported in parts per million (ppm).

Modifier of U indicates that the compound was not present at the numerical PQL value.

PQL varies with the moisture content of the sample.

PQL in bold for benzene exceeds Method A cleanup value.

PQL elevated due to elevated TPH in the individual samples.

MTCA Method A cleanup values are shown for reference purposes.

Values in parenthesis are Method B cleanup values.

**Table 2C**  
**cPAH Summary**  
**Soil Samples-Initial Sampling**  
**MW-102 at 10 Feet**

| Compound               | Test Result | TEF  | Adjusted Value | MTCA Method B |
|------------------------|-------------|------|----------------|---------------|
| benzo(a)pyrene         | 0.014       | 1    | 0.014          |               |
| benzo(a)anthracene     | 0.0093      | 0.1  | 0.00093        |               |
| benzo(b)fluoranthene   | 0.0084      | 0.1  | 0.00084        |               |
| benzo(k)fluoranthene   | 0.0087      | 0.1  | 0.00087        |               |
| chrysene               | 0.011       | 0.01 | 0.00011        |               |
| dibenz(a,h)anthracene  | 0.0078      | 0.1  | 0.00078        |               |
| indeno(1,2,3-cd)pyrene | 0.0078      | 0.1  | 0.00078        |               |
| <b>TOTAL CPAH</b>      | 0.067       |      | <b>0.01831</b> | <b>0.14</b>   |

**Table 2C  
(continued)  
cPAH Summary  
MW-102 at 8 Feet**

| Compound               | Test Result | TEF  | Adjusted Value | MTCA Method B |
|------------------------|-------------|------|----------------|---------------|
| benzo(a)pyrene         | 0.067       | 1    | 0.067          |               |
| benzo(a)anthracene     | 0.035       | 0.1  | 0.0035         |               |
| benzo(b)fluoranthene   | 0.039       | 0.1  | 0.0039         |               |
| benzo(k)fluoranthene   | 0.035       | 0.1  | 0.0035         |               |
| chrysene               | 0.046       | 0.01 | 0.00046        |               |
| dibenz(a,h)anthracene  | 0.0092      | 0.1  | 0.00092        |               |
| indeno(1,2,3-cd)pyrene | 0.0.3       | 0.1  | 0.003          |               |
| <b>TOTAL CPAH</b>      | 0.2612      |      | <b>0.08228</b> | <b>0.14</b>   |

**Notes:** All units are parts per million (ppm).

TEF is from Table 708-2.

MTCA Method A cleanup value is 0.1 ppm for the sum of the cPAHs.

MTCA Method B cleanup value is 0.14 for Benzo (a) Pyrene and for the sum of the cPAHs.

**Table 2D  
Petroleum Hydrocarbons and BETX  
Soil-Performance Samples 2013**

| Exploration Number | Depth | Total Petroleum Hydrocarbons- Gasoline Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o-Xylene |
|--------------------|-------|----------------------------------------------|---------|---------------|---------|------------|----------|
| DPT 1              | 14    | 7.7U                                         | 0.02U   | 0.077U        | 0.077U  | 0.077U     | 0.077U   |
|                    | 19    | 5.4U                                         | 0.02U   | 0.054U        | 0.054U  | 0.054U     | 0.054U   |
| DPT 2              | 14    | 4.8U                                         | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   |
|                    | 19    | 4.9U                                         | 0.02U   | 0.049U        | 0.049U  | 0.049U     | 0.049U   |
| DPT 3              | 9     | 250                                          | 0.02U   | 0.065U        | 0.065U  | 0.093      | 0.065U   |
|                    | 14    | 5.6                                          | 0.02U   | 0.051U        | 0.051U  | 0.051U     | 0.051U   |
|                    | 19    | 4.8U                                         | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   |
| DPT 4              | 9     | 5,100                                        | 0.022U  | 0.11U         | 0.11U   | 0.6        | 0.55U    |
|                    | 14    | 5.5U                                         | 0.02U   | 0.055U        | 0.055U  | 0.055U     | 0.055U   |
|                    | 19    | 4.5U                                         | 0.02U   | 0.045U        | 0.045U  | 0.045U     | 0.045U   |
| DPT 5              | 9     | 37                                           | 0.02U   | 0.045U        | 0.045U  | 0.045U     | 0.045U   |
|                    | 14    | 4.8                                          | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   |
| DPT 6              | 9     | 5.3U                                         | 0.02U   | 0.053U        | 0.053U  | 0.053U     | 0.053U   |
|                    | 14    | 11                                           | 0.02U   | 0.057U        | 0.057U  | 0.057U     | 0.057U   |
|                    | 19    | 5.7U                                         | 0.02U   | 0.057U        | 0.057U  | 0.057U     | 0.057U   |

**Table 2D (continued)**  
**Petroleum Hydrocarbons and BETX**  
**Soil-Performance Samples 2013**

| Exploration<br>Number | Depth | Total Petroleum<br>Hydrocarbons-<br>Gasoline Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o-Xylene |
|-----------------------|-------|----------------------------------------------------|---------|---------------|---------|------------|----------|
| DPT 7                 | 9     | 920                                                | 0.02U   | 0.059U        | 0.059U  | 0.059U     | 0.059U   |
|                       | 14    | 5.1U                                               | 0.02U   | 0.051U        | 0.051U  | 0.051U     | 0.051U   |
|                       | 19    | 5.3U                                               | 0.02U   | 0.053U        | 0.053U  | 0.053U     | 0.053U   |
| DPT 8                 | 9     | 6.1U                                               | 0.02U   | 0.061U        | 0.061U  | 0.061U     | 0.061U   |
|                       | 14    | 4.7U                                               | 0.02U   | 0.047U        | 0.047U  | 0.047U     | 0.047U   |
| DPT 9                 | 9     | 5.6U                                               | 0.02U   | 0.056U        | 0.056U  | 0.056U     | 0.056U   |
|                       | 14    | 5.2U                                               | 0.02U   | 0.052U        | 0.052U  | 0.052U     | 0.052U   |
|                       | 19    | 4.9U                                               | 0.02U   | 0.049U        | 0.049U  | 0.049U     | 0.049U   |
| DPT 10                | 9     | 5.4U                                               | 0.2U    | 0.054U        | 0.054U  | 0.054U     | 0.054U   |
|                       | 14    | 4.7U                                               | 0.02U   | 0.047U        | 0.047U  | 0.047U     | 0.047U   |
|                       | 19    | 5.4U                                               | 0.02U   | 0.054U        | 0.054U  | 0.054U     | 0.054U   |
| DPT 11                | 4     | 4.9U                                               | 0.02U   | 0.049U        | 0.049U  | 0.049U     | 0.049U   |
| MW-105                | 5     | 7,300                                              | 0.03U   | 0.23          | 0.15U   | 1.3        | 0.39     |
|                       | 10    | 1,000                                              | 0.02U   | 0.1U          | 0.1U    | 0.15       | 0.1U     |
|                       | 15    | 4.8U                                               | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   |
|                       | 20    | 14                                                 | 0.02U   | 0.056U        | 0.056U  | 0.056U     | 0.056U   |
| MW-106                | 7.5   | 3,300                                              | 0.02U   | 0.15U         | 0.15U   | 0.65       | 0.27     |
|                       | 12.5  | 5.6U                                               | 0.02U   | 0.056U        | 0.056U  | 0.056U     | 0.056U   |
|                       | 17.5  | 5.5U                                               | 0.02U   | 0.055U        | 0.055U  | 0.055U     | 0.055U   |
| 25-14                 | 4     | 1,000                                              | 0.02U   | 0.38          | 0.051U  | 2.5        | 0.051U   |
|                       | 11    | 67                                                 | 0.02U   | 0.049U        | 0.049U  | 0.049U     | 0.049U   |
|                       | 14    | 4.8U                                               | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   |
| Cleanup Goals         |       | 2,000                                              | 18      | 8,000         | 6,400   | 16,000     |          |

**Table 2E**  
**Petroleum Hydrocarbons and BETX**  
**Soil-5229 Basement**

| Exploration Number | Depth | Total Petroleum Hydrocarbons-Gasoline Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o-Xylene |
|--------------------|-------|---------------------------------------------|---------|---------------|---------|------------|----------|
| K-1                | 4     | 870                                         | 0.027U  | 0.14U         | 0.14U   | 0.22       | 0.14U    |
|                    | 8     | 5.7U                                        | 0.02U   | 0.057U        | 0.057U  | 0.057U     | 0.057U   |
| K-2                | 4     | 1200                                        | 0.028U  | 0.14U         | 0.14U   | 0.14U      | 0.14U    |
|                    | 8     | 5.4U                                        | 0.02U   | 0.054U        | 0.054U  | 0.054U     | 0.054U   |
| K-3                | 4     | 11U                                         | 0.022U  | 0.11U         | 0.11U   | 0.11U      | 0.11U    |
|                    | 8     | 5.0U                                        | 0.02U   | 0.05U         | 0.05U   | 0.05U      | 0.05U    |
| Cleanup Goals      |       | 2,000                                       | 18      | 8,000         | 6,400   | 16,000     |          |

**Table 2F**  
**Analytical Soil Test Summary**  
**Gasoline Range Hydrocarbons and Lead**  
**5242 Shilshole Avenue NW**

| Exploration | Date    | Depth (feet) | TPH Diesel Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o Xylene | Lead |
|-------------|---------|--------------|------------------|---------|---------------|---------|------------|----------|------|
| MW-8        | 1-24-96 | 5            | NT               | 0.001U  | 0.001U        | 0.001U  | 0.001U     | 0.001U   | NT   |
| MW-10       | 1-24-96 | 5            | NT               | 0.001U  | 0.12U         | 0.001U  | 0.36       | 0.001U   | NT   |
| MW-104      | 6-13-11 | 2.5          | NT               | 0.0013U | 0.0013U       | 0.0065U | 0.0026U    | 0.0013U  | NT   |
|             |         | 5            | NT               | NT      | NT            | NT      | NT         | NT       | NT   |
| DPT 25-14   | 3-26-13 | 4            | NT               | 0.02U   | 0.38          | 0.051U  | 2.5        | 0.051U   | NT   |
|             |         | 11           | NT               | 0.02U   | 0.049U        | 0.049U  | 0.049U     | 0.049U   | NT   |
|             |         | 14           | NT               | 0.02U   | 0.048U        | 0.048U  | 0.048U     | 0.048U   | NT   |
| MW-201      | 9-11-14 | 1.0          | NT               | 0.02U   | 0.085U        | 0.085U  | 0.085U     | 0.085U   | NT   |
|             |         | 10           | NT               | 0.02U   | 0.05U         | 0.05U   | 0.05U      | 0.05U    | NT   |
| DPT 215-1   | 2-26-15 | 1            | 71U              | NT      | NT            | NT      | NT         | NT       | 12   |
| DPT 215-2   | 2-26-15 | 1            | 72U              | NT      | NT            | NT      | NT         | NT       | 11   |
| DPT 215-3   | 2-26-15 | 1            | 70U              | NT      | NT            | NT      | NT         | NT       | 9.7  |
| DPT 215-4   | 2-26-15 | 1            | 58U              | NT      | NT            | NT      | NT         | NT       | 11   |
| DPT 215-5   | 2-26-15 | 1            | 57U              | NT      | NT            | NT      | NT         | NT       | 8.6  |
|             |         | 3            | 61U              | 0.02U   | 0.066U        | 0.066U  | 0.5        | 0.33U    | 6.1U |

**Table 2F (continued)**  
**Analytical Soil Test Summary**  
**Gasoline Range Hydrocarbons and Lead**  
**5242 Shilshole Avenue NW**

| Exploration | Date    | Depth (feet) | TPH Diesel Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o Xylene | Lead |
|-------------|---------|--------------|------------------|---------|---------------|---------|------------|----------|------|
| DPT 215-6   | 2-26-15 | 1            | 67U              | NT      | NT            | NT      | NT         | NT       | 7.7  |
| DPT 215-7   | 2-26-15 | 1            | 66U              | NT      | NT            | NT      | NT         | NT       | 6.6U |
| DPT 215-8   | 2-26-15 | 1            | 72U              | NT      | NT            | NT      | NT         | NT       | 11   |
| DPT 215-9   | 2-26-15 | 1            | 62U              | NT      | NT            | NT      | NT         | NT       | 61   |
| DPT 215-10  | 2-26-15 | 1            | 110              | NT      | NT            | NT      | NT         | NT       |      |
|             | 2-26-15 | 2            | NT               | 0.02U   | 0.069U        | 0.069U  | 0.069U     | 0.069U   | 6.2U |
| DPT 215-11  | 2-26-15 | 1            | 70U              | NT      | NT            | NT      | NT         | NT       | 12   |
| DPT 215-12  | 2-26-15 | 1            | 57U              | NT      | NT            | NT      | NT         | NT       | 5.7U |

**Table 2F (continued)**  
**Analytical Soil Test Summary**  
**Gasoline Range Hydrocarbons and Lead**  
**Dry Goods Warehouse**  
**5242 Shilshole Avenue NW**

| Exploration | Date    | Depth (feet) | TPH Gas Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o Xylene | Lead |
|-------------|---------|--------------|---------------|---------|---------------|---------|------------|----------|------|
| B-401       | 4-14-15 | 5            | 2U            | 0.02U   | 0.02U         | 0.02U   | 0.06U      |          | NT   |
|             |         | 7.5          | 2U            | 0.02U   | 0.02U         | 0.02U   | 0.06U      |          | NT   |
| B-402       | 4-14-15 | 2.5          | 20U           | NT      | NT            | NT      | NT         | NT       | NT   |
|             |         | 5.0          | 20U           | NT      | NT            | NT      | NT         | NT       | NT   |
| B-403       | 4-14-15 | 5            | 20U           | NT      | NT            | NT      | NT         | NT       | NT   |
|             |         | 6            | 20U           | NT      | NT            | NT      | NT         | NT       | NT   |
| B-404       | 4-14-15 | 2.5          | 20U           | NT      | NT            | NT      | NT         | NT       | NT   |
|             |         | 10           | 2U            | 0.02U   | 0.02U         | 0.02U   | 0.06U      | NT       | NT   |
| MTCA Method | Method  |              | 100           | 0.03    | 6.0           | 7.0     | 9.0        |          | 250  |
| MTCA Method | Method  |              | 2,000         |         |               |         |            |          |      |

**Table 2G**  
**Analytical Soil Test Summary**  
**Petroleum Hydrocarbons**  
**5242 Shilshole Avenue NW**

| Exploration | Date    | Depth (feet) | TPH Diesel Range | TPH Oil Range |
|-------------|---------|--------------|------------------|---------------|
| MW-8        | 1-24-96 | 5            | NT               | NT            |
| MW-10       | 1-24-96 | 5            | NT               | NT            |
| MW-104      | 6-13-11 | 2.5          | NT               | NT            |
|             |         | 5            | NT               | NT            |
| DPT 25-14   | 3-26-13 | 4            | NT               | NT            |
|             |         | 11           | NT               | NT            |
|             |         | 14           | NT               | NT            |
| MW-201      | 9-11-14 | 1.0          | NT               | NT            |
|             |         | 10           | NT               | NT            |
| DPT 215-1   | 2-26-15 | 1            | 71U              | 140U          |
| DPT 215-2   | 2-26-15 | 1            | 72U              | 140U          |
| DPT 215-3   | 2-26-15 | 1            | 70U              | 140U          |
| DPT 215-4   | 2-26-15 | 1            | 58U              | 120U          |
| DPT 215-5   | 2-26-15 | 1            | 57U              | 110U          |
|             |         | 3            | 61U              | 120U          |
| DPT 215-6   | 2-26-15 | 1            | 67U              | 130U          |
| DPT 215-7   | 2-26-15 | 1            | 66U              | 130U          |
| DPT 215-8   | 2-26-15 | 1            | 72U              | 140U          |
| DPT 215-9   | 2-26-15 | 1            | 62U              | 120U          |
| DPT 215-10  | 2-26-15 | 1            | 110              | 85            |
|             | 2-26-15 | 2            | NT               | NT            |
| DPT 215-11  | 2-26-15 | 1            | 70U              | 140U          |
| DPT 215-12  | 2-26-15 | 1            | 57U              | 110U          |

**Table 2G (continued)**  
**Analytical Soil Test Summary**  
**Petroleum Hydrocarbons**  
**Dry Goods Warehouse**  
**5242 Shilshole Avenue NW**

| Exploration   | Date    | Depth (feet) | TPH Diesel Range | TPH Oil Range |
|---------------|---------|--------------|------------------|---------------|
| B-401         | 4-14-15 | 5            | NT               | NT            |
|               |         | 7.5          | NT               | NT            |
| B-402         | 4-14-15 | 2.5          | 50U              | 250U          |
|               |         | 5.0          | 50U              | 250U          |
| B-403         | 4-14-15 | 5            | 50U              | 250U          |
|               |         | 6            | 50U              | 250U          |
| B-404         | 4-14-15 | 2.5          | 50U              | 250U          |
|               |         | 10           | NT               | NT            |
| MTCA Method A |         |              | 2,000            | 2,000         |
| MTCA Method B |         |              |                  |               |

**Table 2H**  
**Petroleum Hydrocarbons and BETX**  
**Soil-Performance Samples 2015**

| Exploration Number | Depth | Total Petroleum Hydrocarbons-Gasoline Range | Benzene | Ethyl Benzene | Toluene | m,p Xylene | o-Xylene |
|--------------------|-------|---------------------------------------------|---------|---------------|---------|------------|----------|
| B-301              | 7.5   | 7.4U                                        | 0.02U   | 0.074U        | 0.074U  | 0.074U     | 0.074U   |
|                    | 10    | 1500                                        | 0.02U   | 0.15U         | 0.15U   | 0.15U      | 0.15U    |
|                    | 12.5  | 5.3U                                        | 0.02U   | 0.053U        | 0.053U  | 0.053U     | 0.053U   |
| B-302              | 5     | 6.6U                                        | 0.02U   | 0.066U        | 0.066U  | 0.066U     | 0.066U   |
|                    | 7.5   | 1400                                        | 0.025U  | 0.13U         | 0.13U   | 0.29       | 0.13U    |
|                    | 10    | 26                                          | 0.02U   | 0.057U        | 0.057U  | 0.057U     | 0.057U   |
| Cleanup Goals      |       | 2,000                                       | 18      | 8,000         | 6,400   | 16,000     |          |



**Table 3A**  
**Sub Slab Vapor Samples**  
**TPH Results**

| <b>Sample Designation</b>         | <b>Date Sampled</b> | <b>TPH<sub>v</sub><br/>(C5-C8)<br/>Aliphatic</b> | <b>TPH<sub>v</sub><br/>(C9-C12)<br/>Aliphatic</b> | <b>TPH<sub>v</sub><br/>(C9-C10)<br/>Aromatic</b> |
|-----------------------------------|---------------------|--------------------------------------------------|---------------------------------------------------|--------------------------------------------------|
| VP-1                              | 1/29/13             | 150,000                                          | 520                                               | 100U                                             |
|                                   | 1/26/15             | 5,000                                            | 49,000                                            | 500U                                             |
|                                   | 3/29/15             | 100U                                             | 100U                                              | 100U                                             |
| VP-2                              | 6/29/11             | 5,500                                            | 90,000                                            | 500U                                             |
|                                   | 1/29/13             | 4,600                                            | 120                                               | 100U                                             |
|                                   | 1/26/15             | 110                                              | 28,000                                            | 100U                                             |
| VP-3                              | 6/29/11             | 2,200                                            | 55,000                                            | 500U                                             |
|                                   | 1/29/13             | 2,400                                            | 180                                               | 100U                                             |
|                                   | 1/26/15             | 240                                              | 5,500                                             | 100U                                             |
| Ambient Basement Air              | 6/29/11             | 560                                              | 710                                               | 100U                                             |
| VP-4                              | 3/29/15             | 200                                              | 100U                                              | 100U                                             |
| VP-5                              | 3/29/15             | 100                                              | 100U                                              | 100U                                             |
| VP-6                              | 3/29/15             | 340                                              | 100U                                              | 100U                                             |
| K N                               | 1/26/15             | 24,000                                           | 280,000                                           | 2,500U                                           |
|                                   | 4/1/15              | 20,000                                           | 320,000                                           | 790                                              |
| K C                               | 1/26/15             | 500U                                             | 16,000                                            | 500U                                             |
| K S                               | 1/26/15             | 500U                                             | 35,000                                            | 500U                                             |
| K-4                               | 4/1/15              | 250                                              | 200                                               | 100U                                             |
| K-5                               | 4/1/15              | 360                                              | 100U                                              | 100U                                             |
| K-6                               | 4/1/15              | 200                                              | 220                                               | 100U                                             |
| K-7                               | 4/1/15              | 170                                              | 410                                               | 100U                                             |
| Method B Sub Slab Cleanup Value   |                     | 27,000                                           | 1,400                                             | 1,800                                            |
| Method B Indoor Air Value         |                     | 2,700                                            | 140                                               | 180                                              |
| Commercial Indoor Air Value       |                     | NC                                               | 2,628                                             | NC                                               |
| Commercial Sub Slab Cleanup Value |                     | NC                                               | 26,280                                            | NC                                               |

**Table 3B**  
**Sub Slab Vapor Samples**  
**Volatile Organic Compound Results**

| Sample Designation                  | Date    | Acetone | Methylene Chloride | Benzene | Ethyl Benzene | Toluene | m,p-Xylene | o-xylene | Styrene | 1,2,4-Trimethylbenzene | Chloroform | Tetrachloroethene |
|-------------------------------------|---------|---------|--------------------|---------|---------------|---------|------------|----------|---------|------------------------|------------|-------------------|
| VP-1                                | 1/29/13 | 24U     | 4.4                | 4.3     | 4.8           | 62      | 15         | 5.2      | 4.3U    | 5.0U                   | 4.9U       | 6.9U              |
|                                     | 1/26/15 | 120U    | 18U                | 21U     | 22U           | 19U     | 44U        | 22U      | 22U     | 25U                    | 25U        | 4,400             |
|                                     | 3/29/15 | 24U     | 3.5U               | 3.2U    | 4.4U          | 5.6     | 8.8U       | 4.4U     | 4.3U    | 5.0U                   | 8.1        | 5.5U              |
| VP-2                                | 6/29/11 | 850     | 18U                | 16U     | 23            | 67      | 51         | 25       | 22U     | 25U                    | 25U        | 34U               |
|                                     | 1/29/13 | 24U     | 5.1                | 3.2U    | 4.4U          | 47      | 12         | 4.4U     | 4.3U    | 5.0U                   | 8.6        | 6.9U              |
|                                     | 1/26/15 | 24U     | 3.5U               | 3.2U    | 4.8           | 12      | 34         | 15       | 4.3U    | 9.4                    | 4.9U       | 6.9U              |
| VP-3                                | 6/29/11 | 570     | 18U                | 16U     | 22U           | 48      | 44U        | 22U      | 22U     | 25U                    | 25U        | 34U               |
|                                     | 1/29/13 | 24U     | 5.2U               | 3.2U    | 4.4U          | 47      | 12         | 4.4U     | 4.3U    | 5.0U                   | 4.9U       | 6.9U              |
|                                     | 1/26/15 | 26      | 3.5U               | 3.2U    | 9.6           | 13      | 78         | 22       | 4.3U    | 5.7                    | 4.9U       | 6.9U              |
| Ambient Basement Air                | 6/29/11 | 40      | 10                 | 4.5     | 14            | 48      | 36         | 13       | 4.7     | 13                     | 5.0U       | 6.9U              |
| K-N                                 | 1/26/15 | 600U    | 88U                | 81U     | 110U          | 120     | 230        | 160      | 110U    | 120U                   | 120U       | 170U              |
| K-C                                 | 1/26/15 | 120U    | 18U                | 16U     | 22U           | 19U     | 44U        | 22U      | 22U     | 25U                    | 25U        | 34U               |
| K-S                                 | 1/26/15 | 120U    | 16U                | 16U     | 22U           | 19U     | 44U        | 22U      | 22U     | 25U                    | 25U        | 34U               |
| Method B Sub Slab Cleanup Value     |         | NP      | 53                 | 3.2     | 4,600         | 22,000  | 460        | 460      | 44      | NP                     | 1.1        | 96.2              |
| Method B Indoor Air Cleanup Value   |         | NP      | 5.3                | 0.32    | 460           | 2,200   | 46         | 46       | 4.4     | NP                     | 0.11       | 9.62              |
| Commercial Sub Slab value           |         | NC      | NC                 | 14.1    | NC            | NC      | NC         | NC       | NC      | NC                     | NC         |                   |
| Commercial Indoor Air cleanup value |         |         |                    | 1.41    | NC            | NC      | NC         | NC       | NC      | NC                     | NC         |                   |

**Table 4**  
**Indoor Basement Air Samples**  
**TPH Results**

| Sample Designation | Date Sampled | TPHv (C5-C8) Aliphatic | TPHv (C9-C12) Aliphatic | TPHv (C9-C10) Aromatic |
|--------------------|--------------|------------------------|-------------------------|------------------------|
| 5-3-1              | 5-3-15       | 170                    | 290                     | 100U                   |
| 5-3-2              | 5-3-15       | 100U                   | 150                     | 100U                   |
| 5-3-3              | 5-3-15       | 100U                   | 100U                    | 100U                   |

**Table 4 (continued)**  
**Indoor Basement Air Samples**  
**TPH Results**

| Sample Designation          | Date Sampled | TPH <sub>v</sub><br>(C5-C8)<br>Aliphatic | TPH <sub>v</sub><br>(C9-C12)<br>Aliphatic | TPH <sub>v</sub><br>(C9-C10)<br>Aromatic |
|-----------------------------|--------------|------------------------------------------|-------------------------------------------|------------------------------------------|
| 5-3-4                       | 5-3-15       | 290                                      | 120                                       | 100U                                     |
| Method B Indoor Air Value   |              | 2,700                                    | 140                                       | 180                                      |
| Commercial Indoor Air Value |              | NC                                       | 2628                                      | NC                                       |

**Notes for Table 3 and 4:**

All values are µg/m<sup>3</sup>.

U indicates that the analyte was not present at the numerical reporting limit.

Cleanup levels are from Ecology draft publication No. 09-09-047, dated October 2009.

Chloroform is attributed to leaks from city water supply system.

Ambient Basement Air for June 29, 2011 is a 4 minute sample duration and is a grab sample that is not representative of indoor air quality.

Tetrachloroethene in Sample VP-1 for the sample of January 26, 2015 appears to be due to carry over in the sample cylinder and not from the subject site.

Commercial exposure value based on using a value of 0.68 for factor EF and 6.66 for breathing rate for carcinogens.

A sub slab attenuation rate of 0.1 is used based on radon testing in January of 2015.

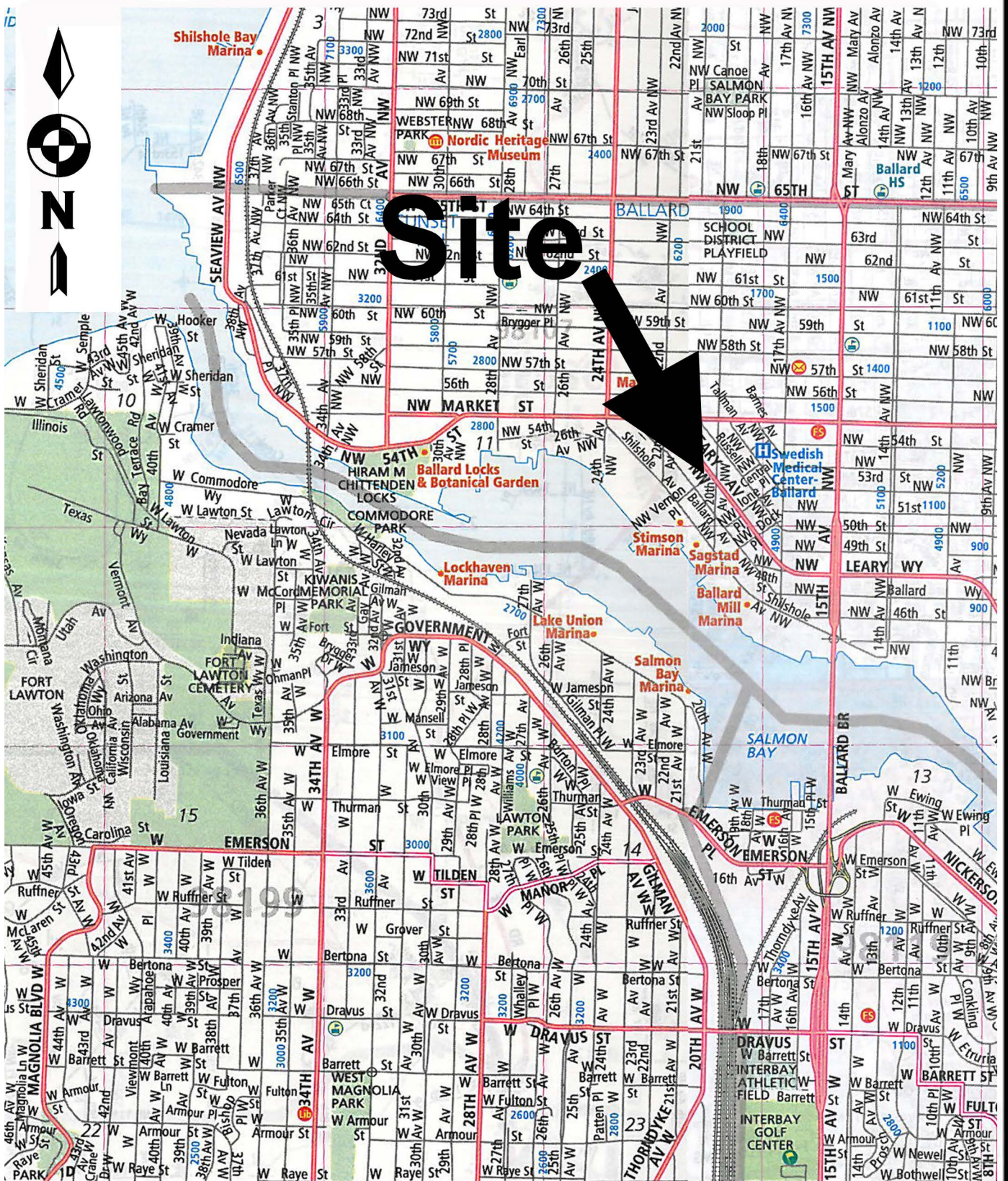
Shaded cells are samples that exceed the published Method B values for indoor air and an attenuation factor of 0.1.

**Table 5**  
**SVE Sampling**

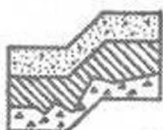
| <b>Date</b> | <b>Wells</b>    | <b>TPH<br/>Gasoline<br/>Range</b> | <b>Date</b> | <b>Wells</b>    | <b>TPH<br/>Gasoline<br/>Range</b> |
|-------------|-----------------|-----------------------------------|-------------|-----------------|-----------------------------------|
| 5/7/12      | MW-101          | 1,800                             | 7/8/13      | MW-105 & MW-106 | 620                               |
| 5/8/12      | MW-101          | 2,100                             | 7/31/13     | MW-105 & MW-106 | 691.6                             |
| 5/22/12     | MW-101          | 2,200                             | 8/28/13     | MW-105 & MW-106 | 1,100                             |
| 5/29/12     | MW-101          | 2,200                             | 9/24/13     | MW-105 & MW-106 | 740                               |
| 6/14/12     | MW-102          | 1,700                             | 10/29/13    | MW-105 & MW-106 | 510                               |
| 6/18/12     | MW-101- MW-103  | 2,300                             | 1/9/14      | MW-105 & MW-106 | 400                               |
| 6/29/12     | MW-101- MW-103  | 2,000                             | 1/28/14     | MW-101 & MW-102 | 210                               |
| 7/26/12     | MW-101- MW-103  | 1,700                             | 2/13/14     | MW-105 & MW-106 | 250                               |
| 9/4/12      | MW-101- MW-103  | 1,000                             | 3/3/14      | MW-105 & MW-106 | 150                               |
| 10/1/12     | MW-101- MW-103  | 1,700                             | 3/31/14     | MW-105 & MW-106 | 50                                |
| 11/14/12    | MW-101- MW-103  | 970                               | 4/30/14     | MW-105 & MW-106 | 190                               |
| 12/12/12    | MW-101- MW-103  | 790                               | 5/28/14     | MW-105 & MW-106 | 240                               |
| 1/10/13     | MW-101- MW-103  | 770                               | 7/14/14     | MW-105 & MW-106 | 430                               |
| 1/22/13     | MW-101- MW-103  | 660                               | 7/28/14     | MW-105 & MW-106 | 950                               |
| 3/1/13      | MW-101- MW-103  | 980                               | 9/29/14     | MW-105 & MW-106 | 240                               |
| 3/7/13      | MW-105 & MW-106 | 1,603                             | 12/15/14    | MW-105 & MW-106 | 50                                |
| 4/3/13      | MW-105 & MW-106 | 780                               | 1/12/15     | MW-105 & MW-106 | 50                                |
| 4/29/13     | MW-105 & MW-106 | 870                               | 2/17/15     | MW-105 & MW-106 | 50                                |
| 6/5/13      | MW-105 & MW-106 | 541.5                             |             |                 |                                   |

**Notes:** All units are µg/l.  
Values of 50 are based on non-detects with a PQL of 100 µg/l.





Reference: Thomas Bros King County Road Atlas. NOT TO SCALE



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Vicinity Map  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No T-6552

Date Oct 2015

Figure 1





Reference: Seattle North and Shilshole Bay USGS Quadrangles



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Topographic Vicinity Map  
5221 Ballard Ave NW  
Seattle, Washington

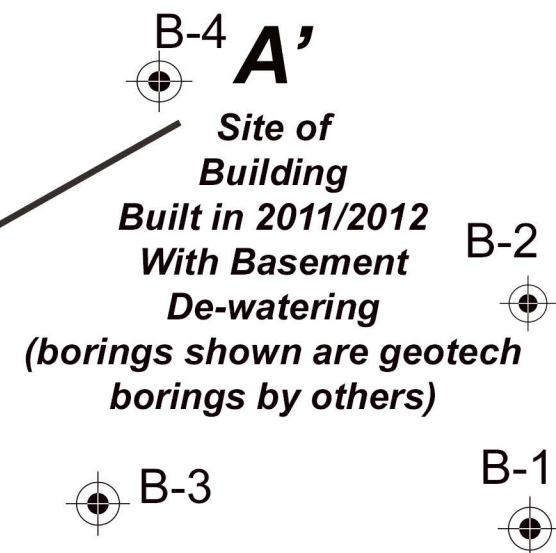
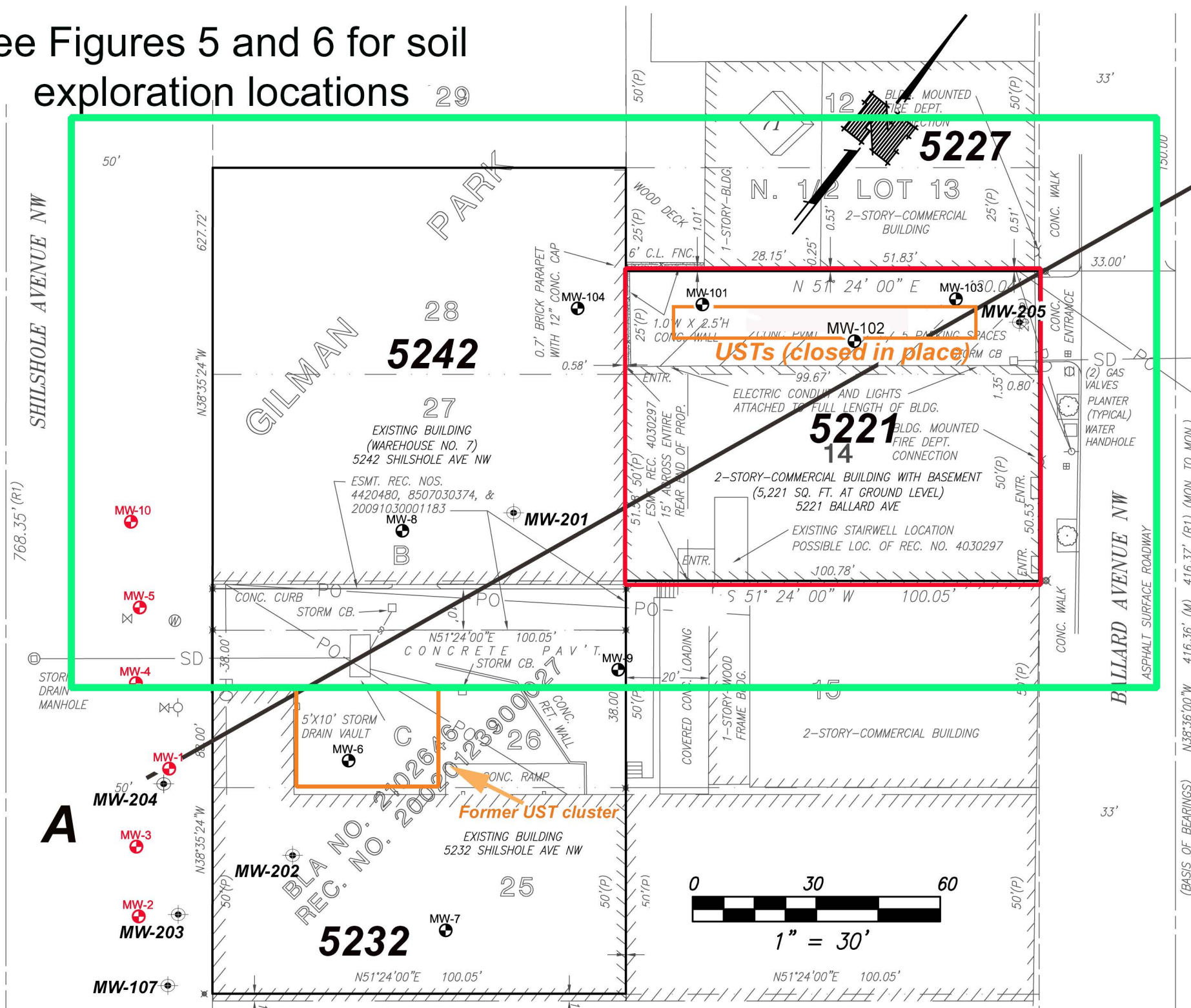
Proj. No T-6552

Date Oct 2015

Figure 2



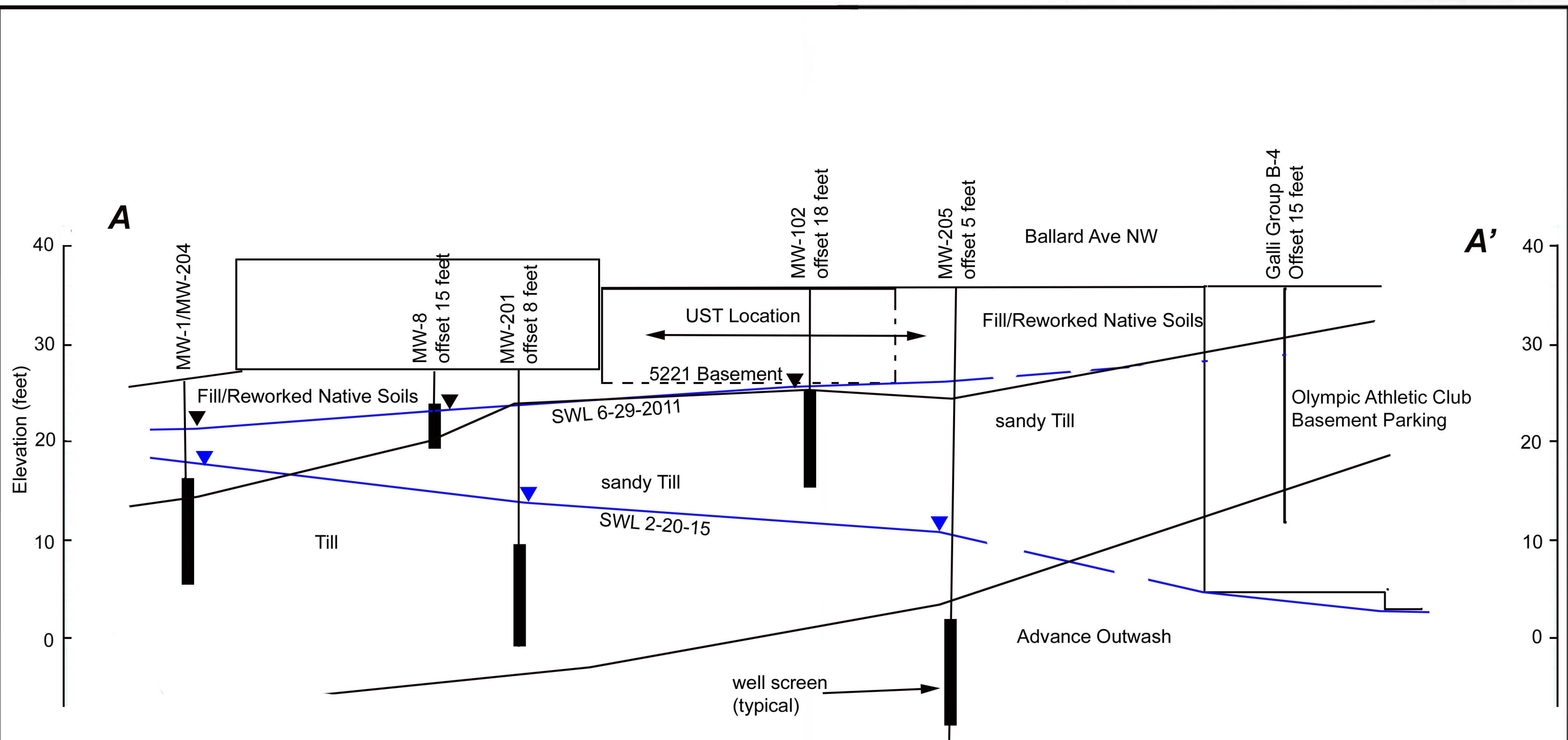
See Figures 5 and 6 for soil exploration locations



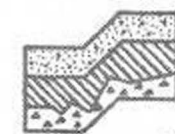
Legend

 **Boring Location**  
MW prefix indicates that the boring was completed as a monitoring well. Monitoring wells shown in red have been abandoned.

**5221** Street Address



Scale 1"=30' Horizontal, 1'=10' Vertical



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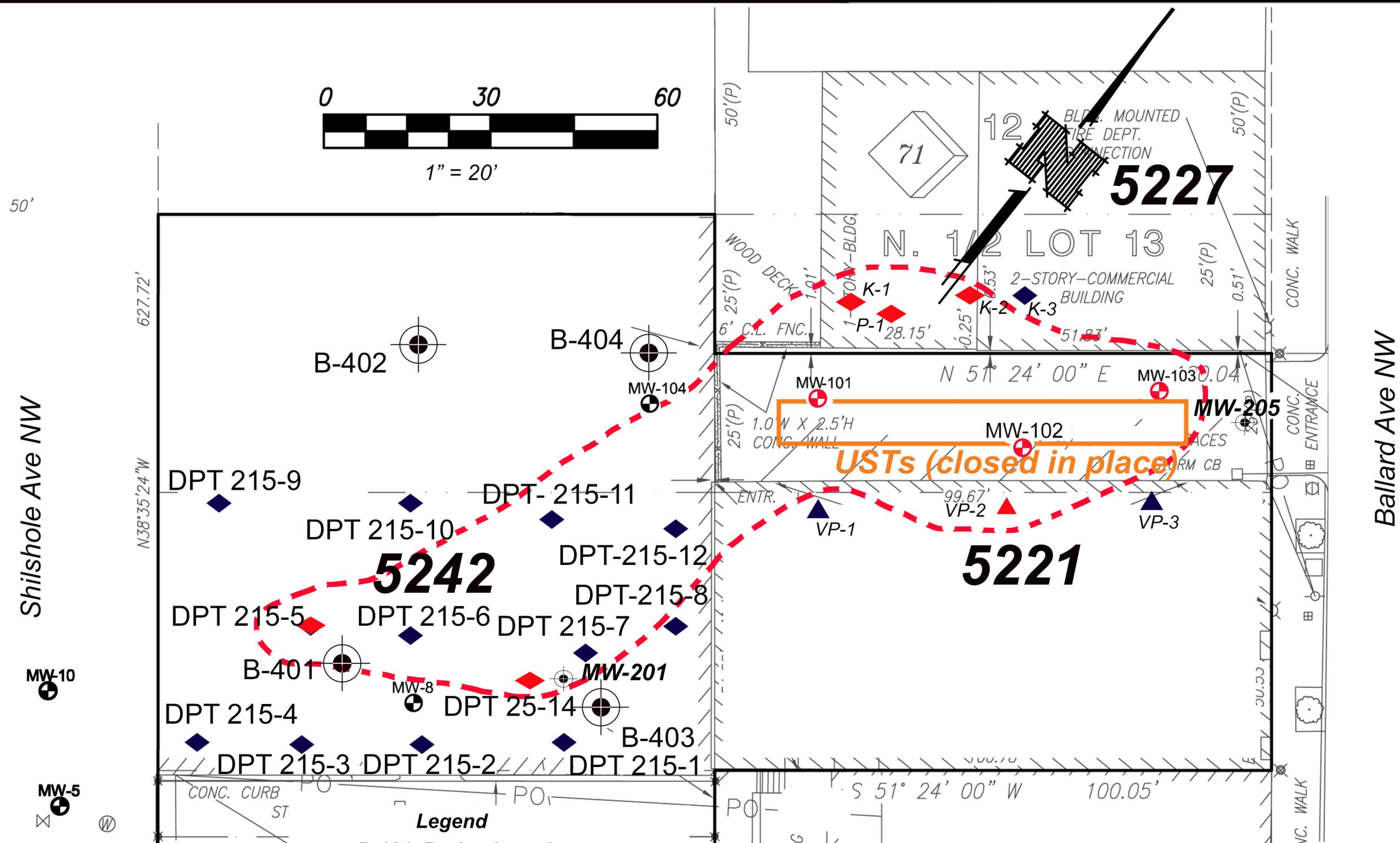
Generalized Geologic Section  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No. T-6552

Date Oct 2015

Figure 4





Explorations shown with red symbol indicate locations of soil samples that exceeded MTCA Method A cleanup values for Total Petroleum Hydrocarbons



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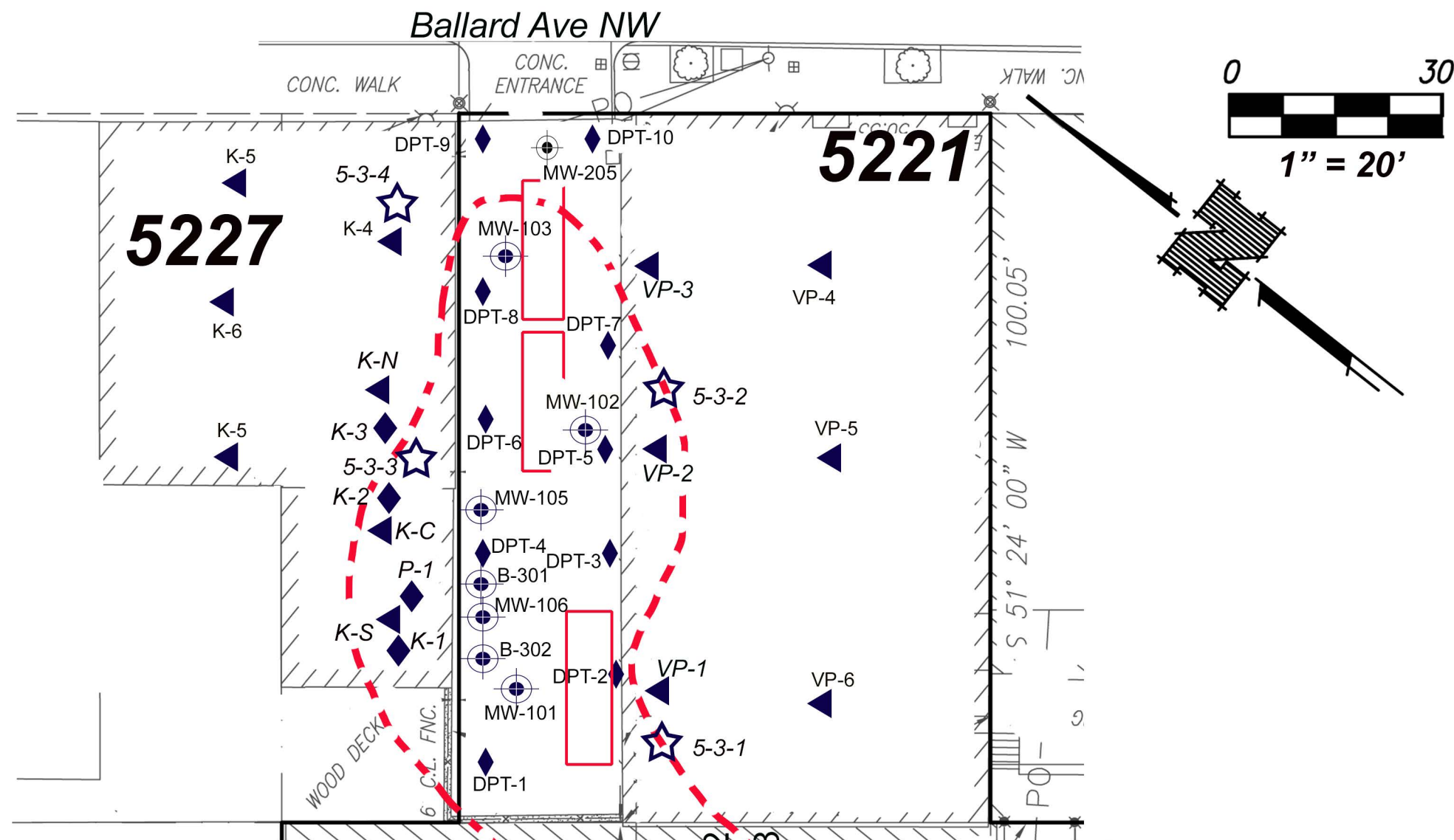
Geotechnical Consultants

Soil Exploration Overview  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No. T-6552

Date Oct 2015

Figure 5



- Legend**
- B-101 Boring Location**
  - MW-101 Monitoring Well Location**
  - DPT Location**
  - Sub Slab Vapor Sample Location**
  - Indoor Air Sample taken at Breathing Zone**
  - Approximate Limit of Release Impacts to Soil from 5221**



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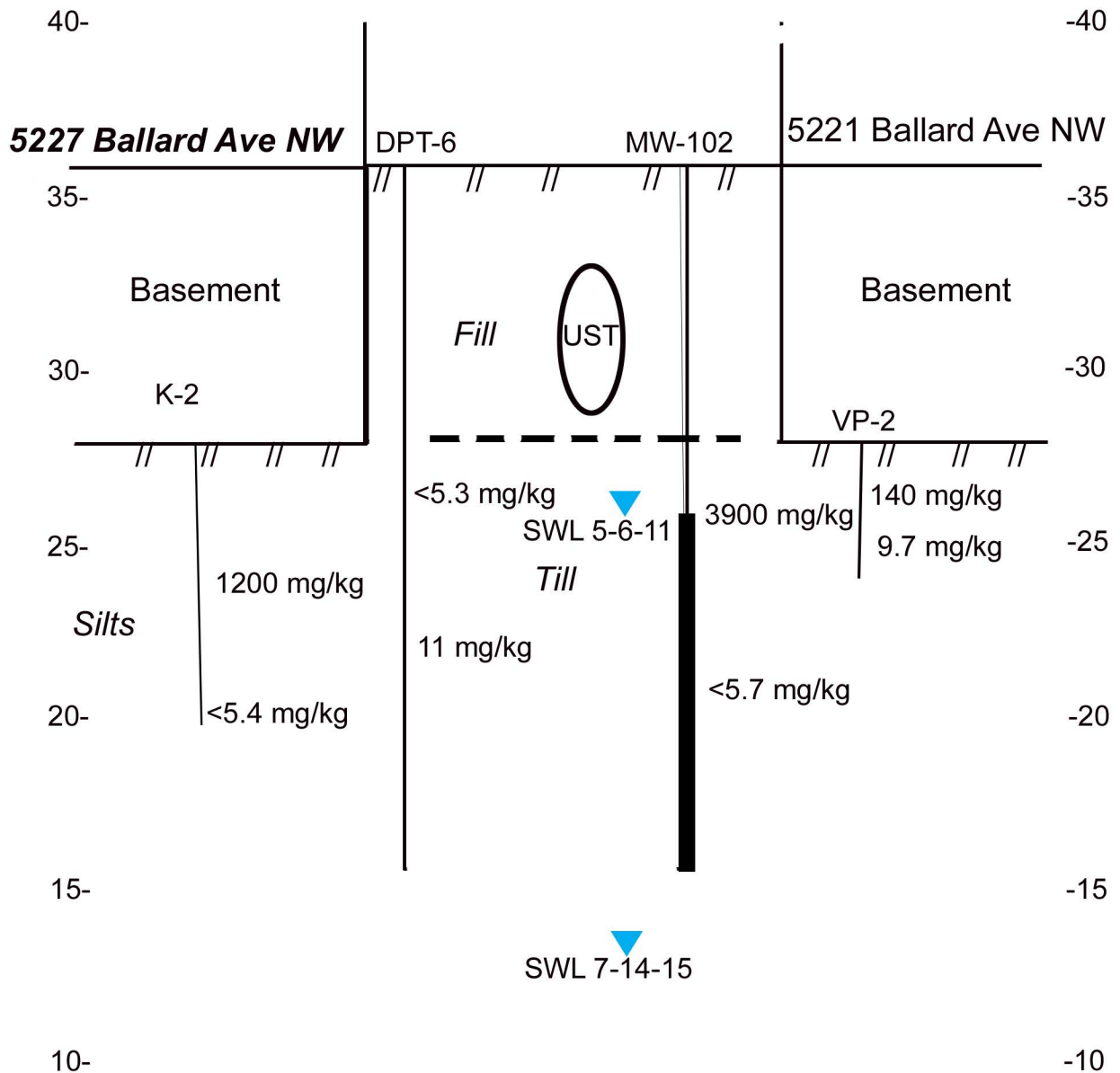
Geotechnical Consultants

Soil Exploration 5221 Ballard Ave NW  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No. T-6552

Date Oct 2015

Figure 6



Horizontal Scale 1"=10 feet  
Vertical Scale 1" = 5'  
Cross Section View is looking north



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Geotechnical Consultants

Generalized Cross Section through UST  
5221 Ballard Ave NW  
Seattle, Washington

Proj. No T-6552

Date Oct 2015

Figure 7

**APPENDIX A**  
**SUBSURFACE EXPLORATION/FIELD SAMPLING**

**5221 Ballard Avenue NW**  
**Seattle, Washington**

Explorations MW-101, MW-102, and MW-103 were advanced using a drill rig owned and operated by Cascade Drilling. MW-104 was drilled using a limited access drill rig owned and operated by BoreTech. All drilling was done using hollow stem augers. In MW-101, MW-102, and MW-103, the samples were taken using a 2-inch ID sampler driven using a 300 pound hammer dropping 30 inches. Due to low overhead in the warehouse, the boom could not be raised to allow SPT samples to be taken. Soil samples were taken from the open hole using a hand auger at selected depths. Prior to taking soil samples, the drill tools were removed from the hole.

The test pits in the basement of 5221 were hand excavated using a post hole digger and a hand auger.

Direct Push Technology (DPT) borings were advanced using a Geoprobe Rig owned and operated by Cascade Drilling. The DPT boring done in the basement of 5227 Ballard Avenue NW were done by Philco under contract with Terra Associates. DPT borings have been used in the parking lot at 5221 Ballard Avenue NW for performance sampling and for characterization samples in the basement of 5227 Ballard Avenue NW and in the warehouse at 5242 Shilshole Avenue NW. The sampling system consists of steel rods that are driven into the ground using a pneumatic hammer. The rods have a length of five feet and are provided with a PVC liner to contain the soil sample within the tooling. In each Geo Probe, the lower one-foot of the recovered core was sampled for analytical testing. The new vacuum extraction wells, MW-105 and MW-106 were drilled using hollow stem augers and a drill rig owned and operated by Cascade Drilling. Samples were taken on five-foot intervals.

Prior to the final explorations within the warehouse space at 5242 Shilshole Avenue NW, a reconnaissance level vapor reconnaissance was conducted to allow for focused soil sampling. The reconnaissance consisted of drilling holes in the slab and temporarily installing cox-Colvin vapor pins in a rigid pattern. A handheld PID was used to develop and sample the vapor pins. The results of the reconnaissance is shown on Figure A-1 attached to this appendix. It must be noted that the purpose of the reconnaissance was a qualitative search for hot spots beneath the slab. The PID readings reflect interference from soil moisture and from compounds that do not resolve themselves as hydrocarbons in the gasoline range using Ecology approved laboratory testing. Subsequent soil sampling does not suggest that there are any unique sub slab conditions in the warehouse relative to the areas sampled for 5221 and 5227 Ballard Avenue NW.

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross contamination.

A representative of our firm continuously monitored the drilling and kept a detailed log of each test exploration. Samples recovered during drilling were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.



Samples were screened in the field using the headspace and sheen methods. For the headspace screening, a subsample of the soil is placed in a plastic bag and allowed to reach ambient temperatures. The probe from a handheld Photo Ionization Device is then inserted to measure the air in the headspace of the bag. The sheen test consists of placing a subsample into a pan with clean water to see if sheen develops.

Groundwater monitoring wells were constructed in each of the borings conducted for this study. The wells are built with two-inch diameter PVC well materials. The screens are factory slotted with 0.01-inch openings. The screen segments were backfilled with silica sand. All wells were constructed in accordance with Washington State well construction requirements.

The initial vapor probes in the basement of 5221 Ballard Avenue NW were hand excavated. The logs for the vapor probes are below in Table B-1.

