



## **ENVIRONMENTAL SITE ASSESSMENT REPORT**

*Property Identification:*

**LUST #04-04-0813  
W.C. HARTLEY (HARTLEY MOTORS) II  
120 E HARBOR STREET  
WARRENTON, OREGON 97146**

*Prepared For:*

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Date Issued: November 18, 2021  
Alpha Project Number: 21-41228

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## **1.0 INTRODUCTION**

Alpha Environmental Services (Alpha) conducted an Environmental Site Assessment at the property located at 120 Harbor Street, Warrenton, Oregon (the Property). The purpose of the investigation was to evaluate the potential presence of environmental impacts from previous site activities. This report summarizes the current scope of work, field investigation activities and laboratory analyses, and provides conclusions and recommendations.

### **1.1 Site Description**

The Property is located at 120 Harbor Street, Warrenton, Clatsop County, Oregon. The Property identification numbers are 81021AD03100, 81021AD02803 and 81021AD02804, located in Township 8 North, Range 10 West, Section 21, Willamette Meridian. The Property and vicinity are depicted in Figures 1 and 2.

The Property consists of an approximately 0.16-acre parcel improved with former service station building. The remainder of the site consists of parking areas.

The vicinity of the Property can generally be described as commercial. Current usage of the adjoining properties includes: north – E Harbor Drive with commercial development beyond; south – auto detailing; east – Jensen Communications and warehouse type structures; and west – mini-mart, restaurants, laundromat and Shell gas station.

It was reported to Alpha that during the 1980s construction of the new bridge over the Skipanon River, the entire site (including the building) was raised with fill material approximately three to four feet in elevation. The former asphalt parking areas and concrete driveway aprons appear to have been left in place. During our investigation, asphalt and concrete were encountered at consistent depths of about three and one-half to four feet beneath the current surface.

### **1.2 Current and Future Land Use**

The Property is zoned C1 – Commercial. Currently the property is occupied by a former gas station. The future use of the property will remain for commercial uses.

### **1.3 Site Drainage**

The majority of the developed areas of the property are covered by the building or with impervious asphalt/concrete. Stormwater appears to sheet flow across the asphalt and drains to E Harbor Drive and SE Anchor Avenue.

### **1.4 Sewer & Water Connections**

The property connected to the sanitary sewer and is serviced by the City of Warrenton. The water is supplied by the City of Warrenton.

### **1.5 Geology and Groundwater**

The near surface geology beneath the Property consists of the fill material placed in the 1980s. This is underlain by Quaternary Alluvium and likely dune sand. Groundwater was encountered across the site at approximately seven feet below existing ground surface. The flow of groundwater typically imitates the surface topography and ordinarily flows from higher to lower elevations. The near surface flow may be influenced by stratigraphy, water bodies, rainfall, underground utilities and other subsurface features. Groundwater flow direction may be influenced from tidal action and is generally anticipated to flow to the north.

The nearest major surface water in the vicinity of the Property is the Skipanon River Creek located approximately 350 feet north and east of the Property.

## **2.0 PREVIOUS INVESTIGATIONS**

### **2.1 Site Work**

Critical Areas Consulting (Bob Bogar), *Tank Decommissioning Report and Initial Site Characterization*, UST Facility #9881, Hartley Motors Site, 120 Harbor Drive, Warrenton, Oregon, Dated June 17, 2004.

### **2.2 Site History**

County records indicate the building was constructed in 1958. It is assumed that the USTs were installed at the same time. The tanks were removed in 2004 by Critical Areas Consulting and at that time an apparent release was discovered. Detections in soils were limited to heavy oils outside of the tank excavation. The initial groundwater from the pit indicated a low concentration of gasoline; however, follow up sampling approximately one month later did not show detections for gasoline, but for heavy oil. Based on the detections, the DEQ requested additional site investigation.

As noted above, during the 1980s construction of a new bridge over the Skipanon River, the entire site (including the building) was lifted with fill material approximately three to four feet in elevation. The former asphalt parking areas and concrete driveway aprons appear to have been left in place. During our investigation, asphalt and concrete were encountered at consistent depths of about three and one-half to five feet beneath the current gravel, asphalt and concrete surfaces.

### **3.0 PURPOSE AND SCOPE**

#### **3.1 Purpose**

The purpose of the current investigation was to determine the extent of impacts on the Property and evaluate any detections relative to current DEQ Risk-Based Concentrations (RBCs). Alpha relied upon the review of the previous report, DEQ records and onsite observations to develop the scope of work for this investigation. The general scope of work for this investigation consisted of the following activities:

- Contacting One Call Oregon for public locates to mark utility services entering the Property.
- The advancement of five borings using a GeoProbe direct-push sampler at specific locations around the Property.
- The installation of five temporary PVC groundwater wells.
- The collection of soil and groundwater samples from borings for visual observation and laboratory analysis.
- The presentation of results for the investigation including findings, conclusions and recommendations.

#### **3.2 Accepted Scope of Services**

The assessment was performed according to the agreed-upon scope of services between Alpha and Bill Hartley. The assessment was completed in general accordance with the authorized scope of work listed above.

## 4.0 FIELD INVESTIGATION AND SAMPLING PROCEDURES

### 4.1 Preliminary Field Work

Prior to sampling, Alpha filed a public utility locate request with One Call Oregon and utilities were marked by respective utility companies where they entered the Property.

### 4.2 Boring Location Rationale

The boring locations were chosen based on the occupancy of the former cabinet shop in that building and from our interpretation of where the leaking barrels were based on the historic photographs in the DEQ file.

### 4.3 Drilling and Sampling Activities

Field investigation and drilling activities were conducted under the supervision of Mr. Jim Cooper, senior geologist for Alpha.

The subsurface sampling consisted of the advancement of five shallow soil borings advanced by Alpha using a hand-driven GeoProbe sampler. The borings were advanced and sampled in 2-foot intervals to approximately 8 feet below surface grade (bsg).

Soil samples were collected using a single-use thin-walled polyethylene tube inserted inside a stainless-steel sampling tube. In between each boring, the push probe sampler, the outer tubing and inner sampling rods were decontaminated. A site plan with approximate boring locations is included as Figure 4.

Soil lithology was observed and logged by slicing the disposable sample tube along the longitudinal axis. Soil samples were field screened for visual and olfactory signs of petroleum contamination along with headspace vapor screening for volatile organic compounds using a hand-held photoionization detection (PID) meter. Representative samples were placed in Ziplock storage bag and left to equalize for approximately 10 minutes before readings were taken.

The soil samples were placed in laboratory-provided glass jars, capped with Teflon®-lined lids and placed in a cooler on ice. The soil samples were transported to Alpha's designated sample refrigerator until picked up by an Apex Laboratory courier.

Samples were handled under chain-of-custody protocol and soil/groundwater samples were analyzed by NWTPH-Gx, NWTPH-Dx and select samples by EPA Test Method 8260 Volatile Organic Compounds (VOCs) and EPA Test Method 8270 Polynuclear Aromatic Hydrocarbons (PAHs).

### 4.4 Soil Boring Details

| 120 E Harbor Dr |                 |             |                |                    |                    |
|-----------------|-----------------|-------------|----------------|--------------------|--------------------|
| Identification  | Purpose         | Type        | Drilling Depth | Sampled Media      | Analysis           |
| B1              | Site Assessment | Direct-push | 8'             | Soil & Groundwater | Gx, Dx,            |
| B2              | Site Assessment | Direct-push | 8'             | Soil               | Gx, Dx             |
| B3              | Site Assessment | Direct-push | 8'             | Soil & Groundwater | Gx, Dx             |
| B4              | Site Assessment | Direct-push | 8'             | Soil & Groundwater | Gx, Dx, VOCs, PAHs |
| B5              | Site Assessment | Direct-push | 8'             | Soil & Groundwater | Gx, Dx             |

#### Boring B1

The soil lithology between the surface and approximately 8 feet bsg generally consists of gravel fill, underlain with sand fill containing various amounts of asphalt. A temporary PVC was placed to facilitate groundwater collection. Static groundwater was measured at 6.22 feet bsg.

#### Boring B2

The soil lithology between the surface and approximately 8 feet bsg generally consists of gravel fill, underlain with sand fill containing various amounts of asphalt. A temporary PVC was placed to facilitate groundwater collection. No groundwater was observed in the well.

#### Boring B3

The soil lithology between the surface and approximately 8 feet bsg generally consists of gravel fill, underlain with sand fill containing various amounts of asphalt and concrete. A temporary PVC was placed to facilitate groundwater collection. Static groundwater was measured at 6.06 feet bsg.

#### Boring B4

The soil lithology between the surface and approximately 8 feet bsg generally consists of gravel fill, underlain with sand fill containing obvious asphalt and silt. A temporary PVC was placed to facilitate groundwater collection. Static groundwater was measured at 5.98 feet bsg.

#### Boring B5

The soil lithology between the surface and approximately 8 feet bsg generally consists of gravel fill, underlain with sand fill containing various amounts of asphalt. A temporary PVC was placed to facilitate groundwater collection. Static groundwater was measured at 6.15 feet bsg.

### **4.5 Selection of Soil Samples for Chemical Analyses**

Soil samples from borings were collected from the depth interval with the greatest contamination, highest PID readings or based on field observations. Asphalt was observed to be mixed into the fill material in all borings. All other shallow soil samples were collected at approximately four to five feet below ground surface.

### **4.6 Boring Abandonment**

After samples were collected, the borings were abandoned by filling with bentonite chips in accordance with the Oregon Water Resources Department (WRD) requirements.

## **5.0 QUALITY ASSURANCE & QUALITY CONTROL**

For the project, all data used for closure purposes complied with the DEQ's Quality Assurance Project Plan (QAPP) for the Site Investigations, DEQ05-LQ-069-QAPP, Version 2.2, dated August 14, 2012.

### **5.1 Field Equipment & Decontamination**

Disposable field equipment used for this project include nitrile gloves, plastic spoons, drill core liners, Terra Core™ samplers and Ziplock bags. Reusable field equipment included a soil cutting knife.

Soil samples were field screened for VOCs using a MiniRAE 2000 hand-held PID meter. The meter was calibrated by Life Safety on September 18, 2020. Prior to using in the field, the meter was calibrated with a fresh air check and subsequently checked using 100 ppm isobutylene. The meter readings were within 2% of the calibration standard.

Decontamination of Alpha supplied reusable field equipment included manual removal of particles, wash with Alconox solution, rinse with tap water, wash with Alconox solution and rinse with distilled water. In between each boring, the driller rinsed all sample tubing, cutting bits, etc. with a hot water pressure rinse.

### **5.2 Field Screening**

The soil samples from the investigation were obtained directly from direct-push disposable liners. The liners were split open along the longitudinal axis and laid open for visual observation. Any obviously impacted soil was placed directly into both laboratory-provided jars and a Ziplock bag using new disposable nitrile gloves. The material in the Ziplock will be checked using a PID meter. A new set of gloves was donned after any sample handling and between each interval of sample collected.

### **5.3 Sample Collection**

Samples from the investigation were collected directly from direct-push disposable liners. For samples collected for VOC analysis, the sample of the soil was collected following EPA Method 5035A using a Terra Core™ sampling tool and placed in a pre-tared vial containing preservative with a septum-sealed screw cap. Once sealed, the sample was not exposed to the atmosphere until analysis was conducted. The sample collection process was completed in the least amount of time in order to minimize the loss of VOCs due to volatilization. Groundwater samples were directly dispensed from the end of the disposable tubing to the laboratory provided sample containers.

### **5.4 Sample Identification**

Soil sample containers were labeled with the project name and number, the time of sampling, sampler's initials, sample designation and date. The chain of custody was completed, placed in a Ziplock bag and put to the cooler.

### **5.5 Sample Transport**

The samples were packed in reusable ice with an appropriate temperature blank(s), which consisted of a 100-ml polyethylene bottle filled with clean water.

Containers were placed upright in the cooler and cushioned by bubble wrap. Ice packets were placed around and on top of the sample containers. The samples were transported by the geologist to Alpha's personnel protected sample refrigerator. A courier from Apex picked the samples up directly from Alpha's designated sample refrigerator and delivered the samples to Apex Laboratories in Tigard, Oregon..

Samples were handled under chain-of-custody protocol in which the custody form was signed and dated by the Alpha personnel. Upon pickup of the samples, personnel at Apex Laboratories examined and recorded the condition of the sample containers, signed the custody form, and transferred the samples to their coolers. A completed copy of the chain-of-custody form is included at the end of the laboratory analytical report (Appendix B).

