Phase II Environmental Site Assessment Armstrong Circle Site

Clackamas County, Oregon

March 25, 2024

Prepared for

City of Happy Valley
16000 SE Misty Drive
Happy Valley, OR 97086

Prepared by

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I EXECUTIVE SUMMARY

In January 2024, GRI completed a Phase I Environmental Site Assessment (ESA) for a 24.98-acre property in Clackamas County designated for acquisition by the City of Happy Valley (City). The ESA indicated the historical use of the property as an agricultural field and residential area. To address the potential for shallow soil to be contaminated with agricultural chemicals and petroleum from oil staining in sheds on residential property, a Phase II program of soil sample collection and chemical analysis was conducted.

1. The subject property includes four parcels. The tax lot in the northwest corner of the subject property contains a house, a large barn/shop, and a small shed. The tax lot on the southwest corner has a house and shed on the property. The rest of the subject property is an open field. The property is generally flat.

2. The shallow soil samples were collected and analyzed for chemicals typically used on commercial agricultural properties. Chemical testing was completed on 17 composite samples collected from 22 locations across the site.

3. Chemical data collected for this ESA were compared with Department of Environmental Quality (DEQ) generic Risk-Based Concentrations (RBCs) for soil ingestion, dermal contact, and inhalation exposure pathways under the occupational exposure scenario and DEQ clean fill screening levels (CFSLs).

    a. The analytical results indicate concentrations of lead to be above the CFSL for Area C.

    b. The analytical results indicate concentrations of polycyclic aromatic hydrocarbons (PAHs) to be above the CFSL for Area C. And benzo(a)pyrene exceeds the RBC in the area of sample C-8.

4. The lawn mowers and drums observed on the residential properties at the site that showed indications of fuel spills to the ground did not result in the detection of petroleum from the testing.

5. The lead and PAHs in Area C appear to be from the former storage of vehicles, trailers, and farm-related equipment and fuels. If project plans require off-site removal of shallow soil, special handling and disposal will likely be required due to elevated levels of lead and benzo(a)pyrene.

6. Arsenic and chromium were measured in concentrations that exceeded RBC but not CFSLs; these concentrations may be elevated due to naturally elevated background levels in the Portland Basin.

7. In our opinion, off-site soil removal should be limited. Soil berms or other landscape features should be considered to reduce off-site soil management. Areas impacted by contamination could be capped with clean soil, or the soil could be removed from the site as solid waste and disposed of at a landfill or managed in accordance with DEQ's beneficial use determination.

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1 INTRODUCTION

As requested, GRI conducted a Phase II Environmental Site Assessment (ESA) on the subject property located at 17651 SE Armstrong Circle, which consists of four parcels totaling approximately 24.98 acres, further identified as tax lot numbers 23E07AD00600, 23E07AD00700, 23E07AD00800, 23E07AD00801, 23E07AD00802, and 23E07A00900, in Clackamas County, Oregon. The general location of the site is shown on the Vicinity Map (Figure 1).

A Phase I ESA completed for the site by GRI in January 2024 identified the historical use of the site as an agricultural field with the potential for pesticide and herbicide use. The Phase I ESA also noted that a structure existed previously on the property and may have been used to store or perform maintenance on farm equipment that would potentially introduce the risk of uncontrolled spills of oils, solvents, or fuel as a Recognized Environmental Condition (REC) to the property. Lastly, lawn mowers and drums observed on the residential properties at the site showed indications of fuel spills to the ground.

Under certain conditions, chemicals and fuels can persist in soil for many years and constitute an exposure hazard, depending on the future land use of the subject property. The potential presence of agricultural chemicals represents an REC for the subject property, and a Phase II ESA was recommended to evaluate the potential effects of past agricultural activities. Soils that contain levels of heavy metals, pesticides, and herbicides at levels exceeding Oregon Department of Environmental Quality (DEQ) Risk-Based Concentrations (RBCs) may need to be capped or removed to prevent human exposure. Impacted soils that exceed Oregon DEQ clean fill screening levels (CFSLs) may require special handling and potential offsite disposal upon site redevelopment.

The purpose of this Phase II ESA is to evaluate the potential residual impact on site soil from past agricultural practices and mishandling of diesel, gas, or oil on residential property, characterize the soil for handling and disposal purposes, and evaluate site soil with respect to applicable Oregon DEQ RBCs for potential future site users. This Phase II ESA report includes our findings and conclusions regarding the extent and magnitude of contamination encountered at the site. The scope of work was developed to meet the ASTM International (ASTM) standard for Phase II ESAs (ASTM E1903-11) and is based on our preliminary understanding of site environmental conditions, our experience with similar projects, and a review of the information generated during the Phase I ESA.