**TABLE A-1  
Vapor Probe Logs  
VP-1**

| <b>Depth (Below Top of Slab)</b> | <b>Soils Encountered</b>                                                          | <b>Sheen/Odor/PID</b> |
|----------------------------------|-----------------------------------------------------------------------------------|-----------------------|
| 0-4"                             | Concrete slab                                                                     |                       |
| 4-12"                            | 1-inch minus clean round rock                                                     | No/No/0.0             |
| 12-18"                           | Mottled gray and brown silty sand with gravel, moist, loose to medium dense. (SM) | No/No/0.0             |
| 18-54"                           | Brown silty sand with gravel sandy gravel lenses. (SM)<br>Seepage at 3 feet.      | No/No/0.0             |

**VP-2**

| <b>Depth (Below Top of Slab)</b> | <b>Soils Encountered</b>                            | <b>Sheen/Odor/PID</b>          |
|----------------------------------|-----------------------------------------------------|--------------------------------|
| 0-4"                             | Concrete slab                                       |                                |
| 4-12"                            | Brown sandy gravel, moist.                          | Light odor                     |
| 12-48"                           | Gray/brown sandy silt with gravel, wet by 3.5 feet. | 659 ppm @ 18"<br>45.4 ppm @ 4' |

**VP-3**

| <b>Depth (Below Top of Slab)</b> | <b>Soils Encountered</b>                                         | <b>Sheen/Odor/PID</b>                        |
|----------------------------------|------------------------------------------------------------------|----------------------------------------------|
| 0-5"                             | Concrete slab                                                    |                                              |
| 5-13"                            | Brown gravelly sand, moist.                                      | No/No/0.0                                    |
| 13-54"                           | Gray silty sand with gravel, moist becoming wet with depth. (SM) | Light odor<br>24.7ppm @ 18"<br>0.0 ppm @ 48" |

**TABLE A-2**  
**DPT Logs**  
**5227 Ballard Avenue NW**

**K-1**

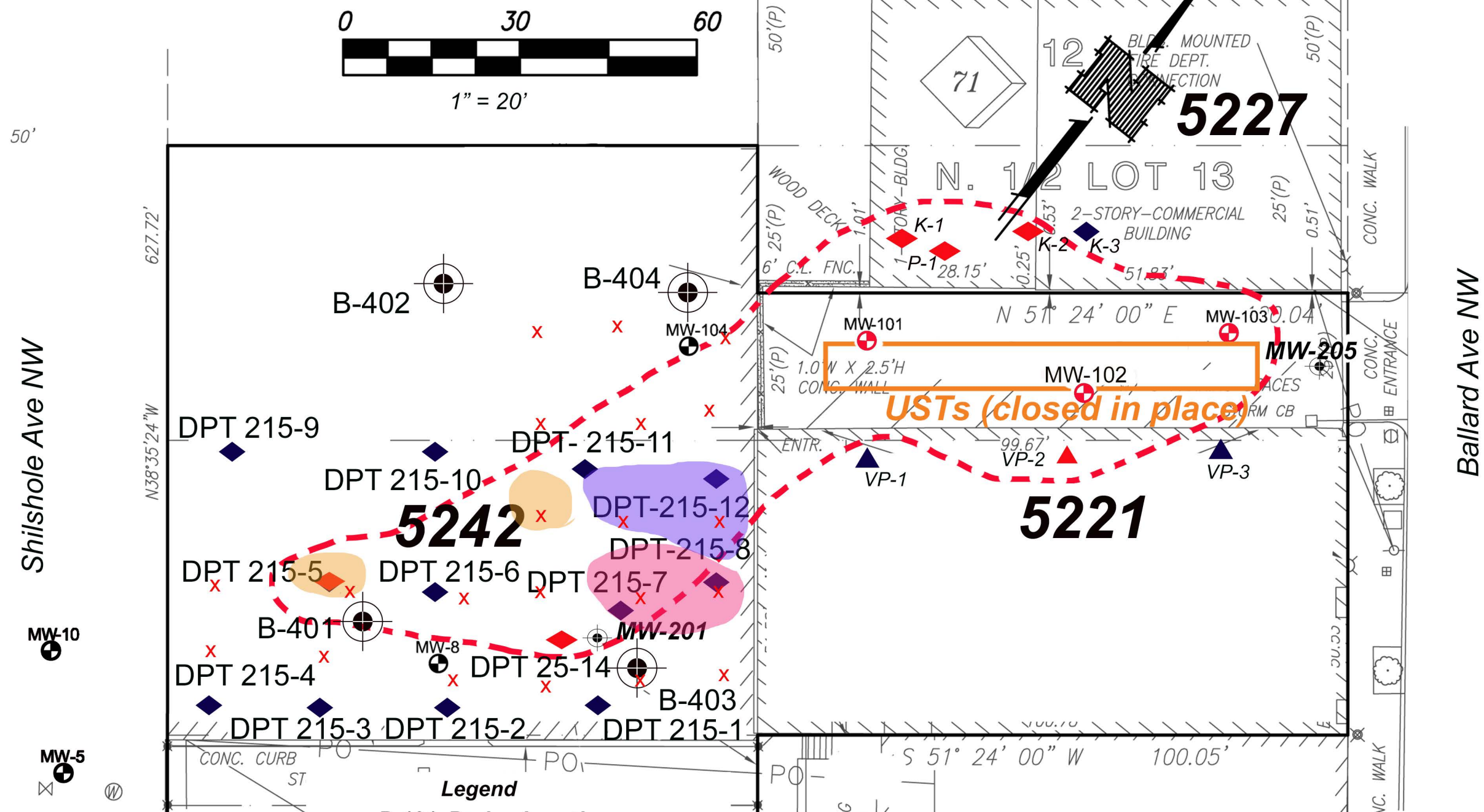
| <b>Depth (Below Top of Slab)</b>                             | <b>Soils Encountered</b>                                    | <b>Odor</b>               |
|--------------------------------------------------------------|-------------------------------------------------------------|---------------------------|
| 0-5"                                                         | Concrete slab                                               |                           |
| 5" to 60"                                                    | Dark brown silt, soft to medium stiff becoming stiff at 42" | Light odor from 24 to 48" |
| 60" to 102"                                                  | Gray silty sand and sandy silt, moist medium dense          | No odors                  |
| Refusal soil conditions at 102". No groundwater encountered. |                                                             |                           |

**K-2**

| <b>Depth (Below Top of Slab)</b>                            | <b>Soils Encountered</b>                                    | <b>Odor</b>                    |
|-------------------------------------------------------------|-------------------------------------------------------------|--------------------------------|
| 0-5"                                                        | Concrete slab                                               |                                |
| 5" to 24"                                                   | Dark brown silt, soft to medium stiff becoming stiff at 42" | Light odor from surface to 48" |
| 24" to 96"                                                  | Gray sandy silt, moist medium dense                         | No odors below 48"             |
| Refusal soil conditions at 96". No groundwater encountered. |                                                             |                                |

**K-3**

| <b>Depth (Below Top of Slab)</b>                            | <b>Soils Encountered</b>                                    | <b>Odor</b>                |
|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
| 0-5"                                                        | Concrete slab                                               |                            |
| 5" to 24"                                                   | Dark brown silt, soft to medium stiff becoming stiff at 42" | Light odor from 24" to 48" |
| 24" to 96"                                                  | Gray sandy silt, moist medium dense                         | No odors below 48"         |
| Refusal soil conditions at 96". No groundwater encountered. |                                                             |                            |



Red x shows location of subslab PID  
 Reconnaissance Location  
 Salmon Color shows probes with  
 PID readings of >20 ppm  
 Tan Color Shows probes with  
 PID readings of 5 to 20 ppm  
 Blue Color shows probes with  
 PID readings of 1 to 5 ppm  
 Areas with no color overlay are  
 areas where the PID reading was <1 ppm

- Legend**
- B-101 Boring Location
  - MW-101 Monitoring Well Location
  - DPT Location
  - Sub Slab Vapor Sample Location
  - Approximate Limit of Release  
Impacts to Soil from 5221

*Explorations shown with red symbol indicate  
 locations of soil samples that exceeded  
 MTCA Method A cleanup values for  
 Total Petroleum Hydrocarbons*



**TERRA  
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Sub Slab Reconnaissance  
 5221 Ballard Ave NW  
 Seattle, Washington

Proj. No. T-6552

Date Oct 2015

Figure A1

# LOG OF MONITORING WELL MW-101

Figure No. B-13

Project: 5221 Ballard Avenue North Project No: T-6552 Date Drilled: 5/6/11  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                           | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>10 30 50 70 90 | Pocket Penetrometer<br>TSF<br>1 2 3 4 |  |  |    | SPT (N)<br>Blows/ft | Observ.<br>Well |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|---------------------------------------|--|--|----|---------------------|-----------------|
|            |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 1          |                 | (3.5 inches ASPHALT SLAB)                                                                                                  |                                  |                                                             |                                       |  |  |    |                     |                 |
| 2          |                 | Brown silty SAND/sandy SILT, moist. (Fill)                                                                                 | Soft                             |                                                             |                                       |  |  |    |                     |                 |
| 3          |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 4          |                 |                                                                                                                            |                                  |                                                             |                                       |  |  | 6  |                     |                 |
| 5          |                 | Dark gray sandy SILT, moist, light hydrocarbon odor. Mottled discoloration. (Fill)                                         | Soft                             |                                                             |                                       |  |  |    |                     |                 |
| 6          |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 7          |                 | Becomes sandier, occasional small chunks of brick, copper.                                                                 |                                  |                                                             |                                       |  |  |    |                     |                 |
| 8          |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 9          |                 | Moderate hydrocarbon odor.                                                                                                 | Medium Dense                     |                                                             |                                       |  |  | 17 |                     |                 |
| 10         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 11         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 12         |                 |                                                                                                                            | Dense                            |                                                             |                                       |  |  |    |                     |                 |
| 13         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 14         |                 | Gray silty SAND with gravel, moist, becomes wet by 13 feet. (Till)                                                         |                                  |                                                             |                                       |  |  |    | 51                  |                 |
| 15         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 16         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    | 49                  |                 |
| 17         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 18         |                 |                                                                                                                            | Dense                            |                                                             |                                       |  |  |    |                     |                 |
| 19         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 20         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    | 50                  |                 |
| 21         |                 | Boring terminated at 20 feet. 2-inch PVC monitoring well installed as shown using 0.010 slotted screen from 10 to 20 feet. |                                  |                                                             |                                       |  |  |    |                     |                 |
| 22         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 23         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 24         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |
| 25         |                 |                                                                                                                            |                                  |                                                             |                                       |  |  |    |                     |                 |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL MW-102

Figure No. B-14

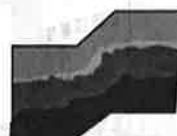
Project: 5221 Ballard Avenue North Project No: T-6552 Date Drilled: 5/6/11

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                                    | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>10 30 50 70 90 | Pocket Penetrometer<br>TSF<br>1 2 3 4<br>SPT (N)<br>Blows/ft<br>10 20 30 40 |  |  |  | Observ.<br>Well |
|------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------|--|--|--|-----------------|
|            |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 1          |                 | (7 inches ASPHALT)                                                                                                                  |                                  |                                                             |                                                                             |  |  |  |                 |
| 2          |                 | Brown silty SAND with gravel, moist.<br>(Till)                                                                                      | Loose/Soft                       |                                                             |                                                                             |  |  |  |                 |
| 3          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 4          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 5          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 6          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 7          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 8          |                 | Pea gravel with silt and brick bits,<br>moderate hydrocarbon odor. (Fill)                                                           | Loose                            |                                                             |                                                                             |  |  |  |                 |
| 9          |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 10         |                 | Gray silty SAND with gravel, moist,<br>becomes wet by 12.5 feet. (Till)                                                             | Medium Dense                     |                                                             |                                                                             |  |  |  |                 |
| 11         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 12         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 13         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 14         |                 | Minor amount of silt by 15 feet.                                                                                                    | Dense                            |                                                             |                                                                             |  |  |  |                 |
| 15         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 16         |                 |                                                                                                                                     | Dense                            |                                                             |                                                                             |  |  |  |                 |
| 17         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 18         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 19         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 20         |                 | Boring terminated at 20 feet.<br>2-inch PVC monitoring well installed as<br>shown using 0.010 slotted screen from<br>10 to 20 feet. |                                  |                                                             |                                                                             |  |  |  |                 |
| 21         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 22         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 23         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 24         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |
| 25         |                 |                                                                                                                                     |                                  |                                                             |                                                                             |  |  |  |                 |

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# LOG OF MONITORING WELL MW-103

Figure No. B-15

**Project:** 5221 Ballard Avenue North      **Project No:** T-6552      **Date Drilled:** 5/6/11  
**Client:** HALCO PROPERTIES, LLC      **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                           | Consistency/<br>Relative Density | Moisture Content %<br>Wp  ----x----  Wl<br>10 30 50 70 90 | Pocket Penetrometer<br>TSF<br>1 2 3 4<br>SPT (N)<br>Blows/ft<br>10 20 30 40 |    |  |  | Observ.<br>Well |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------|----|--|--|-----------------|
|            |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 1          |                 | (5 inches ASPHALT SLAB)                                                                                                    |                                  |                                                           |                                                                             |    |  |  |                 |
| 2          |                 | Brown silty SAND/sandy SILT, small brick bits, moist. (Fill)                                                               | Loose/Soft                       |                                                           |                                                                             |    |  |  |                 |
| 3          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 4          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 5          |                 | Light hydrocarbon odor.                                                                                                    | Medium Dense                     |                                                           |                                                                             | 5  |  |  |                 |
| 6          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 7          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 8          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 9          |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 10         |                 | Gray silty SAND, moist, wet by 12.5 feet, light to moderate hydrocarbon odor, slight sheen from 10 to 14 feet. (TIII)      | Dense                            |                                                           |                                                                             | 25 |  |  |                 |
| 11         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 12         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 13         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 14         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 15         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 16         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 17         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 18         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 19         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 20         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 21         |                 | Boring terminated at 20 feet. 2-inch PVC monitoring well installed as shown using 0.010 slotted screen from 10 to 20 feet. |                                  |                                                           |                                                                             |    |  |  |                 |
| 22         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 23         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 24         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |
| 25         |                 |                                                                                                                            |                                  |                                                           |                                                                             |    |  |  |                 |

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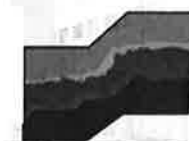
# LOG OF MONITORING WELL MW-104

Figure No. B-16

Project: 5221 Ballard Avenue North Project No: T-6552 Date Drilled: 6/13/11  
 Client: HALCO PROPERTIES, LLC Driller: Borettec Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                   | Odor/Sheen    | Recovery % |    |    |    |            | PID (PPM) | Observ. Well |
|------------|-----------------|--------------------------------------------------------------------------------------------------------------------|---------------|------------|----|----|----|------------|-----------|--------------|
|            |                 |                                                                                                                    |               | 20         | 40 | 60 | 80 | 100        |           |              |
| 1          |                 | 7-inch thick concrete slab.                                                                                        |               |            |    |    |    |            |           |              |
| 2          |                 | Dark brown sandy SILT, moist.<br>Becomes gray.                                                                     | Light Odor/No |            |    |    |    | 98.0<br>x  | 0.0       |              |
| 3          |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 4          |                 |                                                                                                                    | No/No         |            |    |    |    | 100.0<br>x | 0.0       |              |
| 5          |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 6          |                 | Saturated gray silty SAND/sandy SILT.<br>(SM-ML)                                                                   | No/No         |            |    |    |    |            | 0.0       |              |
| 7          |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 8          |                 |                                                                                                                    | No/No         |            |    |    |    |            | 0.0       |              |
| 9          |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 10         |                 | Saturated gray silty SAND/sandy SILT.<br>(SM-ML)                                                                   | No/No         |            |    |    |    |            | 0.0       |              |
| 11         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 12         |                 |                                                                                                                    | No/No         |            |    |    |    |            | 0.0       |              |
| 13         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 14         |                 | Terminated at 15 feet.<br>2-inch PVC monitoring well with .10<br>screen from 5 to 15 feet constructed as<br>shown. | No/No         |            |    |    |    | 100.0<br>x | 0.0       |              |
| 15         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 16         |                 |                                                                                                                    | No/No         |            |    |    |    |            | 0.0       |              |
| 17         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 18         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 19         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |
| 20         |                 |                                                                                                                    |               |            |    |    |    |            |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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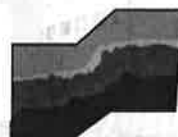
# LOG OF MONITORING WELL MW-105

Figure No. B-17

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 2/18/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                        | Odor/Sheen      | Recovery % |    |    |    |       | PID (PPM) | Observ. Well |
|------------|-----------------|-----------------------------------------|-----------------|------------|----|----|----|-------|-----------|--------------|
|            |                 |                                         |                 | 20         | 40 | 60 | 80 | 100   |           |              |
| 1          |                 | (2 inches ASPHALT)                      |                 |            |    |    |    |       |           |              |
| 2          |                 | FILL: brown sand, moist.                |                 |            |    |    |    |       |           |              |
| 3          |                 |                                         |                 |            |    |    |    |       |           |              |
| 4          |                 |                                         | Light Odor      |            |    |    |    |       |           |              |
| 5          |                 |                                         | on Lower 8 Feet |            |    |    |    | 100.0 | 711       |              |
| 6          |                 |                                         |                 |            |    |    |    | *     |           |              |
| 7          |                 | FILL: gray and dark brown silty sand    |                 |            |    |    |    |       |           |              |
| 8          |                 | with gravel, moist, occasional brick    |                 |            |    |    |    |       |           |              |
| 9          |                 | chunks. 3/3/4                           |                 |            |    |    |    |       |           |              |
| 10         |                 |                                         | Moderate Odor   |            |    |    |    | 100.0 | 474       |              |
| 11         |                 | Occasional organics. 9/18/44            |                 |            |    |    |    | *     |           |              |
| 12         |                 |                                         |                 |            |    |    |    |       |           |              |
| 13         |                 |                                         |                 |            |    |    |    |       |           |              |
| 14         |                 | Gray silty SAND with gravel, fine       |                 |            |    |    |    | 100.0 | 10.1      |              |
| 15         |                 | grained, moist, slightly mottled. (SM)  |                 |            |    |    |    | *     |           |              |
| 16         |                 | 33/50 for 6                             | No/No           |            |    |    |    |       |           |              |
| 17         |                 |                                         |                 |            |    |    |    |       |           |              |
| 18         |                 |                                         |                 |            |    |    |    |       |           |              |
| 19         |                 | Gray SAND, fine grained, moist. (SP)    |                 |            |    |    |    | 100.0 | 9.0       |              |
| 20         |                 |                                         | No/No           |            |    |    |    | *     |           |              |
| 21         |                 |                                         |                 |            |    |    |    |       |           |              |
| 22         |                 | Boring terminated at 21.5 feet.         |                 |            |    |    |    |       |           |              |
| 23         |                 | 2-inch PVC monitoring well              |                 |            |    |    |    |       |           |              |
| 24         |                 | constructed with 20 slot screen from 10 |                 |            |    |    |    |       |           |              |
| 25         |                 | to 20 feet.                             |                 |            |    |    |    |       |           |              |
|            |                 | 300 lb hammer.                          |                 |            |    |    |    |       |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL MW-106

Figure No. B-18

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 2/18/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                    | Odor/Sheen | Recovery % |    |    |    |         | PID (PPM) | Observ. Well |
|------------|-----------------|-----------------------------------------------------------------------------------------------------|------------|------------|----|----|----|---------|-----------|--------------|
|            |                 |                                                                                                     |            | 20         | 40 | 60 | 80 | 100     |           |              |
| 1          |                 | (2 inches ASPHALT)                                                                                  |            |            |    |    |    |         |           |              |
| 2          |                 | FILL: brown sand and silty sand with gravel, moist.                                                 |            |            |    |    |    |         |           |              |
| 3          |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 4          |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 5          |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 6          |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 7          |                 | FILL: gray and dark brown silt and silty sand with gravel, moist, mottled, occasional brick chunks. |            |            |    |    |    |         |           |              |
| 8          |                 |                                                                                                     | Light Odor |            |    |    |    | 100.0 * | 655       |              |
| 9          |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 10         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 11         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 12         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 13         |                 |                                                                                                     | No/No      |            |    |    |    | 50.0 *  | 1.6       |              |
| 14         |                 | Gray and brown silty SAND with gravel, moist, mottled. (SM)                                         |            |            |    |    |    |         |           |              |
| 15         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 16         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 17         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 18         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 19         |                 | Gray SAND with gravel, moist. (SP)                                                                  | No/No      |            |    |    |    | 33.0 *  | 0.0       |              |
| 20         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 21         |                 | Boring terminated at 20 feet.                                                                       |            |            |    |    |    |         |           |              |
| 22         |                 | 2-inch PVC monitoring well constructed with 20 slot screen from 10 to 20 feet.                      |            |            |    |    |    |         |           |              |
| 23         |                 | 300 lb hammer.                                                                                      |            |            |    |    |    |         |           |              |
| 24         |                 |                                                                                                     |            |            |    |    |    |         |           |              |
| 25         |                 |                                                                                                     |            |            |    |    |    |         |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL MW-107

Figure No. B-15

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/27/13  
 Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                 | Odor/Sheen | Recovery % |    |    |       |     | PID (PPM) | Observ. Well |
|------------|-----------------|------------------------------------------------------------------|------------|------------|----|----|-------|-----|-----------|--------------|
|            |                 |                                                                  |            | 20         | 40 | 60 | 80    | 100 |           |              |
| 1          |                 | FILL: brown sand, loose to medium dense, moist.                  | No/No      |            |    |    |       |     |           |              |
| 2          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 3          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 4          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 5          |                 | Gray silty SAND, fine to medium grained, moist to wet. (SM)      | No/No      |            |    |    |       |     |           |              |
| 6          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 7          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 8          |                 |                                                                  |            |            |    |    |       |     |           |              |
| 9          |                 | Becomes fine grained.                                            | No/No      |            |    |    |       |     |           |              |
| 10         |                 |                                                                  |            |            |    |    | 80.0  | *   | 0.0       |              |
| 11         |                 |                                                                  |            |            |    |    |       |     |           |              |
| 12         |                 |                                                                  |            |            |    |    | 100.0 | *   | 0.0       |              |
| 13         |                 | Boring terminated at 18.5 feet in native silty SAND with gravel. | No/No      |            |    |    |       |     |           |              |
| 14         |                 |                                                                  |            |            |    |    |       |     |           |              |
| 15         |                 |                                                                  |            |            |    |    | 80.0  | *   | 0.0       |              |
| 16         |                 |                                                                  |            |            |    |    |       |     |           |              |
| 17         |                 |                                                                  |            |            |    |    | 100.0 | *   | 0.0       |              |
| 18         |                 |                                                                  |            |            |    |    |       |     |           |              |
| 19         |                 |                                                                  |            |            |    |    |       |     |           |              |
| 20         |                 |                                                                  |            |            |    |    |       |     |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL MW-201

Figure No.

Project: Halco Project No: T-6552 Date Drilled: 9/10/14  
 Client: Halco Driller: BORETEC Logged By: TB  
 Location: Seattle, Washington Approx. Elev: 27.88 +/- Feet

| Depth (ft) | Sample Interval | Soil Description                                                            | Odor/Sheen | Blow Count |    |      |    |    | PID (PPM) | Observ. Well |
|------------|-----------------|-----------------------------------------------------------------------------|------------|------------|----|------|----|----|-----------|--------------|
|            |                 |                                                                             |            | 10         | 30 | 50   | 70 | 90 |           |              |
| 1          |                 | (6 inches CONCRETE)                                                         | No/No      | 7.0        |    |      |    |    |           |              |
| 2          |                 | Gray silty fine SAND with gravel, moist. (Till)                             |            |            |    |      |    |    |           |              |
| 3          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 4          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 5          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 6          |                 | With less gravel below 10 feet.                                             | No/No      |            |    | 78.0 |    |    | 0         |              |
| 7          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 8          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 9          |                 |                                                                             |            |            |    |      |    |    |           |              |
| 10         |                 |                                                                             | No/No      |            |    | 67.0 |    |    |           |              |
| 11         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 12         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 13         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 14         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 15         |                 |                                                                             | No/No      |            |    | 50.0 |    |    |           |              |
| 16         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 17         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 18         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 19         |                 |                                                                             | No/No      |            |    | 50.0 |    |    |           |              |
| 20         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 21         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 22         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 23         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 24         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 25         |                 |                                                                             | N/A        |            |    | 50.0 |    |    |           |              |
| 26         |                 | Boring terminated at 28 feet.<br>2-inch PVC monitoring well built as shown. |            |            |    |      |    |    |           |              |
| 27         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 28         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 29         |                 |                                                                             |            |            |    |      |    |    |           |              |
| 30         |                 |                                                                             |            |            |    |      |    |    |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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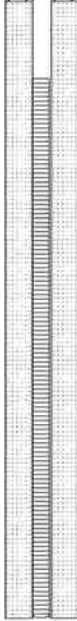
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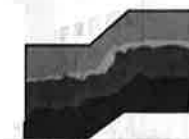
# LOG OF MONITORING WELL MW-202

Figure No.

Project: Halco Project No: T-6552 Date Drilled: 9/10/15  
 Client: Halco Driller: BORETEC Logged By: TB  
 Location: Seattle, Washington Approx. Elev: 26.67 +/- Feet

| Depth (ft) | Sample Interval | Soil Description                                                            | Odor/Sheen  | Blow Count |      |    |    |    | PID (PPM) | Observ. Well                                                                         |
|------------|-----------------|-----------------------------------------------------------------------------|-------------|------------|------|----|----|----|-----------|--------------------------------------------------------------------------------------|
|            |                 |                                                                             |             | 10         | 30   | 50 | 70 | 90 |           |                                                                                      |
| 1          |                 | (6 inches CONCRETE SLAB)                                                    | Strong Odor |            |      |    |    |    | 163       |  |
| 2          |                 | Dark gray silty fine SAND, moist.                                           |             |            |      |    |    |    |           |                                                                                      |
| 3          |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 4          |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 5          |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 6          |                 |                                                                             |             | 30.0       |      |    |    |    |           |                                                                                      |
| 7          |                 |                                                                             |             | *          |      |    |    |    |           |                                                                                      |
| 8          |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 9          |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 10         |                 |                                                                             | No Odor     |            | 50.0 |    |    |    | 14        |  |
| 11         |                 |                                                                             |             |            | *    |    |    |    |           |                                                                                      |
| 12         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 13         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 14         |                 | Becomes wet at 15 feet.                                                     |             |            |      |    |    |    |           |                                                                                      |
| 15         |                 |                                                                             | No Odor     |            | 50.0 |    |    |    | 2.4       |                                                                                      |
| 16         |                 |                                                                             |             |            | *    |    |    |    |           |                                                                                      |
| 17         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 18         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 19         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 20         |                 |                                                                             | No Odor     |            | 50.0 |    |    |    | 3.3       |                                                                                      |
| 21         |                 |                                                                             |             |            | *    |    |    |    |           |                                                                                      |
| 22         |                 | Boring terminated at 21 feet.<br>2-inch PVC monitoring well built as shown. |             |            |      |    |    |    |           |                                                                                      |
| 23         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 24         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |
| 25         |                 |                                                                             |             |            |      |    |    |    |           |                                                                                      |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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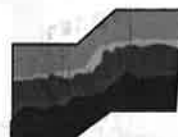
# LOG OF MONITORING WELL MW-203

Figure No.

Project: Shilshole Parcels Project No: T-6552-1 Date Drilled: 9/11/14  
 Client: \_\_\_\_\_ Driller: BORETEC Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                             | Odor/Sheen | Blow Count |    |           |     | PID (PPM)                                                                            | Observ. Well |
|------------|-----------------|--------------------------------------------------------------------------------------------------------------|------------|------------|----|-----------|-----|--------------------------------------------------------------------------------------|--------------|
|            |                 |                                                                                                              |            | 10         | 20 | 30        | 40  |                                                                                      |              |
| 1          |                 | FILL: dark gray silty sand with gravel, fine grained, moist, wood and metal debris.                          | No/No      | 5.0<br>*   |    |           | 0.0 |  |              |
| 2          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 3          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 4          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 5          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 6          |                 | Gray silty SAND with gravel, fine grained, moist, thin sand lenses. (SM)<br><br>Becomes wet.                 | No/No      |            |    | 35.0<br>* | 0.0 |                                                                                      |              |
| 7          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 8          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 9          |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 10         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 11         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 12         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 13         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 14         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 15         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 16         |                 |                                                                                                              | No/No      |            |    | 50.0<br>* | 0.0 |                                                                                      |              |
| 17         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 18         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 19         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 20         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 21         |                 | Boring terminated at 21.5 feet.<br>2-inch PVC monitoring well installed with .010 screen from 10 to 20 feet. | No/No      |            |    | 50.0<br>* | 0.0 |                                                                                      |              |
| 22         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 23         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 24         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |
| 25         |                 |                                                                                                              |            |            |    |           |     |                                                                                      |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



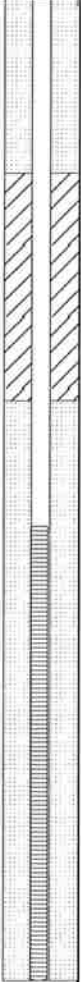
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# LOG OF MONITORING WELL MW-204

Figure No.

Project: Shilshole Parcels Project No: T-6552-1 Date Drilled: 9/11/14  
 Client: \_\_\_\_\_ Driller: BORETEC Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                | Odor/Sheen | Blow Count |    |           |         | PID (PPM)                                                                            | Observ. Well |  |
|------------|-----------------|-----------------------------------------------------------------------------------------------------------------|------------|------------|----|-----------|---------|--------------------------------------------------------------------------------------|--------------|--|
|            |                 |                                                                                                                 |            | 10         | 20 | 30        | 40      |                                                                                      |              |  |
| 1          |                 | FILL: gray silty sand with gravel, fine grained, moist.                                                         | No/No      | 3.0<br>*   |    |           | 0.0 ppm |  |              |  |
| 2          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 3          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 4          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 5          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 6          |                 | Becomes wet.                                                                                                    | No/No      | 7.0<br>*   |    |           | 0.0 ppm |                                                                                      |              |  |
| 7          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 8          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 9          |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 10         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 11         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 12         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 13         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 14         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 15         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 16         |                 |                                                                                                                 | No/No      |            |    | 50.0<br>* | 0.0 ppm |                                                                                      |              |  |
| 17         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 18         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 19         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 20         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 21         |                 | No/No                                                                                                           |            |            |    | 50.0<br>* | 0.0 ppm |                                                                                      |              |  |
| 22         |                 | Boring terminated at 21.5 feet.<br>2-inch PVC monitoring well installed<br>with .010 screen from 10 to 20 feet. |            |            |    |           |         |                                                                                      |              |  |
| 23         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 24         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |
| 25         |                 |                                                                                                                 |            |            |    |           |         |                                                                                      |              |  |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF DPT NO. DPT-1

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                             | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|------------------------------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|
|            |                 |                                                                              |            | 20         | 40 | 60 | 80 | 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)                                                     |            |            |    |    |    |     |           |              |
| 1          |                 | 4 inches SAND, moist. (Fill)                                                 |            |            |    |    |    |     |           |              |
| 2          |                 |                                                                              |            |            |    |    |    |     |           |              |
| 3          |                 |                                                                              |            |            |    |    |    |     |           |              |
| 4          |                 | Gray and dark brown silty SAND with organics, moist.                         | No/No      |            |    |    | 50 |     | 0.0       |              |
| 5          |                 |                                                                              |            |            |    |    |    |     |           |              |
| 6          |                 |                                                                              |            |            |    |    |    |     |           |              |
| 7          |                 |                                                                              |            |            |    |    |    |     |           |              |
| 8          |                 |                                                                              | No/No      |            |    |    |    |     |           |              |
| 9          |                 | Gray and brown silty SAND, fine grained, moist. (SM)                         |            |            |    |    |    |     |           |              |
| 10         |                 |                                                                              |            |            |    |    | 80 |     | 3.2       |              |
| 11         |                 |                                                                              | Light Odor |            |    |    |    |     | 14.4      |              |
| 12         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 13         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 14         |                 |                                                                              |            |            |    |    |    |     | 0.0       |              |
| 15         |                 |                                                                              |            |            |    |    | 80 |     |           |              |
| 16         |                 | Gray and brown SAND with gravel and medium to fine grained SAND, moist. (SP) | No/No      |            |    |    |    |     |           |              |
| 17         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 18         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 19         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 20         |                 |                                                                              |            |            |    |    | 80 |     | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet.                                                 |            |            |    |    |    |     |           |              |
| 22         |                 | All collected from the lower foot of recovered sample.                       |            |            |    |    |    |     |           |              |
| 23         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 24         |                 |                                                                              |            |            |    |    |    |     |           |              |
| 25         |                 |                                                                              |            |            |    |    |    |     |           |              |

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# LOG OF DPT NO. DPT-2

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                    | Odor/Sheen                 | Recovery % |    |     |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|---------------------------------------------------------------------|----------------------------|------------|----|-----|----|-----|-----------|--------------|
|            |                 |                                                                     |                            | 20         | 40 | 60  | 80 | 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)                                            |                            |            |    |     |    |     |           |              |
| 2          |                 | FILL: brown silty sand with gravel, moist, occasional brick chunks. |                            |            |    |     |    |     |           |              |
| 3          |                 |                                                                     | No/No                      |            |    |     |    |     |           |              |
| 4          |                 |                                                                     |                            |            | 30 |     |    |     | 0.0       |              |
| 5          |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 6          |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 7          |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 8          |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 9          |                 |                                                                     |                            |            | 40 |     |    |     | 56.0      |              |
| 10         |                 | Brown becoming gray silty SAND, moist. (SM)                         | Light Odor/<br>Light Sheen |            |    |     |    |     | 415.0     |              |
| 11         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 12         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 13         |                 | Mottled in places.                                                  |                            |            |    |     |    |     |           |              |
| 14         |                 |                                                                     | No/No                      |            |    |     |    |     |           |              |
| 15         |                 | Occasional gravel.                                                  |                            |            |    | 100 |    |     | 0.0       |              |
| 16         |                 |                                                                     |                            |            |    |     |    |     | 3.1       |              |
| 17         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 18         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 19         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 20         |                 | Gray fine grained SAND, moist. (SP)                                 | No/No                      |            |    | 100 |    |     | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet.                                        |                            |            |    |     |    |     |           |              |
| 22         |                 | All samples collected from lower foot of recovered sample.          |                            |            |    |     |    |     |           |              |
| 23         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 24         |                 |                                                                     |                            |            |    |     |    |     |           |              |
| 25         |                 |                                                                     |                            |            |    |     |    |     |           |              |

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# LOG OF DPT NO. DPT-3

Figure No.

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC

Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                        | Odor/Sheen              | Recovery %      | PID (PPM) | Observ. Well |
|------------|-----------------|-----------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|--------------|
|            |                 |                                                                                         |                         | 20 40 60 80 120 |           |              |
| 1          |                 | (5 inches CONCRETE SLAB, sand, moist. (Fill)                                            |                         |                 |           |              |
| 2          |                 |                                                                                         |                         |                 |           |              |
| 3          |                 |                                                                                         |                         |                 |           |              |
| 4          |                 | FILL: gray and brown silty sand, moist, mottled, occasional brick chunks.               | No/No                   | 50              | 0.0       |              |
| 5          |                 |                                                                                         |                         |                 |           |              |
| 6          |                 |                                                                                         |                         |                 |           |              |
| 7          |                 |                                                                                         |                         |                 |           |              |
| 8          |                 |                                                                                         |                         |                 |           |              |
| 9          |                 |                                                                                         |                         |                 |           |              |
| 10         |                 | Gray silty SAND, fine grained, moist. (SM)                                              | Moderate Odor and Sheen | 100             | 1067.0    |              |
| 11         |                 |                                                                                         |                         |                 |           |              |
| 12         |                 |                                                                                         |                         |                 |           |              |
| 13         |                 |                                                                                         |                         |                 |           |              |
| 14         |                 |                                                                                         |                         | 100             |           |              |
| 15         |                 | Gray SAND with gravel, fine grained, moist. (SP)                                        | Light Odor              |                 | 160       |              |
| 16         |                 |                                                                                         |                         |                 |           |              |
| 17         |                 | Becomes medium grained.                                                                 |                         |                 |           |              |
| 18         |                 |                                                                                         |                         |                 |           |              |
| 19         |                 |                                                                                         |                         |                 |           |              |
| 20         |                 |                                                                                         | No/No                   | 80              | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet. All samples collected from lower foot of recovered sample. |                         |                 |           |              |
| 22         |                 |                                                                                         |                         |                 |           |              |
| 23         |                 |                                                                                         |                         |                 |           |              |
| 24         |                 |                                                                                         |                         |                 |           |              |
| 25         |                 |                                                                                         |                         |                 |           |              |

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Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

# LOG OF DPT NO. DPT-4

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                           | Odor/Sheen              | Recovery % |    |    |     |     | PID (PPM) | Observ. Well |
|------------|-----------------|--------------------------------------------------------------------------------------------|-------------------------|------------|----|----|-----|-----|-----------|--------------|
|            |                 |                                                                                            |                         | 20         | 40 | 60 | 80  | 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)                                                                   | No/No                   |            |    |    |     |     |           |              |
| 2          |                 | FILL: gray and brown silty sand with some organics, moist.                                 |                         |            |    |    |     |     |           |              |
| 3          |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 4          |                 | Occasional brick chunks.                                                                   | Light Odor/<br>No Sheen |            |    |    | 70  |     | 23.5      |              |
| 5          |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 6          |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 7          |                 |                                                                                            | Moderate Sheen          |            |    |    |     |     |           |              |
| 8          |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 9          |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 10         |                 |                                                                                            |                         |            |    |    | 80  |     | 289       |              |
| 11         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 12         |                 | Gray silty SAND with gravel, moist. (SM)                                                   |                         |            |    |    |     |     |           |              |
| 13         |                 |                                                                                            | No/No                   |            |    |    |     |     |           |              |
| 14         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 15         |                 |                                                                                            |                         |            |    |    | 100 |     | 0.0       |              |
| 16         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 17         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 18         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 19         |                 | Gray SAND, fine to medium grained, moist. (SP)                                             | No/No                   |            |    |    |     |     |           |              |
| 20         |                 |                                                                                            |                         |            |    |    | 100 |     | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet.<br>All samples collected from lower foot of recovered sample. |                         |            |    |    |     |     |           |              |
| 22         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 23         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 24         |                 |                                                                                            |                         |            |    |    |     |     |           |              |
| 25         |                 |                                                                                            |                         |            |    |    |     |     |           |              |

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# LOG OF DPT NO. DPT-5

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                       | Odor/Sheen              | Recovery %      | PID (PPM) | Observ. Well |
|------------|-----------------|----------------------------------------------------------------------------------------|-------------------------|-----------------|-----------|--------------|
| 1          |                 |                                                                                        |                         | 20 40 60 80 120 |           |              |
| 2          |                 |                                                                                        |                         |                 |           |              |
| 3          |                 | FILL: gray, black, and brown silty sand, small brick chunks, moist.                    | No/No                   |                 |           |              |
| 4          |                 |                                                                                        |                         | 60              | 0.0       |              |
| 5          |                 |                                                                                        |                         |                 |           |              |
| 6          |                 |                                                                                        |                         |                 |           |              |
| 7          |                 |                                                                                        |                         |                 |           |              |
| 8          |                 |                                                                                        |                         |                 |           |              |
| 9          |                 |                                                                                        | Light Odor/<br>No Sheen |                 |           |              |
| 10         |                 | Gray silty SAND, moist. (SM)                                                           |                         | 80              | 153       |              |
| 11         |                 |                                                                                        |                         |                 |           |              |
| 12         |                 |                                                                                        |                         |                 |           |              |
| 13         |                 |                                                                                        | No/No                   |                 |           |              |
| 14         |                 |                                                                                        |                         |                 |           |              |
| 15         |                 |                                                                                        |                         | 100             | 3.4       |              |
| 16         |                 | Gray SAND, medium grained, moist. (SP)                                                 |                         |                 |           |              |
| 17         |                 |                                                                                        |                         |                 |           |              |
| 18         |                 |                                                                                        | No/No                   |                 |           |              |
| 19         |                 |                                                                                        |                         |                 |           |              |
| 20         |                 |                                                                                        |                         | 100             | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet.<br>All samples taken from lower foot of recovered sample. |                         |                 |           |              |
| 22         |                 |                                                                                        |                         |                 |           |              |
| 23         |                 |                                                                                        |                         |                 |           |              |
| 24         |                 |                                                                                        |                         |                 |           |              |
| 25         |                 |                                                                                        |                         |                 |           |              |

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# LOG OF DPT NO. DPT-6

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH

Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                       | Odor/Sheen | Recovery % |    |    |     |     | PID (PPM) | Observ. Well |
|------------|-----------------|----------------------------------------------------------------------------------------|------------|------------|----|----|-----|-----|-----------|--------------|
|            |                 |                                                                                        |            | 20         | 40 | 60 | 80  | 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)<br>3 inches SAND, moist. (Fill)                               |            |            |    |    |     |     |           |              |
| 2          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 3          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 4          |                 | FILL: gray and brown silty sand/sandy silt, moist.                                     | No/No      |            |    |    |     |     |           |              |
| 5          |                 |                                                                                        |            |            |    |    | 80  |     | 0.0       |              |
| 6          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 7          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 8          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 9          |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 10         |                 |                                                                                        | No/No      |            |    |    | 80  |     | 0.0       |              |
| 11         |                 | SAND with silt, fine grained, moist. (SP-SM)                                           |            |            |    |    |     |     |           |              |
| 12         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 13         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 14         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 15         |                 |                                                                                        | No/No      |            |    |    | 100 |     | 0.0       |              |
| 16         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 17         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 18         |                 | Gray SAND, fine to medium grained, moist. (SP)                                         | No/No      |            |    |    |     |     |           |              |
| 19         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 20         |                 |                                                                                        |            | 50         |    |    |     |     | 11.5      |              |
| 21         |                 | Probe terminated at 20 feet.<br>All samples taken from lower foot of recovered sample. |            |            |    |    |     |     |           |              |
| 22         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 23         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 24         |                 |                                                                                        |            |            |    |    |     |     |           |              |
| 25         |                 |                                                                                        |            |            |    |    |     |     |           |              |

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# LOG OF DPT NO. DPT-7

Figure No.

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 1/28/13

Client: HALCO PROPERTIES, LLC

Driller: Cascade Drilling

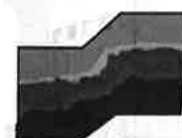
Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                    | Odor/Sheen       | Recovery %      | PID (PPM) | Observ. Well |
|------------|-----------------|-------------------------------------------------------------------------------------|------------------|-----------------|-----------|--------------|
| 1          |                 |                                                                                     |                  | 20 40 60 80 120 |           |              |
| 2          |                 |                                                                                     | No/No            |                 |           |              |
| 3          |                 | FILL: gray and brown silty sand, brick chunks, moist.                               |                  |                 |           |              |
| 4          |                 |                                                                                     |                  |                 |           |              |
| 5          |                 |                                                                                     |                  | 60              | 0.0       |              |
| 6          |                 |                                                                                     |                  |                 |           |              |
| 7          |                 |                                                                                     |                  |                 |           |              |
| 8          |                 | Gray silty SAND, moist. (SM)                                                        | Light Odor/Sheen |                 |           |              |
| 9          |                 |                                                                                     |                  |                 |           |              |
| 10         |                 |                                                                                     |                  | 80              | 969       |              |
| 11         |                 |                                                                                     |                  |                 |           |              |
| 12         |                 | Gray SAND, moist, medium grained with small gravel. (SP)                            |                  |                 |           |              |
| 13         |                 |                                                                                     |                  |                 |           |              |
| 14         |                 |                                                                                     |                  |                 |           |              |
| 15         |                 |                                                                                     | No/No            | 60              | 2.1       |              |
| 16         |                 |                                                                                     |                  |                 |           |              |
| 17         |                 |                                                                                     |                  |                 |           |              |
| 18         |                 |                                                                                     |                  |                 |           |              |
| 19         |                 |                                                                                     | No/No            |                 |           |              |
| 20         |                 |                                                                                     |                  | 100             | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet. All samples taken from lower foot of recovered sample. |                  |                 |           |              |
| 22         |                 |                                                                                     |                  |                 |           |              |
| 23         |                 |                                                                                     |                  |                 |           |              |
| 24         |                 |                                                                                     |                  |                 |           |              |
| 25         |                 |                                                                                     |                  |                 |           |              |

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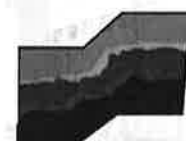
# LOG OF DPT NO. DPT-8

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                       | Odor/Sheen | Recovery %      | PID (PPM) | Observ. Well |
|------------|-----------------|--------------------------------------------------------|------------|-----------------|-----------|--------------|
|            |                 |                                                        |            | 20 40 60 80 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)                               |            |                 |           |              |
| 2          |                 | FILL: gray and brown silty sand, brick chunks, moist.  |            |                 |           |              |
| 3          |                 |                                                        |            |                 |           |              |
| 4          |                 |                                                        | No/No      |                 |           |              |
| 5          |                 |                                                        |            | 60              | 0.0       |              |
| 6          |                 |                                                        |            |                 |           |              |
| 7          |                 |                                                        |            |                 |           |              |
| 8          |                 |                                                        |            |                 |           |              |
| 9          |                 | Gray silty SAND with gravel, moist. (SM)               | No/No      |                 |           |              |
| 10         |                 |                                                        |            | 100             | 15.0      |              |
| 11         |                 |                                                        |            |                 |           |              |
| 12         |                 |                                                        |            |                 |           |              |
| 13         |                 |                                                        |            |                 |           |              |
| 14         |                 |                                                        |            |                 |           |              |
| 15         |                 | Gray SAND, fine to medium grained, moist. (SP)         | No/No      | 80              | 0.0       |              |
| 16         |                 |                                                        |            |                 |           |              |
| 17         |                 |                                                        |            |                 |           |              |
| 18         |                 |                                                        | No/No      |                 |           |              |
| 19         |                 |                                                        |            |                 |           |              |
| 20         |                 |                                                        |            | 100             | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet.                           |            |                 |           |              |
| 22         |                 | All samples taken from lower foot of recovered sample. |            |                 |           |              |
| 23         |                 |                                                        |            |                 |           |              |
| 24         |                 |                                                        |            |                 |           |              |
| 25         |                 |                                                        |            |                 |           |              |

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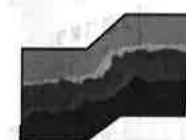
# LOG OF DPT NO. DPT-9

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                    | Odor/Sheen | Recovery %      | PID (PPM) | Observ. Well |
|------------|-----------------|-------------------------------------------------------------------------------------|------------|-----------------|-----------|--------------|
|            |                 |                                                                                     |            | 20 40 60 80 120 |           |              |
| 1          |                 | (4 inches CONCRETE SLAB)                                                            |            |                 |           |              |
| 2          |                 | FILL: gray and brown silty sand with gravel, brick chunks, moist.                   |            |                 |           |              |
| 3          |                 |                                                                                     |            |                 |           |              |
| 4          |                 |                                                                                     | No/No      | 90              | 0.0       |              |
| 5          |                 |                                                                                     |            |                 |           |              |
| 6          |                 |                                                                                     |            |                 |           |              |
| 7          |                 |                                                                                     |            |                 |           |              |
| 8          |                 |                                                                                     |            |                 |           |              |
| 9          |                 | Gray silty SAND with gravel, moist. (SM)                                            | No/No      |                 |           |              |
| 10         |                 |                                                                                     |            | 60              | 0.0       |              |
| 11         |                 |                                                                                     |            |                 |           |              |
| 12         |                 | Gray SAND, fine to medium grained, moist. (SP)                                      | No/No      |                 |           |              |
| 13         |                 |                                                                                     |            |                 |           |              |
| 14         |                 | Becomes fine grained.                                                               |            | 80              | 0.0       |              |
| 15         |                 |                                                                                     |            |                 |           |              |
| 16         |                 |                                                                                     |            |                 |           |              |
| 17         |                 |                                                                                     |            |                 |           |              |
| 18         |                 |                                                                                     |            |                 |           |              |
| 19         |                 |                                                                                     | No/No      |                 |           |              |
| 20         |                 |                                                                                     |            | 60              | 0.0       |              |
| 21         |                 | Probe terminated at 20 feet. All samples taken from lower foot of recovered sample. |            |                 |           |              |
| 22         |                 |                                                                                     |            |                 |           |              |
| 23         |                 |                                                                                     |            |                 |           |              |
| 24         |                 |                                                                                     |            |                 |           |              |
| 25         |                 |                                                                                     |            |                 |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF DPT NO. DPT-10

Figure No.

**Project:** 5221 Ballard Avenue      **Project No:** T-6552      **Date Drilled:** 1/28/13  
**Client:** HALCO PROPERTIES, LLC      **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Ballard, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                                       | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|----------------------------------------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|
|            |                 |                                                                                        |            | 20         | 40 | 60 | 80 | 120 |           |              |
| 1          |                 | FILL: brown silty sand with gravel, brick chunks, moist.                               | No/No      |            |    |    |    |     | 0.0       |              |
| 2          |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 3          |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 4          |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 5          |                 |                                                                                        |            |            | 40 |    |    |     |           |              |
| 6          |                 | Gray SAND with silt, medium to fine grained, moist. (SP-SM)                            | No/No      |            |    |    |    |     | 0.0       |              |
| 7          |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 8          |                 | Gray SAND, medium to coarse grained. (SP)                                              | No/No      |            |    |    |    |     | 0.0       |              |
| 9          |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 10         |                 |                                                                                        |            |            | 70 |    |    |     |           |              |
| 11         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 12         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 13         |                 | Becomes fine grained.                                                                  | No/No      |            |    |    |    |     | 0.0       |              |
| 14         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 15         |                 |                                                                                        |            |            | 70 |    |    |     |           |              |
| 16         |                 | Mottled                                                                                | No/No      |            |    |    |    |     | 0.0       |              |
| 17         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 18         |                 | Probe terminated at 20 feet.<br>All samples taken from lower foot of recovered sample. |            |            |    |    |    |     | 0.0       |              |
| 19         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 20         |                 |                                                                                        |            |            |    |    |    | 100 |           |              |
| 21         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 22         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 23         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 24         |                 |                                                                                        |            |            |    |    |    |     |           |              |
| 25         |                 |                                                                                        |            |            |    |    |    |     |           |              |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF DPT NO. DPT-11

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 1/28/13  
 Client: HALCO PROPERTIES, LLC Driller: Cascade Drilling Logged By: NRH  
 Location: Ballard, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                 | Odor/Sheen                 | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|------------------------------------------------------------------|----------------------------|------------|----|----|----|-----|-----------|--------------|
|            |                 |                                                                  |                            | 20         | 40 | 60 | 80 | 120 |           |              |
| 1          |                 | (10 inches CONCRETE SLAB)                                        |                            |            |    |    |    |     |           |              |
| 2          |                 | Brown SILT, moist. (ML)                                          |                            |            |    |    |    |     |           |              |
| 3          |                 |                                                                  |                            |            |    |    |    |     |           |              |
| 4          |                 | Gray silty SAND, moist. (SM)                                     | Light Odor/<br>Light Sheen |            |    |    |    |     |           |              |
| 5          |                 | Probe terminated at 5 feet due to equipment access restrictions. |                            |            |    |    |    | 100 | 514       |              |
| 6          |                 |                                                                  |                            |            |    |    |    |     |           |              |
| 7          |                 |                                                                  |                            |            |    |    |    |     |           |              |
| 8          |                 |                                                                  |                            |            |    |    |    |     |           |              |
| 9          |                 |                                                                  |                            |            |    |    |    |     |           |              |
| 10         |                 |                                                                  |                            |            |    |    |    |     |           |              |

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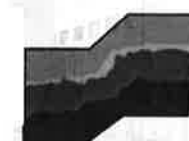
# LOG OF DPT NO. 25-1

Figure No. B-1

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13  
 Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                 | Odor/Sheen             | Recovery % |    |    |    |     | PID (PPM)               | Observ. Well |
|------------|-----------------|--------------------------------------------------|------------------------|------------|----|----|----|-----|-------------------------|--------------|
|            |                 |                                                  |                        | 20         | 40 | 60 | 80 | 120 |                         |              |
| 1          |                 | FILL: dark brown silt with organics, moist.      | Light to Moderate Odor |            |    |    |    |     | Upper 5.9<br>Lower 1107 |              |
| 2          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 3          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 4          |                 | Gray silty SAND, medium grained, moist. (SM)     |                        |            |    |    |    |     | Upper 21.1<br>Lower 0.0 |              |
| 5          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 6          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 7          |                 | Lenses of medium grained sand, moist.            | No/No                  |            |    |    |    |     | Upper 0.0<br>Lower 0.0  |              |
| 8          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 9          |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 10         |                 | Fine grained.                                    | No/No                  |            |    |    |    |     | Upper 0.0<br>Lower 0.0  |              |
| 11         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 12         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 13         |                 | Terminated at 15 feet in native gray silty SAND. |                        |            |    |    |    |     |                         |              |
| 14         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 15         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 16         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 17         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 18         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 19         |                 |                                                  |                        |            |    |    |    |     |                         |              |
| 20         |                 |                                                  |                        |            |    |    |    |     |                         |              |

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# LOG OF DPT NO. 25-2

Figure No. B-2

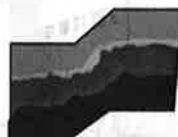
Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13

Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                        | Odor/Sheen                 | Recovery % |    |    |    |     | PID (PPM)                                                       | Observ. Well |
|------------|-----------------|-------------------------------------------------------------------------|----------------------------|------------|----|----|----|-----|-----------------------------------------------------------------|--------------|
|            |                 |                                                                         |                            | 20         | 40 | 60 | 80 | 120 |                                                                 |              |
| 1          |                 | Gray silty SAND with gravel, upper 1-foot wet, lower 4 feet moist. (SM) | Strong Odor/Sheen          |            |    |    |    |     | Upper 52.7<br><br>Lower 4452                                    |              |
| 2          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 3          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 4          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 5          |                 | Fine grained.<br><br>Wet at 7 feet.                                     | Light Odor<br>in upper 1/2 |            |    |    |    |     | Upper 58.9<br><br>Lower 5.7<br><br>Upper 162.0<br><br>Lower 0.0 |              |
| 6          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 7          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 8          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 9          |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 10         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 11         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 12         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 13         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 14         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel.                 | No/No                      |            |    |    |    |     |                                                                 |              |
| 16         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 17         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 18         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 19         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |
| 20         |                 |                                                                         |                            |            |    |    |    |     |                                                                 |              |

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# LOG OF DPT NO. 25-3

Figure No. B-3

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13

Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen  | Recovery % |    |    |    |     | PID (PPM)  | Observ. Well |
|------------|-----------------|---------------------------------------------------------|-------------|------------|----|----|----|-----|------------|--------------|
|            |                 |                                                         |             | 20         | 40 | 60 | 80 | 120 |            |              |
| 1          |                 | FILL: dark brown silt, moist, stiff.                    |             |            |    |    |    |     |            |              |
| 2          |                 |                                                         |             |            |    |    |    |     | Upper 84.3 |              |
| 3          |                 | Gray silty SAND with gravel, moist, wet in places. (SM) | Strong Odor |            |    |    |    |     | Lower 4131 |              |
| 4          |                 |                                                         |             |            |    |    |    |     |            |              |
| 5          |                 |                                                         | Light Odor  |            |    |    |    |     | Upper 120  |              |
| 6          |                 |                                                         |             |            |    |    |    |     |            |              |
| 7          |                 |                                                         |             |            |    |    |    |     |            |              |
| 8          |                 |                                                         |             |            |    |    |    |     | Lower 9.3  |              |
| 9          |                 |                                                         |             |            |    |    |    |     |            |              |
| 10         |                 |                                                         |             |            |    |    |    |     |            |              |
| 11         |                 | Fine grained.                                           | No/No       |            |    |    |    |     | Upper 22.7 |              |
| 12         |                 |                                                         |             |            |    |    |    |     |            |              |
| 13         |                 |                                                         |             |            |    |    |    |     | Lower 0.0  |              |
| 14         |                 |                                                         |             |            |    |    |    |     |            |              |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel. |             |            |    |    |    |     |            |              |
| 16         |                 |                                                         |             |            |    |    |    |     |            |              |
| 17         |                 |                                                         |             |            |    |    |    |     |            |              |
| 18         |                 |                                                         |             |            |    |    |    |     |            |              |
| 19         |                 |                                                         |             |            |    |    |    |     |            |              |
| 20         |                 |                                                         |             |            |    |    |    |     |            |              |

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# LOG OF DPT NO. 25-4

Figure No. B-4

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13

Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |  |
|------------|-----------------|---------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|--|
|            |                 |                                                         |            | 20         | 40 | 60 | 80 | 120 |           |              |  |
| 1          |                 | FILL: dark brown organic silt, moist, stiff.            | Light Odor |            |    |    |    |     | Upper 7.5 |              |  |
| 2          |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 3          |                 | Gray silty SAND with gravel, fine grained, moist.       |            |            |    |    |    |     | Lower 126 |              |  |
| 4          |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 5          |                 |                                                         | Light Odor |            |    |    |    |     | Upper 0.0 |              |  |
| 6          |                 | Mottled from 6 to 7 feet.                               |            |            |    |    |    |     |           |              |  |
| 7          |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 8          |                 | Medium grained.                                         |            |            |    |    |    |     |           |              |  |
| 9          |                 |                                                         | No/No      |            |    |    |    |     | Lower 0.0 |              |  |
| 10         |                 | Fine grained.                                           |            |            |    |    |    |     |           |              |  |
| 11         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 12         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 13         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 14         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel. |            |            |    |    |    |     | Lower 0.0 |              |  |
| 16         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 17         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 18         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 19         |                 |                                                         |            |            |    |    |    |     |           |              |  |
| 20         |                 |                                                         |            |            |    |    |    |     |           |              |  |

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# LOG OF DPT NO. 25-5

Figure No. B-5

**Project:** Former C and C Paints      **Project No:** T-6552-1      **Date Drilled:** 3/25/13  
**Client:**      **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                          | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)                  | Observ. Well |
|------------|-----------------|---------------------------------------------------------------------------|------------|------------|----|----|----|-----|----------------------------|--------------|
|            |                 |                                                                           |            | 20         | 40 | 60 | 80 | 120 |                            |              |
| 1          |                 | Gray silty SAND with gravel, moist, upper 1-foot, mottled medium grained. | Light Odor |            |    |    | 90 |     | Upper 7.9<br><br>Lower 8.5 |              |
| 2          |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 3          |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 4          |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 5          |                 | Becomes fine grained.                                                     | No/No      |            |    |    |    |     | Upper 0.0<br><br>Lower 0.0 |              |
| 6          |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 7          |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 8          |                 |                                                                           |            |            |    |    | 90 |     |                            |              |
| 9          |                 | Becomes wet.                                                              | No/No      |            |    |    |    |     | Upper 0.0<br><br>Lower 0.0 |              |
| 10         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 11         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 12         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 13         |                 | Sand lenses.                                                              | No/No      |            |    |    |    |     | Upper 0.0<br><br>Lower 0.0 |              |
| 14         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 15         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 16         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 17         |                 | Terminated at 15 feet in native gray silty SAND with gravel.              |            |            |    |    |    |     |                            |              |
| 18         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 19         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 20         |                 |                                                                           |            |            |    |    |    |     |                            |              |
| 21         |                 |                                                                           |            |            |    |    |    |     |                            |              |

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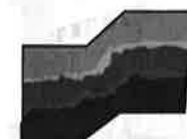
# LOG OF DPT NO. 25-6

Figure No. B-6

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13  
 Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)  | Observ. Well |
|------------|-----------------|---------------------------------------------------------|------------|------------|----|----|----|-----|------------|--------------|
|            |                 |                                                         |            | 20         | 40 | 60 | 80 | 120 |            |              |
| 1          |                 | FILL: gray and brown silt, most, brick chunks.          |            |            |    |    |    |     |            |              |
| 2          |                 | Gray silty SAND with gravel, fine grained, moist. (SM)  | Light Odor |            |    |    |    |     | Upper 14.8 |              |
| 3          |                 |                                                         |            |            |    |    |    |     | Lower 140  |              |
| 4          |                 |                                                         |            |            |    |    |    |     |            |              |
| 5          |                 |                                                         |            |            |    |    |    |     |            |              |
| 6          |                 |                                                         | Light Odor |            |    |    |    |     | Upper 130  |              |
| 7          |                 |                                                         |            |            |    |    |    |     |            |              |
| 8          |                 |                                                         |            |            |    |    |    |     | Lower 0.0  |              |
| 9          |                 |                                                         |            |            |    |    |    |     |            |              |
| 10         |                 | Wet to 12.5 feet.                                       | No/No      |            |    |    |    |     |            |              |
| 11         |                 | Fine to medium grained.                                 |            |            |    |    |    |     | Upper 0.0  |              |
| 12         |                 | Sand lenses.                                            |            |            |    |    |    |     |            |              |
| 13         |                 |                                                         |            |            |    |    |    |     | Lower 0.0  |              |
| 14         |                 |                                                         |            |            |    |    |    |     |            |              |
| 15         |                 |                                                         |            |            |    |    |    |     |            |              |
| 16         |                 | Terminated at 15 feet in native silty SAND with gravel. |            |            |    |    |    |     |            |              |
| 17         |                 |                                                         |            |            |    |    |    |     |            |              |
| 18         |                 |                                                         |            |            |    |    |    |     |            |              |
| 19         |                 |                                                         |            |            |    |    |    |     |            |              |
| 20         |                 |                                                         |            |            |    |    |    |     |            |              |

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# LOG OF DPT NO. 25-7

Figure No. B-7

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13  
 Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)  | Observ. Well |
|------------|-----------------|---------------------------------------------------------|------------|------------|----|----|----|-----|------------|--------------|
|            |                 |                                                         |            | 20         | 40 | 60 | 80 | 120 |            |              |
| 1          |                 | Gray and brown silty SAND with gravel, wet. (SM)        |            |            |    |    |    |     |            |              |
| 2          |                 | Becomes gray and moist at 1-foot.                       | Light Odor |            |    |    | 90 |     | Upper 0.0  |              |
| 3          |                 |                                                         |            |            |    |    |    |     | Lower 21.2 |              |
| 4          |                 |                                                         |            |            |    |    |    |     |            |              |
| 5          |                 | Mottled in places, sand lenses.                         |            |            |    |    |    |     |            |              |
| 6          |                 |                                                         |            |            |    |    |    |     |            |              |
| 7          |                 |                                                         | No/No      |            |    |    |    |     | Upper 0.0  |              |
| 8          |                 |                                                         |            |            |    |    |    |     | Lower 0.0  |              |
| 9          |                 |                                                         |            |            |    |    |    |     |            |              |
| 10         |                 |                                                         |            |            |    |    |    |     |            |              |
| 11         |                 | Wet                                                     |            |            |    |    |    |     | Upper 0.0  |              |
| 12         |                 | Sand lenses                                             | No/No      |            |    |    |    |     |            |              |
| 13         |                 |                                                         |            |            |    |    |    |     |            |              |
| 14         |                 |                                                         |            |            |    |    |    |     | Lower 0.0  |              |
| 15         |                 |                                                         |            |            |    |    |    |     |            |              |
| 16         |                 | Terminated at 15 feet in native silty SAND with gravel. |            |            |    |    |    |     |            |              |
| 17         |                 |                                                         |            |            |    |    |    |     |            |              |
| 18         |                 |                                                         |            |            |    |    |    |     |            |              |
| 19         |                 |                                                         |            |            |    |    |    |     |            |              |
| 20         |                 |                                                         |            |            |    |    |    |     |            |              |

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# LOG OF DPT NO. 25-8

Figure No. B-8

**Project:** Former C and C Paints      **Project No:** T-6552-1      **Date Drilled:** 3/25/13  
**Client:**      **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                     | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|
|            |                 |                                                      |            | 20         | 40 | 60 | 80 | 120 |           |              |
| 1          |                 | FILL: brown silt, soft, wet.                         |            |            |    |    |    |     |           |              |
| 2          |                 |                                                      |            |            |    |    |    |     | Upper     |              |
| 3          |                 | FILL: gray silty sand with gravel, wet, wood debris. | Light Odor |            |    |    |    |     | Lower 249 |              |
| 4          |                 |                                                      |            |            |    |    |    |     |           |              |
| 5          |                 |                                                      |            |            |    |    |    |     |           |              |
| 6          |                 |                                                      | Light Odor |            |    |    |    |     | Upper 175 |              |
| 7          |                 |                                                      |            |            |    |    |    |     |           |              |
| 8          |                 |                                                      |            |            |    |    |    |     | Lower 0.0 |              |
| 9          |                 |                                                      |            |            |    |    |    |     |           |              |
| 10         |                 | Gray silty SAND with gravel, moist to wet. (SM)      |            |            |    |    |    |     |           |              |
| 11         |                 |                                                      | No/No      |            |    |    |    |     | Upper 0.0 |              |
| 12         |                 |                                                      |            |            |    |    |    |     | Lower 0.0 |              |
| 13         |                 |                                                      |            |            |    |    |    |     |           |              |
| 14         |                 | Gray SAND, medium grained, wet. (SP)                 |            |            |    |    |    |     |           |              |
| 15         |                 |                                                      |            |            |    |    |    |     |           |              |
| 16         |                 | Terminated at 15 feet in native SAND.                |            |            |    |    |    |     |           |              |
| 17         |                 |                                                      |            |            |    |    |    |     |           |              |
| 18         |                 |                                                      |            |            |    |    |    |     |           |              |
| 19         |                 |                                                      |            |            |    |    |    |     |           |              |
| 20         |                 |                                                      |            |            |    |    |    |     |           |              |

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# LOG OF DPT NO. 25-9

Figure No. B-9

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/25/13  
 Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen    | Recovery % |    |    |    |     | PID (PPM)                 | Observ. Well |
|------------|-----------------|---------------------------------------------------------|---------------|------------|----|----|----|-----|---------------------------|--------------|
|            |                 |                                                         |               | 20         | 40 | 60 | 80 | 120 |                           |              |
| 1          |                 | FILL: brown gravel and sand, coarse grained, moist.     | No/No         |            |    |    |    |     | Upper 0.0                 |              |
| 2          |                 |                                                         |               |            |    |    |    |     |                           |              |
| 3          |                 |                                                         |               |            |    |    |    |     | Lower 0.0                 |              |
| 4          |                 |                                                         |               |            |    |    |    |     |                           |              |
| 5          |                 |                                                         |               |            |    |    |    |     |                           |              |
| 6          |                 | FILL: gray silty sand with gravel, loose, wet.          | Strong Odor   |            |    |    |    |     | Upper 375                 |              |
| 7          |                 |                                                         |               |            |    |    |    |     |                           |              |
| 8          |                 | Concrete                                                |               |            |    |    |    |     |                           |              |
| 9          |                 |                                                         |               |            |    |    |    |     | Lower - Not enough sample |              |
| 10         |                 | FILL: dark gray sand with gravel, wet.                  |               |            |    |    |    |     |                           |              |
| 11         |                 |                                                         |               |            |    |    |    |     | Upper 338                 |              |
| 12         |                 | Gray silty SAND with gravel, moist to wet. (SM)         | Moderate Odor |            |    |    |    |     |                           |              |
| 13         |                 |                                                         |               |            |    |    |    |     |                           |              |
| 14         |                 |                                                         | No/No         |            |    |    |    |     | Lower 0.0                 |              |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel. |               |            |    |    |    |     |                           |              |
| 16         |                 |                                                         |               |            |    |    |    |     |                           |              |
| 17         |                 |                                                         |               |            |    |    |    |     |                           |              |
| 18         |                 |                                                         |               |            |    |    |    |     |                           |              |
| 19         |                 |                                                         |               |            |    |    |    |     |                           |              |
| 20         |                 |                                                         |               |            |    |    |    |     |                           |              |

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# LOG OF DPT NO. 25-10

Figure No. B-10

Project: Former C and C Paints Project No: T-6552-1 Date Drilled: 3/26/13

Client: \_\_\_\_\_ Driller: Cascade Drilling Logged By: NRH

Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                     | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |  |
|------------|-----------------|--------------------------------------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|--|
|            |                 |                                                                                      |            | 20         | 40 | 60 | 80 | 120 |           |              |  |
| 1          |                 | FILL: dark brown silty SAND with gravel and SILT with gravel and wood debris, moist. | No/No      |            |    |    |    |     | Upper 0.0 |              |  |
| 2          |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 3          |                 |                                                                                      |            |            |    |    |    |     | Lower 0.0 |              |  |
| 4          |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 5          |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 6          |                 | Gray silty SAND with gravel, moist to wet. (SM)                                      | No/No      |            |    |    |    |     | Upper 0.0 |              |  |
| 7          |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 8          |                 |                                                                                      |            |            |    |    |    |     | Lower 0.0 |              |  |
| 9          |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 10         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 11         |                 | Wet.<br><br>Mottled.                                                                 | No/No      |            |    |    |    |     | Upper 0.0 |              |  |
| 12         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 13         |                 |                                                                                      |            |            |    |    |    |     | Lower 0.0 |              |  |
| 14         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 15         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 16         |                 | Terminated at 15 feet in native silty SAND with gravel.                              |            |            |    |    |    |     |           |              |  |
| 17         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 18         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 19         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |
| 20         |                 |                                                                                      |            |            |    |    |    |     |           |              |  |

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# LOG OF DPT NO. 25-11

Figure No. B-11

**Project:** Former C and C Paints      **Project No:** T-6552-1      **Date Drilled:** 3/26/13  
**Client:** \_\_\_\_\_ **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                        | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)  | Observ. Well |
|------------|-----------------|---------------------------------------------------------|------------|------------|----|----|----|-----|------------|--------------|
|            |                 |                                                         |            | 20         | 40 | 60 | 80 | 120 |            |              |
| 1          |                 | FILL: brown sand with gravel, moist.                    |            |            |    |    |    |     |            |              |
| 2          |                 | Concrete                                                |            |            |    |    |    |     | Upper 0.0  |              |
| 3          |                 |                                                         |            |            |    |    |    |     | Lower 60.3 |              |
| 4          |                 | Gray silty SAND with gravel, moist. (SM)                | Light Odor |            |    |    |    |     |            |              |
| 5          |                 |                                                         |            |            |    |    |    |     |            |              |
| 6          |                 |                                                         |            |            |    |    |    |     |            |              |
| 7          |                 |                                                         | No/No      |            |    |    | 70 |     | Upper 0.0  |              |
| 8          |                 |                                                         |            |            |    |    |    |     |            |              |
| 9          |                 | Becomes wet.                                            |            |            |    |    |    |     | Lower 0.0  |              |
| 10         |                 |                                                         |            |            |    |    |    |     |            |              |
| 11         |                 |                                                         |            |            |    |    |    |     |            |              |
| 12         |                 |                                                         | No/No      |            |    |    |    |     | Upper 0.0  |              |
| 13         |                 | Wet to saturated.                                       |            |            |    |    |    |     |            |              |
| 14         |                 | Sand lenses.                                            |            |            |    |    |    |     | Lower 0.0  |              |
| 15         |                 |                                                         |            |            |    |    |    |     |            |              |
| 16         |                 | Terminated at 15 feet in native silty SAND with gravel. |            |            |    |    |    |     |            |              |
| 17         |                 |                                                         |            |            |    |    |    |     |            |              |
| 18         |                 |                                                         |            |            |    |    |    |     |            |              |
| 19         |                 |                                                         |            |            |    |    |    |     |            |              |
| 20         |                 |                                                         |            |            |    |    |    |     |            |              |

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# LOG OF DPT NO. 25-12

Figure No. B-12

**Project:** Former C and C Paints

**Project No:** T-6552-1

**Date Drilled:** 3/26/13

**Client:**

**Driller:** Cascade Drilling

**Logged By:** NRH

**Location:** Seattle, Washington

**Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)  | Observ. Well |
|------------|-----------------|-----------------------------------------------------------------|------------|------------|----|----|----|-----|------------|--------------|
|            |                 |                                                                 |            | 20         | 40 | 60 | 80 | 120 |            |              |
| 1          |                 | (2 inches ASPHALT)<br>FILL: brown sand, moist.                  |            |            |    |    |    |     | Upper 0.0  |              |
| 2          |                 | FILL: grayish-brown silty sand with gravel, wood debris, moist. |            |            |    |    |    |     | Lower 22.5 |              |
| 3          |                 | Gray silty SAND with gravel, moist.                             |            |            |    |    |    |     |            |              |
| 4          |                 |                                                                 |            |            |    |    |    |     |            |              |
| 5          |                 |                                                                 |            |            |    |    |    |     |            |              |
| 6          |                 | Sand lenses, wet in places.                                     |            |            |    |    |    |     |            |              |
| 7          |                 |                                                                 |            |            |    |    |    |     | Upper 613  |              |
| 8          |                 |                                                                 |            |            |    |    |    |     | Lower 0.0  |              |
| 9          |                 |                                                                 |            |            |    |    |    |     |            |              |
| 10         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 11         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 12         |                 | Coarse grained.                                                 |            |            |    |    |    |     | Upper 26.5 |              |
| 13         |                 | Sand lenses.<br>Wet to saturated.                               |            |            |    |    |    |     |            |              |
| 14         |                 |                                                                 |            |            |    |    |    |     | Lower 0.0  |              |
| 15         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 16         |                 | Terminated at 15 feet in native silty SAND with gravel.         |            |            |    |    |    |     |            |              |
| 17         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 18         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 19         |                 |                                                                 |            |            |    |    |    |     |            |              |
| 20         |                 |                                                                 |            |            |    |    |    |     |            |              |

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# LOG OF DPT NO. 25-13

Figure No. B-13

**Project:** Former C and C Paints      **Project No:** T-6552-1      **Date Drilled:** 3/26/13  
**Client:** \_\_\_\_\_ **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                   | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM) | Observ. Well |
|------------|-----------------|--------------------------------------------------------------------|------------|------------|----|----|----|-----|-----------|--------------|
|            |                 |                                                                    |            | 20         | 40 | 60 | 80 | 120 |           |              |
| 1          |                 | (ASPHALT and CRUSHED ROCK)                                         |            |            |    |    |    |     |           |              |
| 2          |                 |                                                                    | No/No      |            | 50 |    |    |     | Upper 0.0 |              |
| 3          |                 | FILL: gray and brown silty sand with gravel, wood debris, moist.   |            |            |    |    |    |     | Lower 0.0 |              |
| 4          |                 |                                                                    |            |            |    |    |    |     |           |              |
| 5          |                 |                                                                    |            |            |    |    |    |     |           |              |
| 6          |                 |                                                                    | No/No      |            |    |    |    |     | Upper 0.0 |              |
| 7          |                 |                                                                    |            |            |    |    |    |     |           |              |
| 8          |                 |                                                                    |            |            |    |    |    |     | Lower 0.0 |              |
| 9          |                 |                                                                    |            |            |    |    |    |     |           |              |
| 10         |                 | Gray silty SAND with gravel, fine to medium grained, moist to wet. |            |            |    |    |    |     |           |              |
| 11         |                 |                                                                    |            |            |    |    |    |     | Upper 0.0 |              |
| 12         |                 | Occasional sand lenses.                                            | No/No      |            |    |    |    |     | Lower 0.0 |              |
| 13         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 14         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel.            |            |            |    |    |    |     |           |              |
| 16         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 17         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 18         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 19         |                 |                                                                    |            |            |    |    |    |     |           |              |
| 20         |                 |                                                                    |            |            |    |    |    |     |           |              |

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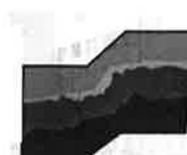
# LOG OF DPT NO. 25-14

Figure No. B-14

**Project:** Former C and C Paints      **Project No:** T-6552      **Date Drilled:** 3/26/13  
**Client:**      **Driller:** Cascade Drilling      **Logged By:** NRH  
**Location:** Seattle, Washington      **Approx. Elev:** N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                        | Odor/Sheen | Recovery % |    |    |    |     | PID (PPM)                                                            | Observ. Well |
|------------|-----------------|---------------------------------------------------------------------------------------------------------|------------|------------|----|----|----|-----|----------------------------------------------------------------------|--------------|
|            |                 |                                                                                                         |            | 20         | 40 | 60 | 80 | 120 |                                                                      |              |
| 1          |                 | FILL: brown SILT, moist, stiff.                                                                         | Light Odor |            |    |    |    |     | Upper 0.0<br>Lower 1046                                              |              |
| 2          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 3          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 4          |                 | Gray silty SAND with gravel, moist.<br><br>Mottled in places.<br><br>Occasional sand and gravel lenses. | No/No      |            |    |    |    |     | Upper 0.0<br><br><br><br>Upper 0.0<br><br>Upper 162<br><br>Lower 0.0 |              |
| 5          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 6          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 7          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 8          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 9          |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 10         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 11         |                 | Becomes wet.                                                                                            | No/No      |            |    |    |    |     |                                                                      |              |
| 12         |                 |                                                                                                         |            |            |    |    | 90 |     |                                                                      |              |
| 13         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 14         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 15         |                 | Terminated at 15 feet in native silty SAND with gravel.                                                 |            |            |    |    |    |     |                                                                      |              |
| 16         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 17         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 18         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 19         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |
| 20         |                 |                                                                                                         |            |            |    |    |    |     |                                                                      |              |

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# LOG OF BORING NO. MW-205

Figure No.