## 6.0 SAMPLE ANALYTICAL RESULTS

### 6.1 Sample Results Evaluation

In order to evaluate the current and reasonably likely future risk to human health and the environment, Alpha compared the data from the current investigation to the Oregon Department of Environmental Quality (DEQ) risk-based decision making (RBDM) guidelines.

The RBDM process involves investigating potential sources of the contaminants and the environmental media in which they are contained (e.g., soil or groundwater), receptors (who could potentially be exposed to contaminants), and the exposure pathway (how a receptor might come in contact with contaminants [e.g., inhalation, ingestion or dermal contact]). If any of these elements is missing, the pathway is considered incomplete.

Using the parameters listed above, the laboratory detected concentrations and/or the reporting limits were compared to DEQ risk-based concentrations (RBCs). An RBC is the concentration of a hazardous substance in soil, water, air or sediment that is determined to be protective of human health and the environment under specified exposure conditions.

The risk screening levels for heavy oil were obtained from a DEQ memorandum by Rob Hood dated January 27, 2016.

The selected pathways and reasoning for selection or exclusion can be found in Section 7.0, Risk-Based Evaluations. The following outlines the impacted media and decision-making criteria selected for this investigation.

#### Impacted Media:

- Soil
- Groundwater

#### Potential Receptors:

- Adults in an occupational scenario
- Adults in an excavation worker scenario

#### Selected Pathways:

- Ingestion, dermal contact, and inhalation
- Volatilization to outdoor air
- Vapor intrusion into buildings

## 6.2 Soil Findings

### Petroleum

The analytical results indicate that gasoline was detected in Boring B2 (17.1 ppm) and Boring B4 (171 ppm). Diesel was detected in Boring B1 (75.9 ppm) and Boring B4 (286 ppm). Heavy oil was detected in Boring B1 (320 ppm), Boring B2 (119 ppm) and Boring B4 (22,800 ppm).

Pieces of asphalt were present in the samples, especially B4 and likely biased the heavy oil results high. The sample results are consistent with select samples collected in 2004.

The sample results were compared to the RBCs for occupational and excavation worker receptors. The detections are below the RBCs for all applicable exposure pathways.

A summary of the results for the soil analysis is presented in Tables 1. Laboratory analytical reports are included as Appendix B.

**Table 1 - Soil Sample Analytical Results - Petroleum**

| Boring No.                                    | Location of Sample           | Sample Depth in Feet | Petroleum |        |            |
|-----------------------------------------------|------------------------------|----------------------|-----------|--------|------------|
|                                               |                              |                      | Gasoline  | Diesel | Heavy Oils |
|                                               |                              |                      | mg/kg     | mg/kg  | mg/kg      |
| B1                                            | South of Building            | 4                    | ND<6.32   | 75.9   | 320        |
| B2                                            | South of Building            | 4                    | 17.1      | ND     | 119        |
| B3                                            | Southeast corner of Building | 5                    | ND<6.95   | ND     | ND         |
| B4                                            | East of Building             | 5                    | 171       | 286    | 22,800     |
| B5                                            | Northeast of Building        | 5                    | ND<12.0   | ND     | 625        |
| <b>Generic Risk Based Screening Levels</b>    |                              |                      |           |        |            |
| Direct Contact (Excavation Worker)            |                              |                      | >Max      | >Max   | 62,000     |
| Volitization to Outdoor Air (Occupational)    |                              |                      | 69,000    | >Max   | >Max       |
| Vapor Intrusion into Buildings (Occupational) |                              |                      | >Max      | >Max   | >Max       |

ND = Analyte Not Detected at or above laboratory reporting limit (See Laboratory Report) All reporting limits are below the RBCs.

mg/kg = milligram per kilogram or parts per million (ppm)

>Max = this substance is deemed not to pose a risk in this scenario.

The Occupational Receptor scenario is not applicable since soils are not located within 3 feet of surface

## VOCs

The analytical results indicate that only 1,2,4-Trimethylbenzene was detected in Boring B4 at a concentration of 0.109 ppm. No other analytes were detected in the soil sample at or above the laboratory reporting limits.

The sample results were compared to the RBCs for occupational and excavation worker receptors. The detections are below the RBCs for all applicable exposure pathways.

A summary of the results for the soil analysis is presented in Table 2. Laboratory analytical reports are included as Appendix B.

**Table 2 - Soil Sample Analytical Results - VOCs**

| Boring No.                                    | Location         | Approx. Depth in Feet | VOCs                   |                    |
|-----------------------------------------------|------------------|-----------------------|------------------------|--------------------|
|                                               |                  |                       | 1,2,4-Trimethylbenzene | All Other Analytes |
|                                               |                  |                       | mg/kg                  | mg/kg              |
| B4@5'                                         | East of Building | 5                     | 0.109                  | ND                 |
| <b>Generic Risk-Based Screening Levels</b>    |                  |                       |                        |                    |
| Direct Contact (Excavation Worker)            |                  |                       | 81,000                 | -                  |
| Volatilization to Outdoor Air (Occupational)  |                  |                       | > Csat                 | -                  |
| Vapor Intrusion into Buildings (Occupational) |                  |                       | > Csat                 | -                  |

ND = Analyte Not Detected at or above laboratory reporting limit (See Laboratory Report) All reporting limits are below the RBCs

mg/kg = milligram per kilogram or parts per million (ppm)

>Csat = This soil RBC exceeds the limit of three-phase partitioning

## PAHs

The analytical results indicate that low levels of several PAHs were detected in Boring B4. The sample results were compared to the RBCs for occupational and excavation worker receptors. The detections are below the RBCs for all applicable exposure pathways.

A summary of the results for the soil analysis is presented in Table 3. Laboratory analytical reports are included as Appendix B.

**Table 3 - Soil Sample Analytical Results - PAHs**

|                        | <b>B4@5'</b>    | Direct Contact<br>(Excavation<br>Worker) | Volitization to<br>Outdoor Air<br>(Occupational) | Vapor<br>Intrusion into<br>Buildings<br>(Occupational) |
|------------------------|-----------------|------------------------------------------|--------------------------------------------------|--------------------------------------------------------|
| <b>Analyte</b>         | Result<br>mg/kg | mg/kg                                    | mg/kg                                            | mg/kg                                                  |
| Acenaphthene           | ND<0.0169       | 590,000                                  | >Max                                             | >Max                                                   |
| Acenaphthylene         | ND<0.0169       | -                                        | -                                                | -                                                      |
| Anthracene             | ND<0.0327       | >Max                                     | >Max                                             | >Max                                                   |
| Benzo(a)anthracene     | <b>0.117</b>    | >Csat                                    | >Csat                                            | >Csat                                                  |
| Benzo(a)pyrene         | <b>0.108</b>    | 490                                      | NV                                               | NV                                                     |
| Benzo(b)fluoranthene   | <b>0.172</b>    | 4,900                                    | NV                                               | NV                                                     |
| Benzo(K)fluoranthene   | <b>0.0780</b>   | 49,000                                   | NV                                               | NV                                                     |
| Benzo(g,h,i)perylene   | <b>0.259</b>    | -                                        | -                                                | -                                                      |
| Chrysene               | <b>0.254</b>    | 490,000                                  | NV                                               | NV                                                     |
| Dibenz(a,h)anthracene  | ND<0.0191       | 490                                      | NV                                               | NV                                                     |
| Fluoranthene           | <b>0.127</b>    | 280,000                                  | NV                                               | NV                                                     |
| Fluorene               | <b>0.0222</b>   | 390,000                                  | >Max                                             | >Max                                                   |
| Indeno(1,2,3-cd)pyrene | <b>0.107</b>    | 4,900                                    | NV                                               | NV                                                     |
| Naphthalene            | <b>0.0472</b>   | 16,000                                   | 83                                               | 83                                                     |
| Phenanthrene           | <b>0.0701</b>   | -                                        | -                                                | -                                                      |
| Pyrene                 | <b>0.611</b>    | 210,000                                  | >Max                                             | >Max                                                   |

ND = Analyte Not Detected at or above laboratory reporting limit (See Laboratory Report) All reporting limits are below the RBCs.

>Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning.

>Max = this substance is deemed not to pose a risk in this scenario.

The Occupational Receptor scenario is not applicable since soils are not located within 3 feet of surface

### 6.3 Groundwater Findings

Groundwater samples were collected in Borings B1, B3, B4 and B5. Insufficient water was encountered in Boring B2 to obtain a sample. The static water level in the temporary wells was measured.

The analytical results indicate that only diesel was detected in Boring B4 at a concentration of 1,390 parts per billion (ppb). No other analytes were detected in the groundwater samples at or above the laboratory reporting limits. The laboratory reporting limits are below the applicable RBCs.

A summary of the results for the groundwater analysis is presented in Table 4. Laboratory analytical reports are included as Appendix B.

**Table 4 - Groundwater Sample Analytical Results - Petroleum**

| Boring No.                                    | Location of Sample           | Static Water Level | Petroleum |         |            |
|-----------------------------------------------|------------------------------|--------------------|-----------|---------|------------|
|                                               |                              |                    | Gasoline  | Diesel  | Heavy Oils |
|                                               |                              |                    | ug/L      | ug/L    | ug/L       |
| B1                                            | South of Building            | 6.8                | ND<100    | ND<80.8 | ND<162     |
| B3                                            | Southeast corner of Building | 7.1                | ND<100    | ND<74.8 | ND<150     |
| B4                                            | East of Building             | 7.3                | ND<100    | 1,390   | ND<203     |
| B5                                            | Northeast of Building        | 7.4                | ND<100    | ND<85.1 | ND<170     |
| <b>Generic Risk Based Screening Levels</b>    |                              |                    |           |         |            |
| Groundwater in Excavation                     |                              |                    | 14,000    | >S      | >S         |
| Volatilization to Outdoor Air (Occupational)  |                              |                    | >S        | >S      | >S         |
| Vapor Intrusion into Buildings (Occupational) |                              |                    | 22,000    | >S      | >S         |

ND = Analyte Not Detected at or above laboratory reporting limit (See Laboratory Report) All reporting limits are below the RBCs.

mg/kg = milligram per kilogram or parts per million (ppm)

>Csat = This groundwater RBC exceeds the solubility limit.

\* = Not applicable as soils are not located within 3 feet of surface

## **7.0 RISK-BASED EVALUATIONS**

### **7.1 Conceptual Site Models**

A conceptual site model (CSM) describes the known or suspected sources of contamination, considers how the contaminants are likely to migrate (pathways), and identifies who is likely to be affected by the contaminants (receptors). In order for risk to be present at the site, a source must be present, a pathway must be complete and a receptor must be present. The risk is evaluated for each contaminant of interest (COI) in order to determine whether risk is present at a site. Current conditions as well as anticipated future conditions are considered when developing the CSM.

### **7.2 Locality of the Facility**

The facility is defined by the DEQ as an area where hazardous substances or materials may have been deposited, stored, placed, or otherwise have come to be located. The facility is considered to be the area of historical operations of the facility, which encompasses the property to the tax lot boundaries.

The locality of the facility (LOF) is defined by DEQ as the area where human or ecological receptors are reasonably likely to come in contact with hazardous substances from the facility. The area is determined by considering factors such as the physical and chemical characteristics of the contaminants, the physical characteristics that govern the migration of contaminants (soil characteristics and groundwater gradient), and human activities in the vicinity. The LOF accounts for the likelihood of the contamination migrating over time, so it may be larger than the facility. Based on the attenuation of the groundwater and the levels of contamination are below all applicable RBCs, for the purposes of this report, the LOF is considered to encompass the same boundaries as the facility.

### **7.3 Expected Future Use of the Site**

The future use of the subject property will likely remain for commercial use only.

### **7.4 Soil ingestion, Dermal Contact, and Inhalation Exposure Pathway**

The exposure pathway for the occupational receptor is not considered complete because contamination is not present in the upper three feet of soils. Based on this, there is no exposure risk for this pathway.

The exposure pathway is complete for the construction and excavation worker; however, the concentrations are present below the applicable RBCs. Based on this, there is no exposure risk for this pathway.

### **7.5 Soil Volatilization to Outdoor Air Pathway**

This potential exposure pathway is complete for all receptors; however, the detected contamination is present at concentrations below the applicable RBCs. Based on this, there is no likely exposure risk for this pathway.

### **7.6 Soil Vapor Intrusion into Buildings**

This potential exposure pathway is complete for all receptors; however, the detected concentrations are below the applicable RBCs. Based on this, there is no likely exposure risk for this pathway.

### **7.7 Soil Leaching to Groundwater**

There is no exposure risk from drinking water as water is provided from the municipal system. The pathway was included for risk evaluation as occupants could be exposed to vapors and future workers could be exposed to shallow groundwater in a trench. The detected concentrations are below the RBCs and based on this, there is no likely exposure risk for this pathway.