2 SITE DESCRIPTION AND PHYSICAL SETTING

2.1 Site Description

The subject property includes six adjacent tax lots totaling about 24.98 acres. Most of the property is an open field. The parcel in the northwest corner includes a house, barn/shop, and a shed. The southwest corner parcel has a house and a shed on the property.

The subject property is currently zoned Industrial Campus District (IC). The surrounding neighborhood to the north, south, and east is primarily Rural Residential Farm/Forest (RRFF5) and Rural Residential (RA-1), and to the west, the land is zoned as Institutional and Public Use District (IPU), Employment Center District (EC), and IC.

2.2 Topography

According to the U.S. Geological Survey (USGS) topographic map of the Damascus Quadrangle, Oregon (2020), the subject property ranges in elevation from about 440 feet on the west side to 500 feet on the east side of the lots (North American Vertical Datum of 1988 [NAVD 88]).

2.3 Geology

Published geologic mapping and our experience in the project vicinity indicate the project site is mapped as Pleistocene rocks of the Boring Volcanic Field (Wells et al., 2020). These deposits include basalt and basaltic andesite flows, breccia, and tuff.

GRI reviewed the Oregon Water Resources Department's (OWRD) online well log database. There were a few well logs in the vicinity of the subject property that were identified in the OWRD well log database. On the site itself, there was one well drilled in 1981 that had a static water level of 28 feet, and another in 2008 that put the static water level at 192 feet. A well approximately a quarter mile to the east, drilled in 1997, has a static water level of 152 feet. A few geotechnical wells drilled less than a quarter mile to the west of the site are consistent with the subsurface geology interpreted as Boring Volcanics but did not have water level information. A little more than a quarter mile away to the southwest at the intersection of SE 172nd Avenue and Oregon Highway 212 (SE Hwy 212), there were a number of borings drilled between 1972 and 1985, with static water depths ranging from 99 feet to 188 feet.

There are two south-southwest-trending creeks to the west and east of the site, both draining to the southwest into the Clackamas River. Rock Creek is approximately a mile away to the west, and Richardson Creek is approximately a mile away to the southeast. The elevation at the site is relatively flat (440 feet to 500 feet). Closer to the Rock Creek drainage directly west, the elevation is around 200 feet, and to the southeast, around the Richardson Creek drainage, the elevation is around 300 feet (NAVD 88).

3 ENVIRONMENTAL SAMPLING

To evaluate the potential for elevated levels of agricultural compounds, heavy metals, and potential fuel contamination in shallow soil resulting from historical agricultural and residential use, 22 discrete sample locations were selected for soil sampling and testing.

Sampling was divided into several different composite sets. Area A includes the agricultural field areas; Area B includes the mound of fill imported to the site; Area C includes an area where former structures and vehicles were identified in historical aerial photographs; and Area D includes two shed buildings where oil staining was observed. Samples were collected to a depth of 18 inches. To capture potential subsurface contamination resulting from oil staining and drums on the residential property, borings D-1 and D-2 were sampled deeper to a maximum depth of 5 feet below ground surface. Soil samples were collected from hand-tool explorations, and the samples were transported to Apex Laboratories in Tigard, Oregon, for analysis.

3.1 Methods

On January 31, 2024, GRI obtained soil samples from 12 locations in the field composited into three samples to analyze at a depth of 1.5 feet. In addition, borings D-1 and D-2 were sampled at 0 feet to 1.5 feet and 3 feet to 5 feet, as shown on the Site Plan (Figure 2). Additional sampling was authorized in the southeast corner of the site, where elevated levels of potential contamination were encountered. On February 28, 2024, GRI obtained soil samples from the ground surface to a depth of 1.5 feet at eight locations. Discrete sample locations were established in a grid-like pattern to capture potential contamination across the agricultural field and the fill mound on the subject property. The explorations were completed using hand tools. Non-disposable equipment was washed and rinsed between sample locations.

Clean, laboratory-supplied glass sample containers were filled and sealed with airtight, Teflon-lined caps. Sample containers were labeled, recorded on a chain-of-custody form, placed in a cooler with ice, and later transported to Apex Laboratories, LLC, in Tigard, Oregon, for chemical analysis. Samples were analyzed for Northwest Total Petroleum Hydrocarbons (NWTPH)-diesel (Dx), polynuclear aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) Method 8270E-SIM, herbicides by EPA Method 8151A, pesticides by EPA Method 8081B, and metals (antimony, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, and mercury) by EPA Methods 6020B and 7471B.

3.2 Soil Sample Descriptions

The Area A borings were dug in the agricultural field around the mound of Fill and consisted of brown SILT, clayey to some clay, with trace sand. There was water in boring A-1-H, approximately 6 inches below the ground surface.