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 11/3/14

Client:

Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                 | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>10 30 50 70 90 | Pocket Penetrometer<br>△ TSF △<br>1 2 3 4<br>SPT (N)<br>Blows/ft<br>• 10 20 30 40 • |   |  |       | Observ.<br>Well |
|------------|-----------------|------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------|---|--|-------|-----------------|
|            |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 1          |                 | (4 inches CONCRETE SLAB)                                         |                                  |                                                             |                                                                                     |   |  |       |                 |
| 2          |                 | FILL: tan/brown silt, moist.                                     | Soft                             |                                                             |                                                                                     |   |  |       |                 |
| 3          |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 4          |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 5          |                 |                                                                  |                                  |                                                             |                                                                                     | 5 |  |       |                 |
| 6          |                 | FILL: grayish-brown silty sand with gravel, moist.               | Loose                            |                                                             |                                                                                     |   |  |       |                 |
| 7          |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 8          |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 9          |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 10         |                 |                                                                  |                                  |                                                             |                                                                                     | 9 |  |       |                 |
| 11         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 12         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 13         |                 | Gray silty SAND with gravel, fine to medium grained, moist. (SM) | Dense                            |                                                             |                                                                                     |   |  |       |                 |
| 14         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 15         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  | 50/6" |                 |
| 16         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 17         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 18         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 19         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 20         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  | 50/6" |                 |
| 21         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 22         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 23         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  |       |                 |
| 24         |                 | *Continued on Next Page.                                         |                                  |                                                             |                                                                                     |   |  |       |                 |
| 25         |                 |                                                                  |                                  |                                                             |                                                                                     |   |  | 50/6" |                 |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF BORING NO. MW-205

Figure No.

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 11/3/14

Client:

Driller: Cascade Drilling

Logged By: NRH

Location: Ballard, Washington

Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                                                                                                         | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>10 20 30 40 | Pocket Penetrometer |    |    |    | Observ.<br>Well |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|---------------------|----|----|----|-----------------|
|            |                 |                                                                                                                                                          |                                  |                                                          | TSF                 |    |    |    |                 |
|            |                 |                                                                                                                                                          |                                  |                                                          | 1                   | 2  | 3  | 4  |                 |
|            |                 |                                                                                                                                                          |                                  |                                                          | SPT (N)<br>Blows/ft |    |    |    |                 |
|            |                 |                                                                                                                                                          |                                  |                                                          | 10                  | 20 | 30 | 40 | 50/6"           |
| 26         |                 | Becomes wet to saturated.                                                                                                                                |                                  |                                                          |                     |    |    |    | 50/6"           |
| 27         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 28         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 29         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 30         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 31         |                 | Gray SAND, fine to medium grained,<br>wet, occasional gravel. (SP)                                                                                       | Dense                            |                                                          |                     |    |    |    | 50/6"           |
| 32         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 33         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 34         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 35         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 36         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 37         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 38         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 39         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 40         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 41         |                 | Boring terminated at 46.5 feet.<br>2-inch PVC monitoring well constructed<br>with 0.010 screen from 34 to 44 feet.<br>Sampler driven with 300 lb hammer. |                                  |                                                          |                     |    |    |    | 50/6"           |
| 42         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 43         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 44         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 45         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 46         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 47         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    | 50/6"           |
| 48         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 49         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |
| 50         |                 |                                                                                                                                                          |                                  |                                                          |                     |    |    |    |                 |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF BORING NO. B-301

Figure No.

Project: 5221 Ballard Avenue Project No: T-6552 Date Drilled: 4/13/15  
 Client: Driller: BORETEC 1 Logged By: NRH  
 Location: Seattle, Washington Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                          | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>0 25 50 75 100 | Pocket Penetrometer<br>TSF<br>1 2 3 4<br>SPT (N)<br>Blows/ft |    |    |    |
|------------|-----------------|---------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|--------------------------------------------------------------|----|----|----|
|            |                 |                                                                           |                                  |                                                             | 10                                                           | 20 | 30 | 40 |
| 1          |                 | FILL: tan sand, coarse grained, minor silt, wet.<br>0.0 ppm PID, no odor. | Loose                            |                                                             |                                                              |    |    |    |
| 2          |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 3          |                 | FILL: tan and brown silt, moist.                                          |                                  |                                                             |                                                              |    |    |    |
| 4          |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 5          |                 | 0.0 ppm PID, no odor.                                                     |                                  |                                                             |                                                              |    |    |    |
| 6          |                 |                                                                           | Medium Dense                     |                                                             |                                                              |    |    |    |
| 7          |                 | 0.0 ppm PID, no odor.                                                     |                                  |                                                             |                                                              |    |    |    |
| 8          |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 9          |                 | Rock in sampler.                                                          |                                  |                                                             |                                                              |    |    |    |
| 10         |                 | 36 ppm PID, light odor.                                                   |                                  |                                                             |                                                              |    |    |    |
| 11         |                 |                                                                           | Dense                            |                                                             |                                                              |    |    |    |
| 12         |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 13         |                 | Gray silty SAND, fine grained, moist. (SM)                                |                                  |                                                             |                                                              |    |    |    |
| 14         |                 | 20.3 ppm PID, light odor.                                                 |                                  |                                                             |                                                              |    |    |    |
| 15         |                 | Minor gravel.<br>0.0 PPM PID, no odor.                                    |                                  |                                                             |                                                              |    |    |    |
| 16         |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 17         |                 | Boring terminated at 16.5 feet.<br>Hole backfilled with bentonite chips.  |                                  |                                                             |                                                              |    |    |    |
| 18         |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 19         |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |
| 20         |                 |                                                                           |                                  |                                                             |                                                              |    |    |    |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF BORING NO. B-302

Figure No.

Project: 5221 Ballard Avenue

Project No: T-6552

Date Drilled: 4/13/15

Client:

Driller: BORETEC 1

Logged By: NRH

Location: Seattle, Washington

Approx. Elev: N/A

| Depth (ft) | Sample Interval | Soil Description                                                         | Consistency/<br>Relative Density | Moisture Content %<br>Wp  -----x-----  Wl<br>0 25 50 75 100 | Pocket Penetrometer<br>Δ TSF Δ |      |      |      |
|------------|-----------------|--------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|--------------------------------|------|------|------|
|            |                 |                                                                          |                                  |                                                             | 1                              | 2    | 3    | 4    |
|            |                 |                                                                          |                                  |                                                             | SPT (N)<br>Blows/ft            |      |      |      |
|            |                 |                                                                          |                                  |                                                             | • 10                           | • 20 | • 30 | • 40 |
| 1          |                 | FILL: tan sand with gravel, coarse grained, wet, wood debris.            |                                  |                                                             |                                |      |      |      |
| 2          |                 | FILL: tan and gray silt, moist, brick debris.                            |                                  |                                                             |                                |      |      |      |
| 3          |                 |                                                                          | Medium Stiff                     |                                                             |                                |      |      |      |
| 4          |                 | 0.0 ppm PID, no odor.                                                    |                                  |                                                             |                                |      |      |      |
| 5          |                 | 0.0 ppm PID, no odor.                                                    |                                  |                                                             |                                |      |      |      |
| 6          |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 7          |                 | Noticable sheen.                                                         |                                  |                                                             |                                |      |      |      |
| 8          |                 | 108 ppm PID, light odor.                                                 | Medium Dense                     |                                                             |                                |      |      |      |
| 9          |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 10         |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 11         |                 | Gray silty SAND with gravel, moist. (SM)                                 |                                  |                                                             |                                |      |      |      |
| 12         |                 | 83 ppm PID, light odor.                                                  |                                  |                                                             |                                |      |      |      |
| 13         |                 | 47.8 ppm PID, light odor.                                                |                                  |                                                             |                                |      |      |      |
| 14         |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 15         |                 | 0.0 ppm PID, no odor.                                                    | Dense                            |                                                             |                                |      |      |      |
| 16         |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 17         |                 | Boring terminated at 16.5 feet.<br>Hole backfilled with bentonite chips. |                                  |                                                             |                                |      |      |      |
| 18         |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 19         |                 |                                                                          |                                  |                                                             |                                |      |      |      |
| 20         |                 |                                                                          |                                  |                                                             |                                |      |      |      |

Note: This borehole log has been prepared for geotechnical purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**

Consultants in Geotechnical Engineering, Geology and Environmental Earth Sciences

**APPENDIX B  
ANALYTICAL TESTING  
SOIL**

**5221 Ballard Avenue NW  
Seattle, Washington**

All soil samples were placed into laboratory-prepared glassware. Each sample was given unique sample identification. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. The procedures consisted of sample blanks, duplicates, and matrix spikes. All testing was within normal standards.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use.



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

February 19, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1301-194

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 29, 2013.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 19, 2013  
Samples Submitted: January 29, 2013  
Laboratory Reference: 1301-194  
Project: 6552

### **Case Narrative**

Samples were collected on January 28, 2013 and received by the laboratory on January 29, 2013. 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples DPT-3 5-10, DPT-3 10-15, DPT-4 5-10, DPT-5 5-10, DPT-6 10-15 and DPT-7 5-10 are similar to mineral spirits.

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.

#### Volatile Petroleum Hydrocarbons Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

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: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | DPT-1 10-15      |                |           |               |               |       |
| Laboratory ID: | 01-194-03        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.077          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.077          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.077          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.077          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | ND               | 7.7            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 120              | 70-132         |           |               |               |       |
| Client ID:     | DPT-1 15-20      |                |           |               |               |       |
| Laboratory ID: | 01-194-04        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.054          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.054          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.054          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.054          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | ND               | 5.4            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 102              | 70-132         |           |               |               |       |
| Client ID:     | DPT-2 10-15      |                |           |               |               |       |
| Laboratory ID: | 01-194-07        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | ND               | 4.8            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 99               | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>                | <b>Result</b>    | <b>PQL</b>     | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|-------------------------------|------------------|----------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID: DPT-2 15-20</b> |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-08        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Toluene                       | ND               | 0.049          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Ethyl Benzene                 | ND               | 0.049          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| m,p-Xylene                    | ND               | 0.049          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| o-Xylene                      | ND               | 0.049          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Gasoline                      | ND               | 4.9            | NWTPH-Gx      | 1-30-13              | 2-1-13               |              |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 102              | 70-132         |               |                      |                      |              |
| <b>Client ID: DPT-3 5-10</b>  |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-10        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 1-30-13              | 2-4-13               |              |
| Toluene                       | ND               | 0.065          | EPA 8021B     | 1-30-13              | 2-4-13               |              |
| Ethyl Benzene                 | ND               | 0.065          | EPA 8021B     | 1-30-13              | 2-4-13               |              |
| m,p-Xylene                    | 0.093            | 0.065          | EPA 8021B     | 1-30-13              | 2-4-13               |              |
| o-Xylene                      | ND               | 0.065          | EPA 8021B     | 1-30-13              | 2-4-13               |              |
| Gasoline                      | 250              | 13             | NWTPH-Gx      | 1-30-13              | 2-1-13               | Z            |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 93               | 70-132         |               |                      |                      |              |
| <b>Client ID: DPT-3 10-15</b> |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-11        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Toluene                       | ND               | 0.051          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Ethyl Benzene                 | ND               | 0.051          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| m,p-Xylene                    | ND               | 0.051          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| o-Xylene                      | ND               | 0.051          | EPA 8021B     | 1-30-13              | 2-1-13               |              |
| Gasoline                      | 5.6              | 5.1            | NWTPH-Gx      | 1-30-13              | 2-1-13               | Z            |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 99               | 70-132         |               |                      |                      |              |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte                | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|------------------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID: DPT-3 15-20 |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-12        |                |           |               |               |       |
| Benzene                | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene                | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene             | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene               | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline               | ND               | 4.8            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 94               | 70-132         |           |               |               |       |
| Client ID: DPT-4 5-10  |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-14        |                |           |               |               |       |
| Benzene                | ND               | 0.022          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene                | ND               | 0.11           | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.11           | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene             | 0.60             | 0.11           | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene               | ND               | 0.55           | EPA 8021B | 1-30-13       | 2-1-13        | U1    |
| Gasoline               | 5100             | 280            | NWTPH-Gx  | 1-30-13       | 2-4-13        | Z     |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 104              | 70-132         |           |               |               |       |
| Client ID: DPT-4 10-15 |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-15        |                |           |               |               |       |
| Benzene                | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene                | ND               | 0.055          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.055          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene             | ND               | 0.055          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene               | ND               | 0.055          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline               | ND               | 5.5            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 104              | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte                | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|------------------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID: DPT-4 15-20 |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-16        |                |           |               |               |       |
| Benzene                | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene                | ND               | 0.045          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.045          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene             | ND               | 0.045          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene               | ND               | 0.045          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline               | ND               | 4.5            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 97               | 70-132         |           |               |               |       |
| Client ID: DPT-5 5-10  |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-18        |                |           |               |               |       |
| Benzene                | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene                | ND               | 0.058          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.058          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene             | ND               | 0.058          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene               | ND               | 0.058          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline               | 37               | 5.8            | NWTPH-Gx  | 1-30-13       | 2-1-13        | Z     |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 94               | 70-132         |           |               |               |       |
| Client ID: DPT-5 10-15 |                  |                |           |               |               |       |
| Laboratory ID:         | 01-194-19        |                |           |               |               |       |
| Benzene                | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene                | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene          | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene             | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene               | ND               | 0.048          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline               | ND               | 4.8            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:             | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene          | 99               | 70-132         |           |               |               |       |



Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | DPT-6 5-10       |                |           |               |               |       |
| Laboratory ID: | 01-194-22        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.053          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.053          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.053          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.053          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | ND               | 5.3            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 100              | 70-132         |           |               |               |       |
| Client ID:     | DPT-6 10-15      |                |           |               |               |       |
| Laboratory ID: | 01-194-23        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.057          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.057          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.057          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.057          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | 11               | 5.7            | NWTPH-Gx  | 1-30-13       | 2-1-13        | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 108              | 70-132         |           |               |               |       |
| Client ID:     | DPT-6 15-20      |                |           |               |               |       |
| Laboratory ID: | 01-194-24        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.057          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.057          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.057          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.057          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | ND               | 5.7            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 102              | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | DPT-7 5-10       |                |           |               |               |       |
| Laboratory ID: | 01-194-26        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.059          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.059          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.059          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.059          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | 920              | 59             | NWTPH-Gx  | 2-1-13        | 2-4-13        | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 112              | 70-132         |           |               |               |       |
| Client ID:     | DPT-7 10-15      |                |           |               |               |       |
| Laboratory ID: | 01-194-27        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.051          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.051          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.051          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.051          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | ND               | 5.1            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 97               | 70-132         |           |               |               |       |
| Client ID:     | DPT-7 15-20      |                |           |               |               |       |
| Laboratory ID: | 01-194-28        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.053          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.053          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.053          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.053          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | ND               | 5.3            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 98               | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>DPT-8 5-10</b>       |                       |               |                      |                      |              |
| Laboratory ID:       | 01-194-30               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Toluene              | ND                      | 0.061                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Ethyl Benzene        | ND                      | 0.061                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| m,p-Xylene           | ND                      | 0.061                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| o-Xylene             | ND                      | 0.061                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Gasoline             | ND                      | 6.1                   | NWTPH-Gx      | 2-1-13               | 2-1-13               |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 107                     | 70-132                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>DPT-8 10-15</b>      |                       |               |                      |                      |              |
| Laboratory ID:       | 01-194-31               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Toluene              | ND                      | 0.047                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Ethyl Benzene        | ND                      | 0.047                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| m,p-Xylene           | ND                      | 0.047                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| o-Xylene             | ND                      | 0.047                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Gasoline             | ND                      | 4.7                   | NWTPH-Gx      | 2-1-13               | 2-1-13               |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 94                      | 70-132                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>DPT-9 5-10</b>       |                       |               |                      |                      |              |
| Laboratory ID:       | 01-194-34               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Toluene              | ND                      | 0.056                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Ethyl Benzene        | ND                      | 0.056                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| m,p-Xylene           | ND                      | 0.056                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| o-Xylene             | ND                      | 0.056                 | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Gasoline             | ND                      | 5.6                   | NWTPH-Gx      | 2-1-13               | 2-1-13               |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 102                     | 70-132                |               |                      |                      |              |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>                | <b>Result</b>    | <b>PQL</b>     | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|-------------------------------|------------------|----------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID: DPT-9 10-15</b> |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-35        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Toluene                       | ND               | 0.052          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Ethyl Benzene                 | ND               | 0.052          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| m,p-Xylene                    | ND               | 0.052          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| o-Xylene                      | ND               | 0.052          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Gasoline                      | ND               | 5.2            | NWTPH-Gx      | 2-1-13               | 2-1-13               |              |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 96               | 70-132         |               |                      |                      |              |
| <b>Client ID: DPT-9 15-20</b> |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-36        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 2-1-13               | 2-4-13               |              |
| Toluene                       | ND               | 0.049          | EPA 8021B     | 2-1-13               | 2-4-13               |              |
| Ethyl Benzene                 | ND               | 0.049          | EPA 8021B     | 2-1-13               | 2-4-13               |              |
| m,p-Xylene                    | ND               | 0.049          | EPA 8021B     | 2-1-13               | 2-4-13               |              |
| o-Xylene                      | ND               | 0.049          | EPA 8021B     | 2-1-13               | 2-4-13               |              |
| Gasoline                      | ND               | 4.9            | NWTPH-Gx      | 2-1-13               | 2-4-13               |              |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 96               | 70-132         |               |                      |                      |              |
| <b>Client ID: DPT-10 5-10</b> |                  |                |               |                      |                      |              |
| Laboratory ID:                | 01-194-38        |                |               |                      |                      |              |
| Benzene                       | ND               | 0.020          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Toluene                       | ND               | 0.054          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Ethyl Benzene                 | ND               | 0.054          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| m,p-Xylene                    | ND               | 0.054          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| o-Xylene                      | ND               | 0.054          | EPA 8021B     | 2-1-13               | 2-1-13               |              |
| Gasoline                      | ND               | 5.4            | NWTPH-Gx      | 2-1-13               | 2-1-13               |              |
| Surrogate:                    | Percent Recovery | Control Limits |               |                      |                      |              |
| Fluorobenzene                 | 103              | 70-132         |               |                      |                      |              |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte                 | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|-------------------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID: DPT-10 10-15 |                  |                |           |               |               |       |
| Laboratory ID:          | 01-194-39        |                |           |               |               |       |
| Benzene                 | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene                 | ND               | 0.047          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene           | ND               | 0.047          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene              | ND               | 0.047          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene                | ND               | 0.047          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline                | ND               | 4.7            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:              | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene           | 100              | 70-132         |           |               |               |       |
| Client ID: DPT-10 15-20 |                  |                |           |               |               |       |
| Laboratory ID:          | 01-194-40        |                |           |               |               |       |
| Benzene                 | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene                 | ND               | 0.054          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene           | ND               | 0.054          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene              | ND               | 0.054          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene                | ND               | 0.054          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline                | ND               | 5.4            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:              | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene           | 104              | 70-132         |           |               |               |       |
| Client ID: DPT-11 0-5   |                  |                |           |               |               |       |
| Laboratory ID:          | 01-194-41        |                |           |               |               |       |
| Benzene                 | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene                 | ND               | 0.049          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene           | ND               | 0.049          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene              | ND               | 0.049          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene                | ND               | 0.049          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline                | ND               | 4.9            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:              | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene           | 104              | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**NWTPH-Gx/BTEX  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| METHOD BLANK   |                  |                |           |               |               |       |
| Laboratory ID: | MB0130S1         |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 1-30-13       |       |
| Toluene        | ND               | 0.050          | EPA 8021B | 1-30-13       | 1-30-13       |       |
| Ethyl Benzene  | ND               | 0.050          | EPA 8021B | 1-30-13       | 1-30-13       |       |
| m,p-Xylene     | ND               | 0.050          | EPA 8021B | 1-30-13       | 1-30-13       |       |
| o-Xylene       | ND               | 0.050          | EPA 8021B | 1-30-13       | 1-30-13       |       |
| Gasoline       | ND               | 5.0            | NWTPH-Gx  | 1-30-13       | 1-30-13       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 102              | 70-132         |           |               |               |       |
|                |                  |                |           |               |               |       |
| Laboratory ID: | MB0130S2         |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Toluene        | ND               | 0.050          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.050          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.050          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| o-Xylene       | ND               | 0.050          | EPA 8021B | 1-30-13       | 2-1-13        |       |
| Gasoline       | ND               | 5.0            | NWTPH-Gx  | 1-30-13       | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 100              | 70-132         |           |               |               |       |
|                |                  |                |           |               |               |       |
| Laboratory ID: | MB0201S1         |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | ND               | 5.0            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 97               | 70-132         |           |               |               |       |
|                |                  |                |           |               |               |       |
| Laboratory ID: | MB0201S2         |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Toluene        | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Ethyl Benzene  | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| m,p-Xylene     | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| o-Xylene       | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-1-13        |       |
| Gasoline       | ND               | 5.0            | NWTPH-Gx  | 2-1-13        | 2-1-13        |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 103              | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**NWTPH-Gx/BTEX  
 DUPLICATE QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte                  | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|--------------------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE                |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID:           | 01-207-01 |     |             |    |               |                  |                 |        |           |       |
|                          | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene            | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene               | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:               |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene            |           |     |             |    |               | 105              | 105             | 70-132 |           |       |
| Laboratory ID: 01-194-03 |           |     |             |    |               |                  |                 |        |           |       |
|                          | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene            | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene               | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:               |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene            |           |     |             |    |               | 120              | 114             | 70-132 |           |       |
| Laboratory ID: 01-194-41 |           |     |             |    |               |                  |                 |        |           |       |
|                          | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene            | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene               | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:               |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene            |           |     |             |    |               | 104              | 100             | 70-132 |           |       |
| Laboratory ID: 01-220-01 |           |     |             |    |               |                  |                 |        |           |       |
|                          | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene                  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene            | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene               | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline                 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:               |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene            |           |     |             |    |               | 100              | 93              | 70-132 |           |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**NWTPH-Gx/BTEX  
 SB/SBD QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result   |       | Spike Level |      | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|----------|-------|-------------|------|---------------|------------------|-----------------|--------|-----------|-------|
| SPIKE BLANKS   |          |       |             |      |               |                  |                 |        |           |       |
| Laboratory ID: | SB0130S1 |       |             |      |               |                  |                 |        |           |       |
|                | SB       | SBD   | SB          | SBD  |               | SB               | SBD             |        |           |       |
| Benzene        | 0.977    | 1.00  | 1.00        | 1.00 |               | 98               | 100             | 71-125 | 2         | 11    |
| Toluene        | 1.01     | 1.03  | 1.00        | 1.00 |               | 101              | 103             | 77-125 | 2         | 11    |
| Ethyl Benzene  | 0.990    | 0.991 | 1.00        | 1.00 |               | 99               | 99              | 76-125 | 0         | 10    |
| m,p-Xylene     | 0.999    | 0.987 | 1.00        | 1.00 |               | 100              | 99              | 78-124 | 1         | 9     |
| o-Xylene       | 0.955    | 0.914 | 1.00        | 1.00 |               | 96               | 91              | 77-123 | 4         | 9     |
| Surrogate:     |          |       |             |      |               |                  |                 |        |           |       |
| Fluorobenzene  |          |       |             |      |               | 97               | 100             | 70-132 |           |       |
|                |          |       |             |      |               |                  |                 |        |           |       |
| Laboratory ID: | SB0201S1 |       |             |      |               |                  |                 |        |           |       |
|                | SB       | SBD   | SB          | SBD  |               | SB               | SBD             |        |           |       |
| Benzene        | 0.949    | 0.966 | 1.00        | 1.00 |               | 95               | 97              | 71-125 | 2         | 11    |
| Toluene        | 0.979    | 0.992 | 1.00        | 1.00 |               | 98               | 99              | 77-125 | 1         | 11    |
| Ethyl Benzene  | 0.981    | 0.967 | 1.00        | 1.00 |               | 98               | 97              | 76-125 | 1         | 10    |
| m,p-Xylene     | 0.985    | 0.971 | 1.00        | 1.00 |               | 99               | 97              | 78-124 | 1         | 9     |
| o-Xylene       | 0.957    | 0.914 | 1.00        | 1.00 |               | 96               | 91              | 77-123 | 5         | 9     |
| Surrogate:     |          |       |             |      |               |                  |                 |        |           |       |
| Fluorobenzene  |          |       |             |      |               | 98               | 97              | 70-132 |           |       |



Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

### VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result                  | PQL                   | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------------|-----------------------|-----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>DPT-3 5-10</b>       |                       |           |               |               |       |
| Laboratory ID:       | 01-194-10               |                       |           |               |               |       |
| Aliphatic C5-C6      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C6-C8      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C8-C10     | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C10-C12    | <b>200</b>              | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aliphatic:     | <b>200</b>              |                       | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C8-C10      | <b>20</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C10-C12     | <b>85</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C12-C13     | <b>9.7</b>              | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aromatic:      | <b>110</b>              |                       | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Methyl t-butyl ether | <b>ND</b>               | 0.026                 | EPA 8021B | 1-30-13       | 2-11-13       |       |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |           |               |               |       |
| <i>Fluorobenzene</i> | <i>84</i>               | <i>70-132</i>         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

### VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result                  | PQL                   | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------------|-----------------------|-----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>DPT-4 5-10</b>       |                       |           |               |               |       |
| Laboratory ID:       | 01-194-14               |                       |           |               |               |       |
| Aliphatic C5-C6      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C6-C8      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C8-C10     | <b>ND</b>               | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C10-C12    | <b>4600</b>             | 14                    | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aliphatic:     | <b>4600</b>             |                       | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C8-C10      | <b>360</b>              | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C10-C12     | <b>2100</b>             | 14                    | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C12-C13     | <b>100</b>              | 5.0                   | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aromatic:      | <b>2600</b>             |                       | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Methyl t-butyl ether | <b>ND</b>               | 0.056                 | EPA 8021B | 1-30-13       | 2-11-13       |       |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |           |               |               |       |
| <i>Fluorobenzene</i> | 99                      | 70-132                |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

### VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result                  | PQL                   | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------------|-----------------------|-----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>DPT-7 5-10</b>       |                       |           |               |               |       |
| Laboratory ID:       | 01-194-26               |                       |           |               |               |       |
| Aliphatic C5-C6      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C6-C8      | <b>ND</b>               | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C8-C10     | <b>ND</b>               | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C10-C12    | <b>640</b>              | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Total Aliphatic:     | <b>640</b>              |                       | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aromatic C8-C10      | <b>40</b>               | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aromatic C10-C12     | <b>330</b>              | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aromatic C12-C13     | <b>62</b>               | 5.0                   | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Total Aromatic:      | <b>430</b>              |                       | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Methyl t-butyl ether | <b>ND</b>               | 0.059                 | EPA 8021B | 2-1-13        | 2-11-13       |       |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |           |               |               |       |
| <i>Fluorobenzene</i> | <i>90</i>               | <i>70-132</i>         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**VOLATILE PETROLEUM HYDROCARBONS  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <hr/>                |                  |                |           |               |               |       |
| Laboratory ID:       | MB0130S1         |                |           |               |               |       |
| Aliphatic C5-C6      | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C6-C8      | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C8-C10     | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aliphatic C10-C12    | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aliphatic:     | NA               |                | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Aromatic C8-C10      | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C10-C12     | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Aromatic C12-C13     | ND               | 5.0            | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| Total Aromatic:      | NA               |                | NWTPH-VPH | 1-30-13       | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Methyl t-butyl ether | ND               | 0.050          | EPA 8021B | 1-30-13       | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Surrogate:           | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene        | 104              | 70-132         |           |               |               |       |
| <hr/>                |                  |                |           |               |               |       |
| Laboratory ID:       | MB0201S1         |                |           |               |               |       |
| Aliphatic C5-C6      | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C6-C8      | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C8-C10     | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aliphatic C10-C12    | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Total Aliphatic:     | NA               |                | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Aromatic C8-C10      | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aromatic C10-C12     | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Aromatic C12-C13     | ND               | 5.0            | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| Total Aromatic:      | NA               |                | NWTPH-VPH | 2-1-13        | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Methyl t-butyl ether | ND               | 0.050          | EPA 8021B | 2-1-13        | 2-11-13       |       |
| <hr/>                |                  |                |           |               |               |       |
| Surrogate:           | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene        | 104              | 70-132         |           |               |               |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**VOLATILE PETROLEUM HYDROCARBONS  
 DUPLICATE QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte           | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | Limit | Flags |
|-------------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-------|-------|
| DUPLICATE         |           |     |             |    |               |                  |                 |        |       |       |
| Laboratory ID:    | 01-194-03 |     |             |    |               |                  |                 |        |       |       |
|                   | ORIG      | DUP |             |    |               |                  |                 |        |       |       |
| Aliphatic C5-C6   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C6-C8   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C8-C10  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C10-C12 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Total Aliphatic:  | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C8-C10   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C10-C12  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C12-C13  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Total Aromatic:   | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| MTBE              | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Surrogate:        |           |     |             |    |               |                  |                 |        |       |       |
| Fluorobenzene     |           |     |             |    |               | 113              | 112             | 70-132 |       |       |
| DUPLICATE         |           |     |             |    |               |                  |                 |        |       |       |
| Laboratory ID:    | 01-194-41 |     |             |    |               |                  |                 |        |       |       |
|                   | ORIG      | DUP |             |    |               |                  |                 |        |       |       |
| Aliphatic C5-C6   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C6-C8   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C8-C10  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aliphatic C10-C12 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Total Aliphatic:  | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C8-C10   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C10-C12  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Aromatic C12-C13  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Total Aromatic:   | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| MTBE              | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30    |       |
| Surrogate:        |           |     |             |    |               |                  |                 |        |       |       |
| Fluorobenzene     |           |     |             |    |               | 89               | 90              | 70-132 |       |       |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

### TOC by EPA 9060

Matrix: Soil  
 Units: % Carbon

| Analyte              | Result            | PQL   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------|-------|----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>DPT-1 5-10</b> |       |          |               |               |       |
| Laboratory ID:       | 01-194-02         |       |          |               |               |       |
| Total Organic Carbon | <b>2.9</b>        | 0.076 | EPA 9060 | 2-11-13       | 2-11-13       |       |

|                      |                   |       |          |         |         |  |
|----------------------|-------------------|-------|----------|---------|---------|--|
| <b>Client ID:</b>    | <b>DPT-9 5-10</b> |       |          |         |         |  |
| Laboratory ID:       | 01-194-34         |       |          |         |         |  |
| Total Organic Carbon | <b>0.066</b>      | 0.044 | EPA 9060 | 2-11-13 | 2-11-13 |  |

|                      |                    |       |          |         |         |  |
|----------------------|--------------------|-------|----------|---------|---------|--|
| <b>Client ID:</b>    | <b>DPT-10 5-10</b> |       |          |         |         |  |
| Laboratory ID:       | 01-194-38          |       |          |         |         |  |
| Total Organic Carbon | <b>0.094</b>       | 0.042 | EPA 9060 | 2-11-13 | 2-11-13 |  |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

**TOC by EPA 9060  
 QUALITY CONTROL**

Matrix: Soil  
 Units: % Carbon

| Analyte              | Result    | PQL   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|-----------|-------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b>  |           |       |          |               |               |       |
| Laboratory ID:       | MB0211S1  |       |          |               |               |       |
| Total Organic Carbon | <b>ND</b> | 0.042 | EPA 9060 | 2-11-13       | 2-11-13       |       |

| Analyte              | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|----------------------|-----------|-------------|---------------|------------------|-----------------|-----|-----------|-------|
| <b>DUPLICATE</b>     |           |             |               |                  |                 |     |           |       |
| Laboratory ID:       | 01-207-01 |             |               |                  |                 |     |           |       |
|                      | ORIG      | DUP         |               |                  |                 |     |           |       |
| Total Organic Carbon | <b>ND</b> | <b>ND</b>   | NA            | NA               | NA              | NA  | 20        |       |

|                      |             |      |    |     |        |    |    |  |
|----------------------|-------------|------|----|-----|--------|----|----|--|
| <b>SPIKE BLANK</b>   |             |      |    |     |        |    |    |  |
| Laboratory ID:       | SB0211S1    |      |    |     |        |    |    |  |
|                      | SB          | SB   |    | SB  |        |    |    |  |
| Total Organic Carbon | <b>48.2</b> | 42.1 | NA | 114 | 80-120 | NA | NA |  |

Date of Report: February 19, 2013  
 Samples Submitted: January 29, 2013  
 Laboratory Reference: 1301-194  
 Project: 6552

### % MOISTURE

Date Analyzed: 2-1-13

| Client ID    | Lab ID    | % Moisture |
|--------------|-----------|------------|
| DPT-1 10-15  | 01-194-03 | 24         |
| DPT-1 15-20  | 01-194-04 | 7          |
| DPT-2 10-15  | 01-194-07 | 10         |
| DPT-2 15-20  | 01-194-08 | 8          |
| DPT-3 5-10   | 01-194-10 | 14         |
| DPT-3 10-15  | 01-194-11 | 6          |
| DPT-3 15-20  | 01-194-12 | 8          |
| DPT-4 5-10   | 01-194-14 | 15         |
| DPT-4 10-15  | 01-194-15 | 15         |
| DPT-4 15-20  | 01-194-16 | 4          |
| DPT-5 5-10   | 01-194-18 | 15         |
| DPT-5 10-15  | 01-194-19 | 5          |
| DPT-6 5-10   | 01-194-22 | 13         |
| DPT-6 10-15  | 01-194-23 | 15         |
| DPT-6 15-20  | 01-194-24 | 13         |
| DPT-7 5-10   | 01-194-26 | 14         |
| DPT-7 10-15  | 01-194-27 | 6          |
| DPT-7 15-20  | 01-194-28 | 9          |
| DPT-8 5-10   | 01-194-30 | 17         |
| DPT-8 10-15  | 01-194-31 | 8          |
| DPT-9 5-10   | 01-194-34 | 13         |
| DPT-9 10-15  | 01-194-35 | 10         |
| DPT-9 15-20  | 01-194-36 | 11         |
| DPT-10 5-10  | 01-194-38 | 13         |
| DPT-10 10-15 | 01-194-39 | 9          |
| DPT-10 15-20 | 01-194-40 | 8          |
| DPT-11 0-5   | 01-194-41 | 9          |





### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



February 18, 2013

Mr. David Baumeister  
OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052

Dear Mr. Baumeister,

On February 6th, 3 samples were received by our laboratory and assigned our laboratory project number EV13020024. The project was identified as your Lab Ref #01-194 / Proj #6552. The sample identification and requested analyses are outlined on the attached chain of custody record.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan  
Laboratory Director



#### CERTIFICATE OF ANALYSIS

|                 |                                                                        |                     |            |
|-----------------|------------------------------------------------------------------------|---------------------|------------|
| CLIENT:         | OnSite Environmental Inc.<br>14648 NE 95th Street<br>Redmond, WA 98052 | DATE:               | 2/18/2013  |
| CLIENT CONTACT: | David Baumeister                                                       | ALS JOB#:           | EV13020024 |
| CLIENT PROJECT: | Lab Ref #01-194 / Proj #6552                                           | WDOE ACCREDITATION: | C601       |

#### CASE NARRATIVE

No sample abnormalities were qualified in this report.



# CERTIFICATE OF ANALYSIS

|                  |                                                                        |                     |                       |
|------------------|------------------------------------------------------------------------|---------------------|-----------------------|
| CLIENT:          | OnSite Environmental Inc.<br>14648 NE 95th Street<br>Redmond, WA 98052 | DATE:               | 2/18/2013             |
| CLIENT CONTACT:  | David Baumeister                                                       | ALS JOB#:           | EV13020024            |
| CLIENT PROJECT:  | Lab Ref #01-194 / Proj #6552                                           | ALS SAMPLE#:        | -01                   |
| CLIENT SAMPLE ID | DPT-3 5-10                                                             | DATE RECEIVED:      | 2/6/2013              |
|                  |                                                                        | COLLECTION DATE:    | 1/28/2013 10:12:00 AM |
|                  |                                                                        | WDOE ACCREDITATION: | C601                  |

## DATA RESULTS

| ANALYTE             | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---------------------|--------|---------|------------------|-----------------|-------|---------------|-------------|
| >C8-C10 Aliphatics  | NWEPH  | 89      | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C10-C12 Aliphatics | NWEPH  | 430     | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C12-C16 Aliphatics | NWEPH  | 44      | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C8-C10 Aromatics   | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C10-C12 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C12-C16 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C16-C21 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C21-C34 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |

| SURROGATE   | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|-------------|--------|------|---------------|-------------|
| C25         | NWEPH  | 77.0 | 02/11/2013    | EBS         |
| p-Terphenyl | NWEPH  | 105  | 02/09/2013    | EBS         |

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



# CERTIFICATE OF ANALYSIS

|                  |                                                                        |                     |                       |
|------------------|------------------------------------------------------------------------|---------------------|-----------------------|
| CLIENT:          | OnSite Environmental Inc.<br>14648 NE 95th Street<br>Redmond, WA 98052 | DATE:               | 2/18/2013             |
| CLIENT CONTACT:  | David Baumeister                                                       | ALS JOB#:           | EV13020024            |
| CLIENT PROJECT:  | Lab Ref #01-194 / Proj #6552                                           | ALS SAMPLE#:        | -02                   |
| CLIENT SAMPLE ID | DPT-4 5-10                                                             | DATE RECEIVED:      | 2/6/2013              |
|                  |                                                                        | COLLECTION DATE:    | 1/28/2013 10:58:00 AM |
|                  |                                                                        | WDOE ACCREDITATION: | C601                  |

# DATA RESULTS

| ANALYTE             | METHOD | RESULTS | REPORTING<br>LIMITS | DILUTION<br>FACTOR | UNITS | ANALYSIS<br>DATE | ANALYSIS<br>BY |
|---------------------|--------|---------|---------------------|--------------------|-------|------------------|----------------|
| >C8-C10 Aliphatics  | NWEPH  | 11      | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C10-C12 Aliphatics | NWEPH  | 320     | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C12-C16 Aliphatics | NWEPH  | 71      | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C8-C10 Aromatics   | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C10-C12 Aromatics  | NWEPH  | 15      | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C12-C16 Aromatics  | NWEPH  | 9.3     | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C16-C21 Aromatics  | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C21-C34 Aromatics  | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |

| SURROGATE   | METHOD | %REC | ANALYSIS<br>DATE | ANALYSIS<br>BY |
|-------------|--------|------|------------------|----------------|
| C25         | NWEPH  | 104  | 02/11/2013       | EBS            |
| p-Terphenyl | NWEPH  | 126  | 02/09/2013       | EBS            |

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

**CERTIFICATE OF ANALYSIS**

|                  |                                                                        |                     |                       |
|------------------|------------------------------------------------------------------------|---------------------|-----------------------|
| CLIENT:          | OnSite Environmental Inc.<br>14648 NE 95th Street<br>Redmond, WA 98052 | DATE:               | 2/18/2013             |
| CLIENT CONTACT:  | David Baumeister                                                       | ALS JOB#:           | EV13020024            |
| CLIENT PROJECT:  | Lab Ref #01-194 / Proj #6552                                           | ALS SAMPLE#:        | -03                   |
| CLIENT SAMPLE ID | DPT-7 5-10                                                             | DATE RECEIVED:      | 2/6/2013              |
|                  |                                                                        | COLLECTION DATE:    | 1/28/2013 12:45:00 PM |
|                  |                                                                        | WDOE ACCREDITATION: | C601                  |

**DATA RESULTS**

| ANALYTE             | METHOD | RESULTS | REPORTING<br>LIMITS | DILUTION<br>FACTOR | UNITS | ANALYSIS<br>DATE | ANALYSIS<br>BY |
|---------------------|--------|---------|---------------------|--------------------|-------|------------------|----------------|
| >C8-C10 Aliphatics  | NWEPH  | 9.4     | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C10-C12 Aliphatics | NWEPH  | 370     | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C12-C16 Aliphatics | NWEPH  | 95      | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/11/2013       | EBS            |
| >C8-C10 Aromatics   | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C10-C12 Aromatics  | NWEPH  | 12      | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C12-C16 Aromatics  | NWEPH  | 7.0     | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C16-C21 Aromatics  | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |
| >C21-C34 Aromatics  | NWEPH  | U       | 5.0                 | 1                  | MG/KG | 02/09/2013       | EBS            |

| SURROGATE   | METHOD | %REC | ANALYSIS<br>DATE | ANALYSIS<br>BY |
|-------------|--------|------|------------------|----------------|
| C25         | NWEPH  | 97.0 | 02/11/2013       | EBS            |
| p-Terphenyl | NWEPH  | 108  | 02/09/2013       | EBS            |

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

**CERTIFICATE OF ANALYSIS**

**CLIENT:** OnSite Environmental Inc.  
 14648 NE 95th Street  
 Redmond, WA 98052  
**CLIENT CONTACT:** David Baumeister  
**CLIENT PROJECT:** Lab Ref #01-194 / Proj #6552

**DATE:** 2/18/2013  
**ALS SDG#:** EV13020024  
**WDOE ACCREDITATION:** C601

**LABORATORY BLANK RESULTS**
**MBLK-2112013 - Batch R80236 - Soil by NWEPH**

| ANALYTE             | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---------------------|--------|---------|------------------|-----------------|-------|---------------|-------------|
| >C8-C10 Aliphatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C10-C12 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C12-C16 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/11/2013    | EBS         |

**MBLK-292013 - Batch R80237 - Soil by NWEPH**

| ANALYTE            | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|--------------------|--------|---------|------------------|-----------------|-------|---------------|-------------|
| >C8-C10 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C10-C12 Aromatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C12-C16 Aromatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C16-C21 Aromatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |
| >C21-C34 Aromatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 02/09/2013    | EBS         |



# CERTIFICATE OF ANALYSIS

CLIENT: OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052  
DATE: 2/18/2013  
ALS SDG#: EV13020024  
WDOE ACCREDITATION: C601

CLIENT CONTACT: David Baumeister  
CLIENT PROJECT: Lab Ref #01-194 / Proj #6552

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: R80236 - Soil by NWEPH

| SPIKED COMPOUND           | METHOD | %REC | RPD | QUAL | ANALYSIS DATE | ANALYSIS BY |
|---------------------------|--------|------|-----|------|---------------|-------------|
| >C8-C10 Aliphatics - BS   | NWEPH  | 90.0 |     |      | 02/11/2013    | EBS         |
| >C8-C10 Aliphatics - BSD  | NWEPH  | 74.0 | 20  |      | 02/11/2013    | EBS         |
| >C10-C12 Aliphatics - BS  | NWEPH  | 94.0 |     |      | 02/11/2013    | EBS         |
| >C10-C12 Aliphatics - BSD | NWEPH  | 79.0 | 17  |      | 02/11/2013    | EBS         |
| >C12-C16 Aliphatics - BS  | NWEPH  | 94.0 |     |      | 02/11/2013    | EBS         |
| >C12-C16 Aliphatics - BSD | NWEPH  | 81.0 | 15  |      | 02/11/2013    | EBS         |
| >C16-C21 Aliphatics - BS  | NWEPH  | 94.0 |     |      | 02/11/2013    | EBS         |
| >C16-C21 Aliphatics - BSD | NWEPH  | 82.0 | 14  |      | 02/11/2013    | EBS         |
| >C21-C34 Aliphatics - BS  | NWEPH  | 89.0 |     |      | 02/11/2013    | EBS         |
| >C21-C34 Aliphatics - BSD | NWEPH  | 73.0 | 20  |      | 02/11/2013    | EBS         |

### ALS Test Batch ID: R80237 - Soil by NWEPH

| SPIKED COMPOUND          | METHOD | %REC | RPD | QUAL | ANALYSIS DATE | ANALYSIS BY |
|--------------------------|--------|------|-----|------|---------------|-------------|
| >C8-C10 Aromatics - BS   | NWEPH  | 98.0 |     |      | 02/09/2013    | EBS         |
| >C8-C10 Aromatics - BSD  | NWEPH  | 90.0 | 9   |      | 02/09/2013    | EBS         |
| >C10-C12 Aromatics - BS  | NWEPH  | 98.0 |     |      | 02/09/2013    | EBS         |
| >C10-C12 Aromatics - BSD | NWEPH  | 91.0 | 7   |      | 02/09/2013    | EBS         |
| >C12-C16 Aromatics - BS  | NWEPH  | 100  |     |      | 02/09/2013    | EBS         |
| >C12-C16 Aromatics - BSD | NWEPH  | 93.0 | 7   |      | 02/09/2013    | EBS         |
| >C16-C21 Aromatics - BS  | NWEPH  | 100  |     |      | 02/09/2013    | EBS         |
| >C16-C21 Aromatics - BSD | NWEPH  | 95.0 | 5   |      | 02/09/2013    | EBS         |
| >C21-C34 Aromatics - BS  | NWEPH  | 82.0 |     |      | 02/09/2013    | EBS         |
| >C21-C34 Aromatics - BSD | NWEPH  | 78.0 | 5   |      | 02/09/2013    | EBS         |

APPROVED BY

Laboratory Director





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

Subcontract Laboratory: ALS Environmental

**Attention: Rick Bagan**

**8620 Holly Drive Everett, WA 98208**

**Phone Number: ( 425 ) 356-2600**

Date/Time:

**Turnaround Request:**

1 Day 2 Day 3 Day

**Standard**

**Other:**

Laboratory Reference #:

**Project Manager: David Baumeister**

**email: [dbaumeister@onsite-env.com](mailto:dbaumeister@onsite-env.com)**

**Project Number:**

**Project Name:**

01-194

[illegible]



**Onsite  
Environmental Inc.**

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

# Chain of Custody

Page 1 of 5

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:

**01-194**

Company: Ta (Co) Associates Inc  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: Chuck Lie  
Sampled by: Nicholas R. Hoffman

Lab ID \_\_\_\_\_  
Sample Identification \_\_\_\_\_

| Number of Containers                             |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| NWTPH-HCID                                       |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Gx/BTEX                                    |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Gx                                         |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Dx                                         |  |  |  |  |  |  |  |  |  |  |  |
| Volatiles 8260C                                  |  |  |  |  |  |  |  |  |  |  |  |
| Halogenated Volatiles 8260C                      |  |  |  |  |  |  |  |  |  |  |  |
| Semivolatiles 8270D/SIM<br>(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/ MTCA Metals (circle one)      |  |  |  |  |  |  |  |  |  |  |  |
| TCLP Metals                                      |  |  |  |  |  |  |  |  |  |  |  |
| HEM (oil and grease) 1664A                       |  |  |  |  |  |  |  |  |  |  |  |
| EPH                                              |  |  |  |  |  |  |  |  |  |  |  |
| VPH                                              |  |  |  |  |  |  |  |  |  |  |  |
| TOC                                              |  |  |  |  |  |  |  |  |  |  |  |
| % Moisture                                       |  |  |  |  |  |  |  |  |  |  |  |

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix |   |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------------------|--------------|--------------|--------|---|--|--|--|--|--|--|--|--|--|--|--|
| 1      | DPT-1 0-5             | 1/28/13      | 8:15         | Soil   | 3 |  |  |  |  |  |  |  |  |  |  |  |
| 2      | DPT-1 5-10            |              | 8:25         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 3      | DPT-1 10-15           |              | 8:30         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 4      | DPT-1 15-20           |              | 8:45         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 5      | DPT-2 0-5             |              | 9:25         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 6      | DPT-2 5-10            |              | 9:30         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 7      | DPT-2 10-15           |              | 9:45         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 8      | DPT-2 15-20           |              | 9:55         |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 9      | DPT-3 0-5             |              | 10:05        |        |   |  |  |  |  |  |  |  |  |  |  |  |
| 10     | DPT-3 5-10            |              | 10:12        |        |   |  |  |  |  |  |  |  |  |  |  |  |

Signature: \_\_\_\_\_ Company: TAI Date: 1/29/13 Time: 16:35 Comments/Special Instructions: Added 2/5/13. DG (STA)

|               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Relinquished  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Received      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Relinquished  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Received      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Relinquished  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Received      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Relinquished  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Received      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Reviewed/Date |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



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# Chain of Custody

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|                                               |  |                     |  |
|-----------------------------------------------|--|---------------------|--|
| Company:                                      |  | Tara Associates Inc |  |
| Project Number:                               |  | 6552                |  |
| Project Name:                                 |  |                     |  |
| Project Manager:                              |  | Chuck Lie           |  |
| Sampled by:                                   |  | Nicholas R. Hoffman |  |
| Date Sampled                                  |  | 1/28/13             |  |
| Time Sampled                                  |  | 10:20               |  |
| Matrix                                        |  | Soil                |  |
| Number of Containers                          |  | 3                   |  |
| NWT PH-HCID                                   |  |                     |  |
| NWT PH-Gx/BTEX                                |  |                     |  |
| NWT PH-Gx                                     |  |                     |  |
| NWT PH-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/ MTCA Metals (circle one)   |  |                     |  |
| TCLP Metals                                   |  |                     |  |
| HEM (oil and grease) 1664A                    |  |                     |  |
| EPH                                           |  |                     |  |
| VPM                                           |  |                     |  |
| % Moisture                                    |  |                     |  |





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# Chain of Custody

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|                                        |                       |                                                                                |              |                                                          |                               |                                                  |
|----------------------------------------|-----------------------|--------------------------------------------------------------------------------|--------------|----------------------------------------------------------|-------------------------------|--------------------------------------------------|
| Company: <u>Terra Associates Inc</u>   |                       | <input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day               |              |                                                          |                               |                                                  |
| Project Number: <u>6552</u>            |                       | <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days                |              |                                                          |                               |                                                  |
| Project Name: _____                    |                       | <input checked="" type="checkbox"/> Standard (7 Days)<br>(TPH analysis 5 Days) |              |                                                          |                               |                                                  |
| Project Manager: _____                 |                       | <input type="checkbox"/> _____ (other)                                         |              |                                                          |                               |                                                  |
| Sampled by: <u>Nicholas R. Hoffman</u> |                       |                                                                                |              |                                                          |                               |                                                  |
| Lab ID                                 | Sample Identification | Date Sampled                                                                   | Time Sampled | Matrix                                                   | Number of Containers          |                                                  |
| 24                                     | DPT-6 0-5             | 1/28/13                                                                        | 12:02        | Soil                                                     | 3                             | NWTPH-HCID                                       |
| 22                                     | DPT-6 5-10            |                                                                                | 12:10        |                                                          |                               | NWTPH-Gx/BTEX                                    |
| 23                                     | DPT-6 10-15           |                                                                                | 12:14        |                                                          |                               | NWTPH-Gx                                         |
| 24                                     | DPT-6 15-20           |                                                                                | 12:25        |                                                          |                               | NWTPH-Dx                                         |
| 25                                     | DPT-7 0-5             |                                                                                | 12:24        |                                                          |                               | Volatiles 8260C                                  |
| 26                                     | DPT-7 5-10            |                                                                                | 12:45        |                                                          |                               | Halogenated Volatiles 8260C                      |
| 27                                     | DPT-7 10-15           |                                                                                | 12:53        |                                                          |                               | Semivolatiles 8270D/SIM<br>(with low-level PAHs) |
| 28                                     | DPT-7 15-20           |                                                                                | 13:01        |                                                          |                               | PAHs 8270D/SIM (low-level)                       |
| 29                                     | DPT-8 0-5             |                                                                                | 13:15        |                                                          |                               | PCBs 8082A                                       |
| 30                                     | DPT-8 5-10            | ✓                                                                              | 13:20        | ✓                                                        |                               | Organochlorine Pesticides 8081B                  |
| Signature _____                        |                       | Company                                                                        | Date         | Time                                                     | Comments/Special Instructions |                                                  |
| Relinquished                           |                       | TAI                                                                            | 1/29/13      | 16:35                                                    | (X) Added 2/6/13. DB (STP)    |                                                  |
| Received                               |                       | _____                                                                          | 1/29/13      | 16:35                                                    |                               |                                                  |
| Relinquished                           |                       |                                                                                |              |                                                          |                               |                                                  |
| Received                               |                       |                                                                                |              |                                                          |                               |                                                  |
| Relinquished                           |                       |                                                                                |              |                                                          |                               |                                                  |
| Received                               |                       |                                                                                |              |                                                          |                               |                                                  |
| Reviewed/Date                          |                       | Reviewed/Date                                                                  |              | Chromatograms with final report <input type="checkbox"/> |                               |                                                  |

## Chain of Custody

|                                                                                                                                   |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| Analytical Laboratory Testing Services<br>14648 NE 95th Street • Redmond, WA 98052<br>Phone: (425) 883-3881 • www.on-site-env.com |  |  |  |  |  |
| Company: Terra Associates Inc.                                                                                                    |  |  |  |  |  |
| Project Number: 6552                                                                                                              |  |  |  |  |  |
| Project Name:                                                                                                                     |  |  |  |  |  |
| Project Manager: Chuck Lie                                                                                                        |  |  |  |  |  |
| Sampled by: Nicolas R. Hoffman                                                                                                    |  |  |  |  |  |
| Date Sampled: 1/28/13 Time Sampled: 13:30 Matrix: Soil                                                                            |  |  |  |  |  |
| Number of Containers: 3                                                                                                           |  |  |  |  |  |
| 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/ MTCA Metals (circle one)                                                                                       |  |  |  |  |  |
| TCLP Metals                                                                                                                       |  |  |  |  |  |
| HEM (oil and grease) 1664A                                                                                                        |  |  |  |  |  |
| TOC                                                                                                                               |  |  |  |  |  |
| % Moisture                                                                                                                        |  |  |  |  |  |

|                                                                                |                                 |
|--------------------------------------------------------------------------------|---------------------------------|
| Turnaround Request (in working days)                                           |                                 |
| (Check One)                                                                    |                                 |
| <input type="checkbox"/> Same Day                                              | <input type="checkbox"/> 1 Day  |
| <input type="checkbox"/> 2 Days                                                | <input type="checkbox"/> 3 Days |
| <input checked="" type="checkbox"/> Standard (7 Days)<br>(TPH analysis 5 Days) |                                 |
| <input type="checkbox"/> _____<br>(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/ MTCA Metals (circle one) | TCLP Metals | HEM (oil and grease) 1664A | TOC | % Moisture |
| 31     | DPT-8 10-15           | 1/28/13      | 13:30        | Soil   | 3                    | X          |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 32     | DPT-8 15-20           |              | 13:35        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 33     | DPT-9 0-5             |              | 13:40        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 34     | DPT-9 5-10            |              | 13:48        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 35     | DPT-9 10-15           |              | 13:55        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 36     | DPT-9 15-20           |              | 14:02        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 37     | DPT-10 0-5            |              | 14:12        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 38     | DPT-10 5-10           |              | 14:20        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 39     | DPT-10 10-15          |              | 14:28        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |
| 40     | DPT-10 15-20          |              | 14:35        |        |                      |            |               |          |          |                 |                             |                                               |                            |            |                                 |                                       |                                   |                                             |             |                            |     |            |

|               |             |               |         |       |                                                          |
|---------------|-------------|---------------|---------|-------|----------------------------------------------------------|
| Relinquished  | Signature   | Company       | Date    | Time  | Comments/Special Instructions                            |
| Received      | [Signature] | TAI           | 1/29/12 | 16:35 |                                                          |
| Relinquished  | [Signature] | C&E En        | 1/29/12 | 16:35 |                                                          |
| Received      |             |               |         |       |                                                          |
| Relinquished  |             |               |         |       |                                                          |
| Received      |             |               |         |       |                                                          |
| Relinquished  |             |               |         |       |                                                          |
| Received      |             |               |         |       |                                                          |
| Reviewed/Date |             | Reviewed/Date |         |       | Chromatograms with final report <input type="checkbox"/> |





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# Chain of Custody

Page 5 of 5[illegible]



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February 26, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1302-112

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 19, 2013.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a horizontal line.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 26, 2013  
Samples Submitted: February 19, 2013  
Laboratory Reference: 1302-112  
Project: 6552

### **Case Narrative**

Samples were collected on February 18, 2013 and received by the laboratory on February 19, 2013. 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples MW-105-5', MW-105-10', MW-105-20' and MW-106-7.5' are similar to mineral spirits.