## 7.8 Groundwater Ingestion and Inhalation (Tap Water)

The exposure pathway was not selected as drinking water is supplied by the municipal system.

## 7.9 Groundwater Volatilization to Outdoor Air

This exposure pathway is complete for all receptors; however, the detected concentrations are below the applicable RBCs. Based on this, there is no likely exposure risk for this pathway.

## 7.10 Groundwater Vapor Intrusion into Buildings

This potential exposure pathway is complete for all receptors; however, the detected concentrations are below the applicable RBCs. Based on this, there is no likely exposure risk for this pathway.

## 7.11 Groundwater Dermal Contact

This exposure pathway is complete for construction and excavation workers; however, the detected concentrations are below the applicable RBCs. Based on this, there is no likely exposure risk for this pathway.

## 7.12 Conceptual Site Model Summary

| Potentially Exposed Population                          | Exposure Route, Medium and Exposure Point                                                         | Pathway Selected? | Risk from This Pathway? | Reason for Selection or Exclusion                                                                                                                                                                       |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CURRENT AND FUTURE LAND USE: OCCUPATIONAL; MEDIUM: SOIL |                                                                                                   |                   |                         |                                                                                                                                                                                                         |
| Adults (Occupational)                                   | Soil Ingestion, Dermal Contact or Inhalation from on-site soils above 3 feet (RBC <sub>ss</sub> ) | No                | No                      | The pathway is not complete since impacted soils are not within 3 feet of the ground surface. Entire property is capped with concrete or asphalt.                                                       |
| Adults (Construction & Excavation Workers)              | Soil Ingestion, Dermal Contact or Inhalation from on-site soils below 3 feet (RBC <sub>ss</sub> ) | Yes               | No                      | The pathway is complete; however, detected concentrations are below the RBCs.                                                                                                                           |
| Adults (Occupational)                                   | Volatilization to Outdoor Air (RBC <sub>so</sub> )                                                | Yes               | No                      | The pathway is complete; however, detected concentrations are below the RBCs.                                                                                                                           |
| Adults (Occupational)                                   | Vapor Intrusion into Buildings (RBC <sub>si</sub> )                                               | Yes               | No                      | The pathway is complete; however, detected concentrations are below the RBCs.                                                                                                                           |
| Adults (Construction & Excavation Workers)              | Soil Leaching to Groundwater (RBC <sub>sw</sub> )                                                 | Yes               | No                      | There is no exposure risk from drinking water; however, the pathway was included as future workers could be exposed to shallow groundwater in a trench. The detected concentrations are below the RBCs. |

| Potentially Exposed Population                                                | Exposure Route, Medium and Exposure Point                                                 | Pathway Selected? | Risk from This Pathway? | Reason for Selection or Exclusion                                                                     |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------|-------------------------|-------------------------------------------------------------------------------------------------------|
|                                                                               |                                                                                           |                   |                         |                                                                                                       |
| CURRENT AND FUTURE LAND USE: <b>OCCUPATIONAL</b> ; MEDIUM: <b>GROUNDWATER</b> |                                                                                           |                   |                         |                                                                                                       |
| Adults (Occupational)                                                         | Ingestion & Inhalation from Tapwater (RBC <sub>tw</sub> )                                 | No                | <b>No</b>               | The pathway is incomplete since drinking water is supplied by the municipal system.                   |
| Adults (Occupational)                                                         | Volatilization to Outdoor Air (RBC <sub>wo</sub> )                                        | Yes               | <b>No</b>               | The pathway is complete; however, however, the detected concentrations are below the applicable RBCs. |
| Adults (Occupational)                                                         | Vapor Intrusion into Buildings (RBC <sub>wi</sub> )                                       | Yes               | <b>No</b>               | The pathway is complete; however, however, the detected concentrations are below the applicable RBCs. |
| Construction & Excavation Workers                                             | Groundwater encountered during excavation activities, dermal contact (RBC <sub>we</sub> ) | Yes               | <b>No</b>               | The pathway is complete; however, however, the detected concentrations are below the applicable RBCs. |

### 7.13 Ecological Receptors

Surface water or sediments were not encountered at the site. The nearest major surface water in the vicinity of the Property is the Skipanon River located approximately 350 feet east of the Property. No ecological risk is anticipated as it can be demonstrated that:

- Contaminated soils are only present at a depth greater than three feet below the ground surface.
- Surface water has not been affected, nor is it likely to be affected in the future as a result of the release.
- Groundwater is not reasonably likely to discharge to surface waters or otherwise reach the surface in a manner that might result in contact with ecological receptors.

## **8.0 FINDINGS, CONCLUSIONS, RISK EVALUATION AND RECOMMENDATIONS**

Alpha has conducted a site assessment at the Property located at 120 E Harbor Drive, Warrenton, Oregon. The assessment followed the standard practice for conducting Environmental Site Assessments from the ASTM Standard E1903-19 and DEQ Site Assessment regulations. Based on the evaluation of the current findings of this assessment, the following findings, conclusions and recommendations have been developed.

### **8.1 Findings**

#### Summary of Soil Findings

- Gasoline detected in Boring B2@4' at 17.1 ppm and Boring B4@5' at 171 ppm.
- Diesel detected in Boring B1@4' at 75.9 ppm and Boring B4@5' at 286 ppm.
- Heavy oil detected in Boring B1@4' at 320 ppm, Boring B2@4' at 119 ppm and Boring B4@5' at 22,800 ppm.
- The only VOC detected was 1,2,4-Trimethylbenzene in Boring B4@5' at 0.109 ppm.
- PAHs detected in Boring B4@5' are below all applicable RBCs.

#### Summary of Groundwater Sampling

- Gasoline not detected in any of the groundwater samples.
- Diesel detected in Boring B4 at 1,390 ppb.
- Heavy oil not detected in any groundwater samples.

### **8.2 Conclusions**

#### Soil Sampling

The detections of gasoline, diesel and heavy oil in the soil samples are below the RBCs for all applicable exposure pathways. Heavy oil detections in these samples and original samples from 2004 are likely influenced by asphalt in the fill material.

The detections of PAHs and 1,2,4-Trimethylbenzene in the soil sample are below the RBCs for all applicable exposure pathways.

#### Groundwater Sampling

The detection of diesel in the groundwater sample is below the RBCs for all applicable exposure pathways.

### **8.3 Risk Evaluation**

Based on the findings and conclusions discussed above, no environmental conditions were encountered at the Property that would pose an adverse risk to site occupants, future residents or workers, and the results indicate that onsite soils and groundwater tested are protective of human health and the environment.

### **8.4 Recommendations**

Alpha does not recommend further assessment of the Property at this time. Based on the analytical results and comparison with current DEQ RBCs, it is our opinion that the site is a candidate for a NFA determination by the DEQ.

## **9.0 LIMITATIONS & USE RELIANCE**

The investigation considered the past activities and operations conducted on the Property and adjacent properties to identify the potential for releases to have occurred or other reasons to conclude that there is a presence or likely presence of substances relevant to the objectives of the investigation. Alpha makes every attempt to fulfill the user's objectives which dictate the thresholds of concern or confidence desired in the conclusions to be derived from this assessment.

There is a possibility that, even with the proper application of these methodologies, there may exist at the Property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide the client and interested parties with an indication of subsurface environmental conditions in specifically targeted areas of the property at this time.

### **9.1 Limitations and Exceptions**

In preparing the investigation sampling plans and reports, Alpha has relied upon certain information and representations contained in the historical documents provided to Alpha and the verbal statements of other consultants, field data (soil/groundwater) and additional information provided to Alpha. Therefore, this report is limited to the conclusions drawn based on information obtained and assumptions made during the review process and analytical results for this investigation.

Alpha relied upon the information and did not attempt to independently re-verify its accuracy or completeness, except as discussed. Potential inconsistencies or omissions of a nature that might call into question the validity of the information were not detected. To the extent that the conclusions in this report are based in whole or in part on such information, they are contingent on its validity. Alpha assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to Alpha.

Within the limitations of the agreed-upon scope of services or the time and budgeting restraints imposed by the client, this investigation has been undertaken and performed in a professional manner, in accordance with generally accepted engineering practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No representations or warranties are made concerning the nature or quality of the air, soil, water, building materials, or any other substance on the Property (including the potential for any substance to migrate into a structure), other than the immediate subject sampling areas as stated in this report. The investigation is a screening and is not intended to be a definitive investigation of existing or potential adverse environmental impacts; thus, it is possible that such an impact exists on the Property or adjacent properties, but was not identified during the investigation. The investigation is not intended to satisfy the level of inquiry that may be necessary to support remedial solutions for a site. Conclusions in this report represent professional judgments based upon the information evaluated during the course of the assessment, not scientific certainties.

### **9.2 Use Reliance**

This report has been prepared for the express use of Bill Hartley, his representatives and the Oregon DEQ. The client and/or Users of this report and its legal counsel may release all or parts of this report to third parties; however, in using this report, such third parties agree that they shall have no legal recourse against Alpha or its parent or subsidiaries, and shall indemnify and defend Alpha from and against all claims arising out of or in conjunction with such use or reliance. This report does not constitute legal advice. In addition, Alpha makes no determination or recommendations regarding the decision to purchase, sell, or provide financing for this Property.

## 10.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Alpha is providing the client with the results of our investigation for the Property located at 120 E Harbor Street, Warrenton, Oregon. Alpha completed the investigation of the Property in a professional manner according with generally accepted engineering practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances.

The environmental consultants listed below exercised professional judgment based on knowledge of the manner in which releases commonly occur in connection with commercial or industrial activities and operations similar to those currently or historically conducted on or adjacent to the Property.

The consultants also possess applicable education, professional training, licensing and relevant experience to conduct the environmental investigation and other activities in accordance with the relevant standards and to develop opinions and conclusions regarding target analytes in the environmental media.

Alpha appreciates the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact our office at 503-292-5346.



Jim Cooper, R.G.  
Senior Geologist



Phillip Brewer  
Principal

*ALPHA ENVIRONMENTAL SERVICES, INC.*

## 11.0 REFERENCES

American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, ASTM Designation: E 1903-19

Oregon Department of Environmental Quality, *files accessed online, 2021-22*.

State of Oregon Water Resources Department, Agency Resources, *Online Well Log Search and Groundwater Level Data*, accessed via website.

Trimble D. E., 1963. *U.S. Geological Survey Bulletin 1119, "Geology of Portland Oregon and Adjacent Areas"*, prepared by the U.S. Department of the Interior, 1963.

United States Geological Survey, *7.5 Minute Topographic Quadrangle of Warrenton, OR*, 1984.

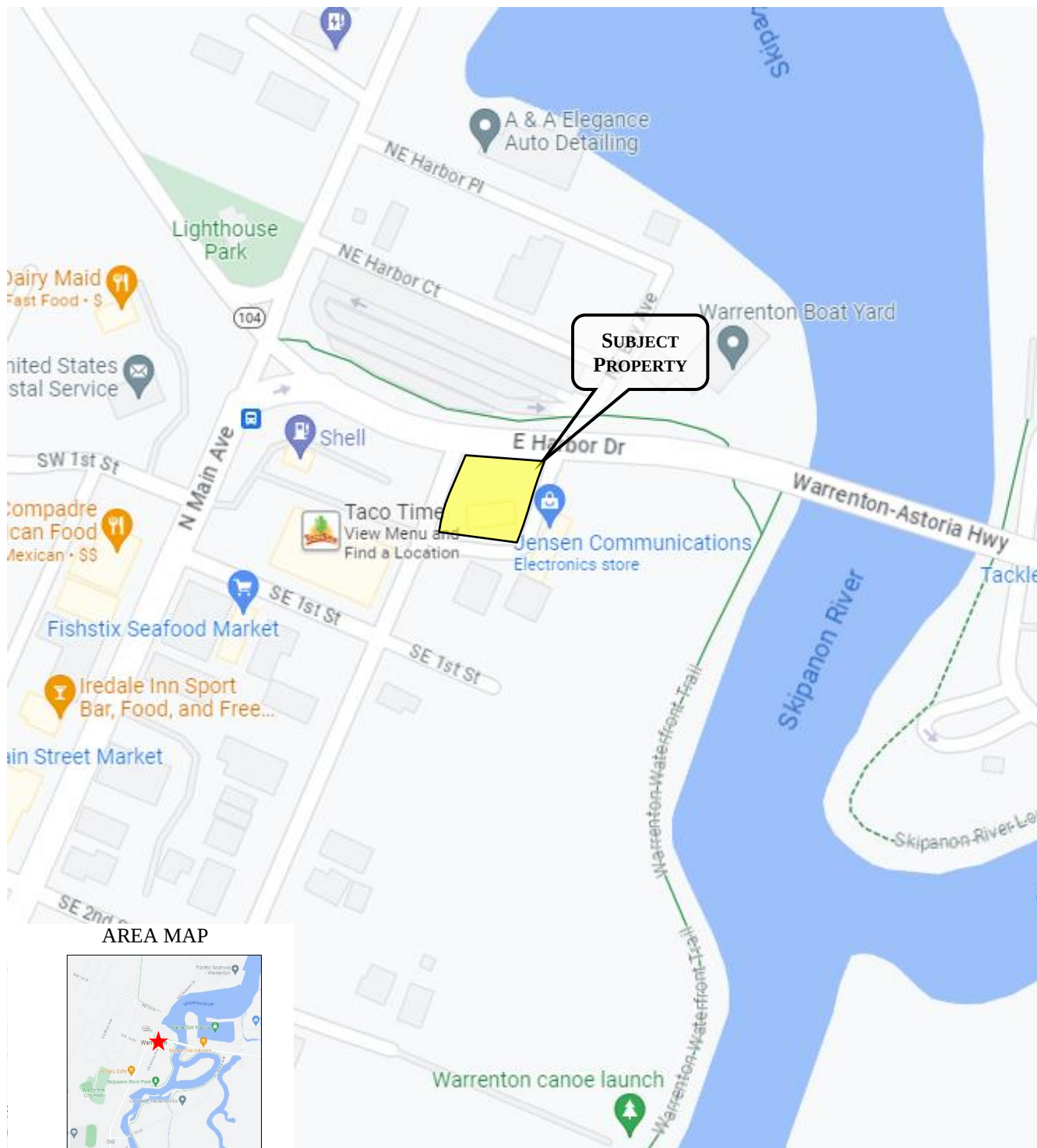
Walker, 1991. *Geological Map of Oregon*, United States Geological Survey, Walker, G.W. and MacLeod, N.S., 1991.