The Area B borings were dug on the mound of Fill in the middle of the field. The material was Clayey SILT to Silty CLAY, and gray and brown in color. Boring B-1-C had trace angular gravel.

The Area C borings were completed in the area of an old structure in the southeast corner of the site where there used to be buildings. In several places, about 3 inches of gravel was encountered at the ground surface, and brown SILT with some subangular to rounded gravel was encountered below the gravel.

Boring D-1 was on the northwest part of the site, on a residential property. The hole was dug in a shed right next to a few old oil drums. The material was brown, Clayey SILT to Silty CLAY with trace fine-grained sand, and water was present at approximately 2.75 feet below the ground surface. Boring D-2 was dug in a shed on the southwest property on the site. There was oil staining observed on parts of the gravel floor near a few old lawn mowers. The upper foot of the hole was silty GRAVEL with some fine- to coarse-grained sand. Below that, the material was brown Silty CLAY to Clayey SILT with trace fine-grained sand. Water was present at 2 feet below the ground surface.

4 SOIL ANALYTICAL RESULTS

Based on the field screening, observations of petroleum sheen, odor, or discoloration were not identified in the samples. Soil samples selected for chemical analysis were composited in the field and analyzed for petroleum hydrocarbons, metals, PAHs, pesticides, and herbicides. The analytical laboratory report is provided in Appendix A. Chemical concentrations in soil are summarized in the text and tables below.

Chemical data collected for this evaluation were compared with DEQ RBCs and CFSLs. The concentrations of detected contaminants are compared to current DEQ RBCs as a preliminary screening approach to identify potential human health risks for reasonably anticipated future land-use activities at the site. Occupational RBC levels have been presented to align with current zoning and anticipated future uses for the property. The applicable RBC exposure pathways include soil ingestion, inhalation, and dermal contact under the occupational exposure scenario.

Petroleum. Petroleum hydrocarbons in the form of oil were detected above the method detection limit in the C- designated samples. Oil was detected at borings C-3, C-5, and C-8 at concentrations of 86.5, 137, and 66.6 milligrams per kilogram (mg/kg), respectively. Diesel was not detected in the samples. Table 4-1 presents a summary of the sample results from the NWTP-Dx analysis.

Table 4-1: PETROLEUM DETECTED IN SOIL (mg/kg)

Analyte	Diesel	Oil
B-1	ND	ND
C-1	ND	ND
C-2	ND	ND
C-3	ND	**86.5**
C-4	ND	ND
C-5	ND	**137**
C-6	ND	ND
C-7	ND	ND
C-8	ND	**66.6**
C-9	ND	ND
D1-A	ND	ND
D1-B	ND	ND
D2-A	ND	ND
D2-B	ND	ND
CFSL	1,100	1,100
RBC	14,000	14,000

Bold = Detected analyte

Metals. Soil samples were tested for the presence of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Arsenic and chromium were detected at concentrations greater than RBCs but less than CFSLs. However, concentrations are less than the natural background levels for arsenic and chromium and, therefore, can be considered to be at concentrations less than the CFSLs. Barium is present in the samples, but at concentrations less than the limits set by both RBCs and CFSLs. Cadmium, mercury, selenium, and silver were not detected in the samples collected. Lead was detected in Area C samples at levels greater than natural background levels. Table 4-2 presents a summary of the sample results from the metal analysis. A toxicity characteristic leachate procedure (TCLP) test was completed on the sample C-8 as the total concentration of lead exceeded 100 mg/kg, and based on the results of the TCLP test, the soil does not appear to exhibit the characteristics of hazardous waste.

Table 4-2: METALS DETECTED IN SOIL (mg/kg)

Analyte	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
A-1	**2.52**	**143**	ND	**30.5**	**10.6**	ND	ND	ND
B-1	**3.30**	**158**	ND	**59.2**	**10.8**	ND	ND	ND
C-1	**3.01**	**259**	ND	**26.5**	**45.8**	ND	ND	ND
C-2	NA	NA	NA	NA	**14.3**	NA	NA	NA
C-3	NA	NA	NA	NA	**65.6**	NA	NA	NA
C-4	NA	NA	NA	NA	**54**	NA	NA	NA
C-5	NA	NA	NA	NA	**38**	NA	NA	NA
C-6	NA	NA	NA	NA	**12.1**	NA	NA	NA
C-7	NA	NA	NA	NA	**12.9**	NA	NA	NA
C-8	NA	NA	NA	NA	**284**	NA	NA	NA
C-9	NA	NA	NA	NA	**18.9**	NA	NA	NA
D1-A	**2.62**	**118**	ND	**22.1**	**14.3**	ND	ND	ND
D1-B	**1.6**	**121**	ND	**37.2**	**8.75**	ND	ND	ND
D2-A	**2.55**	**1.8**	ND	**20.7**	**10.1**	ND	ND	ND
D2-B	**2.41**	**133**	ND	**39.8**	**10.3**	ND	ND	ND
CFSL	8.8	790	0.63	76	27	0.23	0.71	0.82
RBC	1.9	220,000	1,100	6.3	800	350	NE	5,800