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: February 26, 2013  
 Samples Submitted: February 19, 2013  
 Laboratory Reference: 1302-112  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>MW-105-5'</b>        |                       |               |                      |                      |              |
| Laboratory ID:       | 02-112-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.030                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Toluene              | <b>ND</b>               | 0.15                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Ethyl Benzene        | <b>0.23</b>             | 0.15                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| m,p-Xylene           | <b>1.3</b>              | 0.15                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| o-Xylene             | <b>0.39</b>             | 0.15                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Gasoline             | <b>7300</b>             | 380                   | NWTPH-Gx      | 2-19-13              | 2-22-13              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>102</i>              | <i>70-132</i>         |               |                      |                      |              |
| <b>Client ID:</b>    | <b>MW-105-10'</b>       |                       |               |                      |                      |              |
| Laboratory ID:       | 02-112-02               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.020                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Toluene              | <b>ND</b>               | 0.10                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 0.10                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| m,p-Xylene           | <b>0.15</b>             | 0.10                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| o-Xylene             | <b>ND</b>               | 0.10                  | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Gasoline             | <b>1000</b>             | 100                   | NWTPH-Gx      | 2-19-13              | 2-22-13              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>94</i>               | <i>70-132</i>         |               |                      |                      |              |
| <b>Client ID:</b>    | <b>MW-105-15'</b>       |                       |               |                      |                      |              |
| Laboratory ID:       | 02-112-03               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.020                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Toluene              | <b>ND</b>               | 0.048                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 0.048                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| m,p-Xylene           | <b>ND</b>               | 0.048                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| o-Xylene             | <b>ND</b>               | 0.048                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Gasoline             | <b>ND</b>               | 4.8                   | NWTPH-Gx      | 2-19-13              | 2-19-13              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>98</i>               | <i>70-132</i>         |               |                      |                      |              |

Date of Report: February 26, 2013  
 Samples Submitted: February 19, 2013  
 Laboratory Reference: 1302-112  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | MW-105-20'       |                |           |               |               |       |
| Laboratory ID: | 02-112-04        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Toluene        | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Ethyl Benzene  | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| m,p-Xylene     | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| o-Xylene       | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Gasoline       | 14               | 5.6            | NWTPH-Gx  | 2-19-13       | 2-19-13       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 98               | 70-132         |           |               |               |       |
| Client ID:     | MW-106-7.5'      |                |           |               |               |       |
| Laboratory ID: | 02-112-05        |                |           |               |               |       |
| Benzene        | ND               | 0.029          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Toluene        | ND               | 0.15           | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Ethyl Benzene  | ND               | 0.15           | EPA 8021B | 2-19-13       | 2-19-13       |       |
| m,p-Xylene     | 0.65             | 0.15           | EPA 8021B | 2-19-13       | 2-19-13       |       |
| o-Xylene       | 0.27             | 0.15           | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Gasoline       | 3300             | 360            | NWTPH-Gx  | 2-19-13       | 2-22-13       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 95               | 70-132         |           |               |               |       |
| Client ID:     | MW-106-12.5'     |                |           |               |               |       |
| Laboratory ID: | 02-112-06        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Toluene        | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Ethyl Benzene  | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| m,p-Xylene     | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| o-Xylene       | ND               | 0.056          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Gasoline       | ND               | 5.6            | NWTPH-Gx  | 2-19-13       | 2-19-13       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 108              | 70-132         |           |               |               |       |

Date of Report: February 26, 2013  
 Samples Submitted: February 19, 2013  
 Laboratory Reference: 1302-112  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>MW-106-17.5'</b>     |                       |               |                      |                      |              |
| Laboratory ID:       | 02-112-07               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.020                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Toluene              | <b>ND</b>               | 0.055                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 0.055                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| m,p-Xylene           | <b>ND</b>               | 0.055                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| o-Xylene             | <b>ND</b>               | 0.055                 | EPA 8021B     | 2-19-13              | 2-19-13              |              |
| Gasoline             | <b>ND</b>               | 5.5                   | NWTPH-Gx      | 2-19-13              | 2-19-13              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>102</i>              | <i>70-132</i>         |               |                      |                      |              |

Date of Report: February 26, 2013  
 Samples Submitted: February 19, 2013  
 Laboratory Reference: 1302-112  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0219S1         |                |           |               |               |       |
| Benzene             | ND               | 0.020          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Toluene             | ND               | 0.050          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Ethyl Benzene       | ND               | 0.050          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| m,p-Xylene          | ND               | 0.050          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| o-Xylene            | ND               | 0.050          | EPA 8021B | 2-19-13       | 2-19-13       |       |
| Gasoline            | ND               | 5.0            | NWTPH-Gx  | 2-19-13       | 2-19-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 100              | 70-132         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 02-061-05 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | 25.9      | 23.8        | NA            | NA               | NA              | NA     | 8         | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 94               | 97              | 70-132 |           |       |

**SPIKE BLANKS**

|                |          |       |      |      |     |     |        |   |    |  |
|----------------|----------|-------|------|------|-----|-----|--------|---|----|--|
| Laboratory ID: | SB0219S1 |       |      |      |     |     |        |   |    |  |
|                | SB       | SBD   | SB   | SBD  | SB  | SBD |        |   |    |  |
| Benzene        | 0.945    | 0.952 | 1.00 | 1.00 | 95  | 95  | 71-125 | 1 | 11 |  |
| Toluene        | 1.04     | 1.07  | 1.00 | 1.00 | 104 | 107 | 77-125 | 3 | 11 |  |
| Ethyl Benzene  | 1.07     | 1.08  | 1.00 | 1.00 | 107 | 108 | 76-125 | 1 | 10 |  |
| m,p-Xylene     | 1.09     | 1.13  | 1.00 | 1.00 | 109 | 113 | 78-124 | 4 | 9  |  |
| o-Xylene       | 1.08     | 1.10  | 1.00 | 1.00 | 108 | 110 | 77-123 | 2 | 9  |  |
| Surrogate:     |          |       |      |      |     |     |        |   |    |  |
| Fluorobenzene  |          |       |      |      | 98  | 97  | 70-132 |   |    |  |

Date of Report: February 26, 2013  
Samples Submitted: February 19, 2013  
Laboratory Reference: 1302-112  
Project: 6552

### **% MOISTURE**

Date Analyzed: 2-19-13

| Client ID    | Lab ID    | % Moisture |
|--------------|-----------|------------|
| MW-105-5'    | 02-112-01 | 21         |
| MW-105-10'   | 02-112-02 | 14         |
| MW-105-15'   | 02-112-03 | 8          |
| MW-105-20'   | 02-112-04 | 8          |
| MW-106-7.5'  | 02-112-05 | 19         |
| MW-106-12.5' | 02-112-06 | 14         |
| MW-106-17.5' | 02-112-07 | 5          |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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# Chain of Custody

Page \_\_\_\_\_ of \_\_\_\_\_

02-112

[illegible]



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April 4, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1303-237

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 26, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



Date of Report: April 4, 2013  
Samples Submitted: March 26, 2013  
Laboratory Reference: 1303-237  
Project: 6552

### **Case Narrative**

Samples were collected on March 26, 2013 and received by the laboratory on March 26, 2013. 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples 25-14 0-5 lower and 25-14 10-15 upper are similar to mineral spirits.

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: April 4, 2013  
 Samples Submitted: March 26, 2013  
 Laboratory Reference: 1303-237  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result            | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|-------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | 25-14 0-5 lower   |                |           |               |               |       |
| Laboratory ID: | 03-237-02         |                |           |               |               |       |
| Benzene        | ND                | 0.020          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Toluene        | ND                | 0.051          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Ethyl Benzene  | 0.38              | 0.051          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| m,p-Xylene     | 2.5               | 0.051          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| o-Xylene       | ND                | 0.051          | EPA 8021B | 3-28-13       | 3-28-13       | U1    |
| Gasoline       | 1000              | 100            | NWTPH-Gx  | 3-28-13       | 3-29-13       | Z     |
| Surrogate:     | Percent Recovery  | Control Limits |           |               |               |       |
| Fluorobenzene  | 89                | 70-132         |           |               |               |       |
| Client ID:     | 25-14 10-15 upper |                |           |               |               |       |
| Laboratory ID: | 03-237-05         |                |           |               |               |       |
| Benzene        | ND                | 0.020          | EPA 8021B | 3-28-13       | 3-29-13       |       |
| Toluene        | ND                | 0.049          | EPA 8021B | 3-28-13       | 3-29-13       |       |
| Ethyl Benzene  | ND                | 0.049          | EPA 8021B | 3-28-13       | 3-29-13       |       |
| m,p-Xylene     | 0.10              | 0.049          | EPA 8021B | 3-28-13       | 3-29-13       |       |
| o-Xylene       | ND                | 0.049          | EPA 8021B | 3-28-13       | 3-29-13       |       |
| Gasoline       | 67                | 4.9            | NWTPH-Gx  | 3-28-13       | 3-29-13       | Z     |
| Surrogate:     | Percent Recovery  | Control Limits |           |               |               |       |
| Fluorobenzene  | 103               | 70-132         |           |               |               |       |
| Client ID:     | 25-14 10-15 lower |                |           |               |               |       |
| Laboratory ID: | 03-237-06         |                |           |               |               |       |
| Benzene        | ND                | 0.020          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Toluene        | ND                | 0.048          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Ethyl Benzene  | ND                | 0.048          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| m,p-Xylene     | ND                | 0.048          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| o-Xylene       | ND                | 0.048          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Gasoline       | ND                | 4.8            | NWTPH-Gx  | 3-28-13       | 3-28-13       |       |
| Surrogate:     | Percent Recovery  | Control Limits |           |               |               |       |
| Fluorobenzene  | 79                | 70-132         |           |               |               |       |

Date of Report: April 4, 2013  
 Samples Submitted: March 26, 2013  
 Laboratory Reference: 1303-237  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0328S1         |                |           |               |               |       |
| Benzene             | ND               | 0.020          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Toluene             | ND               | 0.050          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Ethyl Benzene       | ND               | 0.050          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| m,p-Xylene          | ND               | 0.050          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| o-Xylene            | ND               | 0.050          | EPA 8021B | 3-28-13       | 3-28-13       |       |
| Gasoline            | ND               | 5.0            | NWTPH-Gx  | 3-28-13       | 3-28-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 96               | 70-132         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 03-245-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 99               | 96              | 70-132 |           |       |

**MATRIX SPIKES**

|                |           |       |      |      |    |     |     |        |   |    |
|----------------|-----------|-------|------|------|----|-----|-----|--------|---|----|
| Laboratory ID: | 03-235-01 |       |      |      |    |     |     |        |   |    |
|                | MS        | MSD   | MS   | MSD  |    | MS  | MSD |        |   |    |
| Benzene        | 0.981     | 0.991 | 1.00 | 1.00 | ND | 98  | 99  | 68-125 | 1 | 12 |
| Toluene        | 1.02      | 1.02  | 1.00 | 1.00 | ND | 102 | 102 | 65-139 | 0 | 13 |
| Ethyl Benzene  | 0.972     | 0.968 | 1.00 | 1.00 | ND | 97  | 97  | 74-128 | 0 | 12 |
| m,p-Xylene     | 0.989     | 0.990 | 1.00 | 1.00 | ND | 99  | 99  | 75-128 | 0 | 13 |
| o-Xylene       | 0.973     | 0.932 | 1.00 | 1.00 | ND | 97  | 93  | 74-127 | 4 | 12 |
| Surrogate:     |           |       |      |      |    |     |     |        |   |    |
| Fluorobenzene  |           |       |      |      |    | 92  | 97  | 70-132 |   |    |

Date of Report: April 4, 2013  
Samples Submitted: March 26, 2013  
Laboratory Reference: 1303-237  
Project: 6552

# **% MOISTURE**

Date Analyzed: 4-2-13

| Client ID         | Lab ID    | % Moisture |
|-------------------|-----------|------------|
| 25-14 0-5 lower   | 03-237-02 | 7          |
| 25-14 10-15 upper | 03-237-05 | 9          |
| 25-14 10-15 lower | 03-237-06 | 9          |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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# Chain of Custody

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:

**03-237**

Company: Terra Associates Inc  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: Chuck Lia  
Sampled by: Nicholas R. Hoffman

| Lab ID | Sample Identification | Date Sampled | Time Sampled | Matrix |
|--------|-----------------------|--------------|--------------|--------|
| 1      | 25-14 0-5 upper       | 3/26/13      | 12:30        |        |
| 2      | 25-14 0-5 lower       |              | 12:35        |        |
| 3      | 25-14 5-10 upper      |              | 12:40        |        |
| 4      | 25-14 5-10 lower      |              | 12:45        |        |
| 5      | 25-14 10-15 upper     |              | 12:50        |        |
| 6      | 25-14 10-15 lower     |              | 12:55        |        |

| Number of Containers                             |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| NWTPH-HCID                                       |  |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Gx/BTEX                                    |  |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Gx                                         |  |  |  |  |  |  |  |  |  |  |  |  |
| NWTPH-Dx                                         |  |  |  |  |  |  |  |  |  |  |  |  |
| Volatiles 8260C                                  |  |  |  |  |  |  |  |  |  |  |  |  |
| Halogenated Volatiles 8260C                      |  |  |  |  |  |  |  |  |  |  |  |  |
| Semivolatiles 8270D/SIM<br>(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/ MTCA Metals (circle one)      |  |  |  |  |  |  |  |  |  |  |  |  |
| TCLP Metals                                      |  |  |  |  |  |  |  |  |  |  |  |  |
| HEM (oil and grease) 1664A                       |  |  |  |  |  |  |  |  |  |  |  |  |
| % Moisture                                       |  |  |  |  |  |  |  |  |  |  |  |  |

| Signature          | Company       | Date           | Time         | Comments/Special Instructions |
|--------------------|---------------|----------------|--------------|-------------------------------|
| <u>[Signature]</u> | <u>TAI</u>    | <u>3/26/13</u> | <u>15:30</u> |                               |
| <u>[Signature]</u> | <u>OnSite</u> | <u>3/26/13</u> | <u>15:30</u> |                               |
| Relinquished       |               |                |              |                               |
| Received           |               |                |              |                               |
| Relinquished       |               |                |              |                               |
| Received           |               |                |              |                               |
| Relinquished       |               |                |              |                               |
| Received           |               |                |              |                               |
| Relinquished       |               |                |              |                               |
| Received           |               |                |              |                               |
| Relinquished       |               |                |              |                               |
| Reviewed/Date      |               |                |              |                               |



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September 23, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1409-080

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 9, 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,

A handwritten signature in black ink, appearing to read "DeB" followed by a stylized flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: September 23, 2014  
Samples Submitted: September 9, 2014  
Laboratory Reference: 1409-080  
Project: 6552

### **Case Narrative**

Samples were collected on September 9, 2014 and received by the laboratory on September 9, 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples K-1-4' and K-2-4 are similar to mineral spirits.

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: September 23, 2014  
 Samples Submitted: September 9, 2014  
 Laboratory Reference: 1409-080  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | K-1-4'           |                |           |               |               |       |
| Laboratory ID: | 09-080-02        |                |           |               |               |       |
| Benzene        | ND               | 0.027          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Toluene        | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Ethyl Benzene  | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-16-14       |       |
| m,p-Xylene     | 0.22             | 0.14           | EPA 8021B | 9-16-14       | 9-16-14       |       |
| o-Xylene       | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Gasoline       | 870              | 68             | NWTPH-Gx  | 9-16-14       | 9-21-14       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 112              | 71-121         |           |               |               |       |
| Client ID:     | K-1 6-8' lower   |                |           |               |               |       |
| Laboratory ID: | 09-080-04        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Toluene        | ND               | 0.057          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Ethyl Benzene  | ND               | 0.057          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| m,p-Xylene     | ND               | 0.057          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| o-Xylene       | ND               | 0.057          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Gasoline       | ND               | 5.7            | NWTPH-Gx  | 9-16-14       | 9-21-14       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 92               | 71-121         |           |               |               |       |
| Client ID:     | K-2-4            |                |           |               |               |       |
| Laboratory ID: | 09-080-06        |                |           |               |               |       |
| Benzene        | ND               | 0.028          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Toluene        | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Ethyl Benzene  | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| m,p-Xylene     | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| o-Xylene       | ND               | 0.14           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Gasoline       | 1200             | 140            | NWTPH-Gx  | 9-16-14       | 9-22-14       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 107              | 71-121         |           |               |               |       |

Date of Report: September 23, 2014  
 Samples Submitted: September 9, 2014  
 Laboratory Reference: 1409-080  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | K-2 6-8' lower   |                |           |               |               |       |
| Laboratory ID: | 09-080-08        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Toluene        | ND               | 0.054          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Ethyl Benzene  | ND               | 0.054          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| m,p-Xylene     | ND               | 0.054          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| o-Xylene       | ND               | 0.054          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Gasoline       | ND               | 5.4            | NWTPH-Gx  | 9-16-14       | 9-21-14       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 91               | 71-121         |           |               |               |       |
| Client ID:     | K-3 2-4' lower   |                |           |               |               |       |
| Laboratory ID: | 09-080-10        |                |           |               |               |       |
| Benzene        | ND               | 0.022          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Toluene        | ND               | 0.11           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Ethyl Benzene  | ND               | 0.11           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| m,p-Xylene     | ND               | 0.11           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| o-Xylene       | ND               | 0.11           | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Gasoline       | ND               | 11             | NWTPH-Gx  | 9-16-14       | 9-21-14       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 88               | 71-121         |           |               |               |       |
| Client ID:     | K-3 6-8' lower   |                |           |               |               |       |
| Laboratory ID: | 09-080-12        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Toluene        | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Ethyl Benzene  | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| m,p-Xylene     | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| o-Xylene       | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-21-14       |       |
| Gasoline       | ND               | 5.0            | NWTPH-Gx  | 9-16-14       | 9-21-14       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 92               | 71-121         |           |               |               |       |

Date of Report: September 23, 2014  
 Samples Submitted: September 9, 2014  
 Laboratory Reference: 1409-080  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0916S1         |                |           |               |               |       |
| Benzene             | ND               | 0.020          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Toluene             | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Ethyl Benzene       | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| m,p-Xylene          | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| o-Xylene            | ND               | 0.050          | EPA 8021B | 9-16-14       | 9-16-14       |       |
| Gasoline            | ND               | 5.0            | NWTPH-Gx  | 9-16-14       | 9-16-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 94               | 71-121         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 06-110-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 103              | 104             | 71-121 |           |       |

**SPIKE BLANKS**

|                |          |       |      |      |     |     |        |   |    |
|----------------|----------|-------|------|------|-----|-----|--------|---|----|
| Laboratory ID: | SB0916S1 |       |      |      |     |     |        |   |    |
|                | SB       | SBD   | SB   | SBD  | SB  | SBD |        |   |    |
| Benzene        | 1.04     | 1.05  | 1.00 | 1.00 | 104 | 105 | 73-121 | 1 | 10 |
| Toluene        | 1.04     | 1.04  | 1.00 | 1.00 | 104 | 104 | 75-124 | 0 | 10 |
| Ethyl Benzene  | 1.01     | 1.00  | 1.00 | 1.00 | 101 | 100 | 75-125 | 1 | 9  |
| m,p-Xylene     | 1.00     | 0.997 | 1.00 | 1.00 | 100 | 100 | 75-126 | 0 | 9  |
| o-Xylene       | 1.01     | 0.981 | 1.00 | 1.00 | 101 | 98  | 74-123 | 3 | 8  |
| Surrogate:     |          |       |      |      |     |     |        |   |    |
| Fluorobenzene  |          |       |      |      | 93  | 94  | 71-121 |   |    |

Date of Report: September 23, 2014  
Samples Submitted: September 9, 2014  
Laboratory Reference: 1409-080  
Project: 6552

### % MOISTURE

Date Analyzed: 9-16-14

| Client ID      | Lab ID    | % Moisture |
|----------------|-----------|------------|
| K-1-4'         | 09-080-02 | 21         |
| K-1 6-8' lower | 09-080-04 | 12         |
| K-2-4          | 09-080-06 | 26         |
| K-2 6-8' lower | 09-080-08 | 14         |
| K-3 2-4' lower | 09-080-10 | 12         |
| K-3 6-8' lower | 09-080-12 | 12         |



### 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 - The sample chromatogram is similar to mineral spirits.

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



# Chain of Custody

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# Chain of Custody

Page 2 of 2

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:

**09-080**

Company: Terra Associates Inc.  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffmann

Lab ID

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

11 K-3 46' lower

9/9/14 11:45 AM

3

(X)

12 K-3 6-8' lower

9/9/14 1:55 PM

3

(X)

Signature

Company

Date

Time

Comments/Special Instructions

Relinquished

IAI

9/9/14

16:10

Received

9/9/14

16:00

Relinquished

Received

Relinquished

Received

Reviewed/Date

Reviewed/Date

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐

Chromatograms with final report ☐





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November 18, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1411-012

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 4, 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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



Date of Report: November 18, 2014  
Samples Submitted: November 4, 2014  
Laboratory Reference: 1411-012  
Project: 6552

### **Case Narrative**

Samples were collected on November 3, 2014 and received by the laboratory on November 4, 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

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: November 18, 2014  
 Samples Submitted: November 4, 2014  
 Laboratory Reference: 1411-012  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>MW-201-20</b>        | <b>MW-205</b>         |               |                      |                      |              |
| Laboratory ID:       | 11-012-04               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.020                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Toluene              | <b>ND</b>               | 0.062                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Ethyl Benzene        | <b>ND</b>               | 0.062                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| m,p-Xylene           | <b>ND</b>               | 0.062                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| o-Xylene             | <b>ND</b>               | 0.062                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Gasoline             | <b>ND</b>               | 6.2                   | NWTPH-Gx      | 11-13-14             | 11-13-14             |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 97                      | 68-123                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>MW-201-30</b>        | <b>MW-205 crl</b>     |               |                      |                      |              |
| Laboratory ID:       | 11-012-05               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 0.020                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Toluene              | <b>ND</b>               | 0.050                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Ethyl Benzene        | <b>ND</b>               | 0.050                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| m,p-Xylene           | <b>ND</b>               | 0.050                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| o-Xylene             | <b>ND</b>               | 0.050                 | EPA 8021B     | 11-13-14             | 11-13-14             |              |
| Gasoline             | <b>ND</b>               | 5.0                   | NWTPH-Gx      | 11-13-14             | 11-13-14             |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 96                      | 68-123                |               |                      |                      |              |

Date of Report: November 18, 2014  
 Samples Submitted: November 4, 2014  
 Laboratory Reference: 1411-012  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB1113S2         |                |           |               |               |       |
| Benzene             | ND               | 0.020          | EPA 8021B | 11-13-14      | 11-13-14      |       |
| Toluene             | ND               | 0.050          | EPA 8021B | 11-13-14      | 11-13-14      |       |
| Ethyl Benzene       | ND               | 0.050          | EPA 8021B | 11-13-14      | 11-13-14      |       |
| m,p-Xylene          | ND               | 0.050          | EPA 8021B | 11-13-14      | 11-13-14      |       |
| o-Xylene            | ND               | 0.050          | EPA 8021B | 11-13-14      | 11-13-14      |       |
| Gasoline            | ND               | 5.0            | NWTPH-Gx  | 11-13-14      | 11-13-14      |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 94               | 68-123         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 11-103-03 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 95               | 95              | 68-123 |           |       |

**SPIKE BLANKS**

|                |          |      |      |      |     |     |        |   |    |  |
|----------------|----------|------|------|------|-----|-----|--------|---|----|--|
| Laboratory ID: | SB1113S1 |      |      |      |     |     |        |   |    |  |
|                | SB       | SBD  | SB   | SBD  | SB  | SBD |        |   |    |  |
| Benzene        | 0.999    | 1.06 | 1.00 | 1.00 | 100 | 106 | 75-117 | 6 | 13 |  |
| Toluene        | 0.999    | 1.06 | 1.00 | 1.00 | 100 | 106 | 78-118 | 6 | 12 |  |
| Ethyl Benzene  | 0.966    | 1.04 | 1.00 | 1.00 | 97  | 104 | 78-118 | 7 | 12 |  |
| m,p-Xylene     | 0.978    | 1.05 | 1.00 | 1.00 | 98  | 105 | 78-121 | 7 | 13 |  |
| o-Xylene       | 0.956    | 1.03 | 1.00 | 1.00 | 96  | 103 | 77-119 | 7 | 13 |  |
| Surrogate:     |          |      |      |      |     |     |        |   |    |  |
| Fluorobenzene  |          |      |      |      | 94  | 100 | 68-123 |   |    |  |

Date of Report: November 18, 2014  
Samples Submitted: November 4, 2014  
Laboratory Reference: 1411-012  
Project: 6552

**% MOISTURE**

Date Analyzed: 11-13-14

| Client ID | Lab ID    | % Moisture |
|-----------|-----------|------------|
| MW-201-20 | 11-012-04 | 8          |
| MW-201-30 | 11-012-05 | 12         |



### 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



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## Chain of Custody

Page 1 of 1

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April 28, 2015

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1504-120

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on April 14, 2015.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: April 28, 2015  
Samples Submitted: April 14, 2015  
Laboratory Reference: 1504-120  
Project: 6552

### **Case Narrative**

Samples were collected on April 13, 2015 and received by the laboratory on April 14, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that 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.

#### NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The chromatograms for samples B-301-10', B-302-7.5' and B-302-10' are similar to mineral spirits.

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.

#### Volatile Petroleum Hydrocarbons Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

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: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>B-301-7.5'</b>       |                       |               |                      |                      |              |
| Laboratory ID:       | 04-120-03               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Toluene              | ND                      | 0.074                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Ethyl Benzene        | ND                      | 0.074                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| m,p-Xylene           | ND                      | 0.074                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| o-Xylene             | ND                      | 0.074                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Gasoline             | ND                      | 7.4                   | NWTPH-Gx      | 4-16-15              | 4-17-15              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 97                      | 68-123                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>B-301-10'</b>        |                       |               |                      |                      |              |
| Laboratory ID:       | 04-120-04               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.029                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Toluene              | ND                      | 0.15                  | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Ethyl Benzene        | ND                      | 0.15                  | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| m,p-Xylene           | ND                      | 0.15                  | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| o-Xylene             | ND                      | 0.15                  | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Gasoline             | 1500                    | 150                   | NWTPH-Gx      | 4-16-15              | 4-20-15              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 94                      | 68-123                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>B-301-12.5'</b>      |                       |               |                      |                      |              |
| Laboratory ID:       | 04-120-05               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Toluene              | ND                      | 0.053                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Ethyl Benzene        | ND                      | 0.053                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| m,p-Xylene           | ND                      | 0.053                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| o-Xylene             | ND                      | 0.053                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Gasoline             | ND                      | 5.3                   | NWTPH-Gx      | 4-16-15              | 4-17-15              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 101                     | 68-123                |               |                      |                      |              |

Date of Report: April 28, 2015  
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 Laboratory Reference: 1504-120  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte        | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|------------------|----------------|-----------|---------------|---------------|-------|
| Client ID:     | B-302-5'         |                |           |               |               |       |
| Laboratory ID: | 04-120-08        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Toluene        | ND               | 0.066          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Ethyl Benzene  | ND               | 0.066          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| m,p-Xylene     | ND               | 0.066          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| o-Xylene       | ND               | 0.066          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Gasoline       | ND               | 6.6            | NWTPH-Gx  | 4-16-15       | 4-17-15       |       |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 91               | 68-123         |           |               |               |       |
| Client ID:     | B-302-7.5'       |                |           |               |               |       |
| Laboratory ID: | 04-120-09        |                |           |               |               |       |
| Benzene        | ND               | 0.025          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Toluene        | ND               | 0.13           | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Ethyl Benzene  | ND               | 0.13           | EPA 8021B | 4-16-15       | 4-17-15       |       |
| m,p-Xylene     | 0.29             | 0.13           | EPA 8021B | 4-16-15       | 4-17-15       |       |
| o-Xylene       | ND               | 0.13           | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Gasoline       | 1400             | 130            | NWTPH-Gx  | 4-16-15       | 4-20-15       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 89               | 68-123         |           |               |               |       |
| Client ID:     | B-302-10'        |                |           |               |               |       |
| Laboratory ID: | 04-120-10        |                |           |               |               |       |
| Benzene        | ND               | 0.020          | EPA 8021B | 4-16-15       | 4-20-15       |       |
| Toluene        | ND               | 0.057          | EPA 8021B | 4-16-15       | 4-20-15       |       |
| Ethyl Benzene  | ND               | 0.057          | EPA 8021B | 4-16-15       | 4-20-15       |       |
| m,p-Xylene     | ND               | 0.057          | EPA 8021B | 4-16-15       | 4-20-15       |       |
| o-Xylene       | ND               | 0.057          | EPA 8021B | 4-16-15       | 4-20-15       |       |
| Gasoline       | 26               | 5.7            | NWTPH-Gx  | 4-16-15       | 4-20-15       | Z     |
| Surrogate:     | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene  | 90               | 68-123         |           |               |               |       |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Soil  
 Units: mg/kg (ppm)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>B-302-12.5'</b>      |                       |               |                      |                      |              |
| Laboratory ID:       | 04-120-11               |                       |               |                      |                      |              |
| Benzene              | ND                      | 0.020                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Toluene              | ND                      | 0.056                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Ethyl Benzene        | ND                      | 0.056                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| m,p-Xylene           | ND                      | 0.056                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| o-Xylene             | ND                      | 0.056                 | EPA 8021B     | 4-16-15              | 4-17-15              |              |
| Gasoline             | ND                      | 5.6                   | NWTPH-Gx      | 4-16-15              | 4-17-15              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 91                      | 68-123                |               |                      |                      |              |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0416S2         |                |           |               |               |       |
| Benzene             | ND               | 0.020          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Toluene             | ND               | 0.050          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Ethyl Benzene       | ND               | 0.050          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| m,p-Xylene          | ND               | 0.050          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| o-Xylene            | ND               | 0.050          | EPA 8021B | 4-16-15       | 4-17-15       |       |
| Gasoline            | ND               | 5.0            | NWTPH-Gx  | 4-16-15       | 4-17-15       |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 94               | 68-123         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 04-118-03 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 91               | 93              | 68-123 |           |       |

**SPIKE BLANKS**

|                |          |       |      |      |    |     |        |    |    |  |
|----------------|----------|-------|------|------|----|-----|--------|----|----|--|
| Laboratory ID: | SB0416S1 |       |      |      |    |     |        |    |    |  |
|                | SB       | SBD   | SB   | SBD  | SB | SBD |        |    |    |  |
| Benzene        | 0.937    | 0.837 | 1.00 | 1.00 | 94 | 84  | 75-117 | 11 | 13 |  |
| Toluene        | 0.950    | 0.847 | 1.00 | 1.00 | 95 | 85  | 78-118 | 11 | 12 |  |
| Ethyl Benzene  | 0.940    | 0.851 | 1.00 | 1.00 | 94 | 85  | 78-118 | 10 | 12 |  |
| m,p-Xylene     | 0.956    | 0.870 | 1.00 | 1.00 | 96 | 87  | 78-121 | 9  | 13 |  |
| o-Xylene       | 0.947    | 0.867 | 1.00 | 1.00 | 95 | 87  | 77-119 | 9  | 13 |  |
| Surrogate:     |          |       |      |      |    |     |        |    |    |  |
| Fluorobenzene  |          |       |      |      | 91 | 85  | 68-123 |    |    |  |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

### VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>B-301-10'</b> |                |           |               |               |       |
| Laboratory ID:       | 04-120-04        |                |           |               |               |       |
| Aliphatic C5-C6      | <b>ND</b>        | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C6-C8      | <b>ND</b>        | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C8-C10     | <b>ND</b>        | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C10-C12    | <b>1500</b>      | 7.3            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Total Aliphatic:     | <b>1500</b>      |                | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C8-C10      | <b>51</b>        | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C10-C12     | <b>440</b>       | 7.3            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C12-C13     | <b>78</b>        | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Total Aromatic:      | <b>570</b>       |                | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Methyl t-butyl ether | <b>ND</b>        | 0.030          | EPA 8021B | 4-16-15       | 4-23-15       |       |
| Surrogate:           | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene        | 86               | 68-123         |           |               |               |       |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

**VOLATILE PETROLEUM HYDROCARBONS  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

| Analyte              | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|----------------------|------------------|----------------|-----------|---------------|---------------|-------|
| Laboratory ID:       | MB0416S2         |                |           |               |               |       |
| Aliphatic C5-C6      | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C6-C8      | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C8-C10     | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aliphatic C10-C12    | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Total Aliphatic:     | NA               |                | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C8-C10      | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C10-C12     | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Aromatic C12-C13     | ND               | 5.0            | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Total Aromatic:      | NA               |                | NWTPH-VPH | 4-16-15       | 4-23-15       |       |
| Methyl t-butyl ether | ND               | 0.020          | EPA 8021B | 4-16-15       | 4-23-15       |       |
| Surrogate:           | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene        | 85               | 68-123         |           |               |               |       |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

**VOLATILE PETROLEUM HYDROCARBONS  
 DUPLICATE QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

| Analyte           | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|-------------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE         |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID:    | 04-118-03 |     |             |    |               |                  |                 |        |           |       |
|                   | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Aliphatic C5-C6   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Aliphatic C6-C8   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Aliphatic C8-C10  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Aliphatic C10-C12 | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Total Aliphatic:  | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
|                   |           |     |             |    |               |                  |                 |        |           |       |
| Aromatic C8-C10   | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Aromatic C10-C12  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Aromatic C12-C13  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Total Aromatic:   | NA        | NA  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
|                   |           |     |             |    |               |                  |                 |        |           |       |
| MTBE              | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:        |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene     |           |     |             |    |               | 87               | 92              | 68-123 |           |       |

Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

**TOTAL ORGANIC CARBON**  
**EPA 9060A**

Matrix: Soil  
 Units: % Carbon

| Analyte              | Result            | PQL   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------|-------|----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>B-301-7.5'</b> |       |          |               |               |       |
| Laboratory ID:       | 04-120-03         |       |          |               |               |       |
| Total Organic Carbon | <b>0.45</b>       | 0.077 | EPA 9060 | 4-27-15       | 4-27-15       |       |

|                      |                    |       |          |         |         |  |
|----------------------|--------------------|-------|----------|---------|---------|--|
| <b>Client ID:</b>    | <b>B-301-12.5'</b> |       |          |         |         |  |
| Laboratory ID:       | 04-120-05          |       |          |         |         |  |
| Total Organic Carbon | <b>0.32</b>        | 0.058 | EPA 9060 | 4-27-15 | 4-27-15 |  |

|                      |                 |       |          |         |         |  |
|----------------------|-----------------|-------|----------|---------|---------|--|
| <b>Client ID:</b>    | <b>B-302-5'</b> |       |          |         |         |  |
| Laboratory ID:       | 04-120-08       |       |          |         |         |  |
| Total Organic Carbon | <b>1.1</b>      | 0.052 | EPA 9060 | 4-27-15 | 4-27-15 |  |



Date of Report: April 28, 2015  
 Samples Submitted: April 14, 2015  
 Laboratory Reference: 1504-120  
 Project: 6552

**TOTAL ORGANIC CARBON  
 EPA 9060A  
 QUALITY CONTROL**

Matrix: Soil  
 Units: % Carbon

| Analyte              | Result   | PQL   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|----------|-------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b>  |          |       |          |               |               |       |
| Laboratory ID:       | MB0427S1 |       |          |               |               |       |
| Total Organic Carbon | ND       | 0.042 | EPA 9060 | 4-27-15       | 4-27-15       |       |

| Analyte              | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|----------------------|-----------|-------------|---------------|------------------|-----------------|-----|-----------|-------|
| <b>DUPLICATE</b>     |           |             |               |                  |                 |     |           |       |
| Laboratory ID:       | 04-120-05 |             |               |                  |                 |     |           |       |
|                      | ORIG      | DUP         |               |                  |                 |     |           |       |
| Total Organic Carbon | 0.316     | 0.270       | NA            | NA               | NA              | 16  | 20        |       |

|                      |          |      |    |     |        |    |    |  |
|----------------------|----------|------|----|-----|--------|----|----|--|
| <b>SPIKE BLANK</b>   |          |      |    |     |        |    |    |  |
| Laboratory ID:       | SB0427S1 |      |    |     |        |    |    |  |
|                      | SB       | SB   |    | SB  |        |    |    |  |
| Total Organic Carbon | 47.6     | 42.1 | NA | 113 | 87-132 | NA | NA |  |

Date of Report: April 28, 2015  
Samples Submitted: April 14, 2015  
Laboratory Reference: 1504-120  
Project: 6552

### % MOISTURE

Date Analyzed: 4-16-15

| Client ID   | Lab ID    | % Moisture |
|-------------|-----------|------------|
| B-301-7.5'  | 04-120-03 | 24         |
| B-301-10'   | 04-120-04 | 15         |
| B-301-12.5' | 04-120-05 | 16         |
| B-302-5'    | 04-120-08 | 17         |
| B-302-7.5'  | 04-120-09 | 17         |
| B-302-10'   | 04-120-10 | 13         |
| B-302-12.5' | 04-120-11 | 14         |



### 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 - The sample chromatogram is similar to mineral spirits.

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



April 28, 2015

Mr. David Baumeister  
OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052

Dear Mr. Baumeister,

On April 22nd, 1 sample was received by our laboratory and assigned our laboratory project number EV15040109. The project was identified as your Lab Ref #04-120 / Proj #6552. The sample identification and requested analyses are outlined on the attached chain of custody record.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan  
Laboratory Director

**CERTIFICATE OF ANALYSIS**

|                  |                                                                        |                     |                      |
|------------------|------------------------------------------------------------------------|---------------------|----------------------|
| CLIENT:          | OnSite Environmental Inc.<br>14648 NE 95th Street<br>Redmond, WA 98052 | DATE:               | 4/28/2015            |
| CLIENT CONTACT:  | David Baumeister                                                       | ALS JOB#:           | EV15040109           |
| CLIENT PROJECT:  | Lab Ref #04-120 / Proj #6552                                           | ALS SAMPLE#:        | EV15040109-01        |
| CLIENT SAMPLE ID | B-301-10'                                                              | DATE RECEIVED:      | 04/22/2015           |
|                  |                                                                        | COLLECTION DATE:    | 4/13/2015 8:45:00 AM |
|                  |                                                                        | WDOE ACCREDITATION: | C601                 |

**SAMPLE DATA RESULTS**

| ANALYTE             | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---------------------|--------|---------|------------------|-----------------|-------|---------------|-------------|
| >C8-C10 Aliphatics  | NWEPH  | 12      | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C10-C12 Aliphatics | NWEPH  | 1100    | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C12-C16 Aliphatics | NWEPH  | 180     | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C8-C10 Aromatics   | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C10-C12 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C12-C16 Aromatics  | NWEPH  | 8.7     | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C16-C21 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C21-C34 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |

| SURROGATE   | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|-------------|--------|------|---------------|-------------|
| C25         | NWEPH  | 111  | 04/27/2015    | EBS         |
| p-Terphenyl | NWEPH  | 80.0 | 04/27/2015    | EBS         |

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



# CERTIFICATE OF ANALYSIS

CLIENT: OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052  
DATE: 4/28/2015  
ALS SDG#: EV15040109  
WDOE ACCREDITATION: C601

CLIENT CONTACT: David Baumeister  
CLIENT PROJECT: Lab Ref #04-120 / Proj #6552

# LABORATORY BLANK RESULTS

## MBLK-4272015 - Batch R253651 - Soil by NWEPH

| ANALYTE             | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---------------------|--------|---------|------------------|-----------------|-------|---------------|-------------|
| >C8-C10 Aliphatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C10-C12 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C12-C16 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C16-C21 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C21-C34 Aliphatics | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C8-C10 Aromatics   | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C10-C12 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C12-C16 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C16-C21 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |
| >C21-C34 Aromatics  | NWEPH  | U       | 5.0              | 1               | MG/KG | 04/27/2015    | EBS         |

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



# CERTIFICATE OF ANALYSIS

CLIENT: OnSite Environmental Inc.  
14648 NE 95th Street  
Redmond, WA 98052  
DATE: 4/28/2015  
ALS SDG#: EV15040109  
WDOE ACCREDITATION: C601

CLIENT CONTACT: David Baumeister  
CLIENT PROJECT: Lab Ref #04-120 / Proj #6552

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: R253651 - Soil by NWEPH

| SPIKED COMPOUND           | METHOD | %REC | RPD | QUAL | ANALYSIS DATE | ANALYSIS BY |
|---------------------------|--------|------|-----|------|---------------|-------------|
| >C8-C10 Aliphatics - BS   | NWEPH  | 71.0 |     |      | 04/27/2015    | EBS         |
| >C8-C10 Aliphatics - BSD  | NWEPH  | 79.0 | 11  |      | 04/27/2015    | EBS         |
| >C10-C12 Aliphatics - BS  | NWEPH  | 77.0 |     |      | 04/27/2015    | EBS         |
| >C10-C12 Aliphatics - BSD | NWEPH  | 86.0 | 11  |      | 04/27/2015    | EBS         |
| >C12-C16 Aliphatics - BS  | NWEPH  | 84.0 |     |      | 04/27/2015    | EBS         |
| >C12-C16 Aliphatics - BSD | NWEPH  | 90.0 | 7   |      | 04/27/2015    | EBS         |
| >C16-C21 Aliphatics - BS  | NWEPH  | 84.0 |     |      | 04/27/2015    | EBS         |
| >C16-C21 Aliphatics - BSD | NWEPH  | 90.0 | 7   |      | 04/27/2015    | EBS         |
| >C21-C34 Aliphatics - BS  | NWEPH  | 73.0 |     |      | 04/27/2015    | EBS         |
| >C21-C34 Aliphatics - BSD | NWEPH  | 81.0 | 10  |      | 04/27/2015    | EBS         |
| >C8-C10 Aromatics - BS    | NWEPH  | 90.0 |     |      | 04/27/2015    | EBS         |
| >C8-C10 Aromatics - BSD   | NWEPH  | 104  | 14  |      | 04/27/2015    | EBS         |
| >C10-C12 Aromatics - BS   | NWEPH  | 91.0 |     |      | 04/27/2015    | EBS         |
| >C10-C12 Aromatics - BSD  | NWEPH  | 105  | 14  |      | 04/27/2015    | EBS         |
| >C12-C16 Aromatics - BS   | NWEPH  | 97.0 |     |      | 04/27/2015    | EBS         |
| >C12-C16 Aromatics - BSD  | NWEPH  | 110  | 13  |      | 04/27/2015    | EBS         |
| >C16-C21 Aromatics - BS   | NWEPH  | 103  |     |      | 04/27/2015    | EBS         |
| >C16-C21 Aromatics - BSD  | NWEPH  | 115  | 11  |      | 04/27/2015    | EBS         |
| >C21-C34 Aromatics - BS   | NWEPH  | 106  |     |      | 04/27/2015    | EBS         |
| >C21-C34 Aromatics - BSD  | NWEPH  | 114  | 7   |      | 04/27/2015    | EBS         |

APPROVED BY

Laboratory Director



Date/Time: \_\_\_\_\_

## Standard

**Project Name:**

**Laboratory Reference #:** 04-720

**Project Manager:** David Baumeister

**email: [dbaumeister@onsite-env.com](mailto:dbaumeister@onsite-env.com)**

**Project Number:** 6552

**Project Name:**

[illegible]





Analytical Laboratory Testing Services  
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## Chain of Custody

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|                                |                       |                                                                                |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|--------------------------------|-----------------------|--------------------------------------------------------------------------------|--------------|---------------------------|---------------------------------------|--------------------------------------------------|--|----------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Company: Terra Associates Inc  |                       | Turnaround Request<br>(in working days)                                        |              | Laboratory Number: 04-120 |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Project Number: 6552           |                       | (Check One)                                                                    |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Project Name:                  |                       | <input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day               |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Project Manager: Chuck Lie     |                       | <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days                |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Sampled by: Nicolas R. Hoffman |                       | <input checked="" type="checkbox"/> Standard (7 Days)<br>(TPH analysis 5 Days) |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|                                |                       | <input type="checkbox"/> (other)                                               |              |                           |                                       |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Lab ID                         | Sample Identification | Date Sampled                                                                   | Time Sampled | Matrix                    | Number of Containers                  |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| 1                              | B-301 -2.5'           | 4/13/15                                                                        | 8:30         | Soil                      | 2                                     |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| 2                              | B-301 -5'             |                                                                                | 8:35         |                           |                                       | NWTPH-HCID                                       |  |                                                          |  |  |  |  |  |  |  |  |  |
| 3                              | B-301 -7.5'           |                                                                                | 8:40         |                           |                                       | NWTPH-Gx/BTEX                                    |  |                                                          |  |  |  |  |  |  |  |  |  |
| 4                              | B-301 -10'            |                                                                                | 8:45         |                           |                                       | NWTPH-Gx                                         |  |                                                          |  |  |  |  |  |  |  |  |  |
| 5                              | B-301 -12.5'          |                                                                                | 8:50         |                           |                                       | NWTPH-Dx                                         |  |                                                          |  |  |  |  |  |  |  |  |  |
| 6                              | B-301 -15'            |                                                                                | 8:55         |                           |                                       | Volatiles 8260C                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| 7                              | B-302 -2.5'           |                                                                                | 9:15         |                           |                                       | Halogenated Volatiles 8260C                      |  |                                                          |  |  |  |  |  |  |  |  |  |
| 8                              | B-302 -5'             |                                                                                | 9:20         |                           |                                       | Semivolatiles 8270D/SIM<br>(with low-level PAHs) |  |                                                          |  |  |  |  |  |  |  |  |  |
| 9                              | B-302 -7.5'           |                                                                                | 9:25         |                           |                                       | PAHs 8270D/SIM (low-level)                       |  |                                                          |  |  |  |  |  |  |  |  |  |
| 10                             | B-302 -10'            |                                                                                | 9:35         |                           |                                       | 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            |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|                                |                       |                                                                                |              |                           | VPH                                   |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|                                |                       |                                                                                |              |                           | EPH                                   |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|                                |                       |                                                                                |              |                           | TOC                                   |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
|                                |                       |                                                                                |              |                           | % Moisture                            |                                                  |  |                                                          |  |  |  |  |  |  |  |  |  |
| Signature                      |                       | Company                                                                        |              | Date                      |                                       | Time                                             |  | Comments/Special Instructions                            |  |  |  |  |  |  |  |  |  |
| [Signature]                    |                       | TAI                                                                            |              | 4/14/15                   |                                       | 14:35                                            |  | (X) Added 4/21/15 - PB (STA)                             |  |  |  |  |  |  |  |  |  |
| [Signature]                    |                       | [Signature]                                                                    |              | 4/14/15                   |                                       | 14:35                                            |  |                                                          |  |  |  |  |  |  |  |  |  |
| Relinquished                   |                       | Relinquished                                                                   |              | Relinquished              |                                       | Relinquished                                     |  | Chromatograms with final report <input type="checkbox"/> |  |  |  |  |  |  |  |  |  |
| Received                       |                       | Received                                                                       |              | Received                  |                                       | Received                                         |  |                                                          |  |  |  |  |  |  |  |  |  |
| Reviewed/Date                  |                       | Reviewed/Date                                                                  |              | Reviewed/Date             |                                       | Reviewed/Date                                    |  |                                                          |  |  |  |  |  |  |  |  |  |



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# Chain of Custody

Page 2 of 2[illegible]

**APPENDIX C  
SAMPLING AND ANALYTICAL TESTING  
VAPOR SAMPLES**

**5221 Ballard Avenue NW  
Seattle, Washington**

Vapor probes were installed in the 3 hand excavated test pits in the basement of 5221. The vapor probes consisted of a 6-inch length of 12-inch diameter pipe attached to a sampling barb. The test holes were backfilled with pea gravel. The pipes were placed with the top of the sampling barb just below the top of the existing slab. The pea gravel extended up to the base of the existing slab. The holes were patched with concrete. A metal electrical junction service box was placed in the concrete patch to provide a flush access box for the sampling barb. Prior to sampling, a vacuum pump was used to develop the probes. These initial vapor probes were abandoned in January of 2015 and were replaced with stainless steel vapor pins manufactured by Colvin Cox.

Vapor samples were placed into laboratory-prepared 400 ml summa canisters. The canisters were provided with a flow control to limit sampling to a rate of 500 ml per minute. Purging of the sample train was done in accordance with the H and P Mobile Geochemistry standard procedures. A syringe was used to extract 3 volumes of the sample trail prior to opening the summa canister valve. Each sample was given unique sample identification. All samples were delivered to H and P Mobile Geochemistry of Carlsbad, California. Chain of custody protocols were followed for all samples. The initial readings in 2011 and 2013 were done without leak testing. The samples obtained in January of 2015 were taken using a qualitative leak test with 1,1-Difluoroethane. The results of the testing indicated that the surface leak amount were less than 10 percent and within acceptable ranges.

The vacuum system was shut off 3 full days prior to the sampling on January 29, 2013 to allow the sub slab vapor conditions to equalize prior to sampling. No negative pressures were present in the sub slab vapor points at the time the samples were taken on January 29, 2013. Subsequent samples were taken following the removal of the vacuum system. In addition to sampling sub slab air for petroleum hydrocarbons, the sub slab ports were also tested for oxygen levels. The oxygen levels are presented later in this appendix.

For the sub slab sampling of March of 2015, a helium shroud leak test methodology was used. The shroud was filled with 90 to 100 percent helium at each sample port. The quantitative leak testing is summarized below:

| Sample Port | Helium            |         |
|-------------|-------------------|---------|
|             | Parts per Million | Percent |
| VP-1        | 360 ppm           | 0.04    |
| VP-4        | 560 ppm           | 0.06    |
| VP-5        | 680 ppm           | 0.07    |
| VP-6        | 1,480 ppm         | 0.15    |

The sampling done in March of 2015 is consistent with the sample procedure used in prior sample events.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. All testing was within normal standards.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use.

On April 24, 2015, an oxygen meter was also used to measure the amount of oxygen beneath the slab using the vapor pins. The results of the measurements are summarized below:

| <b>Sample Port</b> | <b>Date</b> | <b>Oxygen (%)</b> |
|--------------------|-------------|-------------------|
| VP-1               | 4/24/15     | 20.9              |
| VP-2               | 4/24/15     | 19.2              |
| VP-3               | 4/24/15     | 18.4              |
| VP-4               | 4/24/15     | Pin removed       |
| VP-5               | 4/24/15     | 19.3              |
| VP-6               | 4/24/15     | 19.6              |
| K-1                | 4/24/15     | 2.4               |
| K-2                | 4/24/15     | 16.0              |
| K-3                | 4/24/15     | 10.8              |
| K-4                | 4/24/15     | Missed reading    |
| K-5                | 4/24/15     | 14.3              |
| K-6                | 4/24/15     | 18.8              |
| K-7                | 4/24/15     | 10.7              |

The breathing zone samples were taken on May 3, 2015 with summa canisters supplied by H and P Mobile geochemistry. The canisters were provided with chokes that allowed the canisters to fill over a seven hour period. The sampling was done on a Sunday to reduce interference from the operations in the basement areas. The sampling period extended from about 10 AM to 5 PM.



Mobile  
Geochemistry  
Inc.

14 July 2011



Mr. Chuck Lie  
Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

H&P Project: MC070611-10  
Client Project: 6552

Dear Mr. Chuck Lie:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 06-Jul-11 which were analyzed in accordance with the attached Chain of Custody record(s).

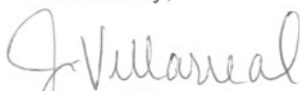
The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

  
Janis Villarreal  
Laboratory Director

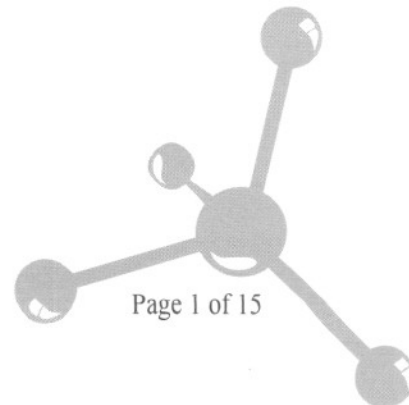
H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

2470 Impala Drive, Carlsbad, California 92010 ☎ 760.804.9678 — Fax 760.804.9159

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2470 Impala Drive  
Carlsbad, CA 92010  
760-804-9678 Phone  
760-804-9159 Fax

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

#### ANALYTICAL REPORT FOR SAMPLES

| Sample ID            | Laboratory ID | Matrix | Date Sampled | Date Received |
|----------------------|---------------|--------|--------------|---------------|
| VP-3                 | E107012-01    | Vapor  | 29-Jun-11    | 06-Jul-11     |
| VP-2                 | E107012-02    | Vapor  | 29-Jun-11    | 06-Jul-11     |
| Ambient Basement Air | E107012-03    | Vapor  | 29-Jun-11    | 06-Jul-11     |





2470 Impala Drive  
 Carlsbad, CA 92010  
 760-804-9678 Phone  
 760-804-9159 Fax

Terra Associates  
 12525 Willows Rd. #101  
 Kirkland, WA 98034

Project: MC070611-10  
 Project Number: 6552  
 Project Manager: Mr. Chuck Lie

Reported:  
 14-Jul-11 13:35

### APH by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                                                     | Result       | Reporting Limit | Units | Dilution Factor | Batch   | Prepared  | Analyzed  | Method  | Notes |
|---------------------------------------------------------------------------------------------|--------------|-----------------|-------|-----------------|---------|-----------|-----------|---------|-------|
| <b>VP-3 (E107012-01) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b>                 |              |                 |       |                 |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                                    | <b>2200</b>  | 500             | ug/m3 | 5               | EG11103 | 08-Jul-11 | 08-Jul-11 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                                   | <b>55000</b> | 500             | "     | "               | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                                                    | ND           | 500             | "     | "               | "       | "         | "         | "       |       |
| <b>VP-2 (E107012-02) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b>                 |              |                 |       |                 |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                                    | <b>5500</b>  | 500             | ug/m3 | 5               | EG11103 | 08-Jul-11 | 08-Jul-11 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                                   | <b>90000</b> | 500             | "     | "               | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                                                    | ND           | 500             | "     | "               | "       | "         | "         | "       |       |
| <b>Ambient Basement Air (E107012-03) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b> |              |                 |       |                 |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                                    | <b>560</b>   | 100             | ug/m3 | 1               | EG11103 | 08-Jul-11 | 08-Jul-11 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                                   | <b>710</b>   | 100             | "     | "               | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                                                    | ND           | 100             | "     | "               | "       | "         | "         | "       |       |



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Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                               | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|-----------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------------|
| <b>VP-3 (E107012-01) Vapor Sampled: 29-Jun-11 Received: 06-Jul-11</b> |            |                    |       |                    |         |           |           |           | <b>R-05</b> |
| Dichlorodifluoromethane (F12)                                         | ND         | 25                 | ug/m3 | 5                  | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |             |
| Chloromethane                                                         | ND         | 10                 | "     | "                  | "       | "         | "         | "         |             |
| Dichlorotetrafluoroethane (F114)                                      | ND         | 35                 | "     | "                  | "       | "         | "         | "         |             |
| Vinyl chloride                                                        | ND         | 13                 | "     | "                  | "       | "         | "         | "         |             |
| Bromomethane                                                          | ND         | 79                 | "     | "                  | "       | "         | "         | "         |             |
| Chloroethane                                                          | ND         | 40                 | "     | "                  | "       | "         | "         | "         |             |
| Trichlorofluoromethane (F11)                                          | ND         | 28                 | "     | "                  | "       | "         | "         | "         |             |
| <b>Acetone</b>                                                        | <b>570</b> | 120                | "     | "                  | "       | "         | "         | "         |             |
| 1,1-Dichloroethene                                                    | ND         | 20                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2-Trichlorotrifluoroethane (F113)                                 | ND         | 39                 | "     | "                  | "       | "         | "         | "         |             |
| Methylene chloride (Dichloromethane)                                  | ND         | 18                 | "     | "                  | "       | "         | "         | "         |             |
| Carbon disulfide                                                      | ND         | 32                 | "     | "                  | "       | "         | "         | "         |             |
| trans-1,2-Dichloroethene                                              | ND         | 40                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1-Dichloroethane                                                    | ND         | 21                 | "     | "                  | "       | "         | "         | "         |             |
| 2-Butanone (MEK)                                                      | ND         | 150                | "     | "                  | "       | "         | "         | "         |             |
| cis-1,2-Dichloroethene                                                | ND         | 20                 | "     | "                  | "       | "         | "         | "         |             |
| Chloroform                                                            | ND         | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1-Trichloroethane                                                 | ND         | 28                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichloroethane (EDC)                                              | ND         | 21                 | "     | "                  | "       | "         | "         | "         |             |
| Benzene                                                               | ND         | 16                 | "     | "                  | "       | "         | "         | "         |             |
| Carbon tetrachloride                                                  | ND         | 32                 | "     | "                  | "       | "         | "         | "         |             |
| Trichloroethene                                                       | ND         | 27                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichloropropane                                                   | ND         | 47                 | "     | "                  | "       | "         | "         | "         |             |
| Bromodichloromethane                                                  | ND         | 34                 | "     | "                  | "       | "         | "         | "         |             |
| cis-1,3-Dichloropropene                                               | ND         | 23                 | "     | "                  | "       | "         | "         | "         |             |
| 4-Methyl-2-pentanone (MIBK)                                           | ND         | 41                 | "     | "                  | "       | "         | "         | "         |             |
| trans-1,3-Dichloropropene                                             | ND         | 23                 | "     | "                  | "       | "         | "         | "         |             |
| <b>Toluene</b>                                                        | <b>48</b>  | 19                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2-Trichloroethane                                                 | ND         | 28                 | "     | "                  | "       | "         | "         | "         |             |
| 2-Hexanone (MBK)                                                      | ND         | 41                 | "     | "                  | "       | "         | "         | "         |             |
| Dibromochloromethane                                                  | ND         | 43                 | "     | "                  | "       | "         | "         | "         |             |
| Tetrachloroethene                                                     | ND         | 34                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dibromoethane (EDB)                                               | ND         | 39                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1,2-Tetrachloroethane                                             | ND         | 35                 | "     | "                  | "       | "         | "         | "         |             |
| Chlorobenzene                                                         | ND         | 23                 | "     | "                  | "       | "         | "         | "         |             |
| Ethylbenzene                                                          | ND         | 22                 | "     | "                  | "       | "         | "         | "         |             |
| m,p-Xylene                                                            | ND         | 44                 | "     | "                  | "       | "         | "         | "         |             |
| Styrene                                                               | ND         | 22                 | "     | "                  | "       | "         | "         | "         |             |





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### H&P Mobile Geochemistry, Inc.

| Analyte                                                               | Result | Reporting Limit | Units | Dilution Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|-----------------------------------------------------------------------|--------|-----------------|-------|-----------------|---------|-----------|-----------|-----------|-------------|
| <b>VP-3 (E107012-01) Vapor Sampled: 29-Jun-11 Received: 06-Jul-11</b> |        |                 |       |                 |         |           |           |           | <b>R-05</b> |
| o-Xylene                                                              | ND     | 22              | ug/m3 | 5               | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |             |
| Bromoform                                                             | ND     | 52              | "     | "               | "       | "         | "         | "         |             |
| 1,1,2,2-Tetrachloroethane                                             | ND     | 35              | "     | "               | "       | "         | "         | "         |             |
| 4-Ethyltoluene                                                        | ND     | 25              | "     | "               | "       | "         | "         | "         |             |
| 1,3,5-Trimethylbenzene                                                | ND     | 25              | "     | "               | "       | "         | "         | "         |             |
| 1,2,4-Trimethylbenzene                                                | ND     | 25              | "     | "               | "       | "         | "         | "         |             |
| 1,3-Dichlorobenzene                                                   | ND     | 61              | "     | "               | "       | "         | "         | "         |             |
| 1,4-Dichlorobenzene                                                   | ND     | 61              | "     | "               | "       | "         | "         | "         |             |
| 1,2-Dichlorobenzene                                                   | ND     | 61              | "     | "               | "       | "         | "         | "         |             |
| 1,2,4-Trichlorobenzene                                                | ND     | 38              | "     | "               | "       | "         | "         | "         |             |
| Hexachlorobutadiene                                                   | ND     | 54              | "     | "               | "       | "         | "         | "         |             |

|                                  |        |        |   |   |   |   |
|----------------------------------|--------|--------|---|---|---|---|
| Surrogate: 1,2-Dichloroethane-d4 | 98.0 % | 76-134 | " | " | " | " |
| Surrogate: Toluene-d8            | 100 %  | 78-125 | " | " | " | " |
| Surrogate: 4-Bromofluorobenzene  | 104 %  | 77-127 | " | " | " | " |

|                                                                       |            |     |       |   |         |           |           |           |             |
|-----------------------------------------------------------------------|------------|-----|-------|---|---------|-----------|-----------|-----------|-------------|
| <b>VP-2 (E107012-02) Vapor Sampled: 29-Jun-11 Received: 06-Jul-11</b> |            |     |       |   |         |           |           |           | <b>R-05</b> |
| Dichlorodifluoromethane (F12)                                         | ND         | 25  | ug/m3 | 5 | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |             |
| Chloromethane                                                         | ND         | 10  | "     | " | "       | "         | "         | "         |             |
| Dichlorotetrafluoroethane (F114)                                      | ND         | 35  | "     | " | "       | "         | "         | "         |             |
| Vinyl chloride                                                        | ND         | 13  | "     | " | "       | "         | "         | "         |             |
| Bromomethane                                                          | ND         | 79  | "     | " | "       | "         | "         | "         |             |
| Chloroethane                                                          | ND         | 40  | "     | " | "       | "         | "         | "         |             |
| Trichlorofluoromethane (F11)                                          | ND         | 28  | "     | " | "       | "         | "         | "         |             |
| <b>Acetone</b>                                                        | <b>850</b> | 120 | "     | " | "       | "         | "         | "         |             |
| 1,1-Dichloroethene                                                    | ND         | 20  | "     | " | "       | "         | "         | "         |             |
| 1,1,2-Trichlorotrifluoroethane (F113)                                 | ND         | 39  | "     | " | "       | "         | "         | "         |             |
| Methylene chloride (Dichloromethane)                                  | ND         | 18  | "     | " | "       | "         | "         | "         |             |
| Carbon disulfide                                                      | ND         | 32  | "     | " | "       | "         | "         | "         |             |
| trans-1,2-Dichloroethene                                              | ND         | 40  | "     | " | "       | "         | "         | "         |             |
| 1,1-Dichloroethane                                                    | ND         | 21  | "     | " | "       | "         | "         | "         |             |
| 2-Butanone (MEK)                                                      | ND         | 150 | "     | " | "       | "         | "         | "         |             |
| cis-1,2-Dichloroethene                                                | ND         | 20  | "     | " | "       | "         | "         | "         |             |
| Chloroform                                                            | ND         | 25  | "     | " | "       | "         | "         | "         |             |
| 1,1,1-Trichloroethane                                                 | ND         | 28  | "     | " | "       | "         | "         | "         |             |
| 1,2-Dichloroethane (EDC)                                              | ND         | 21  | "     | " | "       | "         | "         | "         |             |
| Benzene                                                               | ND         | 16  | "     | " | "       | "         | "         | "         |             |
| Carbon tetrachloride                                                  | ND         | 32  | "     | " | "       | "         | "         | "         |             |



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| Analyte                                                                     | Result    | Reporting Limit | Units  | Dilution Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|-----------------------------------------------------------------------------|-----------|-----------------|--------|-----------------|---------|-----------|-----------|-----------|-------------|
| <b>VP-2 (E107012-02) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b> |           |                 |        |                 |         |           |           |           | <b>R-05</b> |
| Trichloroethene                                                             | ND        | 27              | ug/m3  | 5               | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |             |
| 1,2-Dichloropropane                                                         | ND        | 47              | "      | "               | "       | "         | "         | "         |             |
| Bromodichloromethane                                                        | ND        | 34              | "      | "               | "       | "         | "         | "         |             |
| cis-1,3-Dichloropropene                                                     | ND        | 23              | "      | "               | "       | "         | "         | "         |             |
| 4-Methyl-2-pentanone (MIBK)                                                 | ND        | 41              | "      | "               | "       | "         | "         | "         |             |
| trans-1,3-Dichloropropene                                                   | ND        | 23              | "      | "               | "       | "         | "         | "         |             |
| <b>Toluene</b>                                                              | <b>67</b> | 19              | "      | "               | "       | "         | "         | "         |             |
| 1,1,2-Trichloroethane                                                       | ND        | 28              | "      | "               | "       | "         | "         | "         |             |
| 2-Hexanone (MBK)                                                            | ND        | 41              | "      | "               | "       | "         | "         | "         |             |
| Dibromochloromethane                                                        | ND        | 43              | "      | "               | "       | "         | "         | "         |             |
| Tetrachloroethene                                                           | ND        | 34              | "      | "               | "       | "         | "         | "         |             |
| 1,2-Dibromoethane (EDB)                                                     | ND        | 39              | "      | "               | "       | "         | "         | "         |             |
| 1,1,1,2-Tetrachloroethane                                                   | ND        | 35              | "      | "               | "       | "         | "         | "         |             |
| Chlorobenzene                                                               | ND        | 23              | "      | "               | "       | "         | "         | "         |             |
| <b>Ethylbenzene</b>                                                         | <b>23</b> | 22              | "      | "               | "       | "         | "         | "         |             |
| <b>m,p-Xylene</b>                                                           | <b>51</b> | 44              | "      | "               | "       | "         | "         | "         |             |
| Styrene                                                                     | ND        | 22              | "      | "               | "       | "         | "         | "         |             |
| <b>o-Xylene</b>                                                             | <b>25</b> | 22              | "      | "               | "       | "         | "         | "         |             |
| Bromoform                                                                   | ND        | 52              | "      | "               | "       | "         | "         | "         |             |
| 1,1,2,2-Tetrachloroethane                                                   | ND        | 35              | "      | "               | "       | "         | "         | "         |             |
| 4-Ethyltoluene                                                              | ND        | 25              | "      | "               | "       | "         | "         | "         |             |
| 1,3,5-Trimethylbenzene                                                      | ND        | 25              | "      | "               | "       | "         | "         | "         |             |
| 1,2,4-Trimethylbenzene                                                      | ND        | 25              | "      | "               | "       | "         | "         | "         |             |
| 1,3-Dichlorobenzene                                                         | ND        | 61              | "      | "               | "       | "         | "         | "         |             |
| 1,4-Dichlorobenzene                                                         | ND        | 61              | "      | "               | "       | "         | "         | "         |             |
| 1,2-Dichlorobenzene                                                         | ND        | 61              | "      | "               | "       | "         | "         | "         |             |
| 1,2,4-Trichlorobenzene                                                      | ND        | 38              | "      | "               | "       | "         | "         | "         |             |
| Hexachlorobutadiene                                                         | ND        | 54              | "      | "               | "       | "         | "         | "         |             |
| <hr/>                                                                       |           |                 |        |                 |         |           |           |           |             |
| Surrogate: 1,2-Dichloroethane-d4                                            |           | 92.9 %          | 76-134 |                 | "       | "         | "         | "         |             |
| Surrogate: Toluene-d8                                                       |           | 99.7 %          | 78-125 |                 | "       | "         | "         | "         |             |
| Surrogate: 4-Bromofluorobenzene                                             |           | 102 %           | 77-127 |                 | "       | "         | "         | "         |             |