## 12.0 ACRONYMS

|      |                                                      |
|------|------------------------------------------------------|
| ASTM | American Society for Testing and Materials           |
| bsg  | below surface grade                                  |
| DEQ  | Department of Environmental Quality (Oregon)         |
| EPA  | Environmental Protection Agency                      |
| ESA  | Environmental Site Assessment                        |
| ND   | Not Detected At or Above Laboratory Reporting Limits |
| PID  | Photoionization Detector                             |
| PVC  | Poly Vinyl Chloride                                  |
| ppb  | parts per billion                                    |
| ppm  | parts per million                                    |
| RBCs | Risk-based Concentrations                            |
| RBDM | Risk-based Decision Making                           |
| RCRA | Resource Conservation & Recovery Act                 |
| RECs | Recognized Environmental Conditions                  |
| TPH  | Total Petroleum Hydrocarbons                         |
| VOCs | Volatile Organic Compounds                           |
| WRD  | Water Resources Department (Oregon)                  |

**FIGURES:**

**VICINITY MAP  
TOPOGRAPHIC MAP  
SITE OVERVIEW MAP  
SITE SAMPLING MAP**



SOURCE: Google Maps

DRAWING NOT TO SCALE

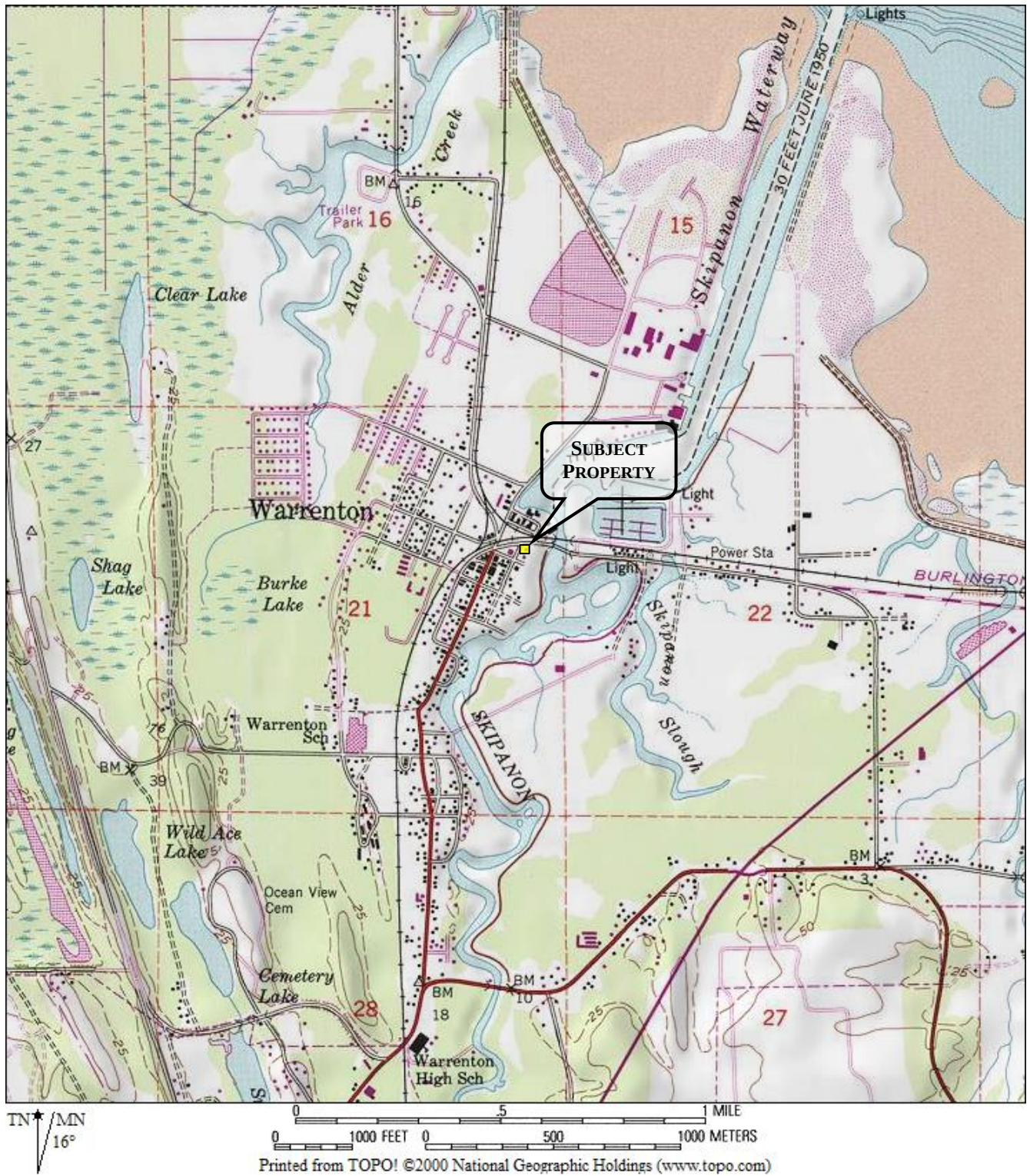


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(503) 292-5346

## FIGURE 1: SITE VICINITY MAP

**Project Name:** 120 E Harbor Drive  
Warrenton, Oregon 97146  
**Project Number:** 21-41228





SOURCE: USGS 7.5 Minute Topographic Map – Warrenton, OR Quadrangle, 1984



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## FIGURE 2: TOPOGRAPHIC MAP

**Project Name:** 120 E Harbor Drive  
Warrenton, Oregon 97146  
**Project Number:** 21-41228





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(503) 292-5346

### FIGURE 3: SITE OVERVIEW MAP

**Project Name:** 120 E Harbor Drive  
Warrenton, Oregon 97146  
**Project Number:** 21-41228





#### LEGEND

- ✕ Soil Sampling Locations from 2004 Decommissioning (detections for heavy oil shown in ppm or ND for Non-Detect)
- ✕ Groundwater and Soil Sampling Location (detections for heavy oil shown in ppm or ND for Non-Detect)
- ✕ Attempted Soil Sampling Locations that encountered refusal



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**FIGURE 1: SITE SAMPLING MAP**

**Project Name:** 120 E Harbor Drive  
Warrenton, Oregon 97146  
**Project Number:** 21-41228



**APPENDIX A:**  
**SITE PHOTOGRAPHS**

## SITE PHOTOGRAPHS



PHOTOGRAPH NO. 1 – Front view of building.



PHOTOGRAPH NO. 2 – Drilling Boring B1.



PHOTOGRAPH NO. 3 – Refusal in two attempts at proposed location of Boring B3.



PHOTOGRAPH NO. 4 – Groundwater sampling in final location of Boring B3.



PHOTOGRAPH NO. 5 – Asphalt cuttings in fill material observed in Boring B4.



PHOTOGRAPH NO. 6 – Groundwater sampling in Boring B5.



**APPENDIX B:**

**ANALYTICAL LABORATORY REPORTS**



ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Tuesday, August 17, 2021

Jim Cooper

Alpha Environmental

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

RE: A1G0409 - Default- Env Dept. - 120 E Harbor Dr.--21-41228

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1G0409, which was received by the laboratory on 7/14/2021 at 4:28:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [KFriscia@apex-labs.com](mailto:KFriscia@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

---

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1

3.2 degC

---

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Apex Laboratories

Kevin Friscia, Project Manager

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**ANALYTICAL REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907****ANALYTICAL REPORT FOR SAMPLES****SAMPLE INFORMATION**

| Client Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------------|---------------|--------|----------------|----------------|
| 21-41228 B1@4'   | A1G0409-01    | Soil   | 07/13/21 11:05 | 07/14/21 16:28 |
| 21-41228 B2@4'   | A1G0409-02    | Soil   | 07/13/21 11:47 | 07/14/21 16:28 |
| 21-41228 B3@5'   | A1G0409-03    | Soil   | 07/13/21 13:16 | 07/14/21 16:28 |
| 21-41228 B4@5'   | A1G0409-04    | Soil   | 07/13/21 14:56 | 07/14/21 16:28 |
| 21-41228 B5@5'   | A1G0409-05    | Soil   | 07/13/21 15:29 | 07/14/21 16:28 |
| 21-41228 B1      | A1G0409-06    | Water  | 07/13/21 11:20 | 07/14/21 16:28 |
| 21-41228 B3      | A1G0409-07    | Water  | 07/13/21 13:58 | 07/14/21 16:28 |
| 21-41228 B4      | A1G0409-08    | Water  | 07/13/21 15:09 | 07/14/21 16:28 |
| 21-41228 B5      | A1G0409-09    | Water  | 07/13/21 15:45 | 07/14/21 16:28 |

Apex Laboratories

Kevin Friscia, Project Manager

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062Alpha Environmental11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## ANALYTICAL SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWT PH-Dx