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| Analyte                                                                                     | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|---------------------------------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>Ambient Basement Air (E107012-03) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b> |            |                    |       |                    |         |           |           |           |       |
| Dichlorodifluoromethane (F12)                                                               | ND         | 5.0                | ug/m3 | 1                  | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |       |
| Chloromethane                                                                               | ND         | 2.1                | "     | "                  | "       | "         | "         | "         |       |
| Dichlorotetrafluoroethane (F114)                                                            | ND         | 7.1                | "     | "                  | "       | "         | "         | "         |       |
| Vinyl chloride                                                                              | ND         | 2.6                | "     | "                  | "       | "         | "         | "         |       |
| Bromomethane                                                                                | ND         | 16                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroethane                                                                                | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| Trichlorofluoromethane (F11)                                                                | ND         | 5.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Acetone</b>                                                                              | <b>40</b>  | <b>24</b>          | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethene                                                                          | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichlorotrifluoroethane (F113)                                                       | ND         | 7.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Methylene chloride (Dichloromethane)</b>                                                 | <b>10</b>  | <b>3.5</b>         | "     | "                  | "       | "         | "         | "         |       |
| Carbon disulfide                                                                            | ND         | 6.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,2-Dichloroethene                                                                    | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethane                                                                          | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| 2-Butanone (MEK)                                                                            | ND         | 30                 | "     | "                  | "       | "         | "         | "         |       |
| cis-1,2-Dichloroethene                                                                      | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| Chloroform                                                                                  | ND         | 5.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1-Trichloroethane                                                                       | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloroethane (EDC)                                                                    | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| <b>Benzene</b>                                                                              | <b>4.5</b> | <b>3.2</b>         | "     | "                  | "       | "         | "         | "         |       |
| Carbon tetrachloride                                                                        | ND         | 6.4                | "     | "                  | "       | "         | "         | "         |       |
| Trichloroethene                                                                             | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloropropane                                                                         | ND         | 9.4                | "     | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                                        | ND         | 6.8                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                                                     | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                                                 | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                                                   | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                                              | <b>48</b>  | <b>3.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                                       | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                                            | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                                        | ND         | 8.6                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                                           | ND         | 6.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                                                     | ND         | 7.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                                                   | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                                               | ND         | 4.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Ethylbenzene</b>                                                                         | <b>14</b>  | <b>4.4</b>         | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                                           | <b>36</b>  | <b>8.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| <b>Styrene</b>                                                                              | <b>4.7</b> | <b>4.3</b>         | "     | "                  | "       | "         | "         | "         |       |



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| Analyte                                                                                     | Result    | Reporting<br>Limit | Units  | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|---------------------------------------------------------------------------------------------|-----------|--------------------|--------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>Ambient Basement Air (E107012-03) Vapor    Sampled: 29-Jun-11    Received: 06-Jul-11</b> |           |                    |        |                    |         |           |           |           |       |
| <b>o-Xylene</b>                                                                             | <b>13</b> | <b>4.4</b>         | ug/m3  | 1                  | EG11103 | 08-Jul-11 | 08-Jul-11 | EPA TO-15 |       |
| Bromoform                                                                                   | ND        | 10                 | "      | "                  | "       | "         | "         | "         |       |
| 1,1,2,2-Tetrachloroethane                                                                   | ND        | 7.0                | "      | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                                              | ND        | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,3,5-Trimethylbenzene                                                                      | ND        | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| <b>1,2,4-Trimethylbenzene</b>                                                               | <b>13</b> | <b>5.0</b>         | "      | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                                                      | ND        | 7.5                | "      | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                                         | ND        | 11                 | "      | "                  | "       | "         | "         | "         |       |
| <br>                                                                                        |           |                    |        |                    |         |           |           |           |       |
| <i>Surrogate: 1,2-Dichloroethane-d4</i>                                                     |           | 97.8 %             | 76-134 |                    | "       | "         | "         | "         |       |
| <i>Surrogate: Toluene-d8</i>                                                                |           | 99.4 %             | 78-125 |                    | "       | "         | "         | "         |       |
| <i>Surrogate: 4-Bromofluorobenzene</i>                                                      |           | 102 %              | 77-127 |                    | "       | "         | "         | "         |       |



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Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

**APH by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EG11103 - TO-15**

**Blank (EG11103-BLK1)**

Prepared & Analyzed: 08-Jul-11

|                           |    |     |       |
|---------------------------|----|-----|-------|
| TPHv (C5 - C8) aliphatic  | ND | 100 | ug/m3 |
| TPHv (C9 - C12) aliphatic | ND | 100 | "     |
| TPHv (C9 - C10) aromatic  | ND | 100 | "     |



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Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EG11103 - TO-15**

**Blank (EG11103-BLK1)**

Prepared & Analyzed: 08-Jul-11

|                                       |    |     |       |
|---------------------------------------|----|-----|-------|
| Dichlorodifluoromethane (F12)         | ND | 5.0 | ug/m3 |
| Chloromethane                         | ND | 2.1 | "     |
| Dichlorotetrafluoroethane (F114)      | ND | 7.1 | "     |
| Vinyl chloride                        | ND | 2.6 | "     |
| Bromomethane                          | ND | 16  | "     |
| Chloroethane                          | ND | 8.0 | "     |
| Trichlorofluoromethane (F11)          | ND | 5.7 | "     |
| Acetone                               | ND | 24  | "     |
| 1,1-Dichloroethene                    | ND | 4.0 | "     |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 7.7 | "     |
| Methylene chloride (Dichloromethane)  | ND | 3.5 | "     |
| Carbon disulfide                      | ND | 6.3 | "     |
| trans-1,2-Dichloroethene              | ND | 8.0 | "     |
| 1,1-Dichloroethane                    | ND | 4.1 | "     |
| 2-Butanone (MEK)                      | ND | 30  | "     |
| cis-1,2-Dichloroethene                | ND | 4.0 | "     |
| Chloroform                            | ND | 5.0 | "     |
| 1,1,1-Trichloroethane                 | ND | 5.5 | "     |
| 1,2-Dichloroethane (EDC)              | ND | 4.1 | "     |
| Benzene                               | ND | 3.2 | "     |
| Carbon tetrachloride                  | ND | 6.4 | "     |
| Trichloroethene                       | ND | 5.5 | "     |
| 1,2-Dichloropropane                   | ND | 9.4 | "     |
| Bromodichloromethane                  | ND | 6.8 | "     |
| cis-1,3-Dichloropropene               | ND | 4.6 | "     |
| 4-Methyl-2-pentanone (MIBK)           | ND | 8.3 | "     |
| trans-1,3-Dichloropropene             | ND | 4.6 | "     |
| Toluene                               | ND | 3.8 | "     |
| 1,1,2-Trichloroethane                 | ND | 5.5 | "     |
| 2-Hexanone (MBK)                      | ND | 8.3 | "     |
| Dibromochloromethane                  | ND | 8.6 | "     |
| Tetrachloroethene                     | ND | 6.9 | "     |
| 1,2-Dibromoethane (EDB)               | ND | 7.8 | "     |
| 1,1,1,2-Tetrachloroethane             | ND | 7.0 | "     |



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Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EG11103 - TO-15**

**Blank (EG11103-BLK1)**

Prepared & Analyzed: 08-Jul-11

|                           |    |     |       |
|---------------------------|----|-----|-------|
| Chlorobenzene             | ND | 4.7 | ug/m3 |
| Ethylbenzene              | ND | 4.4 | "     |
| m,p-Xylene                | ND | 8.8 | "     |
| Styrene                   | ND | 4.3 | "     |
| o-Xylene                  | ND | 4.4 | "     |
| Bromoform                 | ND | 10  | "     |
| 1,1,2,2-Tetrachloroethane | ND | 7.0 | "     |
| 4-Ethyltoluene            | ND | 5.0 | "     |
| 1,3,5-Trimethylbenzene    | ND | 5.0 | "     |
| 1,2,4-Trimethylbenzene    | ND | 5.0 | "     |
| 1,3-Dichlorobenzene       | ND | 12  | "     |
| 1,4-Dichlorobenzene       | ND | 12  | "     |
| 1,2-Dichlorobenzene       | ND | 12  | "     |
| 1,2,4-Trichlorobenzene    | ND | 7.5 | "     |
| Hexachlorobutadiene       | ND | 11  | "     |

|                                         |            |          |            |             |               |
|-----------------------------------------|------------|----------|------------|-------------|---------------|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>194</i> | <i>"</i> | <i>214</i> | <i>90.6</i> | <i>76-134</i> |
| <i>Surrogate: Toluene-d8</i>            | <i>207</i> | <i>"</i> | <i>207</i> | <i>100</i>  | <i>78-125</i> |
| <i>Surrogate: 4-Bromofluorobenzene</i>  | <i>357</i> | <i>"</i> | <i>365</i> | <i>98.0</i> | <i>77-127</i> |

**LCS (EG11103-BS1)**

Prepared & Analyzed: 08-Jul-11

|                                       |     |     |       |      |      |        |
|---------------------------------------|-----|-----|-------|------|------|--------|
| Dichlorodifluoromethane (F12)         | 89  | 5.0 | ug/m3 | 101  | 88.2 | 65-135 |
| Vinyl chloride                        | 56  | 2.6 | "     | 52.0 | 108  | 65-135 |
| Chloroethane                          | 61  | 8.0 | "     | 53.6 | 113  | 65-135 |
| Trichlorofluoromethane (F11)          | 99  | 5.7 | "     | 113  | 87.1 | 65-135 |
| 1,1-Dichloroethene                    | 76  | 4.0 | "     | 80.8 | 94.6 | 65-135 |
| 1,1,2-Trichlorotrifluoroethane (F113) | 150 | 7.7 | "     | 155  | 96.2 | 65-135 |
| Methylene chloride (Dichloromethane)  | 67  | 3.5 | "     | 70.8 | 94.1 | 65-135 |
| trans-1,2-Dichloroethene              | 83  | 8.0 | "     | 80.8 | 103  | 65-135 |
| 1,1-Dichloroethane                    | 84  | 4.1 | "     | 82.4 | 102  | 65-135 |
| cis-1,2-Dichloroethene                | 78  | 4.0 | "     | 80.0 | 97.0 | 65-135 |
| Chloroform                            | 94  | 5.0 | "     | 99.2 | 94.4 | 65-135 |
| 1,1,1-Trichloroethane                 | 100 | 5.5 | "     | 111  | 91.2 | 65-135 |
| 1,2-Dichloroethane (EDC)              | 75  | 4.1 | "     | 82.4 | 90.8 | 65-135 |



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Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

## Volatile Organic Compounds by EPA TO-15 - Quality Control

### H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

#### Batch EG11103 - TO-15

##### LCS (EG11103-BS1)

Prepared & Analyzed: 08-Jul-11

|                           |     |     |       |      |  |      |        |  |  |  |
|---------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Benzene                   | 67  | 3.2 | ug/m3 | 64.8 |  | 103  | 65-135 |  |  |  |
| Carbon tetrachloride      | 120 | 6.4 | "     | 128  |  | 92.6 | 65-135 |  |  |  |
| Trichloroethene           | 110 | 5.5 | "     | 110  |  | 98.6 | 65-135 |  |  |  |
| Toluene                   | 74  | 3.8 | "     | 76.8 |  | 96.0 | 65-135 |  |  |  |
| 1,1,2-Trichloroethane     | 110 | 5.5 | "     | 111  |  | 99.6 | 65-135 |  |  |  |
| Tetrachloroethene         | 130 | 6.9 | "     | 138  |  | 92.3 | 65-135 |  |  |  |
| 1,1,1,2-Tetrachloroethane | 150 | 7.0 | "     | 140  |  | 108  | 65-135 |  |  |  |
| Ethylbenzene              | 97  | 4.4 | "     | 88.4 |  | 110  | 65-135 |  |  |  |
| m,p-Xylene                | 200 | 8.8 | "     | 177  |  | 112  | 65-135 |  |  |  |
| o-Xylene                  | 100 | 4.4 | "     | 88.4 |  | 117  | 65-135 |  |  |  |
| 1,1,2,2-Tetrachloroethane | 180 | 7.0 | "     | 140  |  | 128  | 65-135 |  |  |  |

|                                  |     |  |   |     |  |      |        |  |  |  |
|----------------------------------|-----|--|---|-----|--|------|--------|--|--|--|
| Surrogate: 1,2-Dichloroethane-d4 | 193 |  | " | 214 |  | 90.2 | 76-134 |  |  |  |
| Surrogate: Toluene-d8            | 206 |  | " | 207 |  | 99.5 | 78-125 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 362 |  | " | 365 |  | 99.4 | 77-127 |  |  |  |

##### LCS Dup (EG11103-BS1)

Prepared & Analyzed: 08-Jul-11

|                                       |     |     |       |      |  |      |        |        |    |  |
|---------------------------------------|-----|-----|-------|------|--|------|--------|--------|----|--|
| Dichlorodifluoromethane (F12)         | 91  | 5.0 | ug/m3 | 101  |  | 90.6 | 65-135 | 2.67   | 35 |  |
| Vinyl chloride                        | 55  | 2.6 | "     | 52.0 |  | 106  | 65-135 | 1.71   | 35 |  |
| Chloroethane                          | 59  | 8.0 | "     | 53.6 |  | 111  | 65-135 | 2.14   | 35 |  |
| Trichlorofluoromethane (F11)          | 97  | 5.7 | "     | 113  |  | 85.4 | 65-135 | 1.98   | 35 |  |
| 1,1-Dichloroethene                    | 74  | 4.0 | "     | 80.8 |  | 91.8 | 65-135 | 2.99   | 35 |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | 150 | 7.7 | "     | 155  |  | 95.4 | 65-135 | 0.882  | 35 |  |
| Methylene chloride (Dichloromethane)  | 64  | 3.5 | "     | 70.8 |  | 90.8 | 65-135 | 3.50   | 35 |  |
| trans-1,2-Dichloroethene              | 82  | 8.0 | "     | 80.8 |  | 102  | 65-135 | 1.31   | 35 |  |
| 1,1-Dichloroethane                    | 84  | 4.1 | "     | 82.4 |  | 102  | 65-135 | 0.0488 | 35 |  |
| cis-1,2-Dichloroethene                | 81  | 4.0 | "     | 80.0 |  | 101  | 65-135 | 4.16   | 35 |  |
| Chloroform                            | 94  | 5.0 | "     | 99.2 |  | 94.6 | 65-135 | 0.211  | 35 |  |
| 1,1,1-Trichloroethane                 | 100 | 5.5 | "     | 111  |  | 90.9 | 65-135 | 0.272  | 35 |  |
| 1,2-Dichloroethane (EDC)              | 76  | 4.1 | "     | 82.4 |  | 92.2 | 65-135 | 1.53   | 35 |  |
| Benzene                               | 67  | 3.2 | "     | 64.8 |  | 103  | 65-135 | 0.340  | 35 |  |
| Carbon tetrachloride                  | 120 | 6.4 | "     | 128  |  | 93.2 | 65-135 | 0.643  | 35 |  |
| Trichloroethene                       | 110 | 5.5 | "     | 110  |  | 101  | 65-135 | 2.44   | 35 |  |
| Toluene                               | 73  | 3.8 | "     | 76.8 |  | 94.8 | 65-135 | 1.20   | 35 |  |





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Project: MC070611-10  
 Project Number: 6552  
 Project Manager: Mr. Chuck Lie

Reported:  
 14-Jul-11 13:35

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EG11103 - TO-15**

**LCS Dup (EG11103-BSD1)**

Prepared & Analyzed: 08-Jul-11

|                                         |            |     |          |            |  |             |               |       |    |  |
|-----------------------------------------|------------|-----|----------|------------|--|-------------|---------------|-------|----|--|
| 1,1,2-Trichloroethane                   | 110        | 5.5 | ug/m3    | 111        |  | 101         | 65-135        | 1.53  | 35 |  |
| Tetrachloroethene                       | 130        | 6.9 | "        | 138        |  | 91.5        | 65-135        | 0.865 | 35 |  |
| 1,1,1,2-Tetrachloroethane               | 150        | 7.0 | "        | 140        |  | 109         | 65-135        | 0.827 | 35 |  |
| Ethylbenzene                            | 98         | 4.4 | "        | 88.4       |  | 111         | 65-135        | 0.630 | 35 |  |
| m,p-Xylene                              | 200        | 8.8 | "        | 177        |  | 112         | 65-135        | 0.355 | 35 |  |
| o-Xylene                                | 100        | 4.4 | "        | 88.4       |  | 114         | 65-135        | 2.07  | 35 |  |
| 1,1,2,2-Tetrachloroethane               | 180        | 7.0 | "        | 140        |  | 130         | 65-135        | 1.12  | 35 |  |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>197</i> |     | <i>"</i> | <i>214</i> |  | <i>91.8</i> | <i>76-134</i> |       |    |  |
| <i>Surrogate: Toluene-d8</i>            | <i>208</i> |     | <i>"</i> | <i>207</i> |  | <i>100</i>  | <i>78-125</i> |       |    |  |
| <i>Surrogate: 4-Bromofluorobenzene</i>  | <i>365</i> |     | <i>"</i> | <i>365</i> |  | <i>100</i>  | <i>77-127</i> |       |    |  |



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Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

### Notes and Definitions

R-05      The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.

DET      Analyte DETECTED

ND      Analyte NOT DETECTED at or above the reporting limit

NR      Not Reported

dry      Sample results reported on a dry weight basis

RPD      Relative Percent Difference



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Project: MC070611-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Jul-11 13:35

## Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS

Certificate# 2742, 2745, & 2741 approved for LUFT

Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A  
Hexachlorobutadiene by EPA TO-15 & TO-14A  
1,2,4-Trimethylbenzene by EPA TO -14A  
1,2-Dichlorobenzene by EPA TO-15 & TO-14A  
1,3,5-Trimethylbenzene by EPA TO -14A  
1,4-Dichlorobenzene by EPA TO-15 & TO-14A  
Benzene by EPA TO-15 & TO-14A  
Chlorobenzene by EPA TO-15 & TO-14A  
Ethyl benzene by EPA TO-15 & TO-14A  
Styrene by EPA TO-15 & TO-14A  
Toluene by EPA TO-15 & TO-14A  
Total Xylenes by EPA TO-15 & TO-14A  
1,1,1-Trichloroethane by EPA TO-15 & TO-14A  
1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A  
1,1,2-Trichloroethane by EPA TO-15 & TO-14A  
1,1-Dichloroethane by EPA TO-15 & TO-14A  
1,1-Dichloroethene by EPA TO-15 & TO-14A  
1,2-Dichloroethane by EPA TO-15 & TO-14A  
1,2-Dichloropropane by EPA TO-15 & TO-14A  
Bromoform by EPA TO-15  
Bromomethane by EPA TO-15 & TO-14A  
Carbon tetrachloride by EPA TO-15 & TO-14A  
Chloroethane by EPA TO-15  
Chloroform by EPA TO-15 & TO-14A  
Chloromethane by EPA TO-15 & TO-14A  
cis-1,2-Dichloroethene by EPA TO-15  
cis-1,2-Dichloropropene by EPA TO-15 & TO-14A  
Methylene chloride by EPA TO -15 & TO-14A  
Tetrachloroethane by EPA TO-15 & TO-14A  
trans-1,2-Dichloroethene by EPA TO-15  
trans-1,2-Dichloropropene by EPA TO-15 & TO-14A  
Trichloroethene by EPA TO-15 & TO-14A  
Vinyl chloride by EPA TO -15 & TO-14A  
2-Butanone by EPA TO-15  
4-Methyl-2-Pentanone by EPA TO-15  
Hexane by EPA TO-15  
Methyl tert-butyl ether by EPA TO-15  
Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters.





Mobile  
Geochemistry  
Inc.

14 February 2013



Mr. Chuck Lie  
Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

H&P Project: MC020413-10  
Client Project: T-6552

Dear Mr. Chuck Lie:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 04-Feb-13 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal  
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

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Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|--------------|---------------|
| VP-1      | E302016-01    | Vapor  | 29-Jan-13    | 04-Feb-13     |
| VP-2      | E302016-02    | Vapor  | 29-Jan-13    | 04-Feb-13     |
| VP-3      | E302016-03    | Vapor  | 29-Jan-13    | 04-Feb-13     |

Terra Associates  
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Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                               | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|-----------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>VP-1 (E302016-01) Vapor Sampled: 29-Jan-13 Received: 04-Feb-13</b> |            |                    |       |                    |         |           |           |           |       |
| Dichlorodifluoromethane (F12)                                         | ND         | 5.0                | ug/m3 | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |       |
| Chloromethane                                                         | ND         | 2.1                | "     | "                  | "       | "         | "         | "         |       |
| Dichlorotetrafluoroethane (F114)                                      | ND         | 7.1                | "     | "                  | "       | "         | "         | "         |       |
| Vinyl chloride                                                        | ND         | 2.6                | "     | "                  | "       | "         | "         | "         |       |
| Bromomethane                                                          | ND         | 16                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroethane                                                          | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| Trichlorofluoromethane (F11)                                          | ND         | 5.6                | "     | "                  | "       | "         | "         | "         |       |
| Acetone                                                               | ND         | 24                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethene                                                    | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichlorotrifluoroethane (F113)                                 | ND         | 7.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Methylene chloride (Dichloromethane)</b>                           | <b>4.4</b> | 3.5                | "     | "                  | "       | "         | "         | "         |       |
| Carbon disulfide                                                      | ND         | 6.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,2-Dichloroethene                                              | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethane                                                    | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| 2-Butanone (MEK)                                                      | ND         | 30                 | "     | "                  | "       | "         | "         | "         |       |
| cis-1,2-Dichloroethene                                                | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| Chloroform                                                            | ND         | 4.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1-Trichloroethane                                                 | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloroethane (EDC)                                              | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| <b>Benzene</b>                                                        | <b>4.3</b> | 3.2                | "     | "                  | "       | "         | "         | "         |       |
| Carbon tetrachloride                                                  | ND         | 6.4                | "     | "                  | "       | "         | "         | "         |       |
| Trichloroethene                                                       | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloropropane                                                   | ND         | 9.4                | "     | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                  | ND         | 6.8                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                               | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                           | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                             | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                        | <b>62</b>  | 3.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                 | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                      | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                  | ND         | 8.6                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                     | ND         | 6.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                               | ND         | 7.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                             | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                         | ND         | 4.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Ethylbenzene</b>                                                   | <b>4.8</b> | 4.4                | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                     | <b>15</b>  | 8.8                | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                               | ND         | 4.3                | "     | "                  | "       | "         | "         | "         |       |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                     | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|-----------------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>VP-1 (E302016-01) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |            |                    |       |                    |         |           |           |           |       |
| <b>o-Xylene</b>                                                             | <b>5.2</b> | <b>4.4</b>         | ug/m3 | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |       |
| Bromoform                                                                   | ND         | 10                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2,2-Tetrachloroethane                                                   | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                              | ND         | 5.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,3,5-Trimethylbenzene                                                      | ND         | 5.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trimethylbenzene                                                      | ND         | 5.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                         | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                         | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                         | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                                      | ND         | 7.5                | "     | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                         | ND         | 11                 | "     | "                  | "       | "         | "         | "         |       |

Surrogate: 1,2-Dichloroethane-d4

127 %

76-134

"

"

"

"

Surrogate: Toluene-d8

110 %

78-125

"

"

"

"

Surrogate: 4-Bromofluorobenzene

97.2 %

77-127

"

"

"

"

#### VP-2 (E302016-02) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13

|                                             |            |            |       |   |         |           |           |           |  |
|---------------------------------------------|------------|------------|-------|---|---------|-----------|-----------|-----------|--|
| Dichlorodifluoromethane (F12)               | ND         | 5.0        | ug/m3 | 1 | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |  |
| Chloromethane                               | ND         | 2.1        | "     | " | "       | "         | "         | "         |  |
| Dichlorotetrafluoroethane (F114)            | ND         | 7.1        | "     | " | "       | "         | "         | "         |  |
| Vinyl chloride                              | ND         | 2.6        | "     | " | "       | "         | "         | "         |  |
| Bromomethane                                | ND         | 16         | "     | " | "       | "         | "         | "         |  |
| Chloroethane                                | ND         | 8.0        | "     | " | "       | "         | "         | "         |  |
| Trichlorofluoromethane (F11)                | ND         | 5.6        | "     | " | "       | "         | "         | "         |  |
| Acetone                                     | ND         | 24         | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethene                          | ND         | 4.0        | "     | " | "       | "         | "         | "         |  |
| 1,1,2-Trichlorotrifluoroethane (F113)       | ND         | 7.7        | "     | " | "       | "         | "         | "         |  |
| <b>Methylene chloride (Dichloromethane)</b> | <b>5.1</b> | <b>3.5</b> | "     | " | "       | "         | "         | "         |  |
| Carbon disulfide                            | ND         | 6.3        | "     | " | "       | "         | "         | "         |  |
| trans-1,2-Dichloroethene                    | ND         | 8.0        | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethane                          | ND         | 4.1        | "     | " | "       | "         | "         | "         |  |
| 2-Butanone (MEK)                            | ND         | 30         | "     | " | "       | "         | "         | "         |  |
| cis-1,2-Dichloroethene                      | ND         | 4.0        | "     | " | "       | "         | "         | "         |  |
| <b>Chloroform</b>                           | <b>8.6</b> | <b>4.9</b> | "     | " | "       | "         | "         | "         |  |
| 1,1,1-Trichloroethane                       | ND         | 5.5        | "     | " | "       | "         | "         | "         |  |
| 1,2-Dichloroethane (EDC)                    | ND         | 4.1        | "     | " | "       | "         | "         | "         |  |
| Benzene                                     | ND         | 3.2        | "     | " | "       | "         | "         | "         |  |
| Carbon tetrachloride                        | ND         | 6.4        | "     | " | "       | "         | "         | "         |  |



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### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                     | Result    | Reporting<br>Limit | Units  | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|-----------------------------------------------------------------------------|-----------|--------------------|--------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>VP-2 (E302016-02) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |           |                    |        |                    |         |           |           |           |       |
| Trichloroethene                                                             | ND        | 5.5                | ug/m3  | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |       |
| 1,2-Dichloropropane                                                         | ND        | 9.4                | "      | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                        | ND        | 6.8                | "      | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                                     | ND        | 4.6                | "      | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                                 | ND        | 8.3                | "      | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                                   | ND        | 4.6                | "      | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                              | <b>42</b> | 3.8                | "      | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                       | ND        | 5.5                | "      | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                            | ND        | 8.3                | "      | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                        | ND        | 8.6                | "      | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                           | ND        | 6.9                | "      | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                                     | ND        | 7.8                | "      | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                                   | ND        | 7.0                | "      | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                               | ND        | 4.7                | "      | "                  | "       | "         | "         | "         |       |
| Ethylbenzene                                                                | ND        | 4.4                | "      | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                           | <b>12</b> | 8.8                | "      | "                  | "       | "         | "         | "         |       |
| Styrene                                                                     | ND        | 4.3                | "      | "                  | "       | "         | "         | "         |       |
| o-Xylene                                                                    | ND        | 4.4                | "      | "                  | "       | "         | "         | "         |       |
| Bromoform                                                                   | ND        | 10                 | "      | "                  | "       | "         | "         | "         |       |
| 1,1,2,2-Tetrachloroethane                                                   | ND        | 7.0                | "      | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                              | ND        | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,3,5-Trimethylbenzene                                                      | ND        | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trimethylbenzene                                                      | ND        | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                         | ND        | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                                      | ND        | 7.5                | "      | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                         | ND        | 11                 | "      | "                  | "       | "         | "         | "         |       |
| <hr/>                                                                       |           |                    |        |                    |         |           |           |           |       |
| Surrogate: 1,2-Dichloroethane-d4                                            |           | 115 %              | 76-134 |                    | "       | "         | "         | "         |       |
| Surrogate: Toluene-d8                                                       |           | 98.6 %             | 78-125 |                    | "       | "         | "         | "         |       |
| Surrogate: 4-Bromofluorobenzene                                             |           | 88.2 %             | 77-127 |                    | "       | "         | "         | "         |       |

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Reported:  
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### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                               | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|-----------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>VP-3 (E302016-03) Vapor Sampled: 29-Jan-13 Received: 04-Feb-13</b> |            |                    |       |                    |         |           |           |           |       |
| Dichlorodifluoromethane (F12)                                         | ND         | 5.0                | ug/m3 | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |       |
| Chloromethane                                                         | ND         | 2.1                | "     | "                  | "       | "         | "         | "         |       |
| Dichlorotetrafluoroethane (F114)                                      | ND         | 7.1                | "     | "                  | "       | "         | "         | "         |       |
| Vinyl chloride                                                        | ND         | 2.6                | "     | "                  | "       | "         | "         | "         |       |
| Bromomethane                                                          | ND         | 16                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroethane                                                          | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| Trichlorofluoromethane (F11)                                          | ND         | 5.6                | "     | "                  | "       | "         | "         | "         |       |
| Acetone                                                               | ND         | 24                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethene                                                    | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichlorotrifluoroethane (F113)                                 | ND         | 7.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Methylene chloride (Dichloromethane)</b>                           | <b>6.2</b> | 3.5                | "     | "                  | "       | "         | "         | "         |       |
| Carbon disulfide                                                      | ND         | 6.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,2-Dichloroethene                                              | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethane                                                    | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| 2-Butanone (MEK)                                                      | ND         | 30                 | "     | "                  | "       | "         | "         | "         |       |
| cis-1,2-Dichloroethene                                                | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| Chloroform                                                            | ND         | 4.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1-Trichloroethane                                                 | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloroethane (EDC)                                              | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| Benzene                                                               | ND         | 3.2                | "     | "                  | "       | "         | "         | "         |       |
| Carbon tetrachloride                                                  | ND         | 6.4                | "     | "                  | "       | "         | "         | "         |       |
| Trichloroethene                                                       | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloropropane                                                   | ND         | 9.4                | "     | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                  | ND         | 6.8                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                               | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                           | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                             | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                        | <b>47</b>  | 3.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                 | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                      | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                  | ND         | 8.6                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                     | ND         | 6.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                               | ND         | 7.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                             | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                         | ND         | 4.7                | "     | "                  | "       | "         | "         | "         |       |
| Ethylbenzene                                                          | ND         | 4.4                | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                     | <b>12</b>  | 8.8                | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                               | ND         | 4.3                | "     | "                  | "       | "         | "         | "         |       |

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### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                     | Result | Reporting<br>Limit | Units  | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|-----------------------------------------------------------------------------|--------|--------------------|--------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>VP-3 (E302016-03) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |        |                    |        |                    |         |           |           |           |       |
| o-Xylene                                                                    | ND     | 4.4                | ug/m3  | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | EPA TO-15 |       |
| Bromoform                                                                   | ND     | 10                 | "      | "                  | "       | "         | "         | "         |       |
| 1,1,2,2-Tetrachloroethane                                                   | ND     | 7.0                | "      | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                              | ND     | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,3,5-Trimethylbenzene                                                      | ND     | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trimethylbenzene                                                      | ND     | 5.0                | "      | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                         | ND     | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                         | ND     | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                         | ND     | 12                 | "      | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                                      | ND     | 7.5                | "      | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                         | ND     | 11                 | "      | "                  | "       | "         | "         | "         |       |
| <i>Surrogate: 1,2-Dichloroethane-d4</i>                                     |        |                    |        |                    |         |           |           |           |       |
|                                                                             |        | 115 %              | 76-134 |                    | "       | "         | "         | "         |       |
| <i>Surrogate: Toluene-d8</i>                                                |        |                    |        |                    |         |           |           |           |       |
|                                                                             |        | 97.6 %             | 78-125 |                    | "       | "         | "         | "         |       |
| <i>Surrogate: 4-Bromofluorobenzene</i>                                      |        |                    |        |                    |         |           |           |           |       |
|                                                                             |        | 92.3 %             | 77-127 |                    | "       | "         | "         | "         |       |

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**TPHv / APH on Vapors by EPA Method TO-15**

**H&P Mobile Geochemistry, Inc.**

| Analyte                                                                     | Result        | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method  | Notes |
|-----------------------------------------------------------------------------|---------------|--------------------|-------|--------------------|---------|-----------|-----------|---------|-------|
| <b>VP-1 (E302016-01) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |               |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                    | <b>150000</b> | 2500               | ug/m3 | 25                 | EB31107 | 08-Feb-13 | 11-Feb-13 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                   | <b>520</b>    | 100                | "     | 1                  | "       | "         | 08-Feb-13 | "       |       |
| TPHv (C9 - C10) aromatic                                                    | ND            | 100                | "     | "                  | "       | "         | "         | "       |       |
| <b>VP-2 (E302016-02) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |               |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                    | <b>4600</b>   | 100                | ug/m3 | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                   | <b>120</b>    | 100                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                                    | ND            | 100                | "     | "                  | "       | "         | "         | "       |       |
| <b>VP-3 (E302016-03) Vapor    Sampled: 29-Jan-13    Received: 04-Feb-13</b> |               |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                                    | <b>2400</b>   | 100                | ug/m3 | 1                  | EB31107 | 08-Feb-13 | 08-Feb-13 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                                   | <b>180</b>    | 100                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                                    | ND            | 100                | "     | "                  | "       | "         | "         | "       |       |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB31107 - TO-15**

**Blank (EB31107-BLK1)**

Prepared & Analyzed: 08-Feb-13

|                                       |    |     |       |
|---------------------------------------|----|-----|-------|
| Dichlorodifluoromethane (F12)         | ND | 5.0 | ug/m3 |
| Chloromethane                         | ND | 2.1 | "     |
| Dichlorotetrafluoroethane (F114)      | ND | 7.1 | "     |
| Vinyl chloride                        | ND | 2.6 | "     |
| Bromomethane                          | ND | 16  | "     |
| Chloroethane                          | ND | 8.0 | "     |
| Trichlorofluoromethane (F11)          | ND | 5.6 | "     |
| Acetone                               | ND | 24  | "     |
| 1,1-Dichloroethene                    | ND | 4.0 | "     |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 7.7 | "     |
| Methylene chloride (Dichloromethane)  | ND | 3.5 | "     |
| Carbon disulfide                      | ND | 6.3 | "     |
| trans-1,2-Dichloroethene              | ND | 8.0 | "     |
| 1,1-Dichloroethane                    | ND | 4.1 | "     |
| 2-Butanone (MEK)                      | ND | 30  | "     |
| cis-1,2-Dichloroethene                | ND | 4.0 | "     |
| Chloroform                            | ND | 4.9 | "     |
| 1,1,1-Trichloroethane                 | ND | 5.5 | "     |
| 1,2-Dichloroethane (EDC)              | ND | 4.1 | "     |
| Benzene                               | ND | 3.2 | "     |
| Carbon tetrachloride                  | ND | 6.4 | "     |
| Trichloroethene                       | ND | 5.5 | "     |
| 1,2-Dichloropropane                   | ND | 9.4 | "     |
| Bromodichloromethane                  | ND | 6.8 | "     |
| cis-1,3-Dichloropropene               | ND | 4.6 | "     |
| 4-Methyl-2-pentanone (MIBK)           | ND | 8.3 | "     |
| trans-1,3-Dichloropropene             | ND | 4.6 | "     |
| Toluene                               | ND | 3.8 | "     |
| 1,1,2-Trichloroethane                 | ND | 5.5 | "     |
| 2-Hexanone (MBK)                      | ND | 8.3 | "     |
| Dibromochloromethane                  | ND | 8.6 | "     |
| Tetrachloroethene                     | ND | 6.9 | "     |
| 1,2-Dibromoethane (EDB)               | ND | 7.8 | "     |
| 1,1,1,2-Tetrachloroethane             | ND | 7.0 | "     |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB31107 - TO-15**

**Blank (EB31107-BLK1)**

Prepared & Analyzed: 08-Feb-13

|                           |    |     |       |
|---------------------------|----|-----|-------|
| Chlorobenzene             | ND | 4.7 | ug/m3 |
| Ethylbenzene              | ND | 4.4 | "     |
| m,p-Xylene                | ND | 8.8 | "     |
| Styrene                   | ND | 4.3 | "     |
| o-Xylene                  | ND | 4.4 | "     |
| Bromoform                 | ND | 10  | "     |
| 1,1,2,2-Tetrachloroethane | ND | 7.0 | "     |
| 4-Ethyltoluene            | ND | 5.0 | "     |
| 1,3,5-Trimethylbenzene    | ND | 5.0 | "     |
| 1,2,4-Trimethylbenzene    | ND | 5.0 | "     |
| 1,3-Dichlorobenzene       | ND | 12  | "     |
| 1,4-Dichlorobenzene       | ND | 12  | "     |
| 1,2-Dichlorobenzene       | ND | 12  | "     |
| 1,2,4-Trichlorobenzene    | ND | 7.5 | "     |
| Hexachlorobutadiene       | ND | 11  | "     |

|                                  |     |   |     |      |        |
|----------------------------------|-----|---|-----|------|--------|
| Surrogate: 1,2-Dichloroethane-d4 | 278 | " | 214 | 130  | 76-134 |
| Surrogate: Toluene-d8            | 209 | " | 207 | 101  | 78-125 |
| Surrogate: 4-Bromofluorobenzene  | 329 | " | 364 | 90.2 | 77-127 |

**LCS (EB31107-BS1)**

Prepared & Analyzed: 08-Feb-13

|                                       |     |     |       |      |      |        |
|---------------------------------------|-----|-----|-------|------|------|--------|
| Dichlorodifluoromethane (F12)         | 120 | 5.0 | ug/m3 | 101  | 117  | 65-135 |
| Vinyl chloride                        | 50  | 2.6 | "     | 52.0 | 95.3 | 65-135 |
| Chloroethane                          | 47  | 8.0 | "     | 53.6 | 87.6 | 65-135 |
| Trichlorofluoromethane (F11)          | 120 | 5.6 | "     | 113  | 105  | 65-135 |
| 1,1-Dichloroethene                    | 79  | 4.0 | "     | 80.8 | 97.9 | 65-135 |
| 1,1,2-Trichlorotrifluoroethane (F113) | 140 | 7.7 | "     | 155  | 90.3 | 65-135 |
| Methylene chloride (Dichloromethane)  | 55  | 3.5 | "     | 70.8 | 78.1 | 65-135 |
| trans-1,2-Dichloroethene              | 72  | 8.0 | "     | 80.8 | 89.3 | 65-135 |
| 1,1-Dichloroethane                    | 77  | 4.1 | "     | 82.4 | 93.8 | 65-135 |
| cis-1,2-Dichloroethene                | 73  | 4.0 | "     | 80.0 | 91.6 | 65-135 |
| Chloroform                            | 97  | 4.9 | "     | 99.2 | 97.4 | 65-135 |
| 1,1,1-Trichloroethane                 | 100 | 5.5 | "     | 111  | 89.9 | 65-135 |
| 1,2-Dichloroethane (EDC)              | 87  | 4.1 | "     | 82.4 | 105  | 65-135 |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB31107 - TO-15**

**LCS (EB31107-BS1)**

Prepared & Analyzed: 08-Feb-13

|                           |     |     |       |      |  |      |        |  |  |  |
|---------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Benzene                   | 53  | 3.2 | ug/m3 | 64.8 |  | 82.1 | 65-135 |  |  |  |
| Carbon tetrachloride      | 110 | 6.4 | "     | 128  |  | 87.0 | 65-135 |  |  |  |
| Trichloroethene           | 100 | 5.5 | "     | 110  |  | 93.3 | 65-135 |  |  |  |
| Toluene                   | 66  | 3.8 | "     | 76.8 |  | 85.9 | 65-135 |  |  |  |
| 1,1,2-Trichloroethane     | 94  | 5.5 | "     | 111  |  | 84.1 | 65-135 |  |  |  |
| Tetrachloroethene         | 120 | 6.9 | "     | 138  |  | 84.1 | 65-135 |  |  |  |
| 1,1,1,2-Tetrachloroethane | 110 | 7.0 | "     | 140  |  | 79.8 | 65-135 |  |  |  |
| Ethylbenzene              | 67  | 4.4 | "     | 88.4 |  | 76.1 | 65-135 |  |  |  |
| m,p-Xylene                | 140 | 8.8 | "     | 177  |  | 81.9 | 65-135 |  |  |  |
| o-Xylene                  | 74  | 4.4 | "     | 88.4 |  | 84.1 | 65-135 |  |  |  |
| 1,1,2,2-Tetrachloroethane | 130 | 7.0 | "     | 140  |  | 93.0 | 65-135 |  |  |  |

|                                  |     |  |   |     |  |      |        |  |  |  |
|----------------------------------|-----|--|---|-----|--|------|--------|--|--|--|
| Surrogate: 1,2-Dichloroethane-d4 | 280 |  | " | 214 |  | 131  | 76-134 |  |  |  |
| Surrogate: Toluene-d8            | 206 |  | " | 207 |  | 99.6 | 78-125 |  |  |  |
| Surrogate: 4-Bromofluorobenzene  | 349 |  | " | 364 |  | 95.7 | 77-127 |  |  |  |

**LCS Dup (EB31107-BSD1)**

Prepared & Analyzed: 08-Feb-13

|                                       |     |     |       |      |  |      |        |        |    |  |
|---------------------------------------|-----|-----|-------|------|--|------|--------|--------|----|--|
| Dichlorodifluoromethane (F12)         | 120 | 5.0 | ug/m3 | 101  |  | 119  | 65-135 | 1.27   | 35 |  |
| Vinyl chloride                        | 52  | 2.6 | "     | 52.0 |  | 101  | 65-135 | 5.50   | 35 |  |
| Chloroethane                          | 47  | 8.0 | "     | 53.6 |  | 87.4 | 65-135 | 0.228  | 35 |  |
| Trichlorofluoromethane (F11)          | 90  | 5.6 | "     | 113  |  | 79.9 | 65-135 | 27.4   | 35 |  |
| 1,1-Dichloroethene                    | 77  | 4.0 | "     | 80.8 |  | 95.3 | 65-135 | 2.73   | 35 |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | 140 | 7.7 | "     | 155  |  | 90.2 | 65-135 | 0.0551 | 35 |  |
| Methylene chloride (Dichloromethane)  | 55  | 3.5 | "     | 70.8 |  | 77.1 | 65-135 | 1.28   | 35 |  |
| trans-1,2-Dichloroethene              | 73  | 8.0 | "     | 80.8 |  | 90.1 | 65-135 | 0.944  | 35 |  |
| 1,1-Dichloroethane                    | 76  | 4.1 | "     | 82.4 |  | 91.8 | 65-135 | 2.15   | 35 |  |
| cis-1,2-Dichloroethene                | 74  | 4.0 | "     | 80.0 |  | 92.6 | 65-135 | 1.04   | 35 |  |
| Chloroform                            | 94  | 4.9 | "     | 99.2 |  | 94.5 | 65-135 | 3.01   | 35 |  |
| 1,1,1-Trichloroethane                 | 98  | 5.5 | "     | 111  |  | 88.5 | 65-135 | 1.61   | 35 |  |
| 1,2-Dichloroethane (EDC)              | 86  | 4.1 | "     | 82.4 |  | 104  | 65-135 | 1.62   | 35 |  |
| Benzene                               | 53  | 3.2 | "     | 64.8 |  | 81.5 | 65-135 | 0.671  | 35 |  |
| Carbon tetrachloride                  | 110 | 6.4 | "     | 128  |  | 85.0 | 65-135 | 2.38   | 35 |  |
| Trichloroethene                       | 100 | 5.5 | "     | 110  |  | 91.7 | 65-135 | 1.72   | 35 |  |
| Toluene                               | 65  | 3.8 | "     | 76.8 |  | 85.3 | 65-135 | 0.697  | 35 |  |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB31107 - TO-15**

**LCS Dup (EB31107-BSD1)**

Prepared & Analyzed: 08-Feb-13

|                                  |     |     |       |      |  |      |        |       |    |  |
|----------------------------------|-----|-----|-------|------|--|------|--------|-------|----|--|
| 1,1,2-Trichloroethane            | 95  | 5.5 | ug/m3 | 111  |  | 85.4 | 65-135 | 1.58  | 35 |  |
| Tetrachloroethene                | 120 | 6.9 | "     | 138  |  | 83.7 | 65-135 | 0.475 | 35 |  |
| 1,1,1,2-Tetrachloroethane        | 110 | 7.0 | "     | 140  |  | 80.3 | 65-135 | 0.622 | 35 |  |
| Ethylbenzene                     | 68  | 4.4 | "     | 88.4 |  | 77.4 | 65-135 | 1.62  | 35 |  |
| m,p-Xylene                       | 140 | 8.8 | "     | 177  |  | 81.7 | 65-135 | 0.182 | 35 |  |
| o-Xylene                         | 75  | 4.4 | "     | 88.4 |  | 85.2 | 65-135 | 1.41  | 35 |  |
| 1,1,2,2-Tetrachloroethane        | 130 | 7.0 | "     | 140  |  | 94.2 | 65-135 | 1.28  | 35 |  |
| Surrogate: 1,2-Dichloroethane-d4 | 276 |     | "     | 214  |  | 129  | 76-134 |       |    |  |
| Surrogate: Toluene-d8            | 206 |     | "     | 207  |  | 99.5 | 78-125 |       |    |  |
| Surrogate: 4-Bromofluorobenzene  | 359 |     | "     | 364  |  | 98.6 | 77-127 |       |    |  |



Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

**TPHv / APH on Vapors by EPA Method TO-15 - Quality Control**

**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB31107 - TO-15**

**Blank (EB31107-BLK1)**

Prepared & Analyzed: 08-Feb-13

|                           |    |     |       |
|---------------------------|----|-----|-------|
| TPHv (C5 - C8) aliphatic  | ND | 100 | ug/m3 |
| TPHv (C9 - C12) aliphatic | ND | 100 | "     |
| TPHv (C9 - C10) aromatic  | ND | 100 | "     |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC020413-10  
Project Number: T-6552  
Project Manager: Mr. Chuck Lie

Reported:  
14-Feb-13 08:36

## Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

## Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS  
Certificate# 2742, 2745, & 2741 approved for LUFT  
Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

|                                                 |                                                      |
|-------------------------------------------------|------------------------------------------------------|
| 1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A    | Dibromochloromethane by EPA TO-15                    |
| Hexachlorobutadiene by EPA TO-15 & TO-14A       | 1,3-Dichlorobenzene by EPA TO-15 & TO-14A            |
| Bromodichloromethane by EPA TO-15 & TO-14A      | Trichlorofluoromethane by EPA TO-14A                 |
| 1,2-Dichlorobenzene by EPA TO-15 & TO-14A       | Naphthalene by H&P SOP TO-15/GC-MS                   |
| Dichlorotetrafluoroethane by EPA TO-14A         | 1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A        |
| 1,4-Dichlorobenzene by EPA TO-15 & TO-14A       | 1,2-Dibromo-3-chloropropane by EPA TO-15             |
| Benzene by EPA TO-15 & TO-14A                   | 1,3-Butadiene by EPA TO-15                           |
| Chlorobenzene by EPA TO-15 & TO-14A             | 1,1,2-Trichlorotrifluoroethane by EPA TO-15 & TO-14A |
| Ethyl benzene by EPA TO-15 & TO-14A             | Carbon disulfide by EPA TO-15                        |
| Styrene by EPA TO-15 & TO-14A                   | 1,4-Dioxane by EPA TO-15                             |
| Toluene by EPA TO-15 & TO-14A                   |                                                      |
| Total Xylenes by EPA TO-15 & TO-14A             |                                                      |
| 1,1,1-Trichloroethane by EPA TO-15 & TO-14A     |                                                      |
| 1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A |                                                      |
| 1,1,2-Trichloroethane by EPA TO-15 & TO-14A     |                                                      |
| 1,1-Dichloroethane by EPA TO-15 & TO-14A        |                                                      |
| 1,1-Dichloroethene by EPA TO-15 & TO-14A        |                                                      |
| 1,2-Dichloroethane by EPA TO-15 & TO-14A        |                                                      |
| 1,2-Dichloropropane by EPA TO-15 & TO-14A       |                                                      |
| Benzyl Chloride by EPA TO-15 & TO-14A           |                                                      |
| Bromoform by EPA TO-15                          |                                                      |
| Bromomethane by EPA TO-15 & TO-14A              |                                                      |
| Carbon tetrachloride by EPA TO-15 & TO-14A      |                                                      |
| Chloroethane by EPA TO-15 & TO-14A              |                                                      |
| Chloroform by EPA TO-15 & TO-14A                |                                                      |
| Chloromethane by EPA TO-15 & TO-14A             |                                                      |
| cis-1,2-Dichloroethene by EPA TO-15 & TO-14A    |                                                      |
| cis-1,3-Dichloropropene by EPA TO-15 & TO-14A   |                                                      |
| Methylene chloride by EPA TO -15 & TO-14A       |                                                      |
| Tetrachloroethane by EPA TO-15 & TO-14A         |                                                      |
| trans-1,2-Dichloroethene by EPA TO-15           |                                                      |
| trans-1,3-Dichloropropene by EPA TO-15 & TO-14A |                                                      |
| Trichloroethene by EPA TO-15 & TO-14A           |                                                      |
| Vinyl chloride by EPA TO -15 & TO-14A           |                                                      |
| 2-Butanone by EPA TO-15                         |                                                      |
| 4-Methyl-2-Pentanone by EPA TO-15               |                                                      |
| Hexane by EPA TO-15                             |                                                      |
| Methyl tert-butyl ether by EPA TO-15            |                                                      |
| Vinyl acetate by EPA TO-15                      |                                                      |

This certification applies to samples analyzed in summa canisters.

☐ Pickup

09 February 2015

Mr. Chuck Lie  
Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034



H&P Project: MC012915-10  
Client Project: 6552

Dear Mr. Chuck Lie:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 29-Jan-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Janis Villarreal  
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|--------------|---------------|
| HNE       | E501105-01    | Vapor  | 26-Jan-15    | 29-Jan-15     |
| HC        | E501105-02    | Vapor  | 26-Jan-15    | 29-Jan-15     |
| HSW       | E501105-03    | Vapor  | 26-Jan-15    | 29-Jan-15     |
| KNE       | E501105-04    | Vapor  | 26-Jan-15    | 29-Jan-15     |
| KC        | E501105-05    | Vapor  | 26-Jan-15    | 29-Jan-15     |
| KSW       | E501105-06    | Vapor  | 26-Jan-15    | 29-Jan-15     |

Please be advised that the results for the leak check compound, 1,1-Difluoroethane, have been reported by H&P 8260SV.

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

### DETECTIONS SUMMARY

Sample ID: HNE

Laboratory ID: E501105-01

| Analyte                   | Result | Reporting | Units | Method      | Notes |
|---------------------------|--------|-----------|-------|-------------|-------|
|                           |        | Limit     |       |             |       |
| Acetone                   | 26     | 24        | ug/m3 | EPA TO-15   |       |
| Toluene                   | 13     | 3.8       | ug/m3 | EPA TO-15   |       |
| Ethylbenzene              | 9.6    | 4.4       | ug/m3 | EPA TO-15   |       |
| m,p-Xylene                | 78     | 8.8       | ug/m3 | EPA TO-15   |       |
| o-Xylene                  | 22     | 4.4       | ug/m3 | EPA TO-15   |       |
| 1,2,4-Trimethylbenzene    | 5.7    | 5.0       | ug/m3 | EPA TO-15   |       |
| 1,1-Difluoroethane (LCC)  | 4400   | 500       | ug/m3 | H&P 8260 SV |       |
| TPHv (C5 - C8) aliphatic  | 120    | 100       | ug/m3 | MA APHm     |       |
| TPHv (C9 - C12) aliphatic | 5500   | 100       | ug/m3 | MA APHm     |       |

Sample ID: HC

Laboratory ID: E501105-02

| Analyte                   | Result | Reporting | Units | Method      | Notes |
|---------------------------|--------|-----------|-------|-------------|-------|
|                           |        | Limit     |       |             |       |
| Toluene                   | 12     | 3.8       | ug/m3 | EPA TO-15   |       |
| Ethylbenzene              | 4.8    | 4.4       | ug/m3 | EPA TO-15   |       |
| m,p-Xylene                | 34     | 8.8       | ug/m3 | EPA TO-15   |       |
| o-Xylene                  | 15     | 4.4       | ug/m3 | EPA TO-15   |       |
| 1,3,5-Trimethylbenzene    | 8.1    | 5.0       | ug/m3 | EPA TO-15   |       |
| 1,2,4-Trimethylbenzene    | 9.4    | 5.0       | ug/m3 | EPA TO-15   |       |
| 1,1-Difluoroethane (LCC)  | 17000  | 500       | ug/m3 | H&P 8260 SV |       |
| TPHv (C5 - C8) aliphatic  | 110    | 100       | ug/m3 | MA APHm     |       |
| TPHv (C9 - C12) aliphatic | 28000  | 100       | ug/m3 | MA APHm     | E     |

Sample ID: HSW

Laboratory ID: E501105-03

| Analyte                   | Result | Reporting | Units | Method      | Notes |
|---------------------------|--------|-----------|-------|-------------|-------|
|                           |        | Limit     |       |             |       |
| Tetrachloroethene         | 4400   | 34        | ug/m3 | EPA TO-15   |       |
| 1,1-Difluoroethane (LCC)  | 3400   | 500       | ug/m3 | H&P 8260 SV |       |
| TPHv (C5 - C8) aliphatic  | 5000   | 500       | ug/m3 | MA APHm     |       |
| TPHv (C9 - C12) aliphatic | 49000  | 500       | ug/m3 | MA APHm     |       |

Sample ID: KNE

Laboratory ID: E501105-04

| Analyte    | Result | Reporting | Units | Method    | Notes |
|------------|--------|-----------|-------|-----------|-------|
|            |        | Limit     |       |           |       |
| Toluene    | 120    | 95        | ug/m3 | EPA TO-15 |       |
| m,p-Xylene | 230    | 220       | ug/m3 | EPA TO-15 |       |
| o-Xylene   | 160    | 110       | ug/m3 | EPA TO-15 |       |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

Sample ID: **KNE**

Laboratory ID: **E501105-04**

| Analyte                          | Reporting     |       | Units | Method      | Notes |
|----------------------------------|---------------|-------|-------|-------------|-------|
|                                  | Result        | Limit |       |             |       |
| <b>1,1-Difluoroethane (LCC)</b>  | <b>5600</b>   | 500   | ug/m3 | H&P 8260 SV |       |
| <b>TPHv (C5 - C8) aliphatic</b>  | <b>23000</b>  | 2500  | ug/m3 | MA APHm     |       |
| <b>TPHv (C9 - C12) aliphatic</b> | <b>280000</b> | 2500  | ug/m3 | MA APHm     |       |

Sample ID: **KC**

Laboratory ID: **E501105-05**

| Analyte                          | Reporting    |       | Units | Method      | Notes |
|----------------------------------|--------------|-------|-------|-------------|-------|
|                                  | Result       | Limit |       |             |       |
| <b>1,1-Difluoroethane (LCC)</b>  | <b>16000</b> | 500   | ug/m3 | H&P 8260 SV |       |
| <b>TPHv (C9 - C12) aliphatic</b> | <b>16000</b> | 500   | ug/m3 | MA APHm     |       |

Sample ID: **KSW**

Laboratory ID: **E501105-06**

| Analyte                          | Reporting    |       | Units | Method      | Notes |
|----------------------------------|--------------|-------|-------|-------------|-------|
|                                  | Result       | Limit |       |             |       |
| <b>1,1-Difluoroethane (LCC)</b>  | <b>6000</b>  | 500   | ug/m3 | H&P 8260 SV |       |
| <b>TPHv (C9 - C12) aliphatic</b> | <b>35000</b> | 500   | ug/m3 | MA APHm     |       |

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Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                              | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|----------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>HNE (E501105-01) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |            |                    |       |                    |         |           |           |           |       |
| Dichlorodifluoromethane (F12)                                        | ND         | 5.0                | ug/m3 | 1                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |       |
| Chloromethane                                                        | ND         | 2.1                | "     | "                  | "       | "         | "         | "         |       |
| Dichlorotetrafluoroethane (F114)                                     | ND         | 7.1                | "     | "                  | "       | "         | "         | "         |       |
| Vinyl chloride                                                       | ND         | 2.6                | "     | "                  | "       | "         | "         | "         |       |
| Bromomethane                                                         | ND         | 16                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroethane                                                         | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| Trichlorofluoromethane (F11)                                         | ND         | 5.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Acetone</b>                                                       | <b>26</b>  | <b>24</b>          | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethene                                                   | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichlorotrifluoroethane (F113)                                | ND         | 7.7                | "     | "                  | "       | "         | "         | "         |       |
| Methylene chloride (Dichloromethane)                                 | ND         | 3.5                | "     | "                  | "       | "         | "         | "         |       |
| Carbon disulfide                                                     | ND         | 6.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,2-Dichloroethene                                             | ND         | 8.0                | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethane                                                   | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| 2-Butanone (MEK)                                                     | ND         | 30                 | "     | "                  | "       | "         | "         | "         |       |
| cis-1,2-Dichloroethene                                               | ND         | 4.0                | "     | "                  | "       | "         | "         | "         |       |
| Chloroform                                                           | ND         | 4.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1-Trichloroethane                                                | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloroethane (EDC)                                             | ND         | 4.1                | "     | "                  | "       | "         | "         | "         |       |
| Benzene                                                              | ND         | 3.2                | "     | "                  | "       | "         | "         | "         |       |
| Carbon tetrachloride                                                 | ND         | 6.4                | "     | "                  | "       | "         | "         | "         |       |
| Trichloroethene                                                      | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloropropane                                                  | ND         | 9.4                | "     | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                 | ND         | 6.8                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                              | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                          | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                            | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                       | <b>13</b>  | <b>3.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                     | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                 | ND         | 8.6                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                    | ND         | 6.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                              | ND         | 7.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                            | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                        | ND         | 4.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Ethylbenzene</b>                                                  | <b>9.6</b> | <b>4.4</b>         | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                    | <b>78</b>  | <b>8.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                              | ND         | 4.3                | "     | "                  | "       | "         | "         | "         |       |



Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|--------------------|-------|--------------------|-------|----------|----------|--------|-------|
|---------|--------|--------------------|-------|--------------------|-------|----------|----------|--------|-------|

#### HNE (E501105-01) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15

|                               |            |            |       |   |         |           |           |           |  |
|-------------------------------|------------|------------|-------|---|---------|-----------|-----------|-----------|--|
| <b>o-Xylene</b>               | <b>22</b>  | <b>4.4</b> | ug/m3 | 1 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |  |
| Bromoform                     | ND         | 10         | "     | " | "       | "         | "         | "         |  |
| 1,1,2,2-Tetrachloroethane     | ND         | 7.0        | "     | " | "       | "         | "         | "         |  |
| 4-Ethyltoluene                | ND         | 5.0        | "     | " | "       | "         | "         | "         |  |
| 1,3,5-Trimethylbenzene        | ND         | 5.0        | "     | " | "       | "         | "         | "         |  |
| <b>1,2,4-Trimethylbenzene</b> | <b>5.7</b> | <b>5.0</b> | "     | " | "       | "         | "         | "         |  |
| 1,3-Dichlorobenzene           | ND         | 12         | "     | " | "       | "         | "         | "         |  |
| 1,4-Dichlorobenzene           | ND         | 12         | "     | " | "       | "         | "         | "         |  |
| 1,2-Dichlorobenzene           | ND         | 12         | "     | " | "       | "         | "         | "         |  |
| 1,2,4-Trichlorobenzene        | ND         | 38         | "     | " | "       | "         | "         | "         |  |
| Hexachlorobutadiene           | ND         | 54         | "     | " | "       | "         | "         | "         |  |

Surrogate: Toluene-d8

109 %

78-125

"

"

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"

Surrogate: 4-Bromofluorobenzene

99.3 %

77-127

"

"

"

"

#### HC (E501105-02) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15

|                                       |    |     |       |   |         |           |           |           |  |
|---------------------------------------|----|-----|-------|---|---------|-----------|-----------|-----------|--|
| Dichlorodifluoromethane (F12)         | ND | 5.0 | ug/m3 | 1 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |  |
| Chloromethane                         | ND | 2.1 | "     | " | "       | "         | "         | "         |  |
| Dichlorotetrafluoroethane (F114)      | ND | 7.1 | "     | " | "       | "         | "         | "         |  |
| Vinyl chloride                        | ND | 2.6 | "     | " | "       | "         | "         | "         |  |
| Bromomethane                          | ND | 16  | "     | " | "       | "         | "         | "         |  |
| Chloroethane                          | ND | 8.0 | "     | " | "       | "         | "         | "         |  |
| Trichlorofluoromethane (F11)          | ND | 5.6 | "     | " | "       | "         | "         | "         |  |
| Acetone                               | ND | 24  | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethene                    | ND | 4.0 | "     | " | "       | "         | "         | "         |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 7.7 | "     | " | "       | "         | "         | "         |  |
| Methylene chloride (Dichloromethane)  | ND | 3.5 | "     | " | "       | "         | "         | "         |  |
| Carbon disulfide                      | ND | 6.3 | "     | " | "       | "         | "         | "         |  |
| trans-1,2-Dichloroethene              | ND | 8.0 | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethane                    | ND | 4.1 | "     | " | "       | "         | "         | "         |  |
| 2-Butanone (MEK)                      | ND | 30  | "     | " | "       | "         | "         | "         |  |
| cis-1,2-Dichloroethene                | ND | 4.0 | "     | " | "       | "         | "         | "         |  |
| Chloroform                            | ND | 4.9 | "     | " | "       | "         | "         | "         |  |
| 1,1,1-Trichloroethane                 | ND | 5.5 | "     | " | "       | "         | "         | "         |  |
| 1,2-Dichloroethane (EDC)              | ND | 4.1 | "     | " | "       | "         | "         | "         |  |
| Benzene                               | ND | 3.2 | "     | " | "       | "         | "         | "         |  |
| Carbon tetrachloride                  | ND | 6.4 | "     | " | "       | "         | "         | "         |  |
| Trichloroethene                       | ND | 5.5 | "     | " | "       | "         | "         | "         |  |

Terra Associates  
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Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                             | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|---------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>HC (E501105-02) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |            |                    |       |                    |         |           |           |           |       |
| 1,2-Dichloropropane                                                 | ND         | 9.4                | ug/m3 | 1                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |       |
| Bromodichloromethane                                                | ND         | 6.8                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                             | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                         | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                           | ND         | 4.6                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                      | <b>12</b>  | <b>3.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                               | ND         | 5.5                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                    | ND         | 8.3                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                | ND         | 8.6                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                   | ND         | 6.9                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                             | ND         | 7.8                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                           | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                       | ND         | 4.7                | "     | "                  | "       | "         | "         | "         |       |
| <b>Ethylbenzene</b>                                                 | <b>4.8</b> | <b>4.4</b>         | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                   | <b>34</b>  | <b>8.8</b>         | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                             | ND         | 4.3                | "     | "                  | "       | "         | "         | "         |       |
| <b>o-Xylene</b>                                                     | <b>15</b>  | <b>4.4</b>         | "     | "                  | "       | "         | "         | "         |       |
| Bromoform                                                           | ND         | 10                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                           | ND         | 7.0                | "     | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                      | ND         | 5.0                | "     | "                  | "       | "         | "         | "         |       |
| <b>1,3,5-Trimethylbenzene</b>                                       | <b>8.1</b> | <b>5.0</b>         | "     | "                  | "       | "         | "         | "         |       |
| <b>1,2,4-Trimethylbenzene</b>                                       | <b>9.4</b> | <b>5.0</b>         | "     | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                 | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                 | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                 | ND         | 12                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                              | ND         | 38                 | "     | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                 | ND         | 54                 | "     | "                  | "       | "         | "         | "         |       |

Surrogate: Toluene-d8

109 % 78-125

" " " "

Surrogate: 4-Bromofluorobenzene

103 % 77-127

" " " "

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                              | Result      | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|----------------------------------------------------------------------|-------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>HSW (E501105-03) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |             |                    |       |                    |         |           |           |           |       |
| Dichlorodifluoromethane (F12)                                        | ND          | 25                 | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |       |
| Chloromethane                                                        | ND          | 10                 | "     | "                  | "       | "         | "         | "         |       |
| Dichlorotetrafluoroethane (F114)                                     | ND          | 35                 | "     | "                  | "       | "         | "         | "         |       |
| Vinyl chloride                                                       | ND          | 13                 | "     | "                  | "       | "         | "         | "         |       |
| Bromomethane                                                         | ND          | 79                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroethane                                                         | ND          | 40                 | "     | "                  | "       | "         | "         | "         |       |
| Trichlorofluoromethane (F11)                                         | ND          | 28                 | "     | "                  | "       | "         | "         | "         |       |
| Acetone                                                              | ND          | 120                | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethene                                                   | ND          | 20                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichlorotrifluoroethane (F113)                                | ND          | 39                 | "     | "                  | "       | "         | "         | "         |       |
| Methylene chloride (Dichloromethane)                                 | ND          | 18                 | "     | "                  | "       | "         | "         | "         |       |
| Carbon disulfide                                                     | ND          | 32                 | "     | "                  | "       | "         | "         | "         |       |
| trans-1,2-Dichloroethene                                             | ND          | 40                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1-Dichloroethane                                                   | ND          | 21                 | "     | "                  | "       | "         | "         | "         |       |
| 2-Butanone (MEK)                                                     | ND          | 150                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,2-Dichloroethene                                               | ND          | 20                 | "     | "                  | "       | "         | "         | "         |       |
| Chloroform                                                           | ND          | 25                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1-Trichloroethane                                                | ND          | 28                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloroethane (EDC)                                             | ND          | 21                 | "     | "                  | "       | "         | "         | "         |       |
| Benzene                                                              | ND          | 16                 | "     | "                  | "       | "         | "         | "         |       |
| Carbon tetrachloride                                                 | ND          | 32                 | "     | "                  | "       | "         | "         | "         |       |
| Trichloroethene                                                      | ND          | 27                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichloropropane                                                  | ND          | 47                 | "     | "                  | "       | "         | "         | "         |       |
| Bromodichloromethane                                                 | ND          | 34                 | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                              | ND          | 23                 | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                          | ND          | 41                 | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                            | ND          | 23                 | "     | "                  | "       | "         | "         | "         |       |
| Toluene                                                              | ND          | 19                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                | ND          | 28                 | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                     | ND          | 41                 | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                 | ND          | 43                 | "     | "                  | "       | "         | "         | "         |       |
| <b>Tetrachloroethene</b>                                             | <b>4400</b> | 34                 | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                              | ND          | 39                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                            | ND          | 35                 | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                        | ND          | 23                 | "     | "                  | "       | "         | "         | "         |       |
| Ethylbenzene                                                         | ND          | 22                 | "     | "                  | "       | "         | "         | "         |       |
| m,p-Xylene                                                           | ND          | 44                 | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                              | ND          | 22                 | "     | "                  | "       | "         | "         | "         |       |

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12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|--------------------|-------|--------------------|-------|----------|----------|--------|-------|
|---------|--------|--------------------|-------|--------------------|-------|----------|----------|--------|-------|

#### HSW (E501105-03) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15

|                           |    |     |       |   |         |           |           |           |  |
|---------------------------|----|-----|-------|---|---------|-----------|-----------|-----------|--|
| o-Xylene                  | ND | 22  | ug/m3 | 5 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |  |
| Bromoform                 | ND | 52  | "     | " | "       | "         | "         | "         |  |
| 1,1,2,2-Tetrachloroethane | ND | 35  | "     | " | "       | "         | "         | "         |  |
| 4-Ethyltoluene            | ND | 25  | "     | " | "       | "         | "         | "         |  |
| 1,3,5-Trimethylbenzene    | ND | 25  | "     | " | "       | "         | "         | "         |  |
| 1,2,4-Trimethylbenzene    | ND | 25  | "     | " | "       | "         | "         | "         |  |
| 1,3-Dichlorobenzene       | ND | 61  | "     | " | "       | "         | "         | "         |  |
| 1,4-Dichlorobenzene       | ND | 61  | "     | " | "       | "         | "         | "         |  |
| 1,2-Dichlorobenzene       | ND | 61  | "     | " | "       | "         | "         | "         |  |
| 1,2,4-Trichlorobenzene    | ND | 190 | "     | " | "       | "         | "         | "         |  |
| Hexachlorobutadiene       | ND | 270 | "     | " | "       | "         | "         | "         |  |

Surrogate: Toluene-d8

110 % 78-125

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Surrogate: 4-Bromofluorobenzene

101 % 77-127

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#### KNE (E501105-04) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15

|                                       |    |     |       |    |         |           |           |           |  |
|---------------------------------------|----|-----|-------|----|---------|-----------|-----------|-----------|--|
| Dichlorodifluoromethane (F12)         | ND | 130 | ug/m3 | 25 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |  |
| Chloromethane                         | ND | 52  | "     | "  | "       | "         | "         | "         |  |
| Dichlorotetrafluoroethane (F114)      | ND | 180 | "     | "  | "       | "         | "         | "         |  |
| Vinyl chloride                        | ND | 65  | "     | "  | "       | "         | "         | "         |  |
| Bromomethane                          | ND | 390 | "     | "  | "       | "         | "         | "         |  |
| Chloroethane                          | ND | 200 | "     | "  | "       | "         | "         | "         |  |
| Trichlorofluoromethane (F11)          | ND | 140 | "     | "  | "       | "         | "         | "         |  |
| Acetone                               | ND | 600 | "     | "  | "       | "         | "         | "         |  |
| 1,1-Dichloroethene                    | ND | 100 | "     | "  | "       | "         | "         | "         |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 190 | "     | "  | "       | "         | "         | "         |  |
| Methylene chloride (Dichloromethane)  | ND | 88  | "     | "  | "       | "         | "         | "         |  |
| Carbon disulfide                      | ND | 160 | "     | "  | "       | "         | "         | "         |  |
| trans-1,2-Dichloroethene              | ND | 200 | "     | "  | "       | "         | "         | "         |  |
| 1,1-Dichloroethane                    | ND | 100 | "     | "  | "       | "         | "         | "         |  |
| 2-Butanone (MEK)                      | ND | 750 | "     | "  | "       | "         | "         | "         |  |
| cis-1,2-Dichloroethene                | ND | 100 | "     | "  | "       | "         | "         | "         |  |
| Chloroform                            | ND | 120 | "     | "  | "       | "         | "         | "         |  |
| 1,1,1-Trichloroethane                 | ND | 140 | "     | "  | "       | "         | "         | "         |  |
| 1,2-Dichloroethane (EDC)              | ND | 100 | "     | "  | "       | "         | "         | "         |  |
| Benzene                               | ND | 81  | "     | "  | "       | "         | "         | "         |  |
| Carbon tetrachloride                  | ND | 160 | "     | "  | "       | "         | "         | "         |  |
| Trichloroethene                       | ND | 140 | "     | "  | "       | "         | "         | "         |  |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                    | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|----------------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>KNE (E501105-04) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |            |                    |       |                    |         |           |           |           |       |
| 1,2-Dichloropropane                                                        | ND         | 230                | ug/m3 | 25                 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |       |
| Bromodichloromethane                                                       | ND         | 170                | "     | "                  | "       | "         | "         | "         |       |
| cis-1,3-Dichloropropene                                                    | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| 4-Methyl-2-pentanone (MIBK)                                                | ND         | 210                | "     | "                  | "       | "         | "         | "         |       |
| trans-1,3-Dichloropropene                                                  | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| <b>Toluene</b>                                                             | <b>120</b> | 95                 | "     | "                  | "       | "         | "         | "         |       |
| 1,1,2-Trichloroethane                                                      | ND         | 140                | "     | "                  | "       | "         | "         | "         |       |
| 2-Hexanone (MBK)                                                           | ND         | 210                | "     | "                  | "       | "         | "         | "         |       |
| Dibromochloromethane                                                       | ND         | 220                | "     | "                  | "       | "         | "         | "         |       |
| Tetrachloroethene                                                          | ND         | 170                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dibromoethane (EDB)                                                    | ND         | 190                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                                  | ND         | 170                | "     | "                  | "       | "         | "         | "         |       |
| Chlorobenzene                                                              | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| Ethylbenzene                                                               | ND         | 110                | "     | "                  | "       | "         | "         | "         |       |
| <b>m,p-Xylene</b>                                                          | <b>230</b> | 220                | "     | "                  | "       | "         | "         | "         |       |
| Styrene                                                                    | ND         | 110                | "     | "                  | "       | "         | "         | "         |       |
| <b>o-Xylene</b>                                                            | <b>160</b> | 110                | "     | "                  | "       | "         | "         | "         |       |
| Bromoform                                                                  | ND         | 260                | "     | "                  | "       | "         | "         | "         |       |
| 1,1,1,2-Tetrachloroethane                                                  | ND         | 170                | "     | "                  | "       | "         | "         | "         |       |
| 4-Ethyltoluene                                                             | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| 1,3,5-Trimethylbenzene                                                     | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trimethylbenzene                                                     | ND         | 120                | "     | "                  | "       | "         | "         | "         |       |
| 1,3-Dichlorobenzene                                                        | ND         | 300                | "     | "                  | "       | "         | "         | "         |       |
| 1,4-Dichlorobenzene                                                        | ND         | 300                | "     | "                  | "       | "         | "         | "         |       |
| 1,2-Dichlorobenzene                                                        | ND         | 300                | "     | "                  | "       | "         | "         | "         |       |
| 1,2,4-Trichlorobenzene                                                     | ND         | 940                | "     | "                  | "       | "         | "         | "         |       |
| Hexachlorobutadiene                                                        | ND         | 1300               | "     | "                  | "       | "         | "         | "         |       |

Surrogate: Toluene-d8

110 %    78-125

"    "    "    "

Surrogate: 4-Bromofluorobenzene

97.7 %    77-127

"    "    "    "

Terra Associates  
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Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                             | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|---------------------------------------------------------------------|--------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------------|
| <b>KC (E501105-05) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |           | <b>R-05</b> |
| Dichlorodifluoromethane (F12)                                       | ND     | 25                 | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |             |
| Chloromethane                                                       | ND     | 10                 | "     | "                  | "       | "         | "         | "         |             |
| Dichlorotetrafluoroethane (F114)                                    | ND     | 35                 | "     | "                  | "       | "         | "         | "         |             |
| Vinyl chloride                                                      | ND     | 13                 | "     | "                  | "       | "         | "         | "         |             |
| Bromomethane                                                        | ND     | 79                 | "     | "                  | "       | "         | "         | "         |             |
| Chloroethane                                                        | ND     | 40                 | "     | "                  | "       | "         | "         | "         |             |
| Trichlorofluoromethane (F11)                                        | ND     | 28                 | "     | "                  | "       | "         | "         | "         |             |
| Acetone                                                             | ND     | 120                | "     | "                  | "       | "         | "         | "         |             |
| 1,1-Dichloroethene                                                  | ND     | 20                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2-Trichlorotrifluoroethane (F113)                               | ND     | 39                 | "     | "                  | "       | "         | "         | "         |             |
| Methylene chloride (Dichloromethane)                                | ND     | 18                 | "     | "                  | "       | "         | "         | "         |             |
| Carbon disulfide                                                    | ND     | 32                 | "     | "                  | "       | "         | "         | "         |             |
| trans-1,2-Dichloroethene                                            | ND     | 40                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1-Dichloroethane                                                  | ND     | 21                 | "     | "                  | "       | "         | "         | "         |             |
| 2-Butanone (MEK)                                                    | ND     | 150                | "     | "                  | "       | "         | "         | "         |             |
| cis-1,2-Dichloroethene                                              | ND     | 20                 | "     | "                  | "       | "         | "         | "         |             |
| Chloroform                                                          | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1-Trichloroethane                                               | ND     | 28                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichloroethane (EDC)                                            | ND     | 21                 | "     | "                  | "       | "         | "         | "         |             |
| Benzene                                                             | ND     | 16                 | "     | "                  | "       | "         | "         | "         |             |
| Carbon tetrachloride                                                | ND     | 32                 | "     | "                  | "       | "         | "         | "         |             |
| Trichloroethene                                                     | ND     | 27                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichloropropane                                                 | ND     | 47                 | "     | "                  | "       | "         | "         | "         |             |
| Bromodichloromethane                                                | ND     | 34                 | "     | "                  | "       | "         | "         | "         |             |
| cis-1,3-Dichloropropene                                             | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| 4-Methyl-2-pentanone (MIBK)                                         | ND     | 41                 | "     | "                  | "       | "         | "         | "         |             |
| trans-1,3-Dichloropropene                                           | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| Toluene                                                             | ND     | 19                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2-Trichloroethane                                               | ND     | 28                 | "     | "                  | "       | "         | "         | "         |             |
| 2-Hexanone (MBK)                                                    | ND     | 41                 | "     | "                  | "       | "         | "         | "         |             |
| Dibromochloromethane                                                | ND     | 43                 | "     | "                  | "       | "         | "         | "         |             |
| Tetrachloroethene                                                   | ND     | 34                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dibromoethane (EDB)                                             | ND     | 39                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1,2-Tetrachloroethane                                           | ND     | 35                 | "     | "                  | "       | "         | "         | "         |             |
| Chlorobenzene                                                       | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| Ethylbenzene                                                        | ND     | 22                 | "     | "                  | "       | "         | "         | "         |             |
| m,p-Xylene                                                          | ND     | 44                 | "     | "                  | "       | "         | "         | "         |             |
| Styrene                                                             | ND     | 22                 | "     | "                  | "       | "         | "         | "         |             |

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Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

| Analyte                                                             | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|---------------------------------------------------------------------|--------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------------|
| <b>KC (E501105-05) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |           | <b>R-05</b> |
| o-Xylene                                                            | ND     | 22                 | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |             |
| Bromoform                                                           | ND     | 52                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2,2-Tetrachloroethane                                           | ND     | 35                 | "     | "                  | "       | "         | "         | "         |             |
| 4-Ethyltoluene                                                      | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,3,5-Trimethylbenzene                                              | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2,4-Trimethylbenzene                                              | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,3-Dichlorobenzene                                                 | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,4-Dichlorobenzene                                                 | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichlorobenzene                                                 | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2,4-Trichlorobenzene                                              | ND     | 190                | "     | "                  | "       | "         | "         | "         |             |
| Hexachlorobutadiene                                                 | ND     | 270                | "     | "                  | "       | "         | "         | "         |             |

Surrogate: Toluene-d8

108 % 78-125

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Surrogate: 4-Bromofluorobenzene

102 % 77-127

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### KSW (E501105-06) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15

**R-05**

|                                       |    |     |       |   |         |           |           |           |  |
|---------------------------------------|----|-----|-------|---|---------|-----------|-----------|-----------|--|
| Dichlorodifluoromethane (F12)         | ND | 25  | ug/m3 | 5 | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |  |
| Chloromethane                         | ND | 10  | "     | " | "       | "         | "         | "         |  |
| Dichlorotetrafluoroethane (F114)      | ND | 35  | "     | " | "       | "         | "         | "         |  |
| Vinyl chloride                        | ND | 13  | "     | " | "       | "         | "         | "         |  |
| Bromomethane                          | ND | 79  | "     | " | "       | "         | "         | "         |  |
| Chloroethane                          | ND | 40  | "     | " | "       | "         | "         | "         |  |
| Trichlorofluoromethane (F11)          | ND | 28  | "     | " | "       | "         | "         | "         |  |
| Acetone                               | ND | 120 | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethene                    | ND | 20  | "     | " | "       | "         | "         | "         |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 39  | "     | " | "       | "         | "         | "         |  |
| Methylene chloride (Dichloromethane)  | ND | 18  | "     | " | "       | "         | "         | "         |  |
| Carbon disulfide                      | ND | 32  | "     | " | "       | "         | "         | "         |  |
| trans-1,2-Dichloroethene              | ND | 40  | "     | " | "       | "         | "         | "         |  |
| 1,1-Dichloroethane                    | ND | 21  | "     | " | "       | "         | "         | "         |  |
| 2-Butanone (MEK)                      | ND | 150 | "     | " | "       | "         | "         | "         |  |
| cis-1,2-Dichloroethene                | ND | 20  | "     | " | "       | "         | "         | "         |  |
| Chloroform                            | ND | 25  | "     | " | "       | "         | "         | "         |  |
| 1,1,1-Trichloroethane                 | ND | 28  | "     | " | "       | "         | "         | "         |  |
| 1,2-Dichloroethane (EDC)              | ND | 21  | "     | " | "       | "         | "         | "         |  |
| Benzene                               | ND | 16  | "     | " | "       | "         | "         | "         |  |
| Carbon tetrachloride                  | ND | 32  | "     | " | "       | "         | "         | "         |  |
| Trichloroethene                       | ND | 27  | "     | " | "       | "         | "         | "         |  |

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Reported:  
09-Feb-15 12:46

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                    | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes       |
|----------------------------------------------------------------------------|--------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------------|
| <b>KSW (E501105-06) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |           | <b>R-05</b> |
| 1,2-Dichloropropane                                                        | ND     | 47                 | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | EPA TO-15 |             |
| Bromodichloromethane                                                       | ND     | 34                 | "     | "                  | "       | "         | "         | "         |             |
| cis-1,3-Dichloropropene                                                    | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| 4-Methyl-2-pentanone (MIBK)                                                | ND     | 41                 | "     | "                  | "       | "         | "         | "         |             |
| trans-1,3-Dichloropropene                                                  | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| Toluene                                                                    | ND     | 19                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,2-Trichloroethane                                                      | ND     | 28                 | "     | "                  | "       | "         | "         | "         |             |
| 2-Hexanone (MBK)                                                           | ND     | 41                 | "     | "                  | "       | "         | "         | "         |             |
| Dibromochloromethane                                                       | ND     | 43                 | "     | "                  | "       | "         | "         | "         |             |
| Tetrachloroethene                                                          | ND     | 34                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dibromoethane (EDB)                                                    | ND     | 39                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1,2-Tetrachloroethane                                                  | ND     | 35                 | "     | "                  | "       | "         | "         | "         |             |
| Chlorobenzene                                                              | ND     | 23                 | "     | "                  | "       | "         | "         | "         |             |
| Ethylbenzene                                                               | ND     | 22                 | "     | "                  | "       | "         | "         | "         |             |
| m,p-Xylene                                                                 | ND     | 44                 | "     | "                  | "       | "         | "         | "         |             |
| Styrene                                                                    | ND     | 22                 | "     | "                  | "       | "         | "         | "         |             |
| o-Xylene                                                                   | ND     | 22                 | "     | "                  | "       | "         | "         | "         |             |
| Bromoform                                                                  | ND     | 52                 | "     | "                  | "       | "         | "         | "         |             |
| 1,1,1,2-Tetrachloroethane                                                  | ND     | 35                 | "     | "                  | "       | "         | "         | "         |             |
| 4-Ethyltoluene                                                             | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,3,5-Trimethylbenzene                                                     | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2,4-Trimethylbenzene                                                     | ND     | 25                 | "     | "                  | "       | "         | "         | "         |             |
| 1,3-Dichlorobenzene                                                        | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,4-Dichlorobenzene                                                        | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2-Dichlorobenzene                                                        | ND     | 61                 | "     | "                  | "       | "         | "         | "         |             |
| 1,2,4-Trichlorobenzene                                                     | ND     | 190                | "     | "                  | "       | "         | "         | "         |             |
| Hexachlorobutadiene                                                        | ND     | 270                | "     | "                  | "       | "         | "         | "         |             |

Surrogate: Toluene-d8

112 %    78-125

"    "    "    "

Surrogate: 4-Bromofluorobenzene

96.7 %    77-127

"    "    "    "



Terra Associates  
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Kirkland, WA 98034

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Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**Volatile Organic Compounds by 8260SV**

**H&P Mobile Geochemistry, Inc.**

| Analyte                                                                    | Result       | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method      | Notes |
|----------------------------------------------------------------------------|--------------|--------------------|-------|--------------------|---------|-----------|-----------|-------------|-------|
| <b>HNE (E501105-01) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>4400</b>  | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |
| <b>HC (E501105-02) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b>  |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>17000</b> | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |
| <b>HSW (E501105-03) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>3400</b>  | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |
| <b>KNE (E501105-04) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>5600</b>  | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |
| <b>KC (E501105-05) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b>  |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>16000</b> | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |
| <b>KSW (E501105-06) Vapor    Sampled: 26-Jan-15    Received: 29-Jan-15</b> |              |                    |       |                    |         |           |           |             |       |
| <b>1,1-Difluoroethane (LCC)</b>                                            | <b>6000</b>  | <b>500</b>         | ug/m3 | 0.05               | EB50602 | 03-Feb-15 | 03-Feb-15 | H&P 8260 SV |       |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**TPHv / APH on Vapors by EPA Method TO-15**

**H&P Mobile Geochemistry, Inc.**

| Analyte                                                              | Result | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method  | Notes |
|----------------------------------------------------------------------|--------|--------------------|-------|--------------------|---------|-----------|-----------|---------|-------|
| <b>HNE (E501105-01) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | 120    | 100                | ug/m3 | 1                  | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 5500   | 100                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                             | ND     | 100                | "     | "                  | "       | "         | "         | "       |       |
| <b>HC (E501105-02) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b>  |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | 110    | 100                | ug/m3 | 1                  | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 28000  | 100                | "     | "                  | "       | "         | "         | "       | E     |
| TPHv (C9 - C10) aromatic                                             | ND     | 100                | "     | "                  | "       | "         | "         | "       |       |
| <b>HSW (E501105-03) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | 5000   | 500                | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 49000  | 500                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                             | ND     | 500                | "     | "                  | "       | "         | "         | "       |       |
| <b>KNE (E501105-04) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | 23000  | 2500               | ug/m3 | 25                 | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 280000 | 2500               | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                             | ND     | 2500               | "     | "                  | "       | "         | "         | "       |       |
| <b>KC (E501105-05) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b>  |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | ND     | 500                | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 16000  | 500                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                             | ND     | 500                | "     | "                  | "       | "         | "         | "       |       |
| <b>KSW (E501105-06) Vapor Sampled: 26-Jan-15 Received: 29-Jan-15</b> |        |                    |       |                    |         |           |           |         |       |
| TPHv (C5 - C8) aliphatic                                             | ND     | 500                | ug/m3 | 5                  | EB50508 | 05-Feb-15 | 05-Feb-15 | MA APHm |       |
| TPHv (C9 - C12) aliphatic                                            | 35000  | 500                | "     | "                  | "       | "         | "         | "       |       |
| TPHv (C9 - C10) aromatic                                             | ND     | 500                | "     | "                  | "       | "         | "         | "       |       |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50508 - TO-15**

**Blank (EB50508-BLK1)**

Prepared & Analyzed: 05-Feb-15

|                                       |    |     |       |
|---------------------------------------|----|-----|-------|
| Dichlorodifluoromethane (F12)         | ND | 5.0 | ug/m3 |
| Chloromethane                         | ND | 2.1 | "     |
| Dichlorotetrafluoroethane (F114)      | ND | 7.1 | "     |
| Vinyl chloride                        | ND | 2.6 | "     |
| Bromomethane                          | ND | 16  | "     |
| Chloroethane                          | ND | 8.0 | "     |
| Trichlorofluoromethane (F11)          | ND | 5.6 | "     |
| Acetone                               | ND | 24  | "     |
| 1,1-Dichloroethene                    | ND | 4.0 | "     |
| 1,1,2-Trichlorotrifluoroethane (F113) | ND | 7.7 | "     |
| Methylene chloride (Dichloromethane)  | ND | 3.5 | "     |
| Carbon disulfide                      | ND | 6.3 | "     |
| trans-1,2-Dichloroethene              | ND | 8.0 | "     |
| 1,1-Dichloroethane                    | ND | 4.1 | "     |
| 2-Butanone (MEK)                      | ND | 30  | "     |
| cis-1,2-Dichloroethene                | ND | 4.0 | "     |
| Chloroform                            | ND | 4.9 | "     |
| 1,1,1-Trichloroethane                 | ND | 5.5 | "     |
| 1,2-Dichloroethane (EDC)              | ND | 4.1 | "     |
| Benzene                               | ND | 3.2 | "     |
| Carbon tetrachloride                  | ND | 6.4 | "     |
| Trichloroethene                       | ND | 5.5 | "     |
| 1,2-Dichloropropane                   | ND | 9.4 | "     |
| Bromodichloromethane                  | ND | 6.8 | "     |
| cis-1,3-Dichloropropene               | ND | 4.6 | "     |
| 4-Methyl-2-pentanone (MIBK)           | ND | 8.3 | "     |
| trans-1,3-Dichloropropene             | ND | 4.6 | "     |
| Toluene                               | ND | 3.8 | "     |
| 1,1,2-Trichloroethane                 | ND | 5.5 | "     |
| 2-Hexanone (MBK)                      | ND | 8.3 | "     |
| Dibromochloromethane                  | ND | 8.6 | "     |
| Tetrachloroethene                     | ND | 6.9 | "     |
| 1,2-Dibromoethane (EDB)               | ND | 7.8 | "     |
| 1,1,1,2-Tetrachloroethane             | ND | 7.0 | "     |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50508 - TO-15**

**Blank (EB50508-BLK1)**

Prepared & Analyzed: 05-Feb-15

|                           |    |     |       |
|---------------------------|----|-----|-------|
| Chlorobenzene             | ND | 4.7 | ug/m3 |
| Ethylbenzene              | ND | 4.4 | "     |
| m,p-Xylene                | ND | 8.8 | "     |
| Styrene                   | ND | 4.3 | "     |
| o-Xylene                  | ND | 4.4 | "     |
| Bromoform                 | ND | 10  | "     |
| 1,1,2,2-Tetrachloroethane | ND | 7.0 | "     |
| 4-Ethyltoluene            | ND | 5.0 | "     |
| 1,3,5-Trimethylbenzene    | ND | 5.0 | "     |
| 1,2,4-Trimethylbenzene    | ND | 5.0 | "     |
| 1,3-Dichlorobenzene       | ND | 12  | "     |
| 1,4-Dichlorobenzene       | ND | 12  | "     |
| 1,2-Dichlorobenzene       | ND | 12  | "     |
| 1,2,4-Trichlorobenzene    | ND | 38  | "     |
| Hexachlorobutadiene       | ND | 54  | "     |

|                                 |     |   |     |      |        |
|---------------------------------|-----|---|-----|------|--------|
| Surrogate: Toluene-d8           | 216 | " | 207 | 104  | 78-125 |
| Surrogate: 4-Bromofluorobenzene | 346 | " | 364 | 94.9 | 77-127 |

**LCS (EB50508-BS1)**

Prepared & Analyzed: 05-Feb-15

|                                       |     |     |       |      |      |        |
|---------------------------------------|-----|-----|-------|------|------|--------|
| Dichlorodifluoromethane (F12)         | 88  | 5.0 | ug/m3 | 101  | 87.4 | 70-130 |
| Vinyl chloride                        | 46  | 2.6 | "     | 52.0 | 88.2 | 70-130 |
| Chloroethane                          | 48  | 8.0 | "     | 53.6 | 89.8 | 70-130 |
| Trichlorofluoromethane (F11)          | 110 | 5.6 | "     | 113  | 99.1 | 70-130 |
| 1,1-Dichloroethene                    | 74  | 4.0 | "     | 80.8 | 91.9 | 70-130 |
| 1,1,2-Trichlorotrifluoroethane (F113) | 150 | 7.7 | "     | 155  | 96.6 | 70-130 |
| Methylene chloride (Dichloromethane)  | 66  | 3.5 | "     | 70.8 | 93.4 | 70-130 |
| trans-1,2-Dichloroethene              | 70  | 8.0 | "     | 80.8 | 86.5 | 70-130 |
| 1,1-Dichloroethane                    | 78  | 4.1 | "     | 82.4 | 94.1 | 70-130 |
| cis-1,2-Dichloroethene                | 76  | 4.0 | "     | 80.0 | 95.1 | 70-130 |
| Chloroform                            | 98  | 4.9 | "     | 99.2 | 98.6 | 70-130 |
| 1,1,1-Trichloroethane                 | 110 | 5.5 | "     | 111  | 94.8 | 70-130 |
| 1,2-Dichloroethane (EDC)              | 76  | 4.1 | "     | 82.4 | 92.3 | 70-130 |
| Benzene                               | 63  | 3.2 | "     | 64.8 | 97.4 | 70-130 |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50508 - TO-15**

**LCS (EB50508-BS1)**

Prepared & Analyzed: 05-Feb-15

|                                 |     |     |       |      |  |      |        |  |  |  |
|---------------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Carbon tetrachloride            | 120 | 6.4 | ug/m3 | 128  |  | 96.9 | 70-130 |  |  |  |
| Trichloroethene                 | 110 | 5.5 | "     | 110  |  | 103  | 70-130 |  |  |  |
| Toluene                         | 76  | 3.8 | "     | 76.8 |  | 99.3 | 70-130 |  |  |  |
| 1,1,2-Trichloroethane           | 100 | 5.5 | "     | 111  |  | 93.7 | 70-130 |  |  |  |
| Tetrachloroethene               | 130 | 6.9 | "     | 138  |  | 94.0 | 70-130 |  |  |  |
| 1,1,1,2-Tetrachloroethane       | 130 | 7.0 | "     | 140  |  | 92.2 | 70-130 |  |  |  |
| Ethylbenzene                    | 86  | 4.4 | "     | 88.4 |  | 97.5 | 70-130 |  |  |  |
| m,p-Xylene                      | 180 | 8.8 | "     | 177  |  | 103  | 70-130 |  |  |  |
| o-Xylene                        | 88  | 4.4 | "     | 88.4 |  | 100  | 70-130 |  |  |  |
| 1,1,2,2-Tetrachloroethane       | 120 | 7.0 | "     | 140  |  | 85.1 | 70-130 |  |  |  |
| Surrogate: Toluene-d8           | 211 |     | "     | 207  |  | 102  | 78-125 |  |  |  |
| Surrogate: 4-Bromofluorobenzene | 423 |     | "     | 364  |  | 116  | 77-127 |  |  |  |

**LCS Dup (EB50508-BSD1)**

Prepared & Analyzed: 05-Feb-15

|                                       |     |     |       |      |  |      |        |       |    |  |
|---------------------------------------|-----|-----|-------|------|--|------|--------|-------|----|--|
| Dichlorodifluoromethane (F12)         | 100 | 5.0 | ug/m3 | 101  |  | 101  | 70-130 | 14.7  | 25 |  |
| Vinyl chloride                        | 51  | 2.6 | "     | 52.0 |  | 98.1 | 70-130 | 10.5  | 25 |  |
| Chloroethane                          | 52  | 8.0 | "     | 53.6 |  | 96.1 | 70-130 | 6.82  | 25 |  |
| Trichlorofluoromethane (F11)          | 120 | 5.6 | "     | 113  |  | 105  | 70-130 | 5.48  | 25 |  |
| 1,1-Dichloroethene                    | 77  | 4.0 | "     | 80.8 |  | 95.5 | 70-130 | 3.77  | 25 |  |
| 1,1,2-Trichlorotrifluoroethane (F113) | 150 | 7.7 | "     | 155  |  | 99.1 | 70-130 | 2.54  | 25 |  |
| Methylene chloride (Dichloromethane)  | 68  | 3.5 | "     | 70.8 |  | 96.0 | 70-130 | 2.79  | 25 |  |
| trans-1,2-Dichloroethene              | 72  | 8.0 | "     | 80.8 |  | 88.6 | 70-130 | 2.39  | 25 |  |
| 1,1-Dichloroethane                    | 76  | 4.1 | "     | 82.4 |  | 92.5 | 70-130 | 1.71  | 25 |  |
| cis-1,2-Dichloroethene                | 77  | 4.0 | "     | 80.0 |  | 96.2 | 70-130 | 1.10  | 25 |  |
| Chloroform                            | 99  | 4.9 | "     | 99.2 |  | 99.8 | 70-130 | 1.15  | 25 |  |
| 1,1,1-Trichloroethane                 | 110 | 5.5 | "     | 111  |  | 100  | 70-130 | 5.39  | 25 |  |
| 1,2-Dichloroethane (EDC)              | 82  | 4.1 | "     | 82.4 |  | 99.0 | 70-130 | 6.98  | 25 |  |
| Benzene                               | 64  | 3.2 | "     | 64.8 |  | 99.4 | 70-130 | 2.08  | 25 |  |
| Carbon tetrachloride                  | 130 | 6.4 | "     | 128  |  | 99.9 | 70-130 | 2.99  | 25 |  |
| Trichloroethene                       | 110 | 5.5 | "     | 110  |  | 101  | 70-130 | 1.37  | 25 |  |
| Toluene                               | 74  | 3.8 | "     | 76.8 |  | 95.8 | 70-130 | 3.57  | 25 |  |
| 1,1,2-Trichloroethane                 | 100 | 5.5 | "     | 111  |  | 93.5 | 70-130 | 0.212 | 25 |  |
| Tetrachloroethene                     | 130 | 6.9 | "     | 138  |  | 90.6 | 70-130 | 3.67  | 25 |  |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50508 - TO-15**

**LCS Dup (EB50508-BSD1)**

Prepared & Analyzed: 05-Feb-15

|                                 |     |     |       |      |  |      |        |      |    |  |
|---------------------------------|-----|-----|-------|------|--|------|--------|------|----|--|
| 1,1,1,2-Tetrachloroethane       | 130 | 7.0 | ug/m3 | 140  |  | 94.1 | 70-130 | 2.03 | 25 |  |
| Ethylbenzene                    | 88  | 4.4 | "     | 88.4 |  | 99.1 | 70-130 | 1.62 | 25 |  |
| m,p-Xylene                      | 180 | 8.8 | "     | 177  |  | 104  | 70-130 | 1.03 | 25 |  |
| o-Xylene                        | 90  | 4.4 | "     | 88.4 |  | 102  | 70-130 | 1.53 | 25 |  |
| 1,1,2,2-Tetrachloroethane       | 130 | 7.0 | "     | 140  |  | 90.3 | 70-130 | 5.90 | 25 |  |
| Surrogate: Toluene-d8           | 207 |     | "     | 207  |  | 99.8 | 78-125 |      |    |  |
| Surrogate: 4-Bromofluorobenzene | 438 |     | "     | 364  |  | 120  | 77-127 |      |    |  |

|                                                                  |                                                                                |                              |
|------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------|
| Terra Associates<br>12525 Willows Rd. #101<br>Kirkland, WA 98034 | Project: MC012915-10<br>Project Number: 6552<br>Project Manager: Mr. Chuck Lie | Reported:<br>09-Feb-15 12:46 |
|------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------|

**Volatile Organic Compounds by 8260SV - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50602 - EPA 5030**

|                             |                                |     |       |  |  |  |  |  |  |  |
|-----------------------------|--------------------------------|-----|-------|--|--|--|--|--|--|--|
| <b>Blank (EB50602-BLK1)</b> | Prepared & Analyzed: 03-Feb-15 |     |       |  |  |  |  |  |  |  |
| 1,1-Difluoroethane (LCC)    | ND                             | 500 | ug/m3 |  |  |  |  |  |  |  |

Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

**TPHv / APH on Vapors by EPA Method TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EB50508 - TO-15**

**Blank (EB50508-BLK1)**

Prepared & Analyzed: 05-Feb-15

|                           |    |     |       |
|---------------------------|----|-----|-------|
| TPHv (C5 - C8) aliphatic  | ND | 100 | ug/m3 |
| TPHv (C9 - C12) aliphatic | ND | 100 | "     |
| TPHv (C9 - C10) aromatic  | ND | 100 | "     |



Terra Associates  
12525 Willows Rd. #101  
Kirkland, WA 98034

Project: MC012915-10  
Project Number: 6552  
Project Manager: Mr. Chuck Lie

Reported:  
09-Feb-15 12:46

### Notes and Definitions

|      |                                                                                                                                                                      |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R-05 | The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.                                             |
| E    | The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag). |
| LCC  | Leak Check Compound                                                                                                                                                  |
| ND   | Analyte NOT DETECTED at or above the reporting limit                                                                                                                 |
| MDL  | Method Detection Limit                                                                                                                                               |
| %REC | Percent Recovery                                                                                                                                                     |
| RPD  | Relative Percent Difference                                                                                                                                          |

### Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at [www.handpimg.com/about/certifications](http://www.handpimg.com/about/certifications).

# VAPOR / AIR Chain of Custody

DATE: 1/26/15  
Page 1 of 1

| Lab Client and Project Information                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                             |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Lab Client/Consultant: <u>Terra Associates Inc.</u>                                                                                                                                                                                                      |  | Project Name / #: <u>6552</u>                                                                                                                                                                                                               |  |
| Lab Client Project Manager: <u>Chuck Lie</u>                                                                                                                                                                                                             |  | Project Location:                                                                                                                                                                                                                           |  |
| Lab Client Address: <u>12525 Willows Road Suite 101</u>                                                                                                                                                                                                  |  | Report E-Mail(s): <u>CLie@terra-associates.com</u>                                                                                                                                                                                          |  |
| Lab Client City, State, Zip: <u>Kirkland, WA 98034</u>                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                             |  |
| Phone Number: <u>(425) 821-7777</u>                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                             |  |
| Reporting Requirements                                                                                                                                                                                                                                   |  | Turnaround Time                                                                                                                                                                                                                             |  |
| <input type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV<br><input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____<br><input type="checkbox"/> CA Geotracker Global ID: _____ |  | <input checked="" type="checkbox"/> 5-7 day Std <input type="checkbox"/> 24-Hr Rush<br><input type="checkbox"/> 3-day Rush <input type="checkbox"/> Mobile Lab<br><input type="checkbox"/> 48-Hr Rush <input type="checkbox"/> Other: _____ |  |
| Sampler Information                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                             |  |
| Sampler(s): <u>Nicholas R. Hoffman</u>                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                             |  |
| Signature: <u>[Signature]</u>                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                             |  |
| Date: <u>1/26/15</u>                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                             |  |

| Sample Receipt (Lab Use Only)                                                                                               |                            |
|-----------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Date Rec'd: <u>1/29/15</u>                                                                                                  | Control #: <u>15001.02</u> |
| H&P Project # <u>MC012915-10</u>                                                                                            |                            |
| Lab Work Order # <u>E501105</u>                                                                                             |                            |
| Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below |                            |
| Receipt Gauge ID: <u>11167</u>                                                                                              | Temp: <u>21°C</u>          |
| Outside Lab:                                                                                                                |                            |
| Receipt Notes/Tracking #:                                                                                                   |                            |
| <u>1293TT619046644350</u><br><u>Container ID written by Tori U. 1/29/15</u><br>Lab PM Initials: <u>SN</u>                   |                            |

## Additional Instructions to Laboratory:

- ☐ Check if Project Analyte List is Attached  
 \* Preferred VOC units (please choose one):  
☐ µg/L   ☒ µg/m<sup>3</sup>   ☐ ppbv   ☐ ppmv

API Aliphatics & Aromatics  
Full VOC list TO-15  
Leak testing with difluoroethane

| SAMPLE NAME | FIELD POINT NAME (if applicable) | DATE mm/dd/yy | TIME 24hr clock | SAMPLE TYPE<br>Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV) | CONTAINER SIZE & TYPE<br>400mL/1L/6L Summa or Tedlar or Tube | CONTAINER ID (###) | Lab use only: Receipt Vac | VOCs Standard Full List<br><input type="checkbox"/> 8260SV <input checked="" type="checkbox"/> TO-15 | VOCs Short List / Project List<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 | Oxygenates<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 | Naphthalene<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 <input type="checkbox"/> TO-17m | TPHv as Gas<br><input type="checkbox"/> 8260SV/m <input type="checkbox"/> TO-15m | TPHv as Diesel (sorbent tube)<br><input type="checkbox"/> TO-17m | Aromatic/Aliphatic Fractions<br><input type="checkbox"/> 8260SV/m <input checked="" type="checkbox"/> TO-15m | Leak Check Compound<br><input checked="" type="checkbox"/> DFA <input type="checkbox"/> IPA <input type="checkbox"/> He | Methane by EPA 8015m | Fixed Gases by ASTM D1945<br><input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2 |  |  |  |
|-------------|----------------------------------|---------------|-----------------|---------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------|---------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------|--|--|--|
| HNE         |                                  | 1/26/15       | 13:50           | SS                                                                              | 400mL                                                        | 069                | -60                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
| HC          |                                  |               | 13:28           | SS                                                                              |                                                              | 169                | -35                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
| HSW         |                                  |               | 13:15           | SS                                                                              |                                                              | 159                | -45                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
| KNE         |                                  |               | 12:30           | SS                                                                              |                                                              | 306                | -57                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
| KC          |                                  |               | 12:00           | SS                                                                              |                                                              | 031                | -90                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
| KSW         |                                  |               | 11:35           | SS                                                                              |                                                              | 018                | -06                       | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  | X                                                                                                            | X                                                                                                                       |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                  |                                                                                                              |                                                                                                                         |                      |                                                                                                                   |  |  |  |

|                                              |                     |                      |                    |                                 |                         |                      |                   |
|----------------------------------------------|---------------------|----------------------|--------------------|---------------------------------|-------------------------|----------------------|-------------------|
| Approved/Relinquished by: <u>[Signature]</u> | Company: <u>TAI</u> | Date: <u>1/26/15</u> | Time: <u>15:30</u> | Received by: <u>[Signature]</u> | Company: <u>H&amp;P</u> | Date: <u>1/29/15</u> | Time: <u>1020</u> |
| Approved/Relinquished by:                    | Company:            | Date:                | Time:              | Received by:                    | Company:                | Date:                | Time:             |
| Approved/Relinquished by:                    | Company:            | Date:                | Time:              | Received by:                    | Company:                | Date:                | Time:             |

| Radon Analysis (EPA Method GS: Grab Sample/Scintillation Cell counting)                                                                                   |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------|-------|----------|-------|----------------|-------|-----------|-------|--------|-----------|---------|---------|--------|-----------|-----------|-------|--------|--|---------|--|-------|--|---------------|--|-------|--|-----------|--|
| For H&P/Terra Associates Inc                                                                                                                              |  | Client Project Number: 6552; HP#MC012715-10                           |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Samples Collected by: Nicolas Hoffman                                                                                                                     |  | Sample Dates: 1/26/15                                                 |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Location: Seattle, WA                                                                                                                                     |  | Sample containers: Tedlar bags                                        |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Analysts: Doug Hammond                                                                                                                                    |  | Assumed Site Pressure 1.00 atm                                        |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Phone: 310-490-7896                                                                                                                                       |  | based on an elevation of 30 ft                                        |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| email: dhammond@usc.edu                                                                                                                                   |  | Time Zone adjustment: add to decay time                               |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | 0                                                                     |       | hours    |       | Collect (PST)  |       | Run (PST) |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Summary                                                                                                                                                   |  | Collection                                                            |       | Analysis |       | Lab Duplicates |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Date                                                                  | time  | Date     | time  | Vol run        | Conc. | ±1 sig    | mean  | ±1ssd  | Notes     |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  |                                                                       | (PST) |          | (PST) | (cc)           | pCi/L | pCi/L     | pCi/L | pCi/L  |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Received 01/28/15                                                                                                                                         |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| 1 KC                                                                                                                                                      |  | 1/26/15                                                               | 12:00 |          |       |                |       |           |       |        | Empty bag |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| 2 KIA                                                                                                                                                     |  | 1/26/15                                                               | 12:10 | 1/28/15  | 17:08 | 120            | 0.31  | 0.04      |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| 3 HC                                                                                                                                                      |  | 1/26/15                                                               | 13:40 | 1/28/15  | 17:27 | 40             | 13.4  | 0.7       | 13.0  | 0.7    |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Lab Dupe                                                                                                                                                  |  | 1/26/15                                                               | 13:40 | 1/28/15  | 17:21 | 40             | 12.5  | 0.6       |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| 5 HIA                                                                                                                                                     |  | 1/26/15                                                               | 13:55 | 1/28/15  | 17:15 | 120            | 0.63  | 0.05      |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Uncertainty given in pCi/liter is based on counting statistics for low activity samples. For high activity samples uncertainty is ±5%.                    |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| The Lower Limit of Detection for Rn (95% confidence level as recommended by EPA 402-R-95-012, Oct. 97) is 0.14 pCi/liter.                                 |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Results are reported based on standardization with NIST-traceable radon sources.                                                                          |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| These results are for application of naturally-occurring radon as a tracer of soil vapor intrusion, but are not intended for evaluation of radon hazards. |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Results corrected to in situ pressure as noted above                                                                                                      |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Raw Data, Calculation factors, and Analytical Details                                                                                                     |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Sample ID                                                                                                                                                 |  | Collection                                                            |       | Analysis |       | Count in       |       | He        |       | Air/He |           | Vol run |         | Press  |           | obs       |       | sig    |  | Decay T |  | Decay |  | Concentration |  | count |  | Notes     |  |
|                                                                                                                                                           |  | Date                                                                  | Time  | Date     | Time  | cell/ch        | eff   | eff       | (cc)  | factor | dpm       | dpm     | (hours) | factor | dpm/liter | pCi/liter | stats | ±1 sig |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  |                                                                       | (PST) |          | (PST) |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Received 01/28/15                                                                                                                                         |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| 1 KC                                                                                                                                                      |  | 1/26/15                                                               | 12:00 |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  | Empty bag |  |
| 2 KIA                                                                                                                                                     |  | 1/26/15                                                               | 12:10 | 1/28/15  | 17:08 | 81/31          | 0.818 | 0.97      | 120   | 1.00   | 0.04      | 0.01    | 53.0    | 1.492  | 0.69      | 0.31      | 0.04  |        |  |         |  |       |  |               |  |       |  |           |  |
| 3 HC                                                                                                                                                      |  | 1/26/15                                                               | 13:40 | 1/28/15  | 17:27 | 74/34          | 0.915 | 0.99      | 40    | 1.00   | 0.73      | 0.02    | 51.8    | 1.479  | 30        | 13.4      | 0.4   |        |  |         |  |       |  |               |  |       |  |           |  |
| Lab Dupe                                                                                                                                                  |  | 1/26/15                                                               | 13:40 | 1/28/15  | 17:21 | 61/33          | 0.821 | 0.99      | 40    | 1.00   | 0.61      | 0.02    | 51.7    | 1.478  | 28        | 12.5      | 0.4   |        |  |         |  |       |  |               |  |       |  |           |  |
| 5 HIA                                                                                                                                                     |  | 1/26/15                                                               | 13:55 | 1/28/15  | 17:15 | 82/32          | 0.743 | 0.97      | 120   | 1.00   | 0.08      | 0.01    | 51.3    | 1.474  | 1.40      | 0.63      | 0.05  |        |  |         |  |       |  |               |  |       |  |           |  |
| Decay corrections based on Rn decay constant of 0.1813 per day                                                                                            |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Conversion from dpm based on 0.4504 pCi/dpm                                                                                                               |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Blanks are negligible.                                                                                                                                    |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Radon Conc = ((0.4504)/(1000))(obs dpm)/(decay factor)/(Press factor)/((cc used)(He eff)(Air/He))                                                         |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| (in pCi/liter)                                                                                                                                            |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Definitions:                                                                                                                                              |  |                                                                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Cell/ch:                                                                                                                                                  |  | Counting cell and channel used                                        |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| He eff:                                                                                                                                                   |  | Cell and counter efficiency using helium matrix                       |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Air/He:                                                                                                                                                   |  | Correction for matrix counting gas density                            |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Sample vol:                                                                                                                                               |  | Volume analyzed (cc)                                                  |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| Press factor:                                                                                                                                             |  | Correction to in situ pressure based on collection altitude           |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
| obs dpm:                                                                                                                                                  |  | observed radon activity (disintegrations per minute) when analyzed    |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | sig dpm                                                               |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Decay T:                                                              |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Decay factor:                                                         |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | dpm/liter:                                                            |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | pCi/liter:                                                            |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | count stats:                                                          |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | uncertainty (± 1 sig) in dpm based on counting statistics             |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | time elapsed from sampling to analysis                                |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Correction factor for decay from collection to analysis               |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Radon concentration in disintegrations per minute per liter of sample |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | Radon concentration in picoCuries per liter                           |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |
|                                                                                                                                                           |  | uncertainty in observed radon based on counting statistics            |       |          |       |                |       |           |       |        |           |         |         |        |           |           |       |        |  |         |  |       |  |               |  |       |  |           |  |

## VAPOR / AIR Chain of Custody

| Lab Client and Project Information                                                                                                                                                                                                                       |                                                                                                                                                                                                                                  |                                                                                  |                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------|
| Lab Client/Consultant:                                                                                                                                                                                                                                   | Terra Associates Inc.                                                                                                                                                                                                            | Project Name / #:                                                                | 6552                      |
| Lab Client Project Manager:                                                                                                                                                                                                                              | Chuck Wio                                                                                                                                                                                                                        | Project Location:                                                                | *                         |
| Lab Client Address:                                                                                                                                                                                                                                      | 12525 Willows Road Site 101                                                                                                                                                                                                      | Report E-Mail(s):                                                                | clie@terra-associates Inc |
| Lab Client City, State, Zip:                                                                                                                                                                                                                             | Kirkland, WA, 98034                                                                                                                                                                                                              |                                                                                  |                           |
| Phone Number:                                                                                                                                                                                                                                            | (425) 821-7777                                                                                                                                                                                                                   |                                                                                  |                           |
| Reporting Requirements                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                  | Turnaround Time                                                                  |                           |
| <input type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV<br><input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____<br><input type="checkbox"/> CA Geotracker Global ID: _____ | <input type="checkbox"/> 5-7 day Std <input type="checkbox"/> 24-Hr Rush<br><input type="checkbox"/> 3-day Rush <input type="checkbox"/> Mobile Lab<br><input type="checkbox"/> 48-Hr Rush <input type="checkbox"/> Other: _____ | Sampler(s): Nico & R. Hoffman<br>Signature: <i>Nico Hoffman</i><br>Date: 1/26/15 |                           |

|                                                                                    |                      |
|------------------------------------------------------------------------------------|----------------------|
| Sample Receipt (Lab Use Only)                                                      |                      |
| Date Rec'd: 1/27/15                                                                | Control #: 150001.01 |
| H&P Project # MC012715-10                                                          |                      |
| Lab Work Order #                                                                   |                      |
| Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | See Notes Below      |
| Receipt Gauge ID:                                                                  | Temp: 24°C           |
| Outside Lab: USC                                                                   |                      |
| Receipt Notes/Tracking #:                                                          |                      |
| Lab PM Initials: SN                                                                |                      |

[illegible]

|                                              |               |             |                                 |               |             |
|----------------------------------------------|---------------|-------------|---------------------------------|---------------|-------------|
| Approved/Relinquished by: <i>[Signature]</i> | Date: 1/26/15 | Time: 15:30 | Received by: <i>[Signature]</i> | Date: 1/27/15 | Time: 15:05 |
| Company: TAD                                 |               |             | Company: H4P                    |               |             |
| Approved/Relinquished by: <i>[Signature]</i> | Date: 1/26/15 | Time: 15:30 | Received by: <i>[Signature]</i> | Date: 1/28/15 | Time: 15:00 |
| Company: TAD                                 |               |             | Company: VSC                    |               |             |
| Approved/Relinquished by: <i>[Signature]</i> | Date: 1/26/15 | Time: 15:30 | Received by: <i>[Signature]</i> | Date: 1/28/15 | Time: 15:00 |
| Company: TAD                                 |               |             | Company: VSC                    |               |             |

21 May 2015

Mr. Chuck Lie  
Terra Associates  
12525 Willows Road, Suite 101  
Kirkland, WA 98034



H&P Project: MC050715-11  
Client Project: 6552 / Seattle, WA

Dear Mr. Chuck Lie:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 07-May-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Janis Villarreal  
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

Terra Associates  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Project: MC050715-11  
Project Number: 6552 / Seattle, WA  
Project Manager: Mr. Chuck Lie

Reported:  
21-May-15 10:19

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|--------------|---------------|
| 5-3-1     | E505024-01    | Vapor  | 03-May-15    | 07-May-15     |
| 5-3-2     | E505024-02    | Vapor  | 03-May-15    | 07-May-15     |
| 5-3-3     | E505024-03    | Vapor  | 03-May-15    | 07-May-15     |
| 5-3-4     | E505024-04    | Vapor  | 03-May-15    | 07-May-15     |

Terra Associates  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Project: MC050715-11  
Project Number: 6552 / Seattle, WA  
Project Manager: Mr. Chuck Lie

Reported:  
21-May-15 10:19

### Petroleum Hydrocarbon Analysis

#### H&P Mobile Geochemistry, Inc.

| Analyte                                                                      | Result     | Reporting<br>Limit | Units | Dilution<br>Factor | Batch   | Prepared  | Analyzed  | Method    | Notes |
|------------------------------------------------------------------------------|------------|--------------------|-------|--------------------|---------|-----------|-----------|-----------|-------|
| <b>5-3-1 (E505024-01) Vapor    Sampled: 03-May-15    Received: 07-May-15</b> |            |                    |       |                    |         |           |           |           |       |
| TPHv (C5 - C8) aliphatic                                                     | <b>170</b> | 100                | ug/m3 | 1                  | EE51305 | 13-May-15 | 13-May-15 | EPA TO-15 |       |
| TPHv (C9 - C12) aliphatic                                                    | <b>290</b> | 100                | "     | "                  | "       | "         | "         | "         |       |
| TPHv (C9 - C10) aromatic                                                     | ND         | 100                | "     | "                  | "       | "         | "         | "         |       |
| <b>5-3-2 (E505024-02) Vapor    Sampled: 03-May-15    Received: 07-May-15</b> |            |                    |       |                    |         |           |           |           |       |
| TPHv (C5 - C8) aliphatic                                                     | ND         | 100                | ug/m3 | 1                  | EE51110 | 08-May-15 | 08-May-15 | EPA TO-15 |       |
| TPHv (C9 - C12) aliphatic                                                    | <b>150</b> | 100                | "     | "                  | "       | "         | "         | "         |       |
| TPHv (C9 - C10) aromatic                                                     | ND         | 100                | "     | "                  | "       | "         | "         | "         |       |
| <b>5-3-3 (E505024-03) Vapor    Sampled: 03-May-15    Received: 07-May-15</b> |            |                    |       |                    |         |           |           |           |       |
| TPHv (C5 - C8) aliphatic                                                     | ND         | 100                | ug/m3 | 1                  | EE51110 | 08-May-15 | 08-May-15 | EPA TO-15 |       |
| TPHv (C9 - C12) aliphatic                                                    | ND         | 100                | "     | "                  | "       | "         | "         | "         |       |
| TPHv (C9 - C10) aromatic                                                     | ND         | 100                | "     | "                  | "       | "         | "         | "         |       |
| <b>5-3-4 (E505024-04) Vapor    Sampled: 03-May-15    Received: 07-May-15</b> |            |                    |       |                    |         |           |           |           |       |
| TPHv (C5 - C8) aliphatic                                                     | <b>290</b> | 100                | ug/m3 | 1                  | EE51110 | 08-May-15 | 08-May-15 | EPA TO-15 |       |
| TPHv (C9 - C12) aliphatic                                                    | <b>120</b> | 100                | "     | "                  | "       | "         | "         | "         |       |
| TPHv (C9 - C10) aromatic                                                     | ND         | 100                | "     | "                  | "       | "         | "         | "         |       |

Terra Associates  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Project: MC050715-11  
Project Number: 6552 / Seattle, WA  
Project Manager: Mr. Chuck Lie

Reported:  
21-May-15 10:19

**Petroleum Hydrocarbon Analysis - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch EE51110 - TO-15**

**Blank (EE51110-BLK1)**

Prepared & Analyzed: 08-May-15

|                           |    |     |       |
|---------------------------|----|-----|-------|
| TPHv (C5 - C8) aliphatic  | ND | 100 | ug/m3 |
| TPHv (C9 - C12) aliphatic | ND | 100 | "     |
| TPHv (C9 - C10) aromatic  | ND | 100 | "     |

**Batch EE51305 - TO-15**

**Blank (EE51305-BLK1)**

Prepared & Analyzed: 13-May-15

|                           |    |     |       |
|---------------------------|----|-----|-------|
| TPHv (C5 - C8) aliphatic  | ND | 100 | ug/m3 |
| TPHv (C9 - C12) aliphatic | ND | 100 | "     |
| TPHv (C9 - C10) aromatic  | ND | 100 | "     |



Terra Associates  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Project: MC050715-11  
Project Number: 6552 / Seattle, WA  
Project Manager: Mr. Chuck Lie

Reported:  
21-May-15 10:19

### Notes and Definitions

|      |                                                      |
|------|------------------------------------------------------|
| LCC  | Leak Check Compound                                  |
| ND   | Analyte NOT DETECTED at or above the reporting limit |
| MDL  | Method Detection Limit                               |
| %REC | Percent Recovery                                     |
| RPD  | Relative Percent Difference                          |

### Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at [www.handpimg.com/about/certifications](http://www.handpimg.com/about/certifications).

| Lab Client and Project Information                     |                                                                                            |  |  |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------|--|--|
| Lab Client/Consultant: <u>Terra Associates Inc</u>     | Project Name / #: <u>6552</u>                                                              |  |  |
| Lab Client Project Manager: <u>Chcek hie</u>           | Project Location: <u>Seattle, WA</u>                                                       |  |  |
| Lab Client Address: <u>12525 Willows Rd Suite 101</u>  | Report E-Mail(s): <u>CLie@terra-associates.com</u><br><u>NHoffman@terra-associates.com</u> |  |  |
| Lab Client City, State, Zip: <u>Kirkland, WA 98034</u> |                                                                                            |  |  |
| Phone Number: <u>(425) 821-7777</u>                    |                                                                                            |  |  |

| Reporting Requirements                                                                                                                                                                                                                                                         | Turnaround Time                                                                                                                                                                                                                             | Sampler Information                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV<br><input checked="" type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____<br><input type="checkbox"/> CA Geotracker Global ID: _____ | <input checked="" type="checkbox"/> 5-7 day Std <input type="checkbox"/> 24-Hr Rush<br><input type="checkbox"/> 3-day Rush <input type="checkbox"/> Mobile Lab<br><input type="checkbox"/> 48-Hr Rush <input type="checkbox"/> Other: _____ | Sampler(s): <u>Nicolas R. Hoffman</u><br>Signature: <u>[Signature]</u><br>Date: <u>5/3/15</u> |

| Sample Receipt (Lab Use Only)                                                                                               |                             |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Date Rec'd: <u>5/7/15</u>                                                                                                   | Control #: <u>150346.01</u> |
| H&P Project # <u>MC050715-11</u>                                                                                            |                             |
| Lab Work Order # <u>ES05024</u>                                                                                             |                             |
| Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below |                             |
| Receipt Gauge ID: <u>1076084</u>                                                                                            | Temp: <u>21°C</u>           |
| Outside Lab:                                                                                                                |                             |
| Receipt Notes/Tracking #:<br><u>1293TT619048682636</u><br><u>1293TT619048773243</u>                                         |                             |
| Lab PM Initials: <u>KB</u>                                                                                                  |                             |

**Additional Instructions to Laboratory:**

☐ Check if Project Analyte List is Attached

\* Preferred VOC units (please choose one):

☐ µg/L ☒ µg/m<sup>3</sup> ☐ ppbv ☐ ppmv

| SAMPLE NAME | FIELD POINT NAME (if applicable) | DATE mm/dd/yy | TIME 24hr clock | SAMPLE TYPE<br>Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV) | CONTAINER SIZE & TYPE<br>400mL/1L/6L Summa or Tedlar or Tube | CONTAINER ID (###) | Lab use only: Receipt Vac | VOCs Standard Full List<br><input type="checkbox"/> 8260SV <input checked="" type="checkbox"/> TO-15 | VOCs Short List / Project List<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 | Oxygenates<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 | Naphthalene<br><input type="checkbox"/> 8260SV <input type="checkbox"/> TO-15 <input type="checkbox"/> TO-17m | TPHv as Gas<br><input type="checkbox"/> 8260SV/m <input type="checkbox"/> TO-15m | TPHv as Diesel (sorbet tube)<br><input type="checkbox"/> TO-17m | Aromatic/Aliphatic Fractions<br><input type="checkbox"/> 8260SV/m <input checked="" type="checkbox"/> TO-15m | Leak Check Compound<br><input type="checkbox"/> DFA <input type="checkbox"/> IPA <input type="checkbox"/> He | Methane by EPA 8015m | Fixed Gases by ASTM D1945<br><input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2 |  |  |  |
|-------------|----------------------------------|---------------|-----------------|---------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------|---------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------|--|--|--|
| S-3-1       |                                  | 5/3/15        | 17:26           | IA                                                                              | 6L Summa                                                     | 449                | -2.41                     | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 | X                                                                                                            |                                                                                                              |                      |                                                                                                                   |  |  |  |
| S-3-2       |                                  | 5/3/15        | 17:27           | IA                                                                              | 6L Summa                                                     | 294                | -8.38                     | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 | X                                                                                                            |                                                                                                              |                      |                                                                                                                   |  |  |  |
| S-3-3       |                                  | 5/3/15        | 17:31           | IA                                                                              | 6L Summa                                                     | ST018              | -5.64                     | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 | X                                                                                                            |                                                                                                              |                      |                                                                                                                   |  |  |  |
| S-3-4       |                                  | 5/3/15        | 17:32           | IA                                                                              | 6L Summa                                                     | 333                | -2.26                     | X                                                                                                    |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 | X                                                                                                            |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |
|             |                                  |               |                 |                                                                                 |                                                              |                    |                           |                                                                                                      |                                                                                                  |                                                                              |                                                                                                               |                                                                                  |                                                                 |                                                                                                              |                                                                                                              |                      |                                                                                                                   |  |  |  |

|                                              |                     |                     |                    |                                  |                         |                     |                   |
|----------------------------------------------|---------------------|---------------------|--------------------|----------------------------------|-------------------------|---------------------|-------------------|
| Approved/Relinquished by: <u>[Signature]</u> | Company: <u>TAI</u> | Date: <u>5/4/15</u> | Time: <u>11:00</u> | Received by: <u>Jon Unsworth</u> | Company: <u>H&amp;P</u> | Date: <u>5/7/15</u> | Time: <u>1020</u> |
| Approved/Relinquished by:                    | Company:            | Date:               | Time:              | Received by:                     | Company:                | Date:               | Time:             |
| Approved/Relinquished by:                    | Company:            | Date:               | Time:              | Received by:                     | Company:                | Date:               | Time:             |

**APPENDIX D  
ANALYTICAL TESTING  
VACUUM SYSTEM**

**5221 Ballard Avenue NW  
Seattle, Washington**

All vapor samples were placed into laboratory-provided tedlar bags. Each sample was given unique sample identification. An electric pump was used to fill the tedlar bags from a sample port in the inlet pipe of the Vacuum system. All samples were kept refrigerated pending delivery to OnSite Environmental Inc. in Redmond, Washington. Chain of custody protocols were followed for all samples. OnSite Environmental Inc. has accreditation from Ecology for all of the testing performed during this project.

All testing was performed within the designated holding times. At the laboratory, standard quality control procedures were followed. The procedures consisted of sample blanks, duplicates, and matrix spikes. All testing was within normal standards.

Based on our review of the laboratory data, it is our opinion that the results are acceptable for current use.



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

May 7, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1205-020

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 2, 2012.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: May 7, 2012  
Samples Submitted: May 2, 2012  
Laboratory Reference: 1205-020  
Project: 6552

### **Case Narrative**

Samples were collected on May 2, 2012 and received by the laboratory on May 2, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatograms for samples 3A and 102 are similar to mineral spirits.