| Analyte                       | Sample Result | Detection Limit | Reporting Limit | Units            | Dilution | Date Analyzed  | Method Ref. | Notes      |
|-------------------------------|---------------|-----------------|-----------------|------------------|----------|----------------|-------------|------------|
| 21-41228 B1@4' (A1G0409-01)   |               |                 |                 | Matrix: Soil     |          | Batch: 1070579 |             |            |
| Diesel                        | 75.9          | ---             | 25.0            | mg/kg dry        | 1        | 07/20/21 00:42 | NWTPH-Dx    |            |
| Oil                           | 320           | ---             | 50.0            | mg/kg dry        | 1        | 07/20/21 00:42 | NWTPH-Dx    |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 95 %  |                 | Limits: 50-150 % | 1        | 07/20/21 00:42 | NWTPH-Dx    |            |
| 21-41228 B2@4' (A1G0409-02)   |               |                 |                 | Matrix: Soil     |          | Batch: 1070579 |             |            |
| Diesel                        | ND            | ---             | 31.3            | mg/kg dry        | 1        | 07/20/21 01:04 | NWTPH-Dx    |            |
| Oil                           | 119           | ---             | 62.6            | mg/kg dry        | 1        | 07/20/21 01:04 | NWTPH-Dx    |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 95 %  |                 | Limits: 50-150 % | 1        | 07/20/21 01:04 | NWTPH-Dx    |            |
| 21-41228 B3@5' (A1G0409-03)   |               |                 |                 | Matrix: Soil     |          | Batch: 1070579 |             |            |
| Diesel                        | ND            | ---             | 25.0            | mg/kg dry        | 1        | 07/20/21 01:25 | NWTPH-Dx    |            |
| Oil                           | ND            | ---             | 50.0            | mg/kg dry        | 1        | 07/20/21 01:25 | NWTPH-Dx    |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 90 %  |                 | Limits: 50-150 % | 1        | 07/20/21 01:25 | NWTPH-Dx    |            |
| 21-41228 B4@5' (A1G0409-04)   |               |                 |                 | Matrix: Soil     |          | Batch: 1070580 |             |            |
| Diesel                        | 286           | ---             | 225             | mg/kg dry        | 10       | 07/19/21 22:10 | NWTPH-Dx    |            |
| Oil                           | 22800         | ---             | 450             | mg/kg dry        | 10       | 07/19/21 22:10 | NWTPH-Dx    |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 125 % |                 | Limits: 50-150 % | 10       | 07/19/21 22:10 | NWTPH-Dx    | Q-41, S-05 |
| 21-41228 B5@5' (A1G0409-05)   |               |                 |                 | Matrix: Soil     |          | Batch: 1070580 |             |            |
| Diesel                        | ND            | ---             | 291             | mg/kg dry        | 10       | 07/19/21 23:11 | NWTPH-Dx    |            |
| Oil                           | 625           | ---             | 583             | mg/kg dry        | 10       | 07/19/21 23:11 | NWTPH-Dx    |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 129 % |                 | Limits: 50-150 % | 10       | 07/19/21 23:11 | NWTPH-Dx    | Q-41, S-05 |
| 21-41228 B1 (A1G0409-06)      |               |                 |                 | Matrix: Water    |          | Batch: 1070571 |             |            |
| Diesel                        | ND            | ---             | 80.8            | ug/L             | 1        | 07/20/21 05:28 | NWTPH-Dx LL |            |
| Oil                           | ND            | ---             | 162             | ug/L             | 1        | 07/20/21 05:28 | NWTPH-Dx LL |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 97 %  |                 | Limits: 50-150 % | 1        | 07/20/21 05:28 | NWTPH-Dx LL |            |
| 21-41228 B3 (A1G0409-07)      |               |                 |                 | Matrix: Water    |          | Batch: 1070571 |             |            |
| Diesel                        | ND            | ---             | 74.8            | ug/L             | 1        | 07/20/21 05:51 | NWTPH-Dx LL |            |
| Oil                           | ND            | ---             | 150             | ug/L             | 1        | 07/20/21 05:51 | NWTPH-Dx LL |            |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 92 %  |                 | Limits: 50-150 % | 1        | 07/20/21 05:51 | NWTPH-Dx LL |            |
| 21-41228 B4 (A1G0409-08)      |               |                 |                 | Matrix: Water    |          | Batch: 1070571 |             |            |
| Diesel                        | 1390          | ---             | 101             | ug/L             | 1        | 07/20/21 06:13 | NWTPH-Dx LL |            |

Apex Laboratories

Kevin Friscia, Project Manager

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**ANALYTICAL REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907****ANALYTICAL SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

| Analyte                       | Sample Result | Detection Limit | Reporting Limit | Units            | Dilution | Date Analyzed  | Method Ref. | Notes |
|-------------------------------|---------------|-----------------|-----------------|------------------|----------|----------------|-------------|-------|
| 21-41228 B4 (A1G0409-08)      |               |                 |                 | Matrix: Water    |          | Batch: 1070571 |             |       |
| Oil                           | ND            | ---             | 203             | ug/L             | 1        | 07/20/21 06:13 | NWTPH-Dx LL |       |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 91 %  |                 | Limits: 50-150 % | 1        | 07/20/21 06:13 | NWTPH-Dx LL |       |
| 21-41228 B5 (A1G0409-09)      |               |                 |                 | Matrix: Water    |          | Batch: 1070571 |             |       |
| Diesel                        | ND            | ---             | 85.1            | ug/L             | 1        | 07/20/21 06:36 | NWTPH-Dx LL |       |
| Oil                           | ND            | ---             | 170             | ug/L             | 1        | 07/20/21 06:36 | NWTPH-Dx LL |       |
| Surrogate: o-Terphenyl (Surr) |               | Recovery: 91 %  |                 | Limits: 50-150 % | 1        | 07/20/21 06:36 | NWTPH-Dx LL |       |

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Kevin Friscia, Project Manager

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Alpha Environmental11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

| Analyte                               | Sample Result | Detection Limit | Reporting Limit | Units                | Dilution | Date Analyzed         | Method Ref.   | Notes |
|---------------------------------------|---------------|-----------------|-----------------|----------------------|----------|-----------------------|---------------|-------|
| <b>21-41228 B1@4' (A1G0409-01RE1)</b> |               |                 |                 | <b>Matrix: Soil</b>  |          | <b>Batch: 1070562</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 6.32            | mg/kg dry            | 50       | 07/19/21 13:54        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 93 %            | Limits: 50-150 %     | 1        | 07/19/21 13:54        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 89 %            | 50-150 %             | 1        | 07/19/21 13:54        | NWTPH-Gx (MS) |       |
| <b>21-41228 B2@4' (A1G0409-02RE1)</b> |               |                 |                 | <b>Matrix: Soil</b>  |          | <b>Batch: 1070562</b> |               |       |
| Gasoline Range Organics               | 17.1          | ---             | 13.3            | mg/kg dry            | 50       | 07/19/21 14:21        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 101 %           | Limits: 50-150 %     | 1        | 07/19/21 14:21        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 89 %            | 50-150 %             | 1        | 07/19/21 14:21        | NWTPH-Gx (MS) |       |
| <b>21-41228 B3@5' (A1G0409-03)</b>    |               |                 |                 | <b>Matrix: Soil</b>  |          | <b>Batch: 1070516</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 6.95            | mg/kg dry            | 50       | 07/16/21 18:39        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 95 %            | Limits: 50-150 %     | 1        | 07/16/21 18:39        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 91 %            | 50-150 %             | 1        | 07/16/21 18:39        | NWTPH-Gx (MS) |       |
| <b>21-41228 B4@5' (A1G0409-04)</b>    |               |                 |                 | <b>Matrix: Soil</b>  |          | <b>Batch: 1070516</b> |               |       |
| Gasoline Range Organics               | 171           | ---             | 7.19            | mg/kg dry            | 50       | 07/16/21 19:06        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 155 %           | Limits: 50-150 %     | 1        | 07/16/21 19:06        | NWTPH-Gx (MS) | S-02  |
| 1,4-Difluorobenzene (Sur)             |               |                 | 93 %            | 50-150 %             | 1        | 07/16/21 19:06        | NWTPH-Gx (MS) |       |
| <b>21-41228 B5@5' (A1G0409-05)</b>    |               |                 |                 | <b>Matrix: Soil</b>  |          | <b>Batch: 1070516</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 12.0            | mg/kg dry            | 50       | 07/16/21 19:33        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 100 %           | Limits: 50-150 %     | 1        | 07/16/21 19:33        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 91 %            | 50-150 %             | 1        | 07/16/21 19:33        | NWTPH-Gx (MS) |       |
| <b>21-41228 B1 (A1G0409-06)</b>       |               |                 |                 | <b>Matrix: Water</b> |          | <b>Batch: 1070454</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 100             | ug/L                 | 1        | 07/15/21 15:03        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 95 %            | Limits: 50-150 %     | 1        | 07/15/21 15:03        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 103 %           | 50-150 %             | 1        | 07/15/21 15:03        | NWTPH-Gx (MS) |       |
| <b>21-41228 B3 (A1G0409-07)</b>       |               |                 |                 | <b>Matrix: Water</b> |          | <b>Batch: 1070454</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 100             | ug/L                 | 1        | 07/15/21 15:30        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery:       | 96 %            | Limits: 50-150 %     | 1        | 07/15/21 15:30        | NWTPH-Gx (MS) |       |
| 1,4-Difluorobenzene (Sur)             |               |                 | 101 %           | 50-150 %             | 1        | 07/15/21 15:30        | NWTPH-Gx (MS) |       |
| <b>21-41228 B4 (A1G0409-08)</b>       |               |                 |                 | <b>Matrix: Water</b> |          | <b>Batch: 1070454</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 100             | ug/L                 | 1        | 07/15/21 15:57        | NWTPH-Gx (MS) |       |

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# ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: **Default- Env Dept.**

Project Number: **120 E Harbor Dr.--21-41228**

Project Manager: **Jim Cooper**

**Report ID:**

**A1G0409 - 08 17 21 0907**

## ANALYTICAL SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

| Analyte                               | Sample Result | Detection Limit | Reporting Limit  | Units                | Dilution       | Date Analyzed         | Method Ref.   | Notes |
|---------------------------------------|---------------|-----------------|------------------|----------------------|----------------|-----------------------|---------------|-------|
| <b>21-41228 B4 (A1G0409-08)</b>       |               |                 |                  | <b>Matrix: Water</b> |                | <b>Batch: 1070454</b> |               |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery: 95 %  | Limits: 50-150 % | 1                    | 07/15/21 15:57 | NWTPH-Gx (MS)         |               |       |
| 1,4-Difluorobenzene (Sur)             |               | 102 %           | 50-150 %         | 1                    | 07/15/21 15:57 | NWTPH-Gx (MS)         |               |       |
| <b>21-41228 B5 (A1G0409-09)</b>       |               |                 |                  | <b>Matrix: Water</b> |                | <b>Batch: 1070454</b> |               |       |
| Gasoline Range Organics               | ND            | ---             | 100              | ug/L                 | 1              | 07/15/21 16:24        | NWTPH-Gx (MS) |       |
| Surrogate: 4-Bromofluorobenzene (Sur) |               | Recovery: 94 %  | Limits: 50-150 % | 1                    | 07/15/21 16:24 | NWTPH-Gx (MS)         |               |       |
| 1,4-Difluorobenzene (Sur)             |               | 103 %           | 50-150 %         | 1                    | 07/15/21 16:24 | NWTPH-Gx (MS)         |               |       |

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Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

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## ANALYTICAL SAMPLE RESULTS

## Selected Volatile Organic Compounds by EPA 5035A/8260D

| Analyte                                      | Sample Result | Detection Limit  | Reporting Limit | Units               | Dilution              | Date Analyzed  | Method Ref.           | Notes              |
|----------------------------------------------|---------------|------------------|-----------------|---------------------|-----------------------|----------------|-----------------------|--------------------|
| <b>21-41228 B4@5' (A1G0409-04)</b>           |               |                  |                 | <b>Matrix: Soil</b> | <b>Batch: 1070516</b> |                |                       |                    |
| Benzene                                      | ND            | ---              | 0.0144          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Toluene                                      | ND            | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Ethylbenzene                                 | ND            | ---              | 0.0360          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Xylenes, total                               | ND            | ---              | 0.108           | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Methyl tert-butyl ether (MTBE)               | ND            | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Naphthalene                                  | ND            | ---              | 0.144           | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| 1,2-Dibromoethane (EDB)                      | ND            | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| 1,2-Dichloroethane (EDC)                     | ND            | ---              | 0.0360          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| Isopropylbenzene                             | ND            | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| <b>1,2,4-Trimethylbenzene</b>                | <b>0.109</b>  | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| 1,3,5-Trimethylbenzene                       | ND            | ---              | 0.0719          | mg/kg dry           | 50                    | 07/16/21 19:06 | 5035A/8260D           |                    |
| <i>Surrogate: 1,4-Difluorobenzene (Surr)</i> |               | <i>Recovery:</i> | <i>103 %</i>    | <i>Limits:</i>      | <i>80-120 %</i>       | <i>1</i>       | <i>07/16/21 19:06</i> | <i>5035A/8260D</i> |
| <i>Toluene-d8 (Surr)</i>                     |               |                  | <i>103 %</i>    |                     | <i>80-120 %</i>       | <i>1</i>       | <i>07/16/21 19:06</i> | <i>5035A/8260D</i> |
| <i>4-Bromofluorobenzene (Surr)</i>           |               |                  | <i>96 %</i>     |                     | <i>79-120 %</i>       | <i>1</i>       | <i>07/16/21 19:06</i> | <i>5035A/8260D</i> |