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: May 7, 2012  
 Samples Submitted: May 2, 2012  
 Laboratory Reference: 1205-020  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>3A</b>               |                       |               |                      |                      |              |
| Laboratory ID:       | 05-020-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| m,p-Xylene           | <b>4.2</b>              | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| o-Xylene             | <b>ND</b>               | 5.0                   | EPA 8021      | 5-3-12               | 5-3-12               | U1           |
| Gasoline             | <b>1900</b>             | 100                   | NWTPH-Gx      | 5-3-12               | 5-3-12               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 89                      | 73-121                |               |                      |                      |              |
| <b>Client ID:</b>    | <b>102</b>              |                       |               |                      |                      |              |
| Laboratory ID:       | 05-020-02               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| m,p-Xylene           | <b>4.8</b>              | 1.0                   | EPA 8021      | 5-3-12               | 5-3-12               |              |
| o-Xylene             | <b>ND</b>               | 5.0                   | EPA 8021      | 5-3-12               | 5-3-12               | U1           |
| Gasoline             | <b>1700</b>             | 200                   | NWTPH-Gx      | 5-3-12               | 5-3-12               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 96                      | 73-121                |               |                      |                      |              |

Date of Report: May 7, 2012  
 Samples Submitted: May 2, 2012  
 Laboratory Reference: 1205-020  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0503A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 5-3-12        | 5-3-12        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 5-3-12        | 5-3-12        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 5-3-12        | 5-3-12        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 5-3-12        | 5-3-12        |       |
| o-Xylene            | ND               | 5.0            | EPA 8021 | 5-3-12        | 5-3-12        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 5-3-12        | 5-3-12        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 98               | 73-121         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 05-020-02 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 4.78      | 4.28 | NA          | NA |               | NA               | NA              | 11     | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1710      | 1440 | NA          | NA |               | NA               | NA              | 19     | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 96               | 95              | 73-121 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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# Chain of Custody

Page 1 of 1

|                                    |                       |               |              |                                                                            |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
|------------------------------------|-----------------------|---------------|--------------|----------------------------------------------------------------------------|--------------|-------------------------------|---------------|-----------------------------------------|----------|-----------------|-----------------------------|-----------------------------------------------|----------------------------|-----------|---------------------------------|---------------------------------------|-----------------------------------|-------------------|-------------------|-------------|---------------------------|------------|--|
| Company: <u>Terra Associates</u>   |                       |               |              | <b>Turnaround Request</b><br>(in working days)                             |              |                               |               | <b>Laboratory Number:</b> <u>05-020</u> |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Project Number: <u>6552</u>        |                       |               |              | <input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day           |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Project Name: _____                |                       |               |              | <input type="checkbox"/> 2 Days <input checked="" type="checkbox"/> 3 Days |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Project Manager: <u>Chuck Lie</u>  |                       |               |              | <input type="checkbox"/> Standard (7 Days) (TPH analysis 5 Days)           |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Sampled by: <u>Nicolas Hoffman</u> |                       |               |              | <input type="checkbox"/> _____ (other)                                     |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Lab ID                             | Sample Identification | Date Sampled  | Time Sampled | Matrix                                                                     | No. of Cont. | NWTPH-HCID                    | NWTPH-Gx/BTEX | NWTPH-Gx                                | NWTPH-Dx | Volatiles 8260B | Halogenated Volatiles 8260B | Semivolatiles 8270D/SIM (with low-level PAHs) | PAHs 8270D/SIM (low-level) | PCBs 8082 | Organochlorine Pesticides 8081A | Organophosphorus Pesticides 8270D/SIM | Chlorinated Acid Herbicides 8151A | Total RCRA Metals | Total MTCA Metals | TCLP Metals | HEM (oil and grease) 1664 | % Moisture |  |
| 1                                  | 3A                    | 5/2/12        | 14:00        | Air                                                                        | 1            |                               | X             |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| 2                                  | 10#2                  | 5/2/12        | 14:45        | Air                                                                        | 1            |                               | X             |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Signature                          |                       | Company       |              | Date                                                                       | Time         | Comments/Special Instructions |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| <u>[Signature]</u>                 |                       | <u>TAI</u>    |              | <u>5/2/12</u>                                                              | <u>16:10</u> | <u>Weight by Volume</u>       |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Relinquished                       |                       | Received      |              |                                                                            |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Relinquished                       |                       | Received      |              |                                                                            |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Relinquished                       |                       | Received      |              |                                                                            |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Relinquished                       |                       | Received      |              |                                                                            |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |
| Reviewed/Date                      |                       | Reviewed/Date |              | Chromatograms with final report <input type="checkbox"/>                   |              |                               |               |                                         |          |                 |                             |                                               |                            |           |                                 |                                       |                                   |                   |                   |             |                           |            |  |



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May 16, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1205-063

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 8, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: May 16, 2012  
Samples Submitted: May 8, 2012  
Laboratory Reference: 1205-063  
Project: 6552

### **Case Narrative**

Samples were collected on May 8, 2012 and received by the laboratory on May 8, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

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: May 16, 2012  
 Samples Submitted: May 8, 2012  
 Laboratory Reference: 1205-063  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>102</b>              |                       |               |                      |                      |              |
| Laboratory ID:       | 05-063-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-9-12               | 5-9-12               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-9-12               | 5-9-12               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-9-12               | 5-9-12               |              |
| m,p-Xylene           | <b>3.4</b>              | 1.0                   | EPA 8021      | 5-9-12               | 5-9-12               |              |
| o-Xylene             | <b>ND</b>               | 5.0                   | EPA 8021      | 5-9-12               | 5-9-12               |              |
| Gasoline             | <b>2100</b>             | 200                   | NWTPH-Gx      | 5-9-12               | 5-9-12               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 96                      | 73-121                |               |                      |                      |              |

Date of Report: May 16, 2012  
 Samples Submitted: May 8, 2012  
 Laboratory Reference: 1205-063  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0509A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 5-9-12        | 5-9-12        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 5-9-12        | 5-9-12        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 5-9-12        | 5-9-12        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 5-9-12        | 5-9-12        |       |
| o-Xylene            | ND               | 5.0            | EPA 8021 | 5-9-12        | 5-9-12        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 5-9-12        | 5-9-12        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 103              | 73-121         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 05-063-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | 3.45      | 3.44        | NA            | NA               | NA              | 0      | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | 2060      | 2050        | NA            | NA               | NA              | 0      | 30        |       |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 96               | 101             | 73-121 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference



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# Chain of Custody

Page 1 of 1

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:

05-063

05-063

Company: Monsite Associates  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: Chuck Lie  
Sampled by: Nicolas R Hoffman

Lab ID: 102  
Sample Identification: 5/8/12 11:45 Air

## Number of Containers

NWTPH-HCID  
NWTPH-Gx/BTEX  
NWTPH-Gx  
NWTPH-Dx  
Volatiles 8260B  
Halogenated Volatiles 8260B  
Semivolatiles 8270D/SIM  
(with low-level PAHs)  
PAHs 8270D/SIM (low-level)  
PCBs 8082  
Organochlorine Pesticides 8081A  
Organophosphorus Pesticides 8270D/SIM  
Chlorinated Acid Herbicides 8151A  
Total RCRA / MTCA Metals (circle one)  
TCLP Metals  
HEM (oil and grease) 1664

% Moisture

| Signature          | Company    | Date          | Time         | Comments/Special Instructions                                                             |
|--------------------|------------|---------------|--------------|-------------------------------------------------------------------------------------------|
| <u>[Signature]</u> | <u>TAI</u> | <u>5/8/12</u> | <u>14:04</u> | <u>Report results weight by volume if molecules or compound weight needed call Chuck.</u> |
| Relinquished       |            |               |              |                                                                                           |
| Received           |            |               |              |                                                                                           |
| Relinquished       |            |               |              |                                                                                           |
| Received           |            |               |              |                                                                                           |
| Relinquished       |            |               |              |                                                                                           |
| Received           |            |               |              |                                                                                           |
| Relinquished       |            |               |              |                                                                                           |
| Received           |            |               |              |                                                                                           |
| Relinquished       |            |               |              |                                                                                           |
| Reviewed/Date      |            |               |              |                                                                                           |

Chromatograms with final report ☐



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May 30, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1205-217

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 22, 2012.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures



Date of Report: May 30, 2012  
Samples Submitted: May 22, 2012  
Laboratory Reference: 1205-217  
Project: 6552

### **Case Narrative**

Samples were collected on May 22, 2012 and received by the laboratory on May 22, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

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: May 30, 2012  
 Samples Submitted: May 22, 2012  
 Laboratory Reference: 1205-217  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>102</b>              |                       |               |                      |                      |              |
| Laboratory ID:       | 05-217-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-24-12              | 5-24-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-24-12              | 5-24-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-24-12              | 5-24-12              |              |
| m,p-Xylene           | <b>3.3</b>              | 1.0                   | EPA 8021      | 5-24-12              | 5-24-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 5-24-12              | 5-24-12              |              |
| Gasoline             | <b>2000</b>             | 100                   | NWTPH-Gx      | 5-24-12              | 5-24-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>89</i>               | <i>73-121</i>         |               |                      |                      |              |

Date of Report: May 30, 2012  
 Samples Submitted: May 22, 2012  
 Laboratory Reference: 1205-217  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0524A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 5-24-12       | 5-24-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 5-24-12       | 5-24-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 5-24-12       | 5-24-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 5-24-12       | 5-24-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 5-24-12       | 5-24-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 5-24-12       | 5-24-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 93               | 73-121         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 05-217-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 3.30      | 3.30 | NA          | NA |               | NA               | NA              | 0      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1980      | 1930 | NA          | NA |               | NA               | NA              | 3      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 89               | 94              | 73-121 |           |       |



### 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.
- Y - Sample extract treated with an acid/silica gel cleanup procedure.
- Z - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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Phone: (425) 883-3881 • [www.onste-env.com](http://www.onste-env.com)

# Chain of Custody

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14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

June 6, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1205-265

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on May 29, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: June 6, 2012  
Samples Submitted: May 29, 2012  
Laboratory Reference: 1205-265  
Project: 6552

### **Case Narrative**

Samples were collected on May 29, 2012 and received by the laboratory on May 29, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits.

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: June 6, 2012  
 Samples Submitted: May 29, 2012  
 Laboratory Reference: 1205-265  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>102</b>              |                       |               |                      |                      |              |
| Laboratory ID:       | 05-265-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-31-12              | 5-31-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-31-12              | 5-31-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-31-12              | 5-31-12              |              |
| m,p-Xylene           | <b>3.2</b>              | 1.0                   | EPA 8021      | 5-31-12              | 5-31-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 5-31-12              | 5-31-12              |              |
| Gasoline             | <b>2200</b>             | 200                   | NWTPH-Gx      | 5-31-12              | 5-31-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>96</i>               | <i>73-121</i>         |               |                      |                      |              |



Date of Report: June 6, 2012  
 Samples Submitted: May 29, 2012  
 Laboratory Reference: 1205-265  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0531A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 5-31-12       | 5-31-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 5-31-12       | 5-31-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 5-31-12       | 5-31-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 5-31-12       | 5-31-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 5-31-12       | 5-31-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 5-31-12       | 5-31-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 95               | 73-121         |          |               |               |       |

|                |                  |                |          |        |        |  |
|----------------|------------------|----------------|----------|--------|--------|--|
| Laboratory ID: | MB0601A2         |                |          |        |        |  |
| Gasoline       | ND               | 100            | NWTPH-Gx | 6-1-12 | 6-1-12 |  |
| Surrogate:     | Percent Recovery | Control Limits |          |        |        |  |
| Fluorobenzene  | 89               | 73-121         |          |        |        |  |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 05-265-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | 3.20      | 3.20        | NA            | NA               | NA              | NA     | 0         | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | 2230      | 1790        | NA            | NA               | NA              | NA     | 22        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 96               | 94              | 73-121 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference



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# Chain of Custody

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Turnaround Request  
(in working days)

Laboratory Number:

05-265

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days) (TPH analysis 5 Days)

Company:

Tarce Associates

Project Number:

6552

Project Name:

Project Manager:

Chuck Lio

Sampled by:

Nicolas R. H. H. man

Lab ID

Sample Identification

Date Sampled

Time Sampled

Matrix

No. of Cont.

NWTPH-HCID

NWTPH-Gx/BTEX

NWTPH-Gx

NWTPH-Dx

Volatiles 8260B

Halogenated Volatiles 8260B

Semivolatiles 8270D/SIM  
(with low-level PAHs)

PAHs 8270D/SIM (low-level)

PCBs 8082

Organochlorine Pesticides 8081A

Organophosphorus Pesticides 8270D/SIM

Chlorinated Acid Herbicides 8151A

Total RCRA Metals

Total MTCA Metals

TCLP Metals

HEM (oil and grease) 1664

% Moisture

1 ~~98~~ 102

5/29/12 11:30

Air

1

X

Signature

Company

Date

Time

Comments/Special Instructions

Relinquished

Received

Relinquished

Received

Relinquished

Received

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Report results weight by volume

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐



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June 19, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1206-103

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on June 14, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: June 19, 2012  
Samples Submitted: June 14, 2012  
Laboratory Reference: 1206-103  
Project: 6552

### **Case Narrative**

Samples were collected on June 14, 2012 and received by the laboratory on June 14, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 102 is similar to mineral spirits with diesel.

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: June 19, 2012  
 Samples Submitted: June 14, 2012  
 Laboratory Reference: 1206-103  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>102</b>              |                       |               |                      |                      |              |
| Laboratory ID:       | 06-103-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-15-12              | 6-15-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-15-12              | 6-15-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 6-15-12              | 6-15-12              |              |
| m,p-Xylene           | <b>2.3</b>              | 1.0                   | EPA 8021      | 6-15-12              | 6-15-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 6-15-12              | 6-15-12              |              |
| Gasoline             | <b>1700</b>             | 100                   | NWTPH-Gx      | 6-15-12              | 6-15-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>92</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: June 19, 2012  
 Samples Submitted: June 14, 2012  
 Laboratory Reference: 1206-103  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0615A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 6-15-12       | 6-15-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 6-15-12       | 6-15-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 6-15-12       | 6-15-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 6-15-12       | 6-15-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 6-15-12       | 6-15-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 6-15-12       | 6-15-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 91               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 06-103-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 2.30      | 2.20 | NA          | NA |               | NA               | NA              | 4      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1680      | 1700 | NA          | NA |               | NA               | NA              | 1      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 92               | 92              | 71-116 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits with diesel.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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# Chain of Custody

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June 21, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1206-120

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on June 18, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: June 21, 2012  
Samples Submitted: June 18, 2012  
Laboratory Reference: 1206-120  
Project: 6552

### **Case Narrative**

Samples were collected on June 18, 2012 and received by the laboratory on June 18, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: June 21, 2012  
 Samples Submitted: June 18, 2012  
 Laboratory Reference: 1206-120  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 06-120-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-19-12              | 6-19-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-19-12              | 6-19-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 6-19-12              | 6-19-12              |              |
| m,p-Xylene           | <b>3.7</b>              | 1.0                   | EPA 8021      | 6-19-12              | 6-19-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 6-19-12              | 6-19-12              |              |
| Gasoline             | <b>2300</b>             | 200                   | NWTPH-Gx      | 6-19-12              | 6-19-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>98</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: June 21, 2012  
 Samples Submitted: June 18, 2012  
 Laboratory Reference: 1206-120  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0619A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 6-19-12       | 6-19-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 6-19-12       | 6-19-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 6-19-12       | 6-19-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 6-19-12       | 6-19-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 6-19-12       | 6-19-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 6-19-12       | 6-19-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 95               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 06-120-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 3.70      | 3.40 | NA          | NA |               | NA               | NA              | 8      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 2270      | 2270 | NA          | NA |               | NA               | NA              | 0      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 98               | 95              | 71-116 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference



**Analytical Laboratory Testing Services**  
14648 NE 95th Street • Redmond, WA 98052  
Phone: (425) 883-3881 • [www.onsite-env.com](http://www.onsite-env.com)

## Chain of Custody

Page 1 of 1

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14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

July 31, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1207-210

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on July 26, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



Date of Report: July 31, 2012  
Samples Submitted: July 26, 2012  
Laboratory Reference: 1207-210  
Project: 6552

### **Case Narrative**

Samples were collected on July 26, 2012 and received by the laboratory on July 26, 2012. 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.

#### NWTPH Gx/BTEX (air) Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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 31, 2012  
 Samples Submitted: July 26, 2012  
 Laboratory Reference: 1207-210  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 07-210-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-27-12              | 7-27-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-27-12              | 7-27-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 7-27-12              | 7-27-12              |              |
| m,p-Xylene           | <b>2.9</b>              | 1.0                   | EPA 8021      | 7-27-12              | 7-27-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 7-27-12              | 7-27-12              |              |
| Gasoline             | <b>1700</b>             | 100                   | NWTPH-Gx      | 7-27-12              | 7-27-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>101</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: July 31, 2012  
 Samples Submitted: July 26, 2012  
 Laboratory Reference: 1207-210  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0727A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 7-27-12       | 7-27-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 7-27-12       | 7-27-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 7-27-12       | 7-27-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 7-27-12       | 7-27-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 7-27-12       | 7-27-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 7-27-12       | 7-27-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 105              | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|-----|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |     |           |       |
| Laboratory ID:   | 07-210-01 |             |               |                  |                 |     |           |       |
|                  | ORIG      | DUP         |               |                  |                 |     |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| m,p-Xylene       | 2.90      | 2.60        | NA            | NA               | NA              | 11  | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Gasoline         | 1700      | 1670        | NA            | NA               | NA              | 2   | 30        | Z     |
| Surrogate:       |           |             |               |                  |                 |     |           |       |
| Fluorobenzene    |           |             | 101           | 105              | 71-116          |     |           |       |



### 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.
- Y - Sample extract treated with an acid/silica gel cleanup procedure.
- Z - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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# Chain of Custody

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September 12, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1209-011

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 4, 2012.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: September 12, 2012  
Samples Submitted: September 4, 2012  
Laboratory Reference: 1209-011  
Project: 6552

### **Case Narrative**

Samples were collected on September 4, 2012 and received by the laboratory on September 4, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: September 12, 2012  
 Samples Submitted: September 4, 2012  
 Laboratory Reference: 1209-011  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 09-011-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 9-6-12               | 9-6-12               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 9-6-12               | 9-6-12               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 9-6-12               | 9-6-12               |              |
| m,p-Xylene           | <b>1.8</b>              | 1.0                   | EPA 8021      | 9-6-12               | 9-6-12               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 9-6-12               | 9-6-12               |              |
| Gasoline             | <b>1000</b>             | 100                   | NWTPH-Gx      | 9-6-12               | 9-6-12               | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>90</i>               | <i>71-116</i>         |               |                      |                      |              |



Date of Report: September 12, 2012  
 Samples Submitted: September 4, 2012  
 Laboratory Reference: 1209-011  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0906A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 9-6-12        | 9-6-12        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 9-6-12        | 9-6-12        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 9-6-12        | 9-6-12        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 9-6-12        | 9-6-12        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 9-6-12        | 9-6-12        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 9-6-12        | 9-6-12        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 86               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 09-011-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 1.80      | 1.70 | NA          | NA |               | NA               | NA              | 6      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1010      | 963  | NA          | NA |               | NA               | NA              | 5      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 90               | 93              | 71-116 |           |       |



### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
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- 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.
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- 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.
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- 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.
- Y - Sample extract treated with an acid/silica gel cleanup procedure.
- Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference



**Onsite  
Environmental Inc.**

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# Chain of Custody

Page 1 of 1

Turnaround Request  
(in working days)

Laboratory Number:

09-011

(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 No. of Cont.

101-103 9/4/12 10:00 Air 1

NWTPH-HCID

X NWTPH-Gx/BTEX

NWTPH-Gx

NWTPH-Dx

Volatiles 8260B

Halogenated Volatiles 8260B

Semivolatiles 8270D/SIM  
(with low-level PAHs)

PAHs 8270D/SIM (low-level)

PCBs 8082

Organochlorine Pesticides 8081A

Organophosphorus Pesticides 8270D/SIM

Chlorinated Acid Herbicides 8151A

Total RCRA Metals

Total MTCA Metals

TCLP Metals

HEM (oil and grease) 1664

% Moisture

|                  |                    |            |             |          |                  |       |        |       |       |                                |
|------------------|--------------------|------------|-------------|----------|------------------|-------|--------|-------|-------|--------------------------------|
| Company:         | Terra Associates   | Signature: | [Signature] | Company: | Terra Associates | Date: | 9/4/12 | Time: | 14:20 | Comments/Special Instructions: |
| Project Number:  | 6552               |            |             |          |                  |       | 9/4/12 |       | 14:20 |                                |
| Project Name:    |                    |            |             |          |                  |       |        |       |       |                                |
| Project Manager: | Chuck Lio          |            |             |          |                  |       |        |       |       |                                |
| Sampled by:      | Nicolas R. Hoffman |            |             |          |                  |       |        |       |       |                                |
| Relinquished     |                    |            |             |          |                  |       |        |       |       |                                |
| Received         |                    |            |             |          |                  |       |        |       |       |                                |
| Relinquished     |                    |            |             |          |                  |       |        |       |       |                                |
| Received         |                    |            |             |          |                  |       |        |       |       |                                |
| Relinquished     |                    |            |             |          |                  |       |        |       |       |                                |
| Received         |                    |            |             |          |                  |       |        |       |       |                                |
| Relinquished     |                    |            |             |          |                  |       |        |       |       |                                |
| Reviewed/Date    |                    |            |             |          |                  |       |        |       |       |                                |

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐

Chromatograms with final report ☐



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October 5, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1210-002

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 1, 2012.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a horizontal line.

David Baumeister  
Project Manager

Enclosures

Date of Report: October 5, 2012  
Samples Submitted: October 1, 2012  
Laboratory Reference: 1210-002  
Project: 6552

### **Case Narrative**

Samples were collected on October 1, 2012 and received by the laboratory on October 1, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: October 5, 2012  
 Samples Submitted: October 1, 2012  
 Laboratory Reference: 1210-002  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 10-002-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 10-2-12              | 10-2-12              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 10-2-12              | 10-2-12              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 10-2-12              | 10-2-12              |              |
| m,p-Xylene           | <b>2.1</b>              | 1.0                   | EPA 8021      | 10-2-12              | 10-2-12              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 10-2-12              | 10-2-12              |              |
| Gasoline             | <b>1700</b>             | 100                   | NWTPH-Gx      | 10-2-12              | 10-2-12              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>97</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: October 5, 2012  
 Samples Submitted: October 1, 2012  
 Laboratory Reference: 1210-002  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB1002A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 10-2-12       | 10-2-12       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 10-2-12       | 10-2-12       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 10-2-12       | 10-2-12       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 10-2-12       | 10-2-12       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 10-2-12       | 10-2-12       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 10-2-12       | 10-2-12       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 97               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 10-002-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 2.10      | 2.10 | NA          | NA |               | NA               | NA              | 0      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1700      | 1650 | NA          | NA |               | NA               | NA              | 3      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 97               | 96              | 71-116 |           |       |



### 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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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## Chain of Custody

Page 1 of 1

|                                                                                                                                                                                                                                                            |                       |              |              |        |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|--------------|--------|--------------|
| Analytical Laboratory Testing Services<br>14648 NE 95th Street • Redmond, WA 98052<br>Phone: (425) 883-3881 • www.onsite-env.com                                                                                                                           |                       |              |              |        |              |
| Company: Terra Associates Inc.                                                                                                                                                                                                                             |                       |              |              |        |              |
| Project Number: 6552                                                                                                                                                                                                                                       |                       |              |              |        |              |
| Project Name:                                                                                                                                                                                                                                              |                       |              |              |        |              |
| Project Manager: Chuck Lee                                                                                                                                                                                                                                 |                       |              |              |        |              |
| Sampled by: Nicolas R. Hoffman                                                                                                                                                                                                                             |                       |              |              |        |              |
| Turnaround Request (in working days)<br><input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day<br><input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days<br><input checked="" type="checkbox"/> Standard (7 Days) (TPH analysis 5 Days) |                       |              |              |        |              |
| (other) _____                                                                                                                                                                                                                                              |                       |              |              |        |              |
| Lab ID                                                                                                                                                                                                                                                     | Sample Identification | Date Sampled | Time Sampled | Matrix | No. of Cont. |
| 1                                                                                                                                                                                                                                                          | 101-103               | 10/1/12      | 11:00        | Air    | 2            |
| NWTPH-HCID                                                                                                                                                                                                                                                 |                       |              |              |        |              |
| NWTPH-Gx/BTEX                                                                                                                                                                                                                                              |                       |              |              |        |              |
| NWTPH-Gx                                                                                                                                                                                                                                                   |                       |              |              |        |              |
| NWTPH-Dx                                                                                                                                                                                                                                                   |                       |              |              |        |              |
| Volatiles 8260B                                                                                                                                                                                                                                            |                       |              |              |        |              |
| Halogenated Volatiles 8260B                                                                                                                                                                                                                                |                       |              |              |        |              |
| Semivolatiles 8270D/SIM (with low-level PAHs)                                                                                                                                                                                                              |                       |              |              |        |              |
| PAHs 8270D/SIM (low-level)                                                                                                                                                                                                                                 |                       |              |              |        |              |
| PCBs 8082                                                                                                                                                                                                                                                  |                       |              |              |        |              |
| Organochlorine Pesticides 8081A                                                                                                                                                                                                                            |                       |              |              |        |              |
| Organophosphorus Pesticides 8270D/SIM                                                                                                                                                                                                                      |                       |              |              |        |              |
| Chlorinated Acid Herbicides 8151A                                                                                                                                                                                                                          |                       |              |              |        |              |
| Total RCRA Metals                                                                                                                                                                                                                                          |                       |              |              |        |              |
| Total MTCA Metals                                                                                                                                                                                                                                          |                       |              |              |        |              |
| TCLP Metals                                                                                                                                                                                                                                                |                       |              |              |        |              |
| HEM (oil and grease) 1664                                                                                                                                                                                                                                  |                       |              |              |        |              |
| % Moisture                                                                                                                                                                                                                                                 |                       |              |              |        |              |
| Relinquished                                                                                                                                                                                                                                               |                       |              |              |        |              |
| Received                                                                                                                                                                                                                                                   |                       |              |              |        |              |
| Reviewed/Date                                                                                                                                                                                                                                              |                       |              |              |        |              |
| Signature: [Signature]                                                                                                                                                                                                                                     |                       |              |              |        |              |
| Company: TAI                                                                                                                                                                                                                                               |                       |              |              |        |              |
| Date: 10/1/12                                                                                                                                                                                                                                              |                       |              |              |        |              |
| Time: 12:20                                                                                                                                                                                                                                                |                       |              |              |        |              |
| Comments/Special Instructions                                                                                                                                                                                                                              |                       |              |              |        |              |
| Chromatograms with final report <input type="checkbox"/>                                                                                                                                                                                                   |                       |              |              |        |              |



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November 21, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project T-6552  
Laboratory Reference No. 1211-118

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 2012.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: November 21, 2012  
Samples Submitted: November 14, 2012  
Laboratory Reference: 1211-118  
Project: T-6552

### **Case Narrative**

Samples were collected on November 14, 2012 and received by the laboratory on November 14, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample Air 11-14 is similar to mineral spirits.

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: November 21, 2012  
 Samples Submitted: November 14, 2012  
 Laboratory Reference: 1211-118  
 Project: T-6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>Air 11-14</b>        |                       |               |                      |                      |              |
| Laboratory ID:       | 11-118-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021B     | 11-15-12             | 11-15-12             |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021B     | 11-15-12             | 11-15-12             |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021B     | 11-15-12             | 11-15-12             |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021B     | 11-15-12             | 11-15-12             |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021B     | 11-15-12             | 11-15-12             |              |
| Gasoline             | <b>970</b>              | 100                   | NWTPH-Gx      | 11-15-12             | 11-15-12             | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>99</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: November 21, 2012  
 Samples Submitted: November 14, 2012  
 Laboratory Reference: 1211-118  
 Project: T-6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB1115A1         |                |           |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021B | 11-15-12      | 11-15-12      |       |
| Toluene             | ND               | 1.0            | EPA 8021B | 11-15-12      | 11-15-12      |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021B | 11-15-12      | 11-15-12      |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021B | 11-15-12      | 11-15-12      |       |
| o-Xylene            | ND               | 1.0            | EPA 8021B | 11-15-12      | 11-15-12      |       |
| Gasoline            | ND               | 100            | NWTPH-Gx  | 11-15-12      | 11-15-12      |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 104              | 71-116         |           |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 11-118-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 967       | 1020 | NA          | NA |               | NA               | NA              | 5      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 99               | 101             | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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## Chain of Custody

Page 1 of 1

[illegible]

Data Package: Level III ☒ Level IV ☐

Electronic Data Deliverables (EDDs) ☐



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December 14, 2012

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6550  
Laboratory Reference No. 1212-084

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 12, 2012.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



Date of Report: December 14, 2012  
Samples Submitted: December 12, 2012  
Laboratory Reference: 1212-084  
Project: 6550

### **Case Narrative**

Samples were collected on December 12, 2012 and received by the laboratory on December 12, 2012. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: December 14, 2012  
 Samples Submitted: December 12, 2012  
 Laboratory Reference: 1212-084  
 Project: 6550

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 12-084-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 12-13-12             | 12-13-12             |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 12-13-12             | 12-13-12             |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 12-13-12             | 12-13-12             |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 12-13-12             | 12-13-12             |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 12-13-12             | 12-13-12             |              |
| Gasoline             | <b>790</b>              | 100                   | NWTPH-Gx      | 12-13-12             | 12-13-12             | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>93</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: December 14, 2012  
 Samples Submitted: December 12, 2012  
 Laboratory Reference: 1212-084  
 Project: 6550

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB1213A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 12-13-12      | 12-13-12      |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 12-13-12      | 12-13-12      |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 12-13-12      | 12-13-12      |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 12-13-12      | 12-13-12      |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 12-13-12      | 12-13-12      |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 12-13-12      | 12-13-12      |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 100              | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 12-084-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 792       | 815 | NA          | NA |               | NA               | NA              | 3      | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 93               | 97              | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
  
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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**Environmental Inc.**

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# Chain of Custody

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:

**12-084**

Company: Terra Associates Inc  
Project Number: 6550  
Project Name: —  
Project Manager: Chuck Lie  
Sampled by: Nicholas R. Hoffmann

Lab ID: 1 Sample Identification: 101-103  
Date Sampled: 12/12/12 Time Sampled: 15 Matrix: Air

## 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/ MTCA Metals (circle one)  
TCLP Metals  
HEM (oil and grease) 1664A

% Moisture

| Signature          | Company       | Date                                                     | Time         | Comments/Special Instructions |
|--------------------|---------------|----------------------------------------------------------|--------------|-------------------------------|
| <u>[Signature]</u> | <u>TAI</u>    | <u>12/12/12</u>                                          | <u>13:35</u> |                               |
| <u>[Signature]</u> | <u>ESP</u>    | <u>12/12/12</u>                                          | <u>13:35</u> |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Reviewed/Date      | Reviewed/Date | Chromatograms with final report <input type="checkbox"/> |              |                               |



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January 11, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1301-078

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 10, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: January 11, 2013  
Samples Submitted: January 10, 2013  
Laboratory Reference: 1301-078  
Project: 6552

### **Case Narrative**

Samples were collected on January 10, 2013 and received by the laboratory on January 10, 2013. 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.

#### NWTPH-Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: January 11, 2013  
 Samples Submitted: January 10, 2013  
 Laboratory Reference: 1301-078  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 01-078-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-10-13              | 1-10-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-10-13              | 1-10-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 1-10-13              | 1-10-13              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 1-10-13              | 1-10-13              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 1-10-13              | 1-10-13              |              |
| Gasoline             | <b>770</b>              | 100                   | NWTPH-Gx      | 1-10-13              | 1-10-13              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>106</i>              | <i>71-116</i>         |               |                      |                      |              |



Date of Report: January 11, 2013  
 Samples Submitted: January 10, 2013  
 Laboratory Reference: 1301-078  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0110A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 1-10-13       | 1-10-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 1-10-13       | 1-10-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 1-10-13       | 1-10-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 1-10-13       | 1-10-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 1-10-13       | 1-10-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 1-10-13       | 1-10-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 105              | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 01-078-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 765       | 654 | NA          | NA |               | NA               | NA              | 16     | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 106              | 101             | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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# Chain of Custody

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01-078

CIVIL-JOURNAL INC.

Analytical Laboratory Testing Services

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Phone: (425) 883-3881 • www.on-site-env.com

Laboratory Number:

01-078

Turnaround Request  
(in working days)

(Check One)

☐ Same Day    ☐ 1 Day

☐ 2 Days    ☐ 3 Days

☒ Standard (7 Days)  
(TPH analysis 5 Days)

☐ \_\_\_\_\_  
(other)

Number of Containers

NWT PH-HCID

NWT PH-Gx/BTEX

NWT PH-Gx

NWT PH-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/ MTCA Metals (circle one)

TCLP Metals

HEM (oil and grease) 1664A

% Moisture

Company:

Project Number:

Project Name:

Project Manager:

Sampled by:

Lab ID      Sample Identification

Date Sampled      Time Sampled      Matrix

1      101-103

1/10/13      8:35      Air

1

X

Signature

Company

Date

Time

Comments/Special Instructions

Relinquished

Received

Relinquished

Received

Relinquished

Received

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Terra Associates  
6552

Chuck Lie  
Nicolas R. Hoffman

[Signature]

TAI  
QSE

1/10/13 9:55  
1/10/13 0955

WTL



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January 25, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1301-134

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 22, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: January 25, 2013  
Samples Submitted: January 22, 2013  
Laboratory Reference: 1301-134  
Project: 6552

### **Case Narrative**

Samples were collected on January 22, 2013 and received by the laboratory on January 22, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101-103 is similar to mineral spirits.

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: January 25, 2013  
 Samples Submitted: January 22, 2013  
 Laboratory Reference: 1301-134  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101-103</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 01-134-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-24-13              | 1-24-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-24-13              | 1-24-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 1-24-13              | 1-24-13              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 1-24-13              | 1-24-13              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 1-24-13              | 1-24-13              |              |
| Gasoline             | <b>660</b>              | 100                   | NWTPH-Gx      | 1-24-13              | 1-24-13              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 98                      | 71-116                |               |                      |                      |              |

Date of Report: January 25, 2013  
 Samples Submitted: January 22, 2013  
 Laboratory Reference: 1301-134  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0124A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 1-24-13       | 1-24-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 1-24-13       | 1-24-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 1-24-13       | 1-24-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 1-24-13       | 1-24-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 1-24-13       | 1-24-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 1-24-13       | 1-24-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 103              | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 01-134-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 663       | 648 | NA          | NA |               | NA               | NA              | 2      | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 98               | 99              | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





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# Chain of Custody

Page 1 of 1

[illegible]



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February 19, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project T-6552  
Laboratory Reference No. 1302-092

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 14, 2013.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 19, 2013  
Samples Submitted: February 14, 2013  
Laboratory Reference: 1302-092  
Project: T-6552

### **Case Narrative**

Samples were collected on February 14, 2013 and received by the laboratory on February 14, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample Air 02-14 is similar to mineral spirits.

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: February 19, 2013  
 Samples Submitted: February 14, 2013  
 Laboratory Reference: 1302-092  
 Project: T-6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>Air 02-14</b>        |                       |               |                      |                      |              |
| Laboratory ID:       | 02-092-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-14-13              | 2-14-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-14-13              | 2-14-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 2-14-13              | 2-14-13              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 2-14-13              | 2-14-13              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 2-14-13              | 2-14-13              |              |
| Gasoline             | <b>980</b>              | 100                   | NWTPH-Gx      | 2-14-13              | 2-14-13              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>102</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: February 19, 2013  
 Samples Submitted: February 14, 2013  
 Laboratory Reference: 1302-092  
 Project: T-6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0214A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 2-14-13       | 2-14-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 2-14-13       | 2-14-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 2-14-13       | 2-14-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 2-14-13       | 2-14-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 2-14-13       | 2-14-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 2-14-13       | 2-14-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 99               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 02-091-04 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 99               | 100             | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference

## Chain of Custody

[illegible]



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March 12, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1303-066

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 7, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



Date of Report: March 12, 2013  
Samples Submitted: March 7, 2013  
Laboratory Reference: 1303-066  
Project: 6552

### **Case Narrative**

Samples were collected on March 7, 2013 and received by the laboratory on March 7, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: March 12, 2013  
 Samples Submitted: March 7, 2013  
 Laboratory Reference: 1303-066  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 03-066-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 3-7-13               | 3-7-13               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 3-7-13               | 3-7-13               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 3-7-13               | 3-7-13               |              |
| m,p-Xylene           | <b>3.0</b>              | 1.0                   | EPA 8021      | 3-7-13               | 3-7-13               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 3-7-13               | 3-7-13               |              |
| Gasoline             | <b>1600</b>             | 100                   | NWTPH-Gx      | 3-7-13               | 3-7-13               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>100</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: March 12, 2013  
 Samples Submitted: March 7, 2013  
 Laboratory Reference: 1303-066  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0307A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 3-7-13        | 3-7-13        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 3-7-13        | 3-7-13        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 3-7-13        | 3-7-13        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 3-7-13        | 3-7-13        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 3-7-13        | 3-7-13        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 3-7-13        | 3-7-13        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 102              | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 03-066-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 3.00      | 2.90 | NA          | NA |               | NA               | NA              | 3      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1620      | 1630 | NA          | NA |               | NA               | NA              | 1      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 100              | 102             | 71-116 |           |       |



### 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.
- 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 - The sample chromatogram is similar to mineral spirits.
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



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# Chain of Custody

Page 1 of 1

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:

**03-066**

Company: Terra Associates Inc  
Project Number: 655Z  
Project Name: \_\_\_\_\_  
Project Manager: \_\_\_\_\_  
Sampled by: Chuck Lie  
Nicolas R. Hoffman

Lab ID: 1 Sample Identification: 105/106  
Date Sampled: 3/7/13 Time Sampled: 10:10 Matrix: Ar

## 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/ MTCA Metals (circle one)

TCLP Metals

HEM (oil and grease) 1664A

% Moisture

| Signature          | Company       | Date                                                     | Time         | Comments/Special Instructions |
|--------------------|---------------|----------------------------------------------------------|--------------|-------------------------------|
| <u>[Signature]</u> | <u>TAI</u>    | <u>3/7/13</u>                                            | <u>10:15</u> | <u>WTL</u>                    |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Reviewed/Date      | Reviewed/Date | Chromatograms with final report <input type="checkbox"/> |              |                               |



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April 19, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552-1  
Laboratory Reference No. 1304-101

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on April 12, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: April 19, 2013  
Samples Submitted: April 12, 2013  
Laboratory Reference: 1304-101  
Project: 6552-1

### **Case Narrative**

Samples were collected on April 12, 2013 and received by the laboratory on April 12, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample MW-107 is not similar to that of a typical gas.

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: April 19, 2013  
 Samples Submitted: April 12, 2013  
 Laboratory Reference: 1304-101  
 Project: 6552-1

**NWTPH-Gx/BTEX**

Matrix: Water  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>MW-107</b>           |                       |               |                      |                      |              |
| Laboratory ID:       | 04-101-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021B     | 4-16-13              | 4-16-13              |              |
| Toluene              | <b>4.5</b>              | 1.0                   | EPA 8021B     | 4-16-13              | 4-16-13              |              |
| Ethyl Benzene        | <b>1100</b>             | 100                   | EPA 8021B     | 4-17-13              | 4-17-13              |              |
| m,p-Xylene           | <b>4000</b>             | 100                   | EPA 8021B     | 4-17-13              | 4-17-13              |              |
| o-Xylene             | <b>1100</b>             | 100                   | EPA 8021B     | 4-17-13              | 4-17-13              |              |
| Gasoline             | <b>6900</b>             | 100                   | NWTPH-Gx      | 4-16-13              | 4-16-13              | T            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>89</i>               | <i>71-116</i>         |               |                      |                      |              |



Date of Report: April 19, 2013  
 Samples Submitted: April 12, 2013  
 Laboratory Reference: 1304-101  
 Project: 6552-1

### NWTPH-Gx/BTEX QUALITY CONTROL

Matrix: Water  
 Units: ug/L (ppb)

| Analyte             | Result   | PQL | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|----------|-----|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |          |     |           |               |               |       |
| Laboratory ID:      | MB0416W2 |     |           |               |               |       |
| Benzene             | ND       | 1.0 | EPA 8021B | 4-16-13       | 4-16-13       |       |
| Toluene             | ND       | 1.0 | EPA 8021B | 4-16-13       | 4-16-13       |       |
| Ethyl Benzene       | ND       | 1.0 | EPA 8021B | 4-16-13       | 4-16-13       |       |
| m,p-Xylene          | ND       | 1.0 | EPA 8021B | 4-16-13       | 4-16-13       |       |
| o-Xylene            | ND       | 1.0 | EPA 8021B | 4-16-13       | 4-16-13       |       |
| Gasoline            | ND       | 100 | NWTPH-Gx  | 4-16-13       | 4-16-13       |       |

Surrogate: Percent Recovery Control Limits  
 Fluorobenzene 89 71-116

|                |          |     |           |         |         |  |
|----------------|----------|-----|-----------|---------|---------|--|
| Laboratory ID: | MB0417W1 |     |           |         |         |  |
| Benzene        | ND       | 1.0 | EPA 8021B | 4-17-13 | 4-17-13 |  |
| Toluene        | ND       | 1.0 | EPA 8021B | 4-17-13 | 4-17-13 |  |
| Ethyl Benzene  | ND       | 1.0 | EPA 8021B | 4-17-13 | 4-17-13 |  |
| m,p-Xylene     | ND       | 1.0 | EPA 8021B | 4-17-13 | 4-17-13 |  |
| o-Xylene       | ND       | 1.0 | EPA 8021B | 4-17-13 | 4-17-13 |  |
| Gasoline       | ND       | 100 | NWTPH-Gx  | 4-17-13 | 4-17-13 |  |

Surrogate: Percent Recovery Control Limits  
 Fluorobenzene 88 71-116

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|-----|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |     |           |       |
| Laboratory ID:   | 04-114-11 |             |               |                  |                 |     |           |       |
|                  | ORIG      | DUP         |               |                  |                 |     |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA  | 30        |       |

Surrogate: Fluorobenzene 89 90 71-116

### MATRIX SPIKES

|                |           |      |      |      |    |    |     |        |   |    |
|----------------|-----------|------|------|------|----|----|-----|--------|---|----|
| Laboratory ID: | 04-114-10 |      |      |      |    |    |     |        |   |    |
|                | MS        | MSD  | MS   | MSD  |    | MS | MSD |        |   |    |
| Benzene        | 45.1      | 48.1 | 50.0 | 50.0 | ND | 90 | 96  | 81-121 | 6 | 11 |
| Toluene        | 45.3      | 48.0 | 50.0 | 50.0 | ND | 91 | 96  | 83-122 | 6 | 13 |
| Ethyl Benzene  | 44.4      | 47.1 | 50.0 | 50.0 | ND | 89 | 94  | 81-121 | 6 | 15 |
| m,p-Xylene     | 44.9      | 47.3 | 50.0 | 50.0 | ND | 90 | 95  | 80-119 | 5 | 16 |
| o-Xylene       | 44.7      | 47.0 | 50.0 | 50.0 | ND | 89 | 94  | 80-119 | 5 | 15 |

Surrogate: Fluorobenzene 93 94 71-116

Date of Report: April 19, 2013  
 Samples Submitted: April 12, 2013  
 Laboratory Reference: 1304-101  
 Project: 6552-1

# **NWTPH-Dx**

Matrix: Water  
 Units: mg/L (ppm)

| <b>Analyte</b>          | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|-------------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>       | <b>MW-107</b>           |                       |               |                      |                      |              |
| Laboratory ID:          | 04-101-01               |                       |               |                      |                      |              |
| Diesel Range Organics   | <b>ND</b>               | 0.59                  | NWTPH-Dx      | 4-12-13              | 4-16-13              | U1           |
| Lube Oil Range Organics | <b>ND</b>               | 0.41                  | NWTPH-Dx      | 4-12-13              | 4-16-13              |              |
| <i>Surrogate:</i>       | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>o-Terphenyl</i>      | 73                      | 50-150                |               |                      |                      |              |

Date of Report: April 19, 2013  
 Samples Submitted: April 12, 2013  
 Laboratory Reference: 1304-101  
 Project: 6552-1

**NWTPH-Dx  
QUALITY CONTROL**

Matrix: Water  
 Units: mg/L (ppm)

| Analyte                 | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|-------------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b>     |                  |                |          |               |               |       |
| Laboratory ID:          | MB0412W1         |                |          |               |               |       |
| Diesel Range Organics   | ND               | 0.13           | NWTPH-Dx | 4-12-13       | 4-16-13       |       |
| Lube Oil Range Organics | ND               | 0.20           | NWTPH-Dx | 4-12-13       | 4-16-13       |       |
| Surrogate:              | Percent Recovery | Control Limits |          |               |               |       |
| <i>o</i> -Terphenyl     | 75               | 50-150         |          |               |               |       |

| Analyte                 | Result    |     | Percent Recovery |    | Recovery Limits | RPD | RPD Limit | Flags |
|-------------------------|-----------|-----|------------------|----|-----------------|-----|-----------|-------|
| DUPLICATE               |           |     |                  |    |                 |     |           |       |
| Laboratory ID:          | 04-087-06 |     |                  |    |                 |     |           |       |
|                         | ORIG      | DUP |                  |    |                 |     |           |       |
| Diesel Range Organics   | ND        | ND  |                  |    |                 |     | NA        | NA    |
| Lube Oil Range Organics | ND        | ND  |                  |    |                 |     | NA        | NA    |
| Surrogate:              |           |     |                  |    |                 |     |           |       |
| <i>o</i> -Terphenyl     |           |     | 78               | 96 | 50-150          |     |           |       |



### 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 gas.
- 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.
- 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



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## Chain of Custody

Page 1 of 1

[illegible]



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May 7, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1304-217

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on April 29, 2013.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: May 7, 2013  
Samples Submitted: April 29, 2013  
Laboratory Reference: 1304-217  
Project: 6552

### **Case Narrative**

Samples were collected on April 29, 2013 and received by the laboratory on April 29, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: May 7, 2013  
 Samples Submitted: April 29, 2013  
 Laboratory Reference: 1304-217  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 04-217-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 4-30-13              | 4-30-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 4-30-13              | 4-30-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 4-30-13              | 4-30-13              |              |
| m,p-Xylene           | <b>2.0</b>              | 1.0                   | EPA 8021      | 4-30-13              | 4-30-13              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 4-30-13              | 4-30-13              |              |
| Gasoline             | <b>870</b>              | 100                   | NWTPH-Gx      | 4-30-13              | 4-30-13              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 85                      | 71-116                |               |                      |                      |              |



Date of Report: May 7, 2013  
 Samples Submitted: April 29, 2013  
 Laboratory Reference: 1304-217  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0430A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 4-30-13       | 4-30-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 4-30-13       | 4-30-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 4-30-13       | 4-30-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 4-30-13       | 4-30-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 4-30-13       | 4-30-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 4-30-13       | 4-30-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 85               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 04-217-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | 2.00      | 1.90        | NA            | NA               | NA              | 5      | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | 873       | 877         | NA            | NA               | NA              | 0      | 30        |       |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 85               | 85              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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## Chain of Custody

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04-217

[illegible]



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June 10, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1306-039

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on June 5, 2013.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: June 10, 2013  
Samples Submitted: June 5, 2013  
Laboratory Reference: 1306-039  
Project: 6552

### **Case Narrative**

Samples were collected on June 5, 2013 and received by the laboratory on June 5, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 104/105 is similar to mineral spirits.

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: June 10, 2013  
 Samples Submitted: June 5, 2013  
 Laboratory Reference: 1306-039  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>104/105</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 06-039-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-6-13               | 6-6-13               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 6-6-13               | 6-6-13               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 6-6-13               | 6-6-13               |              |
| m,p-Xylene           | <b>1.4</b>              | 1.0                   | EPA 8021      | 6-6-13               | 6-6-13               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 6-6-13               | 6-6-13               |              |
| Gasoline             | <b>540</b>              | 100                   | NWTPH-Gx      | 6-6-13               | 6-6-13               | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>101</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: June 10, 2013  
 Samples Submitted: June 5, 2013  
 Laboratory Reference: 1306-039  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0606A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 6-6-13        | 6-6-13        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 6-6-13        | 6-6-13        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 6-6-13        | 6-6-13        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 6-6-13        | 6-6-13        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 6-6-13        | 6-6-13        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 6-6-13        | 6-6-13        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 98               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 06-039-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | 1.41      | 1.39 | NA          | NA |               | NA               | NA              | 1      | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 541       | 542  | NA          | NA |               | NA               | NA              | 0      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 101              | 103             | 71-116 |           |       |





### 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 - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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# Chain of Custody

Page 1 of 1[illegible]



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July 10, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1307-046

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on July 8, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: July 10, 2013  
Samples Submitted: July 8, 2013  
Laboratory Reference: 1307-046  
Project: 6552

### **Case Narrative**

Samples were collected on July 8, 2013 and received by the laboratory on July 8, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to that of mineral spirits.

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 10, 2013  
 Samples Submitted: July 8, 2013  
 Laboratory Reference: 1307-046  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 07-046-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-8-13               | 7-8-13               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-8-13               | 7-8-13               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 7-8-13               | 7-8-13               |              |
| m,p-Xylene           | <b>1.5</b>              | 1.0                   | EPA 8021      | 7-8-13               | 7-8-13               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 7-8-13               | 7-8-13               |              |
| Gasoline             | <b>620</b>              | 100                   | NWTPH-Gx      | 7-8-13               | 7-8-13               | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>85</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: July 10, 2013  
 Samples Submitted: July 8, 2013  
 Laboratory Reference: 1307-046  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0708A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 7-8-13        | 7-8-13        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 7-8-13        | 7-8-13        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 7-8-13        | 7-8-13        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 7-8-13        | 7-8-13        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 7-8-13        | 7-8-13        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 7-8-13        | 7-8-13        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 86               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 07-046-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | 1.50      | 1.50        | NA            | NA               | NA              | 0      | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | 621       | 627         | NA            | NA               | NA              | 1      | 30        |       |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 85               | 86              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

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



## Chain of Custody

|                                                                                                                                  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
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| CIVIL ENGINEERING INC.                                                                                                           |  |  |  |  |  |
| Company: Terra Associates Inc.                                                                                                   |  |  |  |  |  |
| Project Number: 6552                                                                                                             |  |  |  |  |  |
| Project Name:                                                                                                                    |  |  |  |  |  |
| Project Manager: Chuck Lie                                                                                                       |  |  |  |  |  |
| Sampled by: Nicolas R. Hoffman                                                                                                   |  |  |  |  |  |
| Date Sampled: 7/8/13 Time Sampled: 10:30 Matrix: Air                                                                             |  |  |  |  |  |
| Number of Containers: 1                                                                                                          |  |  |  |  |  |
| 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/ MTCA Metals (circle one)                                                                                      |  |  |  |  |  |
| TCLP Metals                                                                                                                      |  |  |  |  |  |
| HEM (oil and grease) 1664A                                                                                                       |  |  |  |  |  |
| % Moisture                                                                                                                       |  |  |  |  |  |



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September 3, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1308-207

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: September 3, 2013  
Samples Submitted: August 28, 2013  
Laboratory Reference: 1308-207  
Project: 6552

### **Case Narrative**

Samples were collected on August 28, 2013 and received by the laboratory on August 28, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105-106 is similar to mineral spirits.

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: September 3, 2013  
 Samples Submitted: August 28, 2013  
 Laboratory Reference: 1308-207  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105-106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 08-207-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 8-29-13              | 8-29-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 8-29-13              | 8-29-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 8-29-13              | 8-29-13              |              |
| m,p-Xylene           | <b>ND</b>               | 5.0                   | EPA 8021      | 8-29-13              | 8-29-13              | U1           |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 8-29-13              | 8-29-13              |              |
| Gasoline             | <b>1100</b>             | 100                   | NWTPH-Gx      | 8-29-13              | 8-29-13              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 82                      | 71-116                |               |                      |                      |              |

Date of Report: September 3, 2013  
 Samples Submitted: August 28, 2013  
 Laboratory Reference: 1308-207  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0829A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 8-29-13       | 8-29-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 8-29-13       | 8-29-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 8-29-13       | 8-29-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 8-29-13       | 8-29-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 8-29-13       | 8-29-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 8-29-13       | 8-29-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 82               | 71-116         |          |               |               |       |

| Analyte        | Result    |      | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|------|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |      |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 08-207-01 |      |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP  |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND   | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 1100      | 1020 | NA          | NA |               | NA               | NA              | 8      | 30        |       |
| Surrogate:     |           |      |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |      |             |    |               | 82               | 80              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

ND - Not Detected at PQL

PQL - Practical Quantitation Limit

RPD - Relative Percent Difference





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## Chain of Custody

Page \_\_\_\_\_ of \_\_\_\_\_

08-207

[illegible]





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October 1, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1309-216

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 24, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: October 1, 2013  
Samples Submitted: September 24, 2013  
Laboratory Reference: 1309-216  
Project: 6552

### **Case Narrative**

Samples were collected on September 24, 2013 and received by the laboratory on September 24, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: October 1, 2013  
 Samples Submitted: September 24, 2013  
 Laboratory Reference: 1309-216  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 09-216-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 9-26-13              | 9-26-13              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 9-26-13              | 9-26-13              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 9-26-13              | 9-26-13              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 9-26-13              | 9-26-13              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 9-26-13              | 9-26-13              |              |
| Gasoline             | <b>740</b>              | 100                   | NWTPH-Gx      | 9-26-13              | 9-26-13              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>94</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: October 1, 2013  
 Samples Submitted: September 24, 2013  
 Laboratory Reference: 1309-216  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0926A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 9-26-13       | 9-26-13       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 9-26-13       | 9-26-13       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 9-26-13       | 9-26-13       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 9-26-13       | 9-26-13       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 9-26-13       | 9-26-13       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 9-26-13       | 9-26-13       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 93               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 09-216-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | 742       | 615         | NA            | NA               | NA              | NA     | 19        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 94               | 95              | 71-116 |           |       |



### Data Qualifiers and Abbreviations

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- 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 \_\_\_\_\_.
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- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
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- 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 - The sample chromatogram is similar to mineral spirits.

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



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# Chain of Custody

Company:

Project Number:

Project Name:

Project Manager:

Sampled by:

Lab ID

## 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:

**09-216**

### 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/ MTCA Metals (circle one)

TCLP Metals

HEM (oil and grease) 1664A

% Moisture

Date Sampled Time Sampled Matrix

9/24/13 14:10 Air

X

Signature

Company

Date

Time

Comments/Special Instructions

Relinquished

Received

Relinquished

Received

Relinquished

Received

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐



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November 5, 2013

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1310-298

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 29, 2013.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: November 5, 2013  
Samples Submitted: October 29, 2013  
Laboratory Reference: 1310-298  
Project: 6552

### **Case Narrative**

Samples were collected on October 29, 2013 and received by the laboratory on October 29, 2013. 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: November 5, 2013  
 Samples Submitted: October 29, 2013  
 Laboratory Reference: 1310-298  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 10-298-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 10-29-13             | 10-29-13             |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 10-29-13             | 10-29-13             |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 10-29-13             | 10-29-13             |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 10-29-13             | 10-29-13             |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 10-29-13             | 10-29-13             |              |
| Gasoline             | <b>510</b>              | 100                   | NWTPH-Gx      | 10-29-13             | 10-29-13             | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 86                      | 71-116                |               |                      |                      |              |

Date of Report: November 5, 2013  
 Samples Submitted: October 29, 2013  
 Laboratory Reference: 1310-298  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB1029A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 10-29-13      | 10-29-13      |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 10-29-13      | 10-29-13      |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 10-29-13      | 10-29-13      |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 10-29-13      | 10-29-13      |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 10-29-13      | 10-29-13      |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 10-29-13      | 10-29-13      |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 89               | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 10-298-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 511       | 510 | NA          | NA |               | NA               | NA              | 0      | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 86               | 89              | 71-116 |           |       |



### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
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- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
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- 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.
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- Z - The sample chromatogram is similar to mineral spirits

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

# Chain of Custody

|                                                                                                                                  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Analytical Laboratory Testing Services<br>14648 NE 95th Street • Redmond, WA 98052<br>Phone: (425) 883-3881 • www.onsite-env.com |  |  |  |  |  |  |  |  |  |
| Company: Terra Associates Inc                                                                                                    |  |  |  |  |  |  |  |  |  |
| Project Number: 6552                                                                                                             |  |  |  |  |  |  |  |  |  |
| Project Name: _____                                                                                                              |  |  |  |  |  |  |  |  |  |
| Project Manager: _____                                                                                                           |  |  |  |  |  |  |  |  |  |
| Sampled by: Chuck Lie                                                                                                            |  |  |  |  |  |  |  |  |  |
| Sampled by: Nicolas R. Hoffman                                                                                                   |  |  |  |  |  |  |  |  |  |
| Lab ID                                                                                                                           |  |  |  |  |  |  |  |  |  |
| Sample Identification                                                                                                            |  |  |  |  |  |  |  |  |  |
| Date Sampled                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Time Sampled                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Matrix                                                                                                                           |  |  |  |  |  |  |  |  |  |
| Turnaround Request (in working days)                                                                                             |  |  |  |  |  |  |  |  |  |
| (Check One)                                                                                                                      |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day                                                                 |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days                                                                  |  |  |  |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Standard (7 Days) (TPH analysis 5 Days)                                                      |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> _____ (other)                                                                                           |  |  |  |  |  |  |  |  |  |
| 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/ MTCA Metals (circle one)                                                                                      |  |  |  |  |  |  |  |  |  |
| TCLP Metals                                                                                                                      |  |  |  |  |  |  |  |  |  |
| HEM (oil and grease) 1664A                                                                                                       |  |  |  |  |  |  |  |  |  |
| % Moisture                                                                                                                       |  |  |  |  |  |  |  |  |  |
| Signature                                                                                                                        |  |  |  |  |  |  |  |  |  |
| Company                                                                                                                          |  |  |  |  |  |  |  |  |  |
| Date                                                                                                                             |  |  |  |  |  |  |  |  |  |
| Time                                                                                                                             |  |  |  |  |  |  |  |  |  |
| Comments/Special Instructions                                                                                                    |  |  |  |  |  |  |  |  |  |
| Relinquished                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Received                                                                                                                         |  |  |  |  |  |  |  |  |  |
| Relinquished                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Received                                                                                                                         |  |  |  |  |  |  |  |  |  |
| Relinquished                                                                                                                     |  |  |  |  |  |  |  |  |  |
| Received                                                                                                                         |  |  |  |  |  |  |  |  |  |
| Reviewed/Date                                                                                                                    |  |  |  |  |  |  |  |  |  |
| Reviewed/Date                                                                                                                    |  |  |  |  |  |  |  |  |  |
| Chromatograms with final report <input type="checkbox"/>                                                                         |  |  |  |  |  |  |  |  |  |



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January 14, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1401-050

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 9, 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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: January 14, 2014  
Samples Submitted: January 9, 2014  
Laboratory Reference: 1401-050  
Project: 6552

### **Case Narrative**

Samples were collected on January 9, 2014 and received by the laboratory on January 9, 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.

#### NWTPH Gx/BTEX Analysis

The sample chromatogram is similar to mineral spirits.

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: January 14, 2014  
 Samples Submitted: January 9, 2014  
 Laboratory Reference: 1401-050  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 01-050-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-9-14               | 1-9-14               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-9-14               | 1-9-14               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 1-9-14               | 1-9-14               |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 1-9-14               | 1-9-14               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 1-9-14               | 1-9-14               |              |
| Gasoline             | <b>400</b>              | 100                   | NWTPH-Gx      | 1-9-14               | 1-9-14               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 83                      | 71-116                |               |                      |                      |              |

Date of Report: January 14, 2014  
 Samples Submitted: January 9, 2014  
 Laboratory Reference: 1401-050  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0109A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 1-9-14        | 1-9-14        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 1-9-14        | 1-9-14        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 1-9-14        | 1-9-14        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 1-9-14        | 1-9-14        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 1-9-14        | 1-9-14        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 1-9-14        | 1-9-14        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 83               | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 01-050-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 399       | 403 | NA          | NA |               | NA               | NA              | 1      | 30        | Z     |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 83               | 83              | 71-116 |           |       |





### 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 - The sample chromatogram is similar to mineral spirits.

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



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## Chain of Custody

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01-050

[illegible]



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January 31, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1401-182

Dear Chuck:

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

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: January 31, 2014  
Samples Submitted: January 28, 2014  
Laboratory Reference: 1401-182  
Project: 6552

### **Case Narrative**

Samples were collected on January 28, 2014 and received by the laboratory on January 28, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: January 31, 2014  
 Samples Submitted: January 28, 2014  
 Laboratory Reference: 1401-182  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 01-182-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021B     | 1-30-14              | 1-30-14              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021B     | 1-30-14              | 1-30-14              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021B     | 1-30-14              | 1-30-14              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021B     | 1-30-14              | 1-30-14              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021B     | 1-30-14              | 1-30-14              |              |
| Gasoline             | <b>210</b>              | 100                   | NWTPH-Gx      | 1-30-14              | 1-30-14              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>97</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: January 31, 2014  
 Samples Submitted: January 28, 2014  
 Laboratory Reference: 1401-182  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0130A1         |                |           |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021B | 1-30-14       | 1-30-14       |       |
| Toluene             | ND               | 1.0            | EPA 8021B | 1-30-14       | 1-30-14       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021B | 1-30-14       | 1-30-14       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021B | 1-30-14       | 1-30-14       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021B | 1-30-14       | 1-30-14       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx  | 1-30-14       | 1-30-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 96               | 71-116         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 01-182-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | 208       | 217         | NA            | NA               | NA              | NA     | 4         | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 97               | 99              | 71-116 |           |       |



### 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 \_\_\_\_\_.
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- 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 - The sample chromatogram is similar to mineral spirits.

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





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# Chain of Custody

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February 12, 2014

Note: test results in this report may represent field sampling error. The system was resampled on February 13, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1402-028

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 5, 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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 12, 2014  
Samples Submitted: February 5, 2014  
Laboratory Reference: 1402-028  
Project: 6552

### **Case Narrative**

Samples were collected on February 5, 2014 and received by the laboratory on February 5, 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: February 12, 2014  
Samples Submitted: February 5, 2014  
Laboratory Reference: 1402-028  
Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
Units: ug/L (ppb)

Note that at the time of this sample, the valve to 105/106 was off

| Analyte        | Result          | PQL | Method    | Date Prepared | Date Analyzed | Flags |
|----------------|-----------------|-----|-----------|---------------|---------------|-------|
| Client ID:     | 101,102/105/106 |     |           |               |               |       |
| Laboratory ID: | 02-028-01       |     |           |               |               |       |
| Benzene        | ND              | 1.0 | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Toluene        | ND              | 1.0 | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Ethyl Benzene  | ND              | 1.0 | EPA 8021B | 2-7-14        | 2-7-14        |       |
| m,p-Xylene     | ND              | 1.0 | EPA 8021B | 2-7-14        | 2-7-14        |       |
| o-Xylene       | ND              | 1.0 | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Gasoline       | ND              | 100 | NWTPH-Gx  | 2-7-14        | 2-7-14        |       |

Date of Report: February 12, 2014  
 Samples Submitted: February 5, 2014  
 Laboratory Reference: 1402-028  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method    | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|-----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |           |               |               |       |
| Laboratory ID:      | MB0207A2         |                |           |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Toluene             | ND               | 1.0            | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021B | 2-7-14        | 2-7-14        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021B | 2-7-14        | 2-7-14        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021B | 2-7-14        | 2-7-14        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx  | 2-7-14        | 2-7-14        |       |
| Surrogate:          | Percent Recovery | Control Limits |           |               |               |       |
| Fluorobenzene       | 89               | 71-116         |           |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 02-028-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 88               | 90              | 71-116 |           |       |



### 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.
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- 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.
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- 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



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Page 1 of 1

**02-028**

|                  |                                   |
|------------------|-----------------------------------|
| Company:         | Terra Associates Inc.             |
| Project Number:  | 6552                              |
| Project Name:    |                                   |
| Project Manager: | Chuck Lie                         |
| Sampled by:      | Nicolas E. Hoffman                |
| Lab ID           | Sample Identification             |
| 1                | <del>101</del> 101, 102, 105, 106 |

Turnaround Request  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)  
(TPH analysis 5 Days)

☐ \_\_\_\_\_ (other)

Date Sampled Time Sampled Matrix

2/5/14 11:00 Air

## Number of Containers

|                                                  |
|--------------------------------------------------|
| NWTPH-HCID                                       |
| NWTPH-Gx/BTEX                                    |
| NWTPH-Gx                                         |
| NWTPH-Dx                                         |
| Volatiles 8260C                                  |
| Halogenated Volatiles 8260C                      |
| Semivolatiles 8270D/SIM<br>(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/ MTCA Metals (circle one)      |
| TCLP Metals                                      |
| HEM (oil and grease) 1664A                       |
| % Moisture                                       |

Laboratory Number:

|               |               |        |       |                               |
|---------------|---------------|--------|-------|-------------------------------|
| Signature     | Company       | Date   | Time  | Comments/Special Instructions |
|               | TAI           | 2/5/14 | 11:40 |                               |
| Relinquished  |               | 2/5/14 | 11:40 |                               |
| Received      |               |        |       |                               |
| Relinquished  |               |        |       |                               |
| Received      |               |        |       |                               |
| Relinquished  |               |        |       |                               |
| Received      |               |        |       |                               |
| Reviewed/Date | Reviewed/Date |        |       |                               |

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐

Chromatograms with final report ☐



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February 19, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1402-086

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 13, 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,

A handwritten signature in black ink, appearing to read 'DB', followed by a horizontal line.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 19, 2014  
Samples Submitted: February 13, 2014  
Laboratory Reference: 1402-086  
Project: 6552

### **Case Narrative**

Samples were collected on February 13, 2014 and received by the laboratory on February 13, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101/102 is similar to mineral spirits.