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Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

| Analyte                       | Sample Result | Detection Limit | Reporting Limit | Units        | Dilution | Date Analyzed  | Method Ref.   | Notes       |
|-------------------------------|---------------|-----------------|-----------------|--------------|----------|----------------|---------------|-------------|
| 21-41228 B4@5' (A1G0409-04)   |               |                 |                 | Matrix: Soil |          | Batch: 1070580 |               | Q-22        |
| Acenaphthene                  | ND            | ---             | 0.0169          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | R-02        |
| Acenaphthylene                | ND            | ---             | 0.0169          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | R-02        |
| Anthracene                    | ND            | ---             | 0.0327          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | R-02        |
| <b>Benz(a)anthracene</b>      | <b>0.117</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | <b>M-05</b> |
| <b>Benzo(a)pyrene</b>         | <b>0.108</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Benzo(b)fluoranthene</b>   | <b>0.172</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | <b>M-05</b> |
| <b>Benzo(k)fluoranthene</b>   | <b>0.0780</b> | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | <b>M-05</b> |
| <b>Benzo(g,h,i)perylene</b>   | <b>0.259</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Chrysene</b>               | <b>0.254</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| Dibenz(a,h)anthracene         | ND            | ---             | 0.0191          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM | R-02        |
| <b>Fluoranthene</b>           | <b>0.127</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Fluorene</b>               | <b>0.0222</b> | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Indeno(1,2,3-cd)pyrene</b> | <b>0.107</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Naphthalene</b>            | <b>0.0472</b> | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Phenanthrene</b>           | <b>0.0701</b> | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |
| <b>Pyrene</b>                 | <b>0.611</b>  | ---             | 0.0113          | mg/kg dry    | 1        | 07/27/21 14:16 | EPA 8270E SIM |             |

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503-718-2323  
ORELAP ID: OR100062**Alpha Environmental**11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907****ANALYTICAL SAMPLE RESULTS****Percent Dry Weight**

| Analyte                            | Sample Result | Detection Limit | Reporting Limit | Units               | Dilution | Date Analyzed         | Method Ref. | Notes |
|------------------------------------|---------------|-----------------|-----------------|---------------------|----------|-----------------------|-------------|-------|
| <b>21-41228 B1@4' (A1G0409-01)</b> |               |                 |                 | <b>Matrix: Soil</b> |          | <b>Batch: 1070455</b> |             |       |
| % Solids                           | 81.1          | ---             | 1.00            | %                   | 1        | 07/16/21 07:56        | EPA 8000D   |       |
| <b>21-41228 B2@4' (A1G0409-02)</b> |               |                 |                 | <b>Matrix: Soil</b> |          | <b>Batch: 1070455</b> |             |       |
| % Solids                           | 58.6          | ---             | 1.00            | %                   | 1        | 07/16/21 07:56        | EPA 8000D   |       |
| <b>21-41228 B3@5' (A1G0409-03)</b> |               |                 |                 | <b>Matrix: Soil</b> |          | <b>Batch: 1070455</b> |             |       |
| % Solids                           | 77.0          | ---             | 1.00            | %                   | 1        | 07/16/21 07:56        | EPA 8000D   |       |
| <b>21-41228 B4@5' (A1G0409-04)</b> |               |                 |                 | <b>Matrix: Soil</b> |          | <b>Batch: 1070455</b> |             |       |
| % Solids                           | 86.4          | ---             | 1.00            | %                   | 1        | 07/16/21 07:56        | EPA 8000D   |       |
| <b>21-41228 B5@5' (A1G0409-05)</b> |               |                 |                 | <b>Matrix: Soil</b> |          | <b>Batch: 1070455</b> |             |       |
| % Solids                           | 66.3          | ---             | 1.00            | %                   | 1        | 07/16/21 07:56        | EPA 8000D   |       |

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## ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062**Alpha Environmental**11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907**

## QUALITY CONTROL (QC) SAMPLE RESULTS

**Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

| Analyte                                       | Result | Detection Limit                                      | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------------------|--------|------------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070571 - EPA 3510C (Fuels/Acid Ext.)   |        |                                                      |                 |                  |          | Water        |               |       |              |     |           |       |
| Blank (1070571-BLK1)                          |        | Prepared: 07/19/21 10:33    Analyzed: 07/20/21 02:05 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx LL                                   |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | ND     | ---                                                  | 72.7            | ug/L             | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Oil                                           | ND     | ---                                                  | 145             | ug/L             | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 97 %                                       |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| LCS (1070571-BS1)                             |        | Prepared: 07/19/21 10:33    Analyzed: 07/20/21 02:28 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx LL                                   |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | 406    | ---                                                  | 80.0            | ug/L             | 1        | 500          | ---           | 81    | 36 - 132%    | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 98 %                                       |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| LCS Dup (1070571-BSD1)                        |        | Prepared: 07/19/21 10:33    Analyzed: 07/20/21 02:50 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx LL                                   |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | 330    | ---                                                  | 80.0            | ug/L             | 1        | 500          | ---           | 66    | 36 - 132%    | 21  | 30%       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 85 %                                       |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| Batch 1070579 - EPA 3546 (Fuels)              |        |                                                      |                 |                  |          | Soil         |               |       |              |     |           |       |
| Blank (1070579-BLK1)                          |        | Prepared: 07/19/21 12:50    Analyzed: 07/19/21 21:30 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | ND     | ---                                                  | 25.0            | mg/kg wet        | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Oil                                           | ND     | ---                                                  | 50.0            | mg/kg wet        | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 99 %                                       |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| LCS (1070579-BS1)                             |        | Prepared: 07/19/21 12:50    Analyzed: 07/19/21 21:52 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | 108    | ---                                                  | 25.0            | mg/kg wet        | 1        | 125          | ---           | 86    | 38 - 132%    | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 108 %                                      |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| Duplicate (1070579-DUP2)                      |        | Prepared: 07/19/21 12:50    Analyzed: 07/20/21 01:45 |                 |                  |          |              |               |       |              |     |           |       |
| QC Source Sample: 21-41228 B3@5' (A1G0409-03) |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                      |                 |                  |          |              |               |       |              |     |           |       |
| Diesel                                        | ND     | ---                                                  | 25.0            | mg/kg dry        | 1        | ---          | ND            | ---   | ---          | --- | 30%       |       |
| Oil                                           | 60.5   | ---                                                  | 50.0            | mg/kg dry        | 1        | ---          | 43.2          | ---   | ---          | 33  | 30%       | Q-05  |

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Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

QUALITY CONTROL (QC) SAMPLE RESULTS

**Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

| Analyte                                       | Result | Detection Limit                                     | Reporting Limit | Units          | Dilution | Spike Amount     | Source Result | % REC        | % REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------------------|--------|-----------------------------------------------------|-----------------|----------------|----------|------------------|---------------|--------------|--------------|-----|-----------|-------|
| Batch 1070579 - EPA 3546 (Fuels)              |        |                                                     |                 |                |          |                  | Soil          |              |              |     |           |       |
| Duplicate (1070579-DUP2)                      |        | Prepared: 07/19/21 12:50   Analyzed: 07/20/21 01:45 |                 |                |          |                  |               |              |              |     |           |       |
| QC Source Sample: 21-41228 B3@5' (A1G0409-03) |        |                                                     |                 |                |          |                  |               |              |              |     |           |       |
| Surr: o-Terphenyl (Surr)                      |        |                                                     |                 | Recovery: 97 % |          | Limits: 50-150 % |               | Dilution: 1x |              |     |           |       |

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWTPH-Dx

| Analyte                                       | Result | Detection Limit                                   | Reporting Limit | Units            | Dilution | Spike Amount  | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------------------|--------|---------------------------------------------------|-----------------|------------------|----------|---------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070580 - EPA 3546 (Fuels)              |        |                                                   |                 |                  |          | Soil          |               |       |              |     |           |       |
| Blank (1070580-BLK1)                          |        | Prepared: 07/19/21 12:58 Analyzed: 07/19/21 21:29 |                 |                  |          |               |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                   |                 |                  |          |               |               |       |              |     |           |       |
| Diesel                                        | ND     | ---                                               | 18.2            | mg/kg wet        | 1        | ---           | ---           | ---   | ---          | --- | ---       |       |
| Oil                                           | ND     | ---                                               | 36.4            | mg/kg wet        | 1        | ---           | ---           | ---   | ---          | --- | ---       |       |
| Mineral Oil                                   | ND     | ---                                               | 36.4            | mg/kg wet        | 1        | ---           | ---           | ---   | ---          | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 133 %                                   |                 | Limits: 50-150 % |          | Dilution: 1x  |               | Q-41  |              |     |           |       |
| LCS (1070580-BS1)                             |        | Prepared: 07/19/21 12:58 Analyzed: 07/19/21 21:49 |                 |                  |          |               |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                   |                 |                  |          |               |               |       |              |     |           |       |
| Diesel                                        | 118    | ---                                               | 20.0            | mg/kg wet        | 1        | 125           | ---           | 95    | 38 - 132%    | --- | ---       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: 128 %                                   |                 | Limits: 50-150 % |          | Dilution: 1x  |               | Q-41  |              |     |           |       |
| Duplicate (1070580-DUP3)                      |        | Prepared: 07/19/21 12:58 Analyzed: 07/20/21 08:18 |                 |                  |          |               |               |       |              |     |           |       |
| QC Source Sample: 21-41228 B4@5' (A1G0409-04) |        |                                                   |                 |                  |          |               |               |       |              |     |           |       |
| NWTPH-Dx                                      |        |                                                   |                 |                  |          |               |               |       |              |     |           |       |
| Diesel                                        | ND     | ---                                               | 455             | mg/kg dry        | 20       | ---           | 286           | ---   | ---          | *** | 30%       |       |
| Oil                                           | 26900  | ---                                               | 911             | mg/kg dry        | 20       | ---           | 22800         | ---   | ---          | 16  | 30%       |       |
| Mineral Oil                                   | ND     | ---                                               | 911             | mg/kg dry        | 20       | ---           | ND            | ---   | ---          | --- | 30%       |       |
| Surr: o-Terphenyl (Surr)                      |        | Recovery: %                                       |                 | Limits: 50-150 % |          | Dilution: 20x |               | S-01  |              |     |           |       |

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## ANALYTICAL REPORT

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ORELAP ID: OR100062

Alpha Environmental

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

| Analyte                          | Result | Detection Limit                                     | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|-----------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070454 - EPA 5030B        |        |                                                     |                 |                  |          | Water        |               |       |              |     |           |       |
| Blank (1070454-BLK1)             |        | Prepared: 07/15/21 07:30   Analyzed: 07/15/21 09:38 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | ND     | ---                                                 | 100             | ug/L             | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 93 %                                      |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 99 %                                                |                 | 50-150 %         |          | "            |               |       |              |     |           |       |
|                                  |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| LCS (1070454-BS2)                |        | Prepared: 07/15/21 07:30   Analyzed: 07/15/21 09:11 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | 484    | ---                                                 | 100             | ug/L             | 1        | 500          | ---           | 97    | 80 - 120%    | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 98 %                                      |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 97 %                                                |                 | 50-150 %         |          | "            |               |       |              |     |           |       |

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

| Analyte                          | Result | Detection Limit                                   | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|---------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070516 - EPA 5035A        |        |                                                   |                 |                  |          | Soil         |               |       |              |     |           |       |
| Blank (1070516-BLK1)             |        | Prepared: 07/16/21 09:00 Analyzed: 07/16/21 11:27 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | ND     | ---                                               | 3.33            | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 90 %                                    |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 91 %                                              |                 | 50-150 %         |          | "            |               |       |              |     |           |       |
|                                  |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| LCS (1070516-BS2)                |        | Prepared: 07/16/21 09:00 Analyzed: 07/16/21 11:00 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | 23.1   | ---                                               | 5.00            | mg/kg wet        | 50       | 25.0         | ---           | 92    | 80 - 120%    | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 91 %                                    |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 92 %                                              |                 | 50-150 %         |          | "            |               |       |              |     |           |       |

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

| Analyte                          | Result | Detection Limit                                   | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|---------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070562 - EPA 5035A        |        |                                                   |                 |                  |          | Soil         |               |       |              |     |           |       |
| Blank (1070562-BLK1)             |        | Prepared: 07/19/21 09:00 Analyzed: 07/19/21 12:33 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | ND     | ---                                               | 3.33            | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 91 %                                    |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 90 %                                              |                 | 50-150 %         |          | "            |               |       |              |     |           |       |
|                                  |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| LCS (1070562-BS2)                |        | Prepared: 07/19/21 09:00 Analyzed: 07/19/21 11:12 |                 |                  |          |              |               |       |              |     |           |       |
| NWTPH-Gx (MS)                    |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| Gasoline Range Organics          | 21.6   | ---                                               | 5.00            | mg/kg wet        | 50       | 25.0         | ---           | 86    | 80 - 120%    | --- | ---       |       |
| Surr: 4-Bromofluorobenzene (Sur) |        | Recovery: 91 %                                    |                 | Limits: 50-150 % |          | Dilution: 1x |               |       |              |     |           |       |
| 1,4-Difluorobenzene (Sur)        |        | 91 %                                              |                 | 50-150 %         |          | "            |               |       |              |     |           |       |

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Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Selected Volatile Organic Compounds by EPA 5035A/8260D

| Analyte                          | Result | Detection Limit                                     | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|-----------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070516 - EPA 5035A        |        |                                                     |                 |                  |          | Soil         |               |       |              |     |           |       |
| Blank (1070516-BLK1)             |        | Prepared: 07/16/21 09:00   Analyzed: 07/16/21 11:27 |                 |                  |          |              |               |       |              |     |           |       |
| 5035A/8260D                      |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| Benzene                          | ND     | ---                                                 | 0.00667         | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Toluene                          | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Ethylbenzene                     | ND     | ---                                                 | 0.0167          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Xylenes, total                   | ND     | ---                                                 | 0.0500          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Methyl tert-butyl ether (MTBE)   | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Naphthalene                      | ND     | ---                                                 | 0.0667          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| 1,2-Dibromoethane (EDB)          | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| 1,2-Dichloroethane (EDC)         | ND     | ---                                                 | 0.0167          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Isopropylbenzene                 | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| 1,2,4-Trimethylbenzene           | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| 1,3,5-Trimethylbenzene           | ND     | ---                                                 | 0.0333          | mg/kg wet        | 50       | ---          | ---           | ---   | ---          | --- | ---       |       |
| Surr: 1,4-Difluorobenzene (Surr) |        | Recovery: 104 %                                     |                 | Limits: 80-120 % |          | Dilution: 1x |               |       |              |     |           |       |
| Toluene-d8 (Surr)                |        | 106 %                                               |                 | 80-120 %         |          | "            |               |       |              |     |           |       |
| 4-Bromofluorobenzene (Surr)      |        | 95 %                                                |                 | 79-120 %         |          | "            |               |       |              |     |           |       |
|                                  |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| LCS (1070516-BS1)                |        | Prepared: 07/16/21 09:00   Analyzed: 07/16/21 10:33 |                 |                  |          |              |               |       |              |     |           |       |
| 5035A/8260D                      |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| Benzene                          | 1.09   | ---                                                 | 0.0100          | mg/kg wet        | 50       | 1.00         | ---           | 109   | 80 - 120%    | --- | ---       |       |
| Toluene                          | 1.05   | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 105   | 80 - 120%    | --- | ---       |       |
| Ethylbenzene                     | 1.06   | ---                                                 | 0.0250          | mg/kg wet        | 50       | 1.00         | ---           | 106   | 80 - 120%    | --- | ---       |       |
| Xylenes, total                   | 3.11   | ---                                                 | 0.0750          | mg/kg wet        | 50       | 3.00         | ---           | 104   | 80 - 120%    | --- | ---       |       |
| Methyl tert-butyl ether (MTBE)   | 1.04   | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 104   | 80 - 120%    | --- | ---       |       |
| Naphthalene                      | 0.975  | ---                                                 | 0.100           | mg/kg wet        | 50       | 1.00         | ---           | 97    | 80 - 120%    | --- | ---       |       |
| 1,2-Dibromoethane (EDB)          | 0.965  | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 96    | 80 - 120%    | --- | ---       |       |
| 1,2-Dichloroethane (EDC)         | 0.997  | ---                                                 | 0.0250          | mg/kg wet        | 50       | 1.00         | ---           | 100   | 80 - 120%    | --- | ---       |       |
| Isopropylbenzene                 | 1.04   | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 104   | 80 - 120%    | --- | ---       |       |
| 1,2,4-Trimethylbenzene           | 1.04   | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 104   | 80 - 120%    | --- | ---       |       |
| 1,3,5-Trimethylbenzene           | 1.04   | ---                                                 | 0.0500          | mg/kg wet        | 50       | 1.00         | ---           | 104   | 80 - 120%    | --- | ---       |       |
| Surr: 1,4-Difluorobenzene (Surr) |        | Recovery: 104 %                                     |                 | Limits: 80-120 % |          | Dilution: 1x |               |       |              |     |           |       |
| Toluene-d8 (Surr)                |        | 105 %                                               |                 | 80-120 %         |          | "            |               |       |              |     |           |       |
| 4-Bromofluorobenzene (Surr)      |        | 97 %                                                |                 | 79-120 %         |          | "            |               |       |              |     |           |       |
|                                  |        |                                                     |                 |                  |          |              |               |       |              |     |           |       |
| Matrix Spike (1070516-MS1)       |        | Prepared: 07/13/21 15:29   Analyzed: 07/16/21 20:00 |                 |                  |          |              |               |       |              |     |           |       |

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Selected Volatile Organic Compounds by EPA 5035A/8260D

| Analyte                                       | Result | Detection Limit                                   | Reporting Limit | Units            | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|-----------------------------------------------|--------|---------------------------------------------------|-----------------|------------------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070516 - EPA 5035A                     |        |                                                   |                 |                  |          | Soil         |               |       |              |     |           |       |
| Matrix Spike (1070516-MS1)                    |        | Prepared: 07/13/21 15:29 Analyzed: 07/16/21 20:00 |                 |                  |          |              |               |       |              |     |           |       |
| QC Source Sample: 21-41228 B5@5' (A1G0409-05) |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| 5035A/8260D                                   |        |                                                   |                 |                  |          |              |               |       |              |     |           |       |
| Benzene                                       | 2.58   | ---                                               | 0.0240          | mg/kg dry        | 50       | 2.40         | ND            | 107   | 77 - 121%    | --- | ---       |       |
| Toluene                                       | 2.45   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 102   | 77 - 121%    | --- | ---       |       |
| Ethylbenzene                                  | 2.50   | ---                                               | 0.0600          | mg/kg dry        | 50       | 2.40         | ND            | 104   | 76 - 122%    | --- | ---       |       |
| Xylenes, total                                | 7.43   | ---                                               | 0.180           | mg/kg dry        | 50       | 7.20         | ND            | 103   | 78 - 124%    | --- | ---       |       |
| Methyl tert-butyl ether (MTBE)                | 2.56   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 106   | 73 - 125%    | --- | ---       |       |
| Naphthalene                                   | 2.42   | ---                                               | 0.240           | mg/kg dry        | 50       | 2.40         | ND            | 101   | 62 - 129%    | --- | ---       |       |
| 1,2-Dibromoethane (EDB)                       | 2.33   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 97    | 78 - 122%    | --- | ---       |       |
| 1,2-Dichloroethane (EDC)                      | 2.41   | ---                                               | 0.0600          | mg/kg dry        | 50       | 2.40         | ND            | 100   | 73 - 128%    | --- | ---       |       |
| Isopropylbenzene                              | 2.47   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 103   | 68 - 134%    | --- | ---       |       |
| 1,2,4-Trimethylbenzene                        | 2.47   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 103   | 75 - 123%    | --- | ---       |       |
| 1,3,5-Trimethylbenzene                        | 2.48   | ---                                               | 0.120           | mg/kg dry        | 50       | 2.40         | ND            | 103   | 73 - 124%    | --- | ---       |       |
| Surr: 1,4-Difluorobenzene (Surr)              |        | Recovery: 105 %                                   |                 | Limits: 80-120 % |          | Dilution: 1x |               |       |              |     |           |       |
| Toluene-d8 (Surr)                             |        | 103 %                                             |                 | 80-120 %         |          | "            |               |       |              |     |           |       |
| 4-Bromofluorobenzene (Surr)                   |        | 97 %                                              |                 | 79-120 %         |          | "            |               |       |              |     |           |       |

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Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM

| Analyte                          | Result | Detection Limit                                   | Reporting Limit | Units     | Dilution | Spike Amount | Source Result | % REC | % REC Limits | RPD | RPD Limit | Notes |
|----------------------------------|--------|---------------------------------------------------|-----------------|-----------|----------|--------------|---------------|-------|--------------|-----|-----------|-------|
| Batch 1070580 - EPA 3546 (Fuels) |        |                                                   |                 |           |          | Soil         |               |       |              |     |           |       |
| Blank (1070580-BLK2)             |        | Prepared: 07/19/21 12:58 Analyzed: 07/27/21 13:51 |                 |           |          |              |               |       |              |     |           | Q-22  |
| EPA 8270E SIM                    |        |                                                   |                 |           |          |              |               |       |              |     |           |       |
| Acenaphthene                     | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Acenaphthylene                   | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Anthracene                       | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Benz(a)anthracene                | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Benzo(a)pyrene                   | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Benzo(b)fluoranthene             | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Benzo(k)fluoranthene             | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Benzo(g,h,i)perylene             | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Chrysene                         | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Dibenz(a,h)anthracene            | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Fluoranthene                     | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Fluorene                         | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Indeno(1,2,3-cd)pyrene           | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Naphthalene                      | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Phenanthrene                     | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |
| Pyrene                           | ND     | ---                                               | 0.0100          | mg/kg wet | 1        | ---          | ---           | ---   | ---          | --- | ---       |       |

Apex Laboratories

Kevin Friscia, Project Manager

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Alpha Environmental

11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005

Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

| Analyte                                   | Result | Detection<br>Limit | Reporting<br>Limit | Units | Dilution | Spike<br>Amount | Source<br>Result | % REC | % REC<br>Limits | RPD | RPD<br>Limit | Notes |
|-------------------------------------------|--------|--------------------|--------------------|-------|----------|-----------------|------------------|-------|-----------------|-----|--------------|-------|
| Batch 1070455 - Total Solids (Dry Weight) |        |                    |                    |       |          |                 | Soil             |       |                 |     |              |       |

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062**Alpha Environmental**11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**  
Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907****SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3510C (Fuels/Acid Ext.)**

| Lab Number            | Matrix | Method      | Sampled        | Prepared       | Sample Initial/Final | Default Initial/Final | RL Prep Factor |
|-----------------------|--------|-------------|----------------|----------------|----------------------|-----------------------|----------------|
| <b>Batch: 1070571</b> |        |             |                |                |                      |                       |                |
| A1G0409-06            | Water  | NWTPH-Dx LL | 07/13/21 11:20 | 07/19/21 16:41 | 990mL/2mL            | 1000mL/2mL            | 1.01           |
| A1G0409-07            | Water  | NWTPH-Dx LL | 07/13/21 13:58 | 07/19/21 16:41 | 1070mL/2mL           | 1000mL/2mL            | 0.94           |
| A1G0409-08            | Water  | NWTPH-Dx LL | 07/13/21 15:09 | 07/19/21 16:41 | 790mL/2mL            | 1000mL/2mL            | 1.27           |
| A1G0409-09            | Water  | NWTPH-Dx LL | 07/13/21 15:45 | 07/19/21 16:41 | 940mL/2mL            | 1000mL/2mL            | 1.06           |

**Prep: EPA 3546 (Fuels)**

| Lab Number            | Matrix | Method   | Sampled        | Prepared       | Sample Initial/Final | Default Initial/Final | RL Prep Factor |
|-----------------------|--------|----------|----------------|----------------|----------------------|-----------------------|----------------|
| <b>Batch: 1070579</b> |        |          |                |                |                      |                       |                |
| A1G0409-01            | Soil   | NWTPH-Dx | 07/13/21 11:05 | 07/19/21 12:50 | 10.59g/5mL           | 10g/5mL               | 0.94           |
| A1G0409-02            | Soil   | NWTPH-Dx | 07/13/21 11:47 | 07/19/21 12:50 | 10.92g/5mL           | 10g/5mL               | 0.92           |
| A1G0409-03            | Soil   | NWTPH-Dx | 07/13/21 13:16 | 07/19/21 12:50 | 10.4g/5mL            | 10g/5mL               | 0.96           |
| <b>Batch: 1070580</b> |        |          |                |                |                      |                       |                |
| A1G0409-04            | Soil   | NWTPH-Dx | 07/13/21 14:56 | 07/19/21 12:58 | 10.28g/5mL           | 10g/5mL               | 0.97           |
| A1G0409-05            | Soil   | NWTPH-Dx | 07/13/21 15:29 | 07/19/21 12:58 | 10.35g/5mL           | 10g/5mL               | 0.97           |

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5030B**

| Lab Number            | Matrix | Method        | Sampled        | Prepared       | Sample Initial/Final | Default Initial/Final | RL Prep Factor |
|-----------------------|--------|---------------|----------------|----------------|----------------------|-----------------------|----------------|
| <b>Batch: 1070454</b> |        |               |                |                |                      |                       |                |
| A1G0409-06            | Water  | NWTPH-Gx (MS) | 07/13/21 11:20 | 07/15/21 08:02 | 5mL/5mL              | 5mL/5mL               | 1.00           |
| A1G0409-07            | Water  | NWTPH-Gx (MS) | 07/13/21 13:58 | 07/15/21 08:02 | 5mL/5mL              | 5mL/5mL               | 1.00           |
| A1G0409-08            | Water  | NWTPH-Gx (MS) | 07/13/21 15:09 | 07/15/21 08:02 | 5mL/5mL              | 5mL/5mL               | 1.00           |
| A1G0409-09            | Water  | NWTPH-Gx (MS) | 07/13/21 15:45 | 07/15/21 08:02 | 5mL/5mL              | 5mL/5mL               | 1.00           |