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: February 19, 2014  
 Samples Submitted: February 13, 2014  
 Laboratory Reference: 1402-086  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101/102</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 02-086-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-13-14              | 2-13-14              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-13-14              | 2-13-14              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 2-13-14              | 2-13-14              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 2-13-14              | 2-13-14              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 2-13-14              | 2-13-14              |              |
| Gasoline             | <b>250</b>              | 100                   | NWTPH-Gx      | 2-13-14              | 2-13-14              | <b>Z</b>     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>79</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: February 19, 2014  
 Samples Submitted: February 13, 2014  
 Laboratory Reference: 1402-086  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0213A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 2-13-14       | 2-13-14       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 2-13-14       | 2-13-14       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 2-13-14       | 2-13-14       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 2-13-14       | 2-13-14       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 2-13-14       | 2-13-14       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 2-13-14       | 2-13-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 79               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 02-086-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | 249       | 222         | NA            | NA               | NA              | NA     | 11        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 79               | 83              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

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





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March 10, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1403-011

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 3, 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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: March 10, 2014  
Samples Submitted: March 3, 2014  
Laboratory Reference: 1403-011  
Project: 6552

### **Case Narrative**

Samples were collected March 3, 2014 and received by the laboratory on March 3, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 101/102 is similar to mineral spirits.

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: March 10, 2014  
 Samples Submitted: March 3, 2014  
 Laboratory Reference: 1403-011  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101/102</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 03-011-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 3-5-14               | 3-5-14               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 3-5-14               | 3-5-14               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 3-5-14               | 3-5-14               |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 3-5-14               | 3-5-14               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 3-5-14               | 3-5-14               |              |
| Gasoline             | <b>150</b>              | 100                   | NWTPH-Gx      | 3-5-14               | 3-5-14               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>100</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: March 10, 2014  
 Samples Submitted: March 3, 2014  
 Laboratory Reference: 1403-011  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte              | Result                  | PQL                   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------------|-----------------------|----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>METHOD BLANK</b>     |                       |          |               |               |       |
| Laboratory ID:       | MB0305A1                |                       |          |               |               |       |
| Benzene              | ND                      | 1.0                   | EPA 8021 | 3-5-14        | 3-5-14        |       |
| Toluene              | ND                      | 1.0                   | EPA 8021 | 3-5-14        | 3-5-14        |       |
| Ethyl Benzene        | ND                      | 1.0                   | EPA 8021 | 3-5-14        | 3-5-14        |       |
| m,p-Xylene           | ND                      | 1.0                   | EPA 8021 | 3-5-14        | 3-5-14        |       |
| o-Xylene             | ND                      | 1.0                   | EPA 8021 | 3-5-14        | 3-5-14        |       |
| Gasoline             | ND                      | 100                   | NWTPH-Gx | 3-5-14        | 3-5-14        |       |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |          |               |               |       |
| <i>Fluorobenzene</i> | <i>101</i>              | <i>71-116</i>         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 03-011-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 153       | 142 | NA          | NA |               | NA               | NA              | 7      | 30        | Z,Z   |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 100              | 99              | 71-116 |           |       |





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



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# Chain of Custody

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03-011

[illegible]



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April 2, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1403-222

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 31, 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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: April 2, 2014  
Samples Submitted: March 31, 2014  
Laboratory Reference: 1403-222  
Project: 6552

### **Case Narrative**

Samples were collected on March 31, 2014 and received by the laboratory on March 31, 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: April2, 2014  
 Samples Submitted: March 31, 2014  
 Laboratory Reference: 1403-222  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101/102</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 03-222-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 4-1-14               | 4-1-14               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 4-1-14               | 4-1-14               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 4-1-14               | 4-1-14               |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 4-1-14               | 4-1-14               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 4-1-14               | 4-1-14               |              |
| Gasoline             | <b>ND</b>               | 100                   | NWTPH-Gx      | 4-1-14               | 4-1-14               |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>92</i>               | <i>71-116</i>         |               |                      |                      |              |

Date of Report: April2, 2014  
 Samples Submitted: March 31, 2014  
 Laboratory Reference: 1403-222  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0401A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 4-1-14        | 4-1-14        |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 4-1-14        | 4-1-14        |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 4-1-14        | 4-1-14        |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 4-1-14        | 4-1-14        |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 4-1-14        | 4-1-14        |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 4-1-14        | 4-1-14        |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 93               | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 03-222-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 92               | 91              | 71-116 |           |       |



### 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.
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- 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.
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- 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



# Onsite Environmental Inc.

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

## Chain of Custody

Page 1 of 1

### 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:

03-222

Company: Terra Associates Inc.  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: Chuck Lye  
Sampled by: Nicolas R. Hoffman

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

| Signature     | Company       | Date                                                     | Time  | Comments/Special Instructions |
|---------------|---------------|----------------------------------------------------------|-------|-------------------------------|
| Relinquished  | TAI           | 3/31/14                                                  | 11:15 |                               |
| Received      | ORE           | 3/31/14                                                  | 11:15 |                               |
| Relinquished  |               |                                                          |       |                               |
| Received      |               |                                                          |       |                               |
| Relinquished  |               |                                                          |       |                               |
| Received      |               |                                                          |       |                               |
| Relinquished  |               |                                                          |       |                               |
| Received      |               |                                                          |       |                               |
| Reviewed/Date | Reviewed/Date | Chromatograms with final report <input type="checkbox"/> |       |                               |

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ \_\_\_\_\_





14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

May 7, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1404-258

Dear Chuck:

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

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: May 7, 2014  
Samples Submitted: April 30, 2014  
Laboratory Reference: 1404-258  
Project: 6552

### **Case Narrative**

Samples were collected on April 30, 2014 and received by the laboratory on April 30, 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.

#### NWTPH Gx/BTEX Analysis

The sample chromatogram is similar to mineral spirits.

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: May 7, 2014  
 Samples Submitted: April 30, 2014  
 Laboratory Reference: 1404-258  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 04-258-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-1-14               | 5-1-14               |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-1-14               | 5-1-14               |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-1-14               | 5-1-14               |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 5-1-14               | 5-1-14               |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 5-1-14               | 5-1-14               |              |
| Gasoline             | <b>190</b>              | 100                   | NWTPH-Gx      | 5-1-14               | 5-1-14               | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 82                      | 71-116                |               |                      |                      |              |

Date of Report: May 7, 2014  
 Samples Submitted: April 30, 2014  
 Laboratory Reference: 1404-258  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte              | Result                  | PQL                   | Method   | Date Prepared | Date Analyzed | Flags |
|----------------------|-------------------------|-----------------------|----------|---------------|---------------|-------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |          |               |               |       |
| Laboratory ID:       | 04-258-01               |                       |          |               |               |       |
| Benzene              | ND                      | 1.0                   | EPA 8021 | 5-1-14        | 5-1-14        |       |
| Toluene              | ND                      | 1.0                   | EPA 8021 | 5-1-14        | 5-1-14        |       |
| Ethyl Benzene        | ND                      | 1.0                   | EPA 8021 | 5-1-14        | 5-1-14        |       |
| m,p-Xylene           | ND                      | 1.0                   | EPA 8021 | 5-1-14        | 5-1-14        |       |
| o-Xylene             | ND                      | 1.0                   | EPA 8021 | 5-1-14        | 5-1-14        |       |
| Gasoline             | 190                     | 100                   | NWTPH-Gx | 5-1-14        | 5-1-14        | Z     |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |          |               |               |       |
| <i>Fluorobenzene</i> | 82                      | 71-116                |          |               |               |       |

| Analyte              | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b>     |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID:       | 04-258-01 |     |             |    |               |                  |                 |        |           |       |
|                      | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene              | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene              | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene           | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene             | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline             | 194       | 195 | NA          | NA |               | NA               | NA              | 1      | 30        | Z,Z   |
| <i>Surrogate:</i>    |           |     |             |    |               |                  |                 |        |           |       |
| <i>Fluorobenzene</i> |           |     |             |    |               | 82               | 81              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

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



**Onsite  
Environmental Inc.**

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

**Chain of Custody**

**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:**

**04-258**

Company: Terra Associates Inc

Project Number: 6552

Project Name: \_\_\_\_\_

Project Manager: Chuck Lie

Sampled by: Nicolas R Hoffman

Lab ID

**Number of Containers**

|                                                  |   |
|--------------------------------------------------|---|
| NWTPH-HCID                                       |   |
| NWTPH-Gx/BTEX                                    | X |
| NWTPH-Gx                                         |   |
| NWTPH-Dx                                         |   |
| Volatiles 8260C                                  |   |
| Halogenated Volatiles 8260C                      |   |
| Semivolatiles 8270D/SIM<br>(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                                       |   |

Date Sampled

Time Sampled

Matrix

4/30/14

13:15

AW

1

X

Signature

Company

Date

Time

Comments/Special Instructions

Relinquished

[Signature]

TAI

4/30/14

14:05

Received

[Signature]

Onsite

4.30.14

1405-

Relinquished

Received

Relinquished

Received

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ \_\_\_\_\_



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

June 4, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1405-216

Dear Chuck:

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

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: June 4, 2014  
Samples Submitted: May 28, 2014  
Laboratory Reference: 1405-216  
Project: 6552

### **Case Narrative**

Samples were collected on May 28, 2014 and received by the laboratory on May 28, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: June 4, 2014  
 Samples Submitted: May 28, 2014  
 Laboratory Reference: 1405-216  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 05-216-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-30-14              | 5-30-14              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 5-30-14              | 5-30-14              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 5-30-14              | 5-30-14              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 5-30-14              | 5-30-14              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 5-30-14              | 5-30-14              |              |
| Gasoline             | <b>240</b>              | 100                   | NWTPH-Gx      | 5-30-14              | 5-30-14              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>103</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: June 4, 2014  
 Samples Submitted: May 28, 2014  
 Laboratory Reference: 1405-216  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0530A2         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 5-30-14       | 5-30-14       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 5-30-14       | 5-30-14       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 5-30-14       | 5-30-14       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 5-30-14       | 5-30-14       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 5-30-14       | 5-30-14       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 5-30-14       | 5-30-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 108              | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 05-216-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 241       | 231 | NA          | NA |               | NA               | NA              | 4      | 30        | Z,Z   |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 103              | 107             | 71-116 |           |       |



### 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.
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- 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.
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- Z - The sample chromatogram is similar to mineral spirits.

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

# Chain of Custody

[illegible]



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

July 31, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1407-259

Dear Chuck:

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

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish line.

David Baumeister  
Project Manager

Enclosures

Date of Report: July 31, 2014  
Samples Submitted: July 28, 2014  
Laboratory Reference: 1407-259  
Project: 6552

### **Case Narrative**

Samples were collected on July 28, 2014 and received by the laboratory on July 28, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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 31, 2014  
 Samples Submitted: July 28, 2014  
 Laboratory Reference: 1407-259  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 07-259-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-29-14              | 7-29-14              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 7-29-14              | 7-29-14              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 7-29-14              | 7-29-14              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 7-29-14              | 7-29-14              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 7-29-14              | 7-29-14              |              |
| Gasoline             | <b>950</b>              | 100                   | NWTPH-Gx      | 7-29-14              | 7-29-14              | Z            |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>103</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: July 31, 2014  
 Samples Submitted: July 28, 2014  
 Laboratory Reference: 1407-259  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0729A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 7-29-14       | 7-29-14       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 7-29-14       | 7-29-14       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 7-29-14       | 7-29-14       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 7-29-14       | 7-29-14       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 7-29-14       | 7-29-14       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 7-29-14       | 7-29-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 104              | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 07-259-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | 30        |       |
| Gasoline         | 952       | 928         | NA            | NA               | NA              | 3      | 30        | Z,Z   |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 103              | 107             | 71-116 |           |       |





### 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 - The sample chromatogram is similar to mineral spirits.

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



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## Chain of Custody

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[illegible]



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October 7, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1409-305

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 29, 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,

A handwritten signature in black ink, appearing to read 'DB', followed by a horizontal line.

David Baumeister  
Project Manager

Enclosures

Date of Report: October 7, 2014  
Samples Submitted: September 29, 2014  
Laboratory Reference: 1409-305  
Project: 6552

### **Case Narrative**

Samples were collected on September 29, 2014 and received by the laboratory on September 29, 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.

#### NWTPH Gx/BTEX Analysis

The chromatogram for sample 105/106 is similar to mineral spirits.

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: October 7, 2014  
 Samples Submitted: September 29, 2014  
 Laboratory Reference: 1409-305  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>        | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|-----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>     | <b>105/106</b>          |                       |               |                      |                      |              |
| <b>Laboratory ID:</b> | <b>09-305-01</b>        |                       |               |                      |                      |              |
| Benzene               | <b>ND</b>               | 1.0                   | EPA 8021      | 10-1-14              | 10-1-14              |              |
| Toluene               | <b>ND</b>               | 1.0                   | EPA 8021      | 10-1-14              | 10-1-14              |              |
| Ethyl Benzene         | <b>ND</b>               | 1.0                   | EPA 8021      | 10-1-14              | 10-1-14              |              |
| m,p-Xylene            | <b>ND</b>               | 1.0                   | EPA 8021      | 10-1-14              | 10-1-14              |              |
| o-Xylene              | <b>ND</b>               | 1.0                   | EPA 8021      | 10-1-14              | 10-1-14              |              |
| Gasoline              | <b>240</b>              | 100                   | NWTPH-Gx      | 10-1-14              | 10-1-14              | Z            |
| <i>Surrogate:</i>     | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i>  | 99                      | 71-116                |               |                      |                      |              |

Date of Report: October 7, 2014  
 Samples Submitted: September 29, 2014  
 Laboratory Reference: 1409-305  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB1001A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 10-1-14       | 10-1-14       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 10-1-14       | 10-1-14       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 10-1-14       | 10-1-14       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 10-1-14       | 10-1-14       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 10-1-14       | 10-1-14       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 10-1-14       | 10-1-14       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 98               | 71-116         |          |               |               |       |

| Analyte        | Result    |     | Spike Level |    | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|----------------|-----------|-----|-------------|----|---------------|------------------|-----------------|--------|-----------|-------|
| DUPLICATE      |           |     |             |    |               |                  |                 |        |           |       |
| Laboratory ID: | 09-305-01 |     |             |    |               |                  |                 |        |           |       |
|                | ORIG      | DUP |             |    |               |                  |                 |        |           |       |
| Benzene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Toluene        | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Ethyl Benzene  | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| m,p-Xylene     | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| o-Xylene       | ND        | ND  | NA          | NA |               | NA               | NA              | NA     | 30        |       |
| Gasoline       | 243       | 206 | NA          | NA |               | NA               | NA              | 16     | 30        |       |
| Surrogate:     |           |     |             |    |               |                  |                 |        |           |       |
| Fluorobenzene  |           |     |             |    |               | 99               | 97              | 71-116 |           |       |



### 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 - The sample chromatogram is similar to mineral spirits.

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



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# Chain of Custody

Page 1 of 1

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December 19, 2014

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1412-158

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 15, 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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: December 19, 2014  
Samples Submitted: December 15, 2014  
Laboratory Reference: 1412-158  
Project: 6552

### **Case Narrative**

Samples were collected on December 15, 2014 and received by the laboratory on December 15, 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: December 19, 2014  
 Samples Submitted: December 15, 2014  
 Laboratory Reference: 1412-158  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 12-158-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 12-17-14             | 12-17-14             |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 12-17-14             | 12-17-14             |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 12-17-14             | 12-17-14             |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 12-17-14             | 12-17-14             |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 12-17-14             | 12-17-14             |              |
| Gasoline             | <b>ND</b>               | 100                   | NWTPH-Gx      | 12-17-14             | 12-17-14             |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 96                      | 71-116                |               |                      |                      |              |

Date of Report: December 19, 2014  
 Samples Submitted: December 15, 2014  
 Laboratory Reference: 1412-158  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB1217W1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 12-17-14      | 12-17-14      |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 12-17-14      | 12-17-14      |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 12-17-14      | 12-17-14      |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 12-17-14      | 12-17-14      |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 12-17-14      | 12-17-14      |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 12-17-14      | 12-17-14      |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 99               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 12-158-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 96               | 96              | 71-116 |           |       |



### 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





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January 16, 2015

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1501-054

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on January 12, 2015.

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,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: January 16, 2015  
Samples Submitted: January 12, 2015  
Laboratory Reference: 1501-054  
Project: 6552

### **Case Narrative**

Samples were collected on January 12, 2015 and received by the laboratory on January 12, 2015. 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 16, 2015  
 Samples Submitted: January 12, 2015  
 Laboratory Reference: 1501-054  
 Project: 6552

# **NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>105/106</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 01-054-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-14-15              | 1-14-15              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 1-14-15              | 1-14-15              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 1-14-15              | 1-14-15              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 1-14-15              | 1-14-15              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 1-14-15              | 1-14-15              |              |
| Gasoline             | <b>ND</b>               | 100                   | NWTPH-Gx      | 1-14-15              | 1-14-15              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | 96                      | 71-116                |               |                      |                      |              |

Date of Report: January 16, 2015  
 Samples Submitted: January 12, 2015  
 Laboratory Reference: 1501-054  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0114A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 1-14-15       | 1-14-15       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 1-14-15       | 1-14-15       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 1-14-15       | 1-14-15       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 1-14-15       | 1-14-15       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 1-14-15       | 1-14-15       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 1-14-15       | 1-14-15       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 97               | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 01-054-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 96               | 93              | 71-116 |           |       |



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



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## Chain of Custody

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01-054

[illegible]



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February 18, 2015

Chuck Lie  
Terra Associates, Inc.  
12525 Willows Road, Suite 101  
Kirkland, WA 98034

Re: Analytical Data for Project 6552  
Laboratory Reference No. 1502-150

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on February 17, 2015.

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,

A handwritten signature in black ink, appearing to read "DB", followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures

Date of Report: February 18, 2015  
Samples Submitted: February 17, 2015  
Laboratory Reference: 1502-150  
Project: 6552

### **Case Narrative**

Samples were collected on February 17, 2015 and received by the laboratory on February 17, 2015. 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: February 18, 2015  
 Samples Submitted: February 17, 2015  
 Laboratory Reference: 1502-150  
 Project: 6552

**NWTPH-Gx/BTEX**

Matrix: Air  
 Units: ug/L (ppb)

| <b>Analyte</b>       | <b>Result</b>           | <b>PQL</b>            | <b>Method</b> | <b>Date Prepared</b> | <b>Date Analyzed</b> | <b>Flags</b> |
|----------------------|-------------------------|-----------------------|---------------|----------------------|----------------------|--------------|
| <b>Client ID:</b>    | <b>101/102</b>          |                       |               |                      |                      |              |
| Laboratory ID:       | 02-150-01               |                       |               |                      |                      |              |
| Benzene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-17-15              | 2-17-15              |              |
| Toluene              | <b>ND</b>               | 1.0                   | EPA 8021      | 2-17-15              | 2-17-15              |              |
| Ethyl Benzene        | <b>ND</b>               | 1.0                   | EPA 8021      | 2-17-15              | 2-17-15              |              |
| m,p-Xylene           | <b>ND</b>               | 1.0                   | EPA 8021      | 2-17-15              | 2-17-15              |              |
| o-Xylene             | <b>ND</b>               | 1.0                   | EPA 8021      | 2-17-15              | 2-17-15              |              |
| Gasoline             | <b>ND</b>               | 100                   | NWTPH-Gx      | 2-17-15              | 2-17-15              |              |
| <i>Surrogate:</i>    | <i>Percent Recovery</i> | <i>Control Limits</i> |               |                      |                      |              |
| <i>Fluorobenzene</i> | <i>102</i>              | <i>71-116</i>         |               |                      |                      |              |

Date of Report: February 18, 2015  
 Samples Submitted: February 17, 2015  
 Laboratory Reference: 1502-150  
 Project: 6552

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Air  
 Units: ug/L (ppb)

| Analyte             | Result           | PQL            | Method   | Date Prepared | Date Analyzed | Flags |
|---------------------|------------------|----------------|----------|---------------|---------------|-------|
| <b>METHOD BLANK</b> |                  |                |          |               |               |       |
| Laboratory ID:      | MB0217A1         |                |          |               |               |       |
| Benzene             | ND               | 1.0            | EPA 8021 | 2-17-15       | 2-17-15       |       |
| Toluene             | ND               | 1.0            | EPA 8021 | 2-17-15       | 2-17-15       |       |
| Ethyl Benzene       | ND               | 1.0            | EPA 8021 | 2-17-15       | 2-17-15       |       |
| m,p-Xylene          | ND               | 1.0            | EPA 8021 | 2-17-15       | 2-17-15       |       |
| o-Xylene            | ND               | 1.0            | EPA 8021 | 2-17-15       | 2-17-15       |       |
| Gasoline            | ND               | 100            | NWTPH-Gx | 2-17-15       | 2-17-15       |       |
| Surrogate:          | Percent Recovery | Control Limits |          |               |               |       |
| Fluorobenzene       | 100              | 71-116         |          |               |               |       |

| Analyte          | Result    | Spike Level | Source Result | Percent Recovery | Recovery Limits | RPD    | RPD Limit | Flags |
|------------------|-----------|-------------|---------------|------------------|-----------------|--------|-----------|-------|
| <b>DUPLICATE</b> |           |             |               |                  |                 |        |           |       |
| Laboratory ID:   | 02-150-01 |             |               |                  |                 |        |           |       |
|                  | ORIG      | DUP         |               |                  |                 |        |           |       |
| Benzene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Toluene          | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Ethyl Benzene    | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| m,p-Xylene       | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| o-Xylene         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Gasoline         | ND        | ND          | NA            | NA               | NA              | NA     | NA        | 30    |
| Surrogate:       |           |             |               |                  |                 |        |           |       |
| Fluorobenzene    |           |             |               | 102              | 98              | 71-116 |           |       |





### 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



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# Chain of Custody

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Turnaround Request  
(in working days)

Laboratory Number:

02-150

(Check One)

☒ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☐ Standard (7 Days)  
(TPH analysis 5 Days)

☐ \_\_\_\_\_  
(other)

Company: Tara Associates Inc.  
Project Number: 6552  
Project Name: \_\_\_\_\_  
Project Manager: \_\_\_\_\_  
Sampled by: Chuck Lee  
Nicolas R. Hoffman

Lab ID \_\_\_\_\_ Sample Identification \_\_\_\_\_  
Date Sampled 2/17/15 Time Sampled 11:15 Matrix Air

## Number of Containers

|                                                  |   |
|--------------------------------------------------|---|
| NWTPH-HCID                                       |   |
| NWTPH-Gx/BTEX                                    | X |
| NWTPH-Gx                                         |   |
| NWTPH-Dx                                         |   |
| Volatiles 8260C                                  |   |
| Halogenated Volatiles 8260C                      |   |
| Semivolatiles 8270D/SIM<br>(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                                       |   |

| Signature          | Company       | Date                                                     | Time         | Comments/Special Instructions |
|--------------------|---------------|----------------------------------------------------------|--------------|-------------------------------|
| <u>[Signature]</u> | <u>TAI</u>    | <u>2/17/15</u>                                           | <u>12:28</u> |                               |
| <u>[Signature]</u> | <u>ORE</u>    | <u>2/17/15</u>                                           | <u>12:28</u> |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Received           |               |                                                          |              |                               |
| Relinquished       |               |                                                          |              |                               |
| Reviewed/Date      | Reviewed/Date | Chromatograms with final report <input type="checkbox"/> |              |                               |

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ \_\_\_\_\_

## **APPENDIX E**

### **MTCATPH11 SUMMARIES**

# **A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

## **1. Enter Site Information**

Date: August 14 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-102 at 10

## **2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis | Composition<br>Ratio |
|---------------------------------------------------|---------------------------------|----------------------|
|                                                   | mg/kg                           | %                    |
| <b><u>Petroleum EC Fraction</u></b>               |                                 |                      |
| AL_EC >5-6                                        | 2.5                             | 0.05%                |
| AL_EC >6-8                                        | 2.5                             | 0.05%                |
| AL_EC >8-10                                       | 2.5                             | 0.05%                |
| AL_EC >10-12                                      | 3400                            | 72.64%               |
| AL_EC >12-16                                      | 2.5                             | 0.05%                |
| AL_EC >16-21                                      | 2.5                             | 0.05%                |
| AL_EC >21-34                                      | 2.5                             | 0.05%                |
| AR_EC >8-10                                       | 340                             | 7.26%                |
| AR_EC >10-12                                      | 820                             | 17.52%               |
| AR_EC >12-16                                      | 100                             | 2.14%                |
| AR_EC >16-21                                      | 2.5                             | 0.05%                |
| AR_EC >21-34                                      | 2.5                             | 0.05%                |
| Benzene                                           | 0.029                           | 0.00%                |
| Toluene                                           | 0.145                           | 0.00%                |
| Ethylbenzene                                      | 0.029                           | 0.00%                |
| Total Xylenes                                     | 0.12                            | 0.00%                |
| Naphthalene                                       | 0.011                           | 0.00%                |
| 1-Methyl Naphthalene                              | 0.0097                          | 0.00%                |
| 2-Methyl Naphthalene                              | 0.0039                          | 0.00%                |
| n-Hexane                                          | 0                               | 0.00%                |
| MTBE                                              | 0                               | 0.00%                |
| Ethylene Dibromide (EDB)                          | 0                               | 0.00%                |
| 1,2 Dichloroethane (EDC)                          | 0                               | 0.00%                |
| Benzo(a)anthracene                                | 0.0093                          | 0.00%                |
| Benzo(b)fluoranthene                              | 0.0084                          | 0.00%                |
| Benzo(k)fluoranthene                              | 0.0087                          | 0.00%                |
| Benzo(a)pyrene                                    | 0.0039                          | 0.00%                |
| Chrysene                                          | 0.055                           | 0.00%                |
| Dibenz(a,h)anthracene                             | 0.0039                          | 0.00%                |
| Indeno(1,2,3-cd)pyrene                            | 0.0039                          | 0.00%                |
| <b>Sum</b>                                        | <b>4680.4407</b>                | <b>100.00%</b>       |

Notes for Data Entry Set Default Hydrogeology

**Clear All Soil Concentration Data Entry Cells**

**Restore All Soil Concentration Data cleared**

REMARK: This sample represents soils prior to the injection of calcium peroxide and soil vacuum extraction operations. This worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## **3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## **4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:

500

ug/L

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

|                                                          |
|----------------------------------------------------------|
| Date: <u>August 14 2015</u>                              |
| Site Name: <u>5221 Ballard Ave NW</u>                    |
| Sample Name: <u>B-102 at 10</u>                          |
| Measured Soil TPH Concentration, mg/kg: <b>4,680.441</b> |

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,151                           | 7.75E-08                | 2.18E+00 | Fail                                  |
|                                                        | Method C                            | 41,844                          | 1.91E-08                | 1.12E-01 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 65                              | 1.17E-06                | 1.97E+00 | Fail                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 640                             | NA                      | NA       | Fail                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,151.12</b>                 | <b>41,843.74</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria                | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|------------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                              | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI =1                        | YES                                     | 2.15E+03        | 3.56E-08 | 1.00E+00 | YES                                     | 4.18E+04        | 1.70E-07 | 1.00E+00 |
| Total Risk = 1E-5            | NO                                      | 6.04E+05        | 1.00E-05 | 2.81E+02 | NO                                      | 2.46E+06        | 1.00E-05 | 5.87E+01 |
| Risk of Benzene = 1E-6       | NO                                      | 2.93E+06        | 4.85E-05 | 1.36E+03 | NA                                      |                 |          |          |
| Risk of cPAHs mixture = 1E-6 | NO                                      | 6.17E+04        | 1.02E-06 | 2.87E+01 |                                         |                 |          |          |
| EDB                          | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                          | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>248.15</b> |
| Protective Soil Concentration, mg/kg        | <b>64.98</b>  |

| Ground Water Criteria        | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|------------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                              | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                         | YES                                                     | 2.48E+02       | 1.36E-07 | 1.00E+00 | 6.50E+01                    |
| Total Risk = 1E-5            | NO                                                      | 5.60E+02       | 1.30E-06 | 2.00E+00 | 100% NAPL                   |
| Total Risk = 1E-6            | NO                                                      | 5.37E+02       | 1.00E-06 | 1.93E+00 | 1.76E+03                    |
| Risk of cPAHs mixture = 1E-5 | NO                                                      | 5.60E+02       | 1.30E-06 | 2.00E+00 | 100% NAPL                   |
| Benzene MCL = 5 ug/L         | NO                                                      | 5.60E+02       | 1.30E-06 | 2.00E+00 | 100% NAPL                   |
| MTBE = 20 ug/L               | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 99000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 5.00E+02                              | 7.05E-07 | 1.83E+00 | <b>6.40E+02</b>             |

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-103@10

Measured Soil TPH Concentration, mg/kg: 1,973.111

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,119                           | 7.95E-07                | 9.31E-01 | Pass                                  |
|                                                        | Method C                            | 36,140                          | 1.97E-07                | 5.46E-02 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 117                             | 2.56E-06                | 1.57E+00 | Fail                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,119.02</b>                 | <b>36,140.09</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI =1                       | YES                                     | 2.12E+03        | 8.54E-07 | 9.99E-01 | YES                                     | 3.61E+04        | 3.61E-06 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 2.48E+04        | 1.00E-05 | 1.17E+01 | NO                                      | 1.00E+05        | 1.00E-05 | 2.77E+00 |
| Risk of Benzene= 1E-6       | NO                                      | 1.24E+06        | 4.98E-04 | 5.83E+02 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NO                                      | 2.49E+03        | 1.00E-06 | 1.17E+00 |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>247.79</b> |
| Protective Soil Concentration, mg/kg        | <b>117.40</b> |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 2.48E+02       | 5.42E-07 | 1.00E+00 | 1.17E+02                    |
| Total Risk = 1E-5           | NO                                                      | 4.34E+02       | 3.30E-06 | 1.64E+00 | 100% NAPL                   |
| Total Risk = 1E-6           | NO                                                      | 3.24E+02       | 1.00E-06 | 1.27E+00 | 2.57E+02                    |
| Risk of cPAHs mixture= 1E-5 | NO                                                      | 4.34E+02       | 3.30E-06 | 1.64E+00 | 100% NAPL                   |
| Benzene MCL = 5 ug/L        | NO                                                      | 4.34E+02       | 3.30E-06 | 1.64E+00 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 101000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 4.34E+02                              | 3.30E-06 | 1.64E+00 | <b>100% NAPL</b>            |

# **A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

## **1. Enter Site Information**

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-103@10

## **2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis | Composition<br>Ratio |
|---------------------------------------------------|---------------------------------|----------------------|
|                                                   | mg/kg                           | %                    |
| <b><u>Petroleum EC Fraction</u></b>               |                                 |                      |
| AL_EC >5-6                                        | 2.5                             | 0.13%                |
| AL_EC >6-8                                        | 2.5                             | 0.13%                |
| AL_EC >8-10                                       | 46                              | 2.33%                |
| AL_EC >10-12                                      | 1100                            | 55.75%               |
| AL_EC >12-16                                      | 240                             | 12.16%               |
| AL_EC >16-21                                      | 2.5                             | 0.13%                |
| AL_EC >21-34                                      | 46                              | 2.33%                |
| AR_EC >8-10                                       | 95                              | 4.81%                |
| AR_EC >10-12                                      | 260                             | 13.18%               |
| AR_EC >12-16                                      | 52                              | 2.64%                |
| AR_EC >16-21                                      | 33                              | 1.67%                |
| AR_EC >21-34                                      | 93                              | 4.71%                |
| Benzene                                           | 0.029                           | 0.00%                |
| Toluene                                           | 0.145                           | 0.01%                |
| Ethylbenzene                                      | 0.029                           | 0.00%                |
| Total Xylenes                                     | 0.12                            | 0.01%                |
| Naphthalene                                       | 0.019                           | 0.00%                |
| 1-Methyl Naphthalene                              | 0.0038                          | 0.00%                |
| 2-Methyl Naphthalene                              | 0.0038                          | 0.00%                |
| n-Hexane                                          | 0                               | 0.00%                |
| MTBE                                              | 0                               | 0.00%                |
| Ethylene Dibromide (EDB)                          | 0                               | 0.00%                |
| 1,2 Dichloroethane (EDC)                          | 0                               | 0.00%                |
| Benzo(a)anthracene                                | 0.035                           | 0.00%                |
| Benzo(b)fluoranthene                              | 0.039                           | 0.00%                |
| Benzo(k)fluoranthene                              | 0.035                           | 0.00%                |
| Benzo(a)pyrene                                    | 0.067                           | 0.00%                |
| Chrysene                                          | 0.046                           | 0.00%                |
| Dibenz(a,h)anthracene                             | 0.0092                          | 0.00%                |
| Indeno(1,2,3-cd)pyrene                            | 0.03                            | 0.00%                |
| <b>Sum</b>                                        | <b>1973.1108</b>                | <b>100.00%</b>       |

Notes for Data Entry      Set Default Hydrogeology

**Clear All Soil Concentration Data Entry Cells**

**Restore All Soil Concentration Data cleared**

### **REMARK:**

This soil sample represents soil prior to the injection of calcium peroxide and soil vacuum extraction operations. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## **3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## **4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## 1. Enter Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 3 5-10 ft

## 2. Enter Soil Concentration Measured

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis<br>mg/kg | Composition<br>Ratio<br>% |
|---------------------------------------------------|------------------------------------------|---------------------------|
| <b><u>Petroleum EC Fraction</u></b>               |                                          |                           |
| AL_EC >5-6                                        | 2.5                                      | 0.36%                     |
| AL_EC >6-8                                        | 2.5                                      | 0.36%                     |
| AL_EC >8-10                                       | 89                                       | 12.85%                    |
| AL_EC >10-12                                      | 430                                      | 62.07%                    |
| AL_EC >12-16                                      | 44                                       | 6.35%                     |
| AL_EC >16-21                                      | 2.5                                      | 0.36%                     |
| AL_EC >21-34                                      | 2.5                                      | 0.36%                     |
| AR_EC >8-10                                       | 20                                       | 2.89%                     |
| AR_EC >10-12                                      | 85                                       | 12.27%                    |
| AR_EC >12-16                                      | 9.7                                      | 1.40%                     |
| AR_EC >16-21                                      | 2.5                                      | 0.36%                     |
| AR_EC >21-34                                      | 2.5                                      | 0.36%                     |
| Benzene                                           | 0.01                                     | 0.00%                     |
| Toluene                                           | 0.025                                    | 0.00%                     |
| Ethylbenzene                                      | 0.025                                    | 0.00%                     |
| Total Xylenes                                     | 0.049                                    | 0.01%                     |
| Naphthalene                                       |                                          | 0.00%                     |
| 1-Methyl Naphthalene                              |                                          | 0.00%                     |
| 2-Methyl Naphthalene                              |                                          | 0.00%                     |
| n-Hexane                                          | 0                                        | 0.00%                     |
| MTBE                                              | 0                                        | 0.00%                     |
| Ethylene Dibromide (EDB)                          | 0                                        | 0.00%                     |
| 1,2 Dichloroethane (EDC)                          | 0                                        | 0.00%                     |
| Benzo(a)anthracene                                | 0                                        | 0.00%                     |
| Benzo(b)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(k)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(a)pyrene                                    | 0                                        | 0.00%                     |
| Chrysene                                          | 0                                        | 0.00%                     |
| Dibenz(a,h)anthracene                             | 0                                        | 0.00%                     |
| Indeno(1,2,3-cd)pyrene                            | 0                                        | 0.00%                     |
| <b>Sum</b>                                        | <b>692.809</b>                           | <b>100.00%</b>            |

Notes for Data Entry Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

### REMARK:

This is in intermediate soil sample that follows the period with SVE operation shutdown. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## 3. Enter Site-Specific Hydrogeological Data

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## 4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L



## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 3 5-10 ft

Measured Soil TPH Concentration, mg/kg: **692.809**

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,119                           | 5.51E-10                | 3.27E-01 | Pass                                  |
|                                                        | Method C                            | 39,207                          | 7.37E-11                | 1.77E-02 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 187                             | 1.70E-06                | 1.24E+00 | Fail                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,119.02</b>                 | <b>39,207.24</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI =1                       | YES                                     | 2.12E+03        | 1.68E-09 | 1.00E+00 | YES                                     | 3.92E+04        | 4.17E-09 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 1.26E+07        | 1.00E-05 | 5.94E+03 | NO                                      | 9.40E+07        | 1.00E-05 | 2.40E+03 |
| Risk of Benzene= 1E-6       | NO                                      | 1.26E+06        | 1.00E-06 | 5.94E+02 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>226.95</b> |
| Protective Soil Concentration, mg/kg        | <b>187.39</b> |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 2.27E+02       | 7.66E-07 | 1.00E+00 | 1.87E+02                    |
| Total Risk = 1E-5           | NO                                                      | 3.24E+02       | 3.07E-06 | 1.37E+00 | 100% NAPL                   |
| Total Risk = 1E-6           | NO                                                      | 2.50E+02       | 1.00E-06 | 1.09E+00 | 2.71E+02                    |
| Risk of cPAHs mixture= 1E-5 | NA                                                      | NA             | NA       | NA       | NA                          |
| Benzene MCL = 5 ug/L        | NO                                                      | 3.24E+02       | 3.07E-06 | 1.37E+00 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 97000 mg/kg TPH.

#### 3.2. Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 3.24E+02                              | 3.07E-06 | 1.37E+00 | <b>100% NAPL</b>            |

# A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

## 1. Enter Site Information

Date: August 14 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 4 5-10 feet

## 2. Enter Soil Concentration Measured

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis | Composition<br>Ratio |
|---------------------------------------------------|---------------------------------|----------------------|
|                                                   | mg/kg                           | %                    |
| <b>Petroleum EC Fraction</b>                      |                                 |                      |
| AL_EC >5-6                                        | 2.5                             | 0.05%                |
| AL_EC >6-8                                        | 2.5                             | 0.05%                |
| AL_EC >8-10                                       | 11                              | 0.23%                |
| AL_EC >10-12                                      | 4600                            | 97.00%               |
| AL_EC >12-16                                      | 71                              | 1.50%                |
| AL_EC >16-21                                      | 2.5                             | 0.05%                |
| AL_EC >21-34                                      | 2.5                             | 0.05%                |
| AR_EC >8-10                                       | 20                              | 0.42%                |
| AR_EC >10-12                                      | 15                              | 0.32%                |
| AR_EC >12-16                                      | 9.3                             | 0.20%                |
| AR_EC >16-21                                      | 2.5                             | 0.05%                |
| AR_EC >21-34                                      | 2.5                             | 0.05%                |
| Benzene                                           | 0.011                           | 0.00%                |
| Toluene                                           | 0.024                           | 0.00%                |
| Ethylbenzene                                      | 0.024                           | 0.00%                |
| Total Xylenes                                     | 0.87                            | 0.02%                |
| Naphthalene                                       | 0                               | 0.00%                |
| 1-Methyl Naphthalene                              | 0                               | 0.00%                |
| 2-Methyl Naphthalene                              | 0                               | 0.00%                |
| n-Hexane                                          | 0                               | 0.00%                |
| MTBE                                              | 0                               | 0.00%                |
| Ethylene Dibromide (EDB)                          | 0                               | 0.00%                |
| 1,2 Dichloroethane (EDC)                          | 0                               | 0.00%                |
| Benzo(a)anthracene                                | 0                               | 0.00%                |
| Benzo(b)fluoranthene                              | 0                               | 0.00%                |
| Benzo(k)fluoranthene                              | 0                               | 0.00%                |
| Benzo(a)pyrene                                    | 0                               | 0.00%                |
| Chrysene                                          | 0                               | 0.00%                |
| Dibenz(a,h)anthracene                             | 0                               | 0.00%                |
| Indeno(1,2,3-cd)pyrene                            | 0                               | 0.00%                |
| <b>Sum</b>                                        | <b>4742.229</b>                 | <b>100.00%</b>       |

Notes for Data Entry Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

### REMARK:

using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a desity of 114 pounds per cubic foot (1.82 kg/liter)

## 3. Enter Site-Specific Hydrogeological Data

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## 4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 14 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 4 5-10 feet

Measured Soil TPH Concentration, mg/kg: **4,742.229**

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,215                           | 6.06E-10                | 2.14E+00 | Fail                                  |
|                                                        | Method C                            | 42,963                          | 8.11E-11                | 1.10E-01 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 100% NAPL                       | 4.64E-07                | 7.36E-02 | Pass                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,214.58</b>                 | <b>42,962.74</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI =1                       | YES                                     | 2.21E+03        | 2.83E-10 | 1.00E+00 | YES                                     | 4.30E+04        | 7.35E-10 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 7.83E+07        | 1.00E-05 | 3.54E+04 | NO                                      | 5.85E+08        | 1.00E-05 | 1.36E+04 |
| Risk of Benzene= 1E-6       | NO                                      | 7.83E+06        | 1.00E-06 | 3.54E+03 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |                                                        |
|---------------------------------------------|--------------------------------------------------------|
| Most Stringent Criterion                    | NA                                                     |
| Protective Ground Water Concentration, ug/L | NA                                                     |
| Protective Soil Concentration, mg/kg        | <b>Soil-to-Ground Water is not a critical pathway!</b> |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Total Risk = 1E-5           | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Total Risk = 1E-6           | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Risk of cPAHs mixture= 1E-5 | NA                                                      | NA             | NA       | NA       | NA                          |
| Benzene MCL = 5 ug/L        | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 94000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 3.06E+01                              | 5.20E-07 | 7.62E-02 | <b>100% NAPL</b>            |

# **A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

## **1. Enter Site Information**

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 4 5-10 ft

## **2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis<br>mg/kg | Composition<br>Ratio<br>% |
|---------------------------------------------------|------------------------------------------|---------------------------|
| <b><u>Petroleum EC Fraction</u></b>               |                                          |                           |
| AL_EC >5-6                                        | 2.5                                      | 0.05%                     |
| AL_EC >6-8                                        | 2.5                                      | 0.05%                     |
| AL_EC >8-10                                       | 11                                       | 0.23%                     |
| AL_EC >10-12                                      | 4600                                     | 97.00%                    |
| AL_EC >12-16                                      | 71                                       | 1.50%                     |
| AL_EC >16-21                                      | 2.5                                      | 0.05%                     |
| AL_EC >21-34                                      | 2.5                                      | 0.05%                     |
| AR_EC >8-10                                       | 20                                       | 0.42%                     |
| AR_EC >10-12                                      | 15                                       | 0.32%                     |
| AR_EC >12-16                                      | 9.3                                      | 0.20%                     |
| AR_EC >16-21                                      | 2.5                                      | 0.05%                     |
| AR_EC >21-34                                      | 2.5                                      | 0.05%                     |
| Benzene                                           | 0.011                                    | 0.00%                     |
| Toluene                                           | 0.024                                    | 0.00%                     |
| Ethylbenzene                                      | 0.024                                    | 0.00%                     |
| Total Xylenes                                     | 0.87                                     | 0.02%                     |
| Naphthalene                                       |                                          | 0.00%                     |
| 1-Methyl Naphthalene                              |                                          | 0.00%                     |
| 2-Methyl Naphthalene                              |                                          | 0.00%                     |
| n-Hexane                                          | 0                                        | 0.00%                     |
| MTBE                                              | 0                                        | 0.00%                     |
| Ethylene Dibromide (EDB)                          | 0                                        | 0.00%                     |
| 1,2 Dichloroethane (EDC)                          | 0                                        | 0.00%                     |
| Benzo(a)anthracene                                | 0                                        | 0.00%                     |
| Benzo(b)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(k)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(a)pyrene                                    | 0                                        | 0.00%                     |
| Chrysene                                          | 0                                        | 0.00%                     |
| Dibenz(a,h)anthracene                             | 0                                        | 0.00%                     |
| Indeno(1,2,3-cd)pyrene                            | 0                                        | 0.00%                     |
| <b>Sum</b>                                        | <b>4742.229</b>                          | <b>100.00%</b>            |

## **3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## **4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

### **REMARK:**

This is in intermediate soil sample that follows the period with SVE operation shutdown. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 4 5-10 ft

Measured Soil TPH Concentration, mg/kg: 4,742.229

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,215                           | 6.06E-10                | 2.14E+00 | Fail                                  |
|                                                        | Method C                            | 42,963                          | 8.11E-11                | 1.10E-01 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 100% NAPL                       | 4.64E-07                | 7.36E-02 | Pass                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | 2,214.58                        | 42,962.74                     |
| Most Stringent Criterion                 | HI =1                           | HI =1                         |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI=1                        | YES                                     | 2.21E+03        | 2.83E-10 | 1.00E+00 | YES                                     | 4.30E+04        | 7.35E-10 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 7.83E+07        | 1.00E-05 | 3.54E+04 | NO                                      | 5.85E+08        | 1.00E-05 | 1.36E+04 |
| Risk of Benzene= 1E-6       | NO                                      | 7.83E+06        | 1.00E-06 | 3.54E+03 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |                                                 |
|---------------------------------------------|-------------------------------------------------|
| Most Stringent Criterion                    | NA                                              |
| Protective Ground Water Concentration, ug/L | NA                                              |
| Protective Soil Concentration, mg/kg        | Soil-to-Ground Water is not a critical pathway! |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Total Risk = 1E-5           | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Total Risk = 1E-6           | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| Risk of cPAHs mixture= 1E-5 | NA                                                      | NA             | NA       | NA       | NA                          |
| Benzene MCL = 5 ug/L        | YES                                                     | 3.06E+01       | 5.20E-07 | 7.62E-02 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 94000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 3.06E+01                              | 5.20E-07 | 7.62E-02 | 100% NAPL                   |

# **A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

## **1. Enter Site Information**

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 7 5-10 ft

## **2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis<br>mg/kg | Composition<br>Ratio<br>% |
|---------------------------------------------------|------------------------------------------|---------------------------|
| <b><u>Petroleum EC Fraction</u></b>               |                                          |                           |
| AL_EC >5-6                                        | 2.5                                      | 0.21%                     |
| AL_EC >6-8                                        | 2.5                                      | 0.21%                     |
| AL_EC >8-10                                       | 9.4                                      | 0.79%                     |
| AL_EC >10-12                                      | 640                                      | 53.71%                    |
| AL_EC >12-16                                      | 95                                       | 7.97%                     |
| AL_EC >16-21                                      | 2.5                                      | 0.21%                     |
| AL_EC >21-34                                      | 2.5                                      | 0.21%                     |
| AR_EC >8-10                                       | 40                                       | 3.36%                     |
| AR_EC >10-12                                      | 330                                      | 27.70%                    |
| AR_EC >12-16                                      | 62                                       | 5.20%                     |
| AR_EC >16-21                                      | 2.5                                      | 0.21%                     |
| AR_EC >21-34                                      | 2.5                                      | 0.21%                     |
| Benzene                                           | 0.011                                    | 0.00%                     |
| Toluene                                           | 0.024                                    | 0.00%                     |
| Ethylbenzene                                      | 0.025                                    | 0.00%                     |
| Total Xylenes                                     | 0.059                                    | 0.00%                     |
| Naphthalene                                       |                                          | 0.00%                     |
| 1-Methyl Naphthalene                              |                                          | 0.00%                     |
| 2-Methyl Naphthalene                              |                                          | 0.00%                     |
| n-Hexane                                          | 0                                        | 0.00%                     |
| MTBE                                              | 0                                        | 0.00%                     |
| Ethylene Dibromide (EDB)                          | 0                                        | 0.00%                     |
| 1,2 Dichloroethane (EDC)                          | 0                                        | 0.00%                     |
| Benzo(a)anthracene                                | 0                                        | 0.00%                     |
| Benzo(b)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(k)fluoranthene                              | 0                                        | 0.00%                     |
| Benzo(a)pyrene                                    | 0                                        | 0.00%                     |
| Chrysene                                          | 0                                        | 0.00%                     |
| Dibenz(a,h)anthracene                             | 0                                        | 0.00%                     |
| Indeno(1,2,3-cd)pyrene                            | 0                                        | 0.00%                     |
| <b>Sum</b>                                        | <b>1191.519</b>                          | <b>100.00%</b>            |

## **3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## **4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

### **REMARK:**

This is in intermediate soil sample that follows the period with SVE operation shutdown. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: DPT 7 5-10 ft

Measured Soil TPH Concentration, mg/kg: **1,191.519**

### 1. Summary of Calculation Results

| Exposure Pathway                                          | Method/Goal                         | Protective Soil<br>TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil<br>Conc Pass or Fail? |
|-----------------------------------------------------------|-------------------------------------|------------------------------------|-------------------------|----------|------------------------------------------|
|                                                           |                                     |                                    | RISK @                  | HI @     |                                          |
| Protection of Soil Direct<br>Contact: Human Health        | Method B                            | 1,974                              | 6.06E-10                | 6.04E-01 | Pass                                     |
|                                                           | Method C                            | 35,741                             | 8.11E-11                | 3.33E-02 | Pass                                     |
| Protection of Method B Ground<br>Water Quality (Leaching) | Potable GW: Human Health Protection | 35                                 | 1.34E-06                | 2.64E+00 | Fail                                     |
|                                                           | Target TPH GW Conc. @ 500 ug/L      | 445                                | NA                      | NA       | Fail                                     |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>1,973.82</b>                 | <b>35,741.32</b>              |
| Most Stringent Criterion                 | <b>HI=1</b>                     | <b>HI=1</b>                   |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI=1                        | YES                                     | 1.97E+03        | 1.00E-09 | 1.00E+00 | YES                                     | 3.57E+04        | 2.43E-09 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 1.97E+07        | 1.00E-05 | 9.97E+03 | NO                                      | 1.47E+08        | 1.00E-05 | 4.11E+03 |
| Risk of Benzene= 1E-6       | NO                                      | 1.97E+06        | 1.00E-06 | 9.97E+02 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>194.59</b> |
| Protective Soil Concentration, mg/kg        | <b>34.57</b>  |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil<br>Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|--------------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                                |
| HI=1                        | YES                                                     | 1.95E+02       | 1.13E-07 | 1.00E+00 | 3.46E+01                       |
| Total Risk = 1E-5           | NO                                                      | 5.64E+02       | 1.95E-06 | 2.75E+00 | 100% NAPL                      |
| Total Risk = 1E-6           | NO                                                      | 5.13E+02       | 1.00E-06 | 2.53E+00 | 5.74E+02                       |
| Risk of cPAHs mixture= 1E-5 | NA                                                      | NA             | NA       | NA       | NA                             |
| Benzene MCL = 5 ug/L        | NO                                                      | 5.64E+02       | 1.95E-06 | 2.75E+00 | 100% NAPL                      |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                             |

Note: 100% NAPL is 101000 mg/kg TPH.

#### 3.2. Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil<br>Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|--------------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                                |
| Target TPH GW Conc = 500 ug/L | 5.00E+02                              | 8.76E-07 | 2.47E+00 | <b>4.45E+02</b>                |

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-301 at 10

Measured Soil TPH Concentration, mg/kg: **2,370.526**

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,014                           | 7.94E-07                | 1.18E+00 | Fail                                  |
|                                                        | Method C                            | 36,206                          | 1.97E-07                | 6.55E-02 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 71                              | 1.04E-06                | 1.84E+00 | Fail                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,014.40</b>                 | <b>36,205.51</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI=1                        | YES                                     | 2.01E+03        | 6.75E-07 | 1.00E+00 | YES                                     | 3.62E+04        | 3.01E-06 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 2.98E+04        | 1.00E-05 | 1.48E+01 | NO                                      | 1.20E+05        | 1.00E-05 | 3.32E+00 |
| Risk of Benzene= 1E-6       | NO                                      | 3.08E+06        | 1.03E-03 | 1.53E+03 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NO                                      | 2.99E+03        | 1.00E-06 | 1.48E+00 |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>194.20</b> |
| Protective Soil Concentration, mg/kg        | <b>70.60</b>  |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 1.94E+02       | 1.39E-07 | 1.00E+00 | 7.06E+01                    |
| Total Risk = 1E-5           | NO                                                      | 3.84E+02       | 1.28E-06 | 1.89E+00 | 100% NAPL                   |
| Total Risk = 1E-6           | NO                                                      | 3.72E+02       | 1.00E-06 | 1.83E+00 | 1.99E+03                    |
| Risk of cPAHs mixture= 1E-5 | NO                                                      | 3.84E+02       | 1.28E-06 | 1.89E+00 | 100% NAPL                   |
| Benzene MCL = 5 ug/L        | NO                                                      | 3.84E+02       | 1.28E-06 | 1.89E+00 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 99000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 3.84E+02                              | 1.28E-06 | 1.89E+00 | <b>100% NAPL</b>            |



**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-301 at 10

**2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis<br>mg/kg | Composition<br>Ratio<br>% |
|---------------------------------------------------|------------------------------------------|---------------------------|
| <b><u>Petroleum EC Fraction</u></b>               |                                          |                           |
| AL_EC >5-6                                        | 2.5                                      | 0.11%                     |
| AL_EC >6-8                                        | 2.5                                      | 0.11%                     |
| AL_EC >8-10                                       | 46                                       | 1.94%                     |
| AL_EC >10-12                                      | 1500                                     | 63.28%                    |
| AL_EC >12-16                                      | 240                                      | 10.12%                    |
| AL_EC >16-21                                      | 2.5                                      | 0.11%                     |
| AL_EC >21-34                                      | 2.5                                      | 0.11%                     |
| AR_EC >8-10                                       | 51                                       | 2.15%                     |
| AR_EC >10-12                                      | 440                                      | 18.56%                    |
| AR_EC >12-16                                      | 78                                       | 3.29%                     |
| AR_EC >16-21                                      | 2.5                                      | 0.11%                     |
| AR_EC >21-34                                      | 2.5                                      | 0.11%                     |
| Benzene                                           | 0.014                                    | 0.00%                     |
| Toluene                                           | 0.075                                    | 0.00%                     |
| Ethylbenzene                                      | 0.075                                    | 0.00%                     |
| Total Xylenes                                     | 0.074                                    | 0.00%                     |
| Naphthalene                                       | 0.019                                    | 0.00%                     |
| 1-Methyl Naphthalene                              | 0.0038                                   | 0.00%                     |
| 2-Methyl Naphthalene                              | 0.0038                                   | 0.00%                     |
| n-Hexane                                          | 0                                        | 0.00%                     |
| MTBE                                              | 0                                        | 0.00%                     |
| Ethylene Dibromide (EDB)                          | 0                                        | 0.00%                     |
| 1,2 Dichloroethane (EDC)                          | 0                                        | 0.00%                     |
| Benzo(a)anthracene                                | 0.035                                    | 0.00%                     |
| Benzo(b)fluoranthene                              | 0.039                                    | 0.00%                     |
| Benzo(k)fluoranthene                              | 0.035                                    | 0.00%                     |
| Benzo(a)pyrene                                    | 0.067                                    | 0.00%                     |
| Chrysene                                          | 0.046                                    | 0.00%                     |
| Dibenz(a,h)anthracene                             | 0.0092                                   | 0.00%                     |
| Indeno(1,2,3-cd)pyrene                            | 0.03                                     | 0.00%                     |
| <b>Sum</b>                                        | <b>2370.5258</b>                         | <b>100.00%</b>            |

Notes for Data Entry Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

**REMARK:**

This is the most recent soil sample that follows the period with SVE operation shutdown. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

w/PAH data from B-103 @ 10'

**3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L

# **A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

## **1. Enter Site Information**

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-301 at 10

## **2. Enter Soil Concentration Measured**

| Chemical of Concern<br>or Equivalent Carbon Group | Measured Soil Conc<br>dry basis | Composition<br>Ratio |
|---------------------------------------------------|---------------------------------|----------------------|
|                                                   | mg/kg                           | %                    |
| <b><u>Petroleum EC Fraction</u></b>               |                                 |                      |
| AL_EC >5-6                                        | 2.5                             | 0.11%                |
| AL_EC >6-8                                        | 2.5                             | 0.11%                |
| AL_EC >8-10                                       | 46                              | 1.94%                |
| AL_EC >10-12                                      | 1500                            | 63.28%               |
| AL_EC >12-16                                      | 240                             | 10.13%               |
| AL_EC >16-21                                      | 2.5                             | 0.11%                |
| AL_EC >21-34                                      | 2.5                             | 0.11%                |
| AR_EC >8-10                                       | 51                              | 2.15%                |
| AR_EC >10-12                                      | 440                             | 18.56%               |
| AR_EC >12-16                                      | 78                              | 3.29%                |
| AR_EC >16-21                                      | 2.5                             | 0.11%                |
| AR_EC >21-34                                      | 2.5                             | 0.11%                |
| Benzene                                           | 0.014                           | 0.00%                |
| Toluene                                           | 0.075                           | 0.00%                |
| Ethylbenzene                                      | 0.075                           | 0.00%                |
| Total Xylenes                                     | 0.074                           | 0.00%                |
| Naphthalene                                       | 0.019                           | 0.00%                |
| 1-Methyl Naphthalene                              | 0.0038                          | 0.00%                |
| 2-Methyl Naphthalene                              | 0.0038                          | 0.00%                |
| n-Hexane                                          | 0                               | 0.00%                |
| MTBE                                              | 0                               | 0.00%                |
| Ethylene Dibromide (EDB)                          | 0                               | 0.00%                |
| 1,2 Dichloroethane (EDC)                          | 0                               | 0.00%                |
| Benzo(a)anthracene                                | 0                               | 0.00%                |
| Benzo(b)fluoranthene                              | 0                               | 0.00%                |
| Benzo(k)fluoranthene                              | 0                               | 0.00%                |
| Benzo(a)pyrene                                    | 0                               | 0.00%                |
| Chrysene                                          | 0                               | 0.00%                |
| Dibenz(a,h)anthracene                             | 0                               | 0.00%                |
| Indeno(1,2,3-cd)pyrene                            | 0                               | 0.00%                |
| <b>Sum</b>                                        | <b>2370.2646</b>                | <b>100.00%</b>       |

Notes for Data Entry Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared

### **REMARK:**

This is the most recent soil sample that follows the period with SVE operation shutdown. The worksheet was prepared using EPH VPH and moisture content data from the analytical lab. Bulk density is based on our experience with till soils and is set at a density of 114 pounds per cubic foot (1.82 kg/liter)

## **3. Enter Site-Specific Hydrogeological Data**

|                             |       |          |
|-----------------------------|-------|----------|
| Total soil porosity:        | 0.38  | Unitless |
| Volumetric water content:   | 0.15  | Unitless |
| Volumetric air content:     | 0.23  | Unitless |
| Soil bulk density measured: | 1.82  | kg/L     |
| Fraction Organic Carbon:    | 0.001 | Unitless |
| Dilution Factor:            | 20    | Unitless |

## **4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water

concentration, enter adjusted value here: 500 ug/L

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: August 19 2015

Site Name: 5221 Ballard Ave NW

Sample Name: B-301 at 10

Measured Soil TPH Concentration, mg/kg: 2,370.265

### 1. Summary of Calculation Results

| Exposure Pathway                                       | Method/Goal                         | Protective Soil TPH Conc, mg/kg | With Measured Soil Conc |          | Does Measured Soil Conc Pass or Fail? |
|--------------------------------------------------------|-------------------------------------|---------------------------------|-------------------------|----------|---------------------------------------|
|                                                        |                                     |                                 | RISK @                  | HI @     |                                       |
| Protection of Soil Direct Contact: Human Health        | Method B                            | 2,014                           | 7.71E-10                | 1.18E+00 | Fail                                  |
|                                                        | Method C                            | 36,206                          | 1.03E-10                | 6.55E-02 | Pass                                  |
| Protection of Method B Ground Water Quality (Leaching) | Potable GW: Human Health Protection | 71                              | 1.04E-06                | 1.84E+00 | Fail                                  |
|                                                        | Target TPH GW Conc. @ 500 ug/L      | 100% NAPL                       | NA                      | NA       | Pass                                  |

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

|                                          | Method B: Unrestricted Land Use | Method C: Industrial Land Use |
|------------------------------------------|---------------------------------|-------------------------------|
| Protective Soil Concentration, TPH mg/kg | <b>2,014.40</b>                 | <b>36,205.51</b>              |
| Most Stringent Criterion                 | <b>HI =1</b>                    | <b>HI =1</b>                  |

| Soil Criteria               | Protective Soil Concentration @Method B |                 |          |          | Protective Soil Concentration @Method C |                 |          |          |
|-----------------------------|-----------------------------------------|-----------------|----------|----------|-----------------------------------------|-----------------|----------|----------|
|                             | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     | Most Stringent?                         | TPH Conc, mg/kg | RISK @   | HI @     |
| HI=1                        | YES                                     | 2.01E+03        | 6.55E-10 | 1.00E+00 | YES                                     | 3.62E+04        | 1.58E-09 | 1.00E+00 |
| Total Risk=1E-5             | NO                                      | 3.07E+07        | 1.00E-05 | 1.53E+04 | NO                                      | 2.30E+08        | 1.00E-05 | 6.34E+03 |
| Risk of Benzene= 1E-6       | NO                                      | 3.07E+06        | 1.00E-06 | 1.53E+03 | NA                                      |                 |          |          |
| Risk of cPAHs mixture= 1E-6 | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDB                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |
| EDC                         | NA                                      | NA              | NA       | NA       |                                         |                 |          |          |

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

|                                             |               |
|---------------------------------------------|---------------|
| Most Stringent Criterion                    | <b>HI=1</b>   |
| Protective Ground Water Concentration, ug/L | <b>194.19</b> |
| Protective Soil Concentration, mg/kg        | <b>70.54</b>  |

| Ground Water Criteria       | Protective Potable Ground Water Concentration @Method B |                |          |          | Protective Soil Conc, mg/kg |
|-----------------------------|---------------------------------------------------------|----------------|----------|----------|-----------------------------|
|                             | Most Stringent?                                         | TPH Conc, ug/L | RISK @   | HI @     |                             |
| HI=1                        | YES                                                     | 1.94E+02       | 1.39E-07 | 1.00E+00 | 7.05E+01                    |
| Total Risk = 1E-5           | NO                                                      | 3.84E+02       | 1.28E-06 | 1.89E+00 | 100% NAPL                   |
| Total Risk = 1E-6           | NO                                                      | 3.72E+02       | 1.00E-06 | 1.83E+00 | 2.00E+03                    |
| Risk of cPAHs mixture= 1E-5 | NA                                                      | NA             | NA       | NA       | NA                          |
| Benzene MCL = 5 ug/L        | NO                                                      | 3.84E+02       | 1.28E-06 | 1.89E+00 | 100% NAPL                   |
| MTBE = 20 ug/L              | NA                                                      | NA             | NA       | NA       | NA                          |

Note: 100% NAPL is 99000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

| Ground Water Criteria         | Protective Ground Water Concentration |          |          | Protective Soil Conc, mg/kg |
|-------------------------------|---------------------------------------|----------|----------|-----------------------------|
|                               | TPH Conc, ug/L                        | Risk @   | HI @     |                             |
| Target TPH GW Conc = 500 ug/L | 3.84E+02                              | 1.28E-06 | 1.89E+00 | <b>100% NAPL</b>            |