**Prep: EPA 5035A**

| Lab Number            | Matrix | Method        | Sampled        | Prepared       | Sample Initial/Final | Default Initial/Final | RL Prep Factor |
|-----------------------|--------|---------------|----------------|----------------|----------------------|-----------------------|----------------|
| <b>Batch: 1070516</b> |        |               |                |                |                      |                       |                |
| A1G0409-03            | Soil   | NWTPH-Gx (MS) | 07/13/21 13:16 | 07/13/21 13:16 | 5.94g/5mL            | 5g/5mL                | 0.84           |
| A1G0409-04            | Soil   | NWTPH-Gx (MS) | 07/13/21 14:56 | 07/13/21 14:56 | 4.52g/5mL            | 5g/5mL                | 1.11           |
| A1G0409-05            | Soil   | NWTPH-Gx (MS) | 07/13/21 15:29 | 07/13/21 15:29 | 3.98g/5mL            | 5g/5mL                | 1.26           |
| <b>Batch: 1070562</b> |        |               |                |                |                      |                       |                |
| A1G0409-01RE1         | Soil   | NWTPH-Gx (MS) | 07/13/21 11:05 | 07/13/21 11:05 | 5.99g/5mL            | 5g/5mL                | 0.84           |
| A1G0409-02RE1         | Soil   | NWTPH-Gx (MS) | 07/13/21 11:47 | 07/13/21 11:47 | 4.37g/5mL            | 5g/5mL                | 1.14           |

Apex Laboratories

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: **Default- Env Dept.**Project Number: **120 E Harbor Dr.--21-41228**Project Manager: **Jim Cooper****Report ID:****A1G0409 - 08 17 21 0907****SAMPLE PREPARATION INFORMATION****Selected Volatile Organic Compounds by EPA 5035A/8260D****Prep: EPA 5035A**

| Lab Number            | Matrix | Method      | Sampled        | Prepared       | Sample<br>Initial/Final | Default<br>Initial/Final | RL Prep<br>Factor |
|-----------------------|--------|-------------|----------------|----------------|-------------------------|--------------------------|-------------------|
| <b>Batch: 1070516</b> |        |             |                |                |                         |                          |                   |
| A1G0409-04            | Soil   | 5035A/8260D | 07/13/21 14:56 | 07/13/21 14:56 | 4.52g/5mL               | 5g/5mL                   | 1.11              |

**Polyaromatic Hydrocarbons (PAHs) by EPA 8270E SIM****Prep: EPA 3546 (Fuels)**

| Lab Number            | Matrix | Method        | Sampled        | Prepared       | Sample<br>Initial/Final | Default<br>Initial/Final | RL Prep<br>Factor |
|-----------------------|--------|---------------|----------------|----------------|-------------------------|--------------------------|-------------------|
| <b>Batch: 1070580</b> |        |               |                |                |                         |                          |                   |
| A1G0409-04            | Soil   | EPA 8270E SIM | 07/13/21 14:56 | 07/19/21 12:58 | 10.28g/5mL              | 10g/5mL                  | 0.97              |

**Percent Dry Weight****Prep: Total Solids (Dry Weight)**

| Lab Number            | Matrix | Method    | Sampled        | Prepared       | Sample<br>Initial/Final | Default<br>Initial/Final | RL Prep<br>Factor |
|-----------------------|--------|-----------|----------------|----------------|-------------------------|--------------------------|-------------------|
| <b>Batch: 1070455</b> |        |           |                |                |                         |                          |                   |
| A1G0409-01            | Soil   | EPA 8000D | 07/13/21 11:05 | 07/15/21 08:02 |                         |                          | NA                |
| A1G0409-02            | Soil   | EPA 8000D | 07/13/21 11:47 | 07/15/21 08:02 |                         |                          | NA                |
| A1G0409-03            | Soil   | EPA 8000D | 07/13/21 13:16 | 07/15/21 08:02 |                         |                          | NA                |
| A1G0409-04            | Soil   | EPA 8000D | 07/13/21 14:56 | 07/15/21 08:02 |                         |                          | NA                |
| A1G0409-05            | Soil   | EPA 8000D | 07/13/21 15:29 | 07/15/21 08:02 |                         |                          | NA                |

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ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005

Project: **Default- Env Dept.**

Project Number: **120 E Harbor Dr.--21-41228**

Project Manager: **Jim Cooper**

**Report ID:**

**A1G0409 - 08 17 21 0907**

## QUALIFIER DEFINITIONS

### **Client Sample and Quality Control (QC) Sample Qualifier Definitions:**

**Apex Laboratories**

- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-22** Due to limited sample volume or hold time restraints, the NWTPH-Dx extract was used for the 8270 SIM PAH analysis. Therefore no PAH Surrogates and/or Batch QC results are available. Results are Estimated Values.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-01** Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
- S-02** Surrogate recovery cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported.  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).

If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.  
  
"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")  
See Percent Solids section for details of dry weight analysis.  
  
"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.  
  
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.  
  
" \*\*\* " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).  
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.  
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.  
For further details, please request a copy of this document.

Apex Laboratories

Kevin Friscia, Project Manager

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503-718-2323  
ORELAP ID: OR100062

**Alpha Environmental**

11080 SW Allen Blvd, Suite 100  
Beaverton, OR 97005

Project: **Default- Env Dept.**

Project Number: **120 E Harbor Dr.--21-41228**  
Project Manager: **Jim Cooper**

**Report ID:**

**A1G0409 - 08 17 21 0907**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks (Cont.):**

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Beaverton, OR 97005

Project: **Default- Env Dept.**

Project Number: **120 E Harbor Dr.--21-41228**

Project Manager: **Jim Cooper**

**Report ID:**

**A1G0409 - 08 17 21 0907**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)**

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

| Matrix | Analysis | TNI_ID | Analyte | TNI_ID | Accreditation |
|--------|----------|--------|---------|--------|---------------|
|--------|----------|--------|---------|--------|---------------|

All reported analytes are included in Apex Laboratories' current ORELAP scope.

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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## ANALYTICAL REPORT

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ORELAP ID: OR100062

## Alpha Environmental

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Beaverton, OR 97005

Project: Default- Env Dept.

Project Number: 120 E Harbor Dr.--21-41228

Project Manager: Jim Cooper

## Report ID:

A1G0409 - 08 17 21 0907

| APEX LABS                                                                        |  | CHAIN OF CUSTODY               |  | Lab # <u>11600009</u> of <u>    </u>  |  |
|----------------------------------------------------------------------------------|--|--------------------------------|--|---------------------------------------|--|
| 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323                          |  | Project Mgr: <u>Jim Cooper</u> |  | Project Name: <u>120 E HARBOR DR.</u> |  |
| Company: <u>ALPHA</u>                                                            |  | Project Mgr: <u>Jim Cooper</u> |  | Project #: <u>21-41228</u>            |  |
| Address: <u>    </u>                                                             |  | Phone: <u>    </u>             |  | PO # <u>    </u>                      |  |
| Sampled by: <u>JC</u>                                                            |  | Email: <u>    </u>             |  |                                       |  |
| Site Location: <u>OR</u> WA CA                                                   |  | ANALYSIS REQUEST               |  |                                       |  |
| AK ID <u>    </u>                                                                |  |                                |  |                                       |  |
| SAMPLE ID                                                                        |  | LAB ID #                       |  | DATE                                  |  |
| B1 e 4'                                                                          |  | 7/14/21                        |  | 11:05                                 |  |
| B2 e 4'                                                                          |  | 11:47                          |  | 2                                     |  |
| B3 e 5'                                                                          |  | 1:16                           |  | 2                                     |  |
| B4 e 5'                                                                          |  | 2:56                           |  | 2                                     |  |
| B5 e 5'                                                                          |  | 3:29                           |  | 2                                     |  |
| B1                                                                               |  | 11:00                          |  | 5                                     |  |
| B3                                                                               |  | 1:58                           |  | 5                                     |  |
| B4                                                                               |  | 3:09                           |  | 4                                     |  |
| B5                                                                               |  | 3:45                           |  | 5                                     |  |
| MATRIX                                                                           |  | # OF CONTAINERS                |  | NWTPH-HCID                            |  |
| NWTPH-DX                                                                         |  | NWTPH-GX                       |  | 8260 BTEX                             |  |
| 8260 Halo VOCs                                                                   |  | 8260 RBDM VOCs                 |  | 8260 Halo VOCs                        |  |
| 8260 VOCs Full List                                                              |  | 8270 SEMI-VOL Full List        |  | 8082 PCBs                             |  |
| 8081 Pest                                                                        |  | RCRA Metals (8)                |  | Priority Metals (13)                  |  |
| AL, Sb, As, Ba, Be, Cd, Ca, Cr, Cu, Fe, Hg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn |  | TOTAL DISS. TCLP               |  | TCLP Metals (8)                       |  |
| Archive                                                                          |  |                                |  |                                       |  |
| SPECIAL INSTRUCTIONS:                                                            |  |                                |  |                                       |  |
| Normal Turn Around Time (TAT) = 10 Business Days                                 |  |                                |  |                                       |  |
| TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: <u>    </u>          |  |                                |  |                                       |  |
| SAMPLES ARE HELD FOR 30 DAYS                                                     |  |                                |  |                                       |  |
| RELINQUISHED BY:                                                                 |  | RECEIVED BY:                   |  | RELINQUISHED BY:                      |  |
| Signature: <u>Jim Cooper</u>                                                     |  | Signature: <u>    </u>         |  | Signature: <u>    </u>                |  |
| Date: <u>7/14/21</u>                                                             |  | Date: <u>7/14/21</u>           |  | Date: <u>    </u>                     |  |
| Printed Name: <u>Jim Cooper</u>                                                  |  | Printed Name: <u>    </u>      |  | Printed Name: <u>    </u>             |  |
| Time: <u>12:51</u>                                                               |  | Time: <u>16:28</u>             |  | Time: <u>    </u>                     |  |
| Company: <u>ALPHA</u>                                                            |  | Company: <u>APEX LABS</u>      |  | Company: <u>    </u>                  |  |

Apex Laboratories

Kevin Friscia, Project Manager

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## ANALYTICAL REPORT

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

Alpha Environmental

11080 SW Allen Blvd, Suite 100

Beaverton, OR 97005

Project: Default- Env Dept.Project Number: 120 E Harbor Dr.--21-41228Project Manager: Jim Cooper

Report ID:

A1G0409 - 08 17 21 0907

## APEX LABS COOLER RECEIPT FORM

Client: Alpha Element WO#: A1 60009Project/Project #: 120 E Harbor Dr. 21-41228Delivery Info:Date/time received: 7/14/21 @ 1628 By: EJDelivered by: Apex ☒ Client ☐ ESS ☐ FedEx ☐ UPS ☐ Swift ☐ Senvoy ☐ SDS ☐ Other ☐Cooler Inspection Date/time inspected: 7/14/21 @ 1651 By: EJChain of Custody included? Yes ☒ No ☐ Custody seals? Yes ☐ No ☒Signed/dated by client? Yes ☒ No ☐Signed/dated by Apex? Yes ☒ No ☐

|                            | Cooler #1   | Cooler #2 | Cooler #3 | Cooler #4 | Cooler #5 | Cooler #6 | Cooler #7 |
|----------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Temperature (°C)           | <u>3.2</u>  |           |           |           |           |           |           |
| Received on ice? (Y/N)     | <u>Y</u>    |           |           |           |           |           |           |
| Temp. blanks? (Y/N)        | <u>Y</u>    |           |           |           |           |           |           |
| Ice type: (Gel/Real/Other) | <u>Gel</u>  |           |           |           |           |           |           |
| Condition:                 | <u>Good</u> |           |           |           |           |           |           |

Cooler out of temp? (Y/N) N Possible reason why: \_\_\_\_\_Green dots applied to out of temperature samples? Yes ☐ No ☒Out of temperature samples form initiated? Yes ☐ No ☒Sample Inspection: Date/time inspected: 7/14/21 @ 1705 By: DickAll samples intact? Yes ☒ No ☐ Comments: \_\_\_\_\_Bottle labels/COCs agree? Yes ☒ No ☐ Comments: No date/time on jars/Ambers.COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: \_\_\_\_\_Do VOA vials have visible headspace? Yes ☒ No ☐ NA ☐Comments B4 1/3 HS, B5 3/3 sed.Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐

Comments: \_\_\_\_\_

Additional information: \_\_\_\_\_

Labeled by: DickWitness: CBCooler Inspected by: EJ

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kevin Friscia, Project Manager

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