Bold = Detected analyte
Shaded cell = Concentration greater CFSL
Bordered cell = Concentration greater RBC

PAHs. PAHs were detected in the Area C samples in six out of the nine shallow soil samples collected from the area: samples C-1, C-3, C-4, C-5, C-7, and C-8. PAHs were not detected above the reporting limit in samples C-2, C-6, and C-9. Benzo(a)pyrene was detected at concentrations of 0.149 mg/kg in sample C-1; 0.240 mg/kg in sample C-5; and 2.72 mg/kg in sample C-8, which are greater than the CFSL value of 0.11 mg/kg for occupational exposure. The sample from C-8 has a concentration of PAH that exceeds CFSLs for eight compounds. Benzo(a)pyrene was detected at a concentration of 2.72 mg/kg that exceeded the RBC of 2.1 mg/kg. PAH toxicity equivalents for benzo(a)pyrene in samples C-1 and C-5 are less than the RBC. In other samples collected from the site, PAH compounds were not detected in the soil samples above or at the reporting limit. Table 4-3 presents a summary of detected PAH compounds.

Table 4-3: PAHs DETECTED IN SOIL (mg/kg)

Analyte	C-1	C-3	C-4	C-5	C-7	C-8	CFSL	RBC
Acenaphthene	ND	ND	ND	ND	ND	ND	0.25	70,000
Acenaphthylene	**0.143**	ND	ND	**0.0668**	ND	**0.291**	120	NE
Anthracene	**0.0218**	ND	ND	**0.119**	ND	**0.686**	6.8	350,000
Benz(a)anthracene	**0.108**	**0.0262**	**0.0119**	**0.183**	0.0112	**2.22**	0.73	21
Benzo(a)pyrene	**0.149**	**0.0324**	**0.0138**	**0.240**	0.0130	**2.72**	0.11	2.1
Benzo(b,j)fluoranthene(s)	**0.162**	**0.0384**	**0.0160**	**0.259**	0.0152	**2.59**	1.1	21
Benzo(k)fluoranthene	**0.0568**	**0.0143**	ND	**0.0981**	ND	**0.998**	11	210
Benzo(g,h,i)perylene	**0.108**	**0.0291**	**0.0117**	**0.510**	ND	**1.72**	25	NE
Chrysene	**0.177**	**0.0368**	**0.0143**	**0.246**	0.0128	**2.83**	3.1	2,100
Dibenz(a,h)anthracene	**0.0159**	ND	ND	**0.0540**	ND	**0.325**	0.11	2.1
Fluoranthene	**0.297**	**0.0617**	**0.0250**	**0.559**	0.0211	**6.31**	10	30,000
Fluorene	ND	ND	ND	**0.0216**	ND	**0.120**	3.7	47,000
Indeno(1,2,3-cd)pyrene	**0.106**	**0.0273**	**0.0250**	**0.414**	0.0106	**1.73**	1.1	21
1-Methylnaphthalene	ND	ND	ND	ND	ND	**0.0189**	0.36	NE
2-Methylnaphthalene	ND	ND	ND	ND	ND	**0.0429**	11	NE
Naphthalene	**0.0192**	**0.0142**	ND	**0.0263**	ND	**0.382**	0.077	23
Phenanthrene	**0.161**	**0.0341**	**0.0137**	**0.377**	ND	**2.99**	5.5	NE
Pyrene	**0.307**	**0.0652**	**0.0243**	**0.544**	0.0207	**6.54**	6	23,000
Dibenzofuran	ND	ND	ND	**0.0139**	ND	**0.0743**	0.002	NE

Bold = Detected analyte
Shaded cell = Concentration greater CFSL or RBC
Bordered cell = Concentration greater RBC Occupational Exposure

Pesticides. Pesticides were not detected in soil above the method detection limits.

5 CONCLUSIONS AND RECOMMENDATIONS

A Phase I ESA completed for the site indicated the historical use of the property as an agricultural field. To address the potential for shallow soil to be contaminated with agricultural chemicals, a Phase II ESA program of soil sample collection and chemical analysis was conducted.

1. The subject property includes four parcels totaling 24.98 acres in Clackamas County, Oregon. The tax lot in the northwest corner of the subject property contains a house, a large barn/shop, and a small shed. The tax lot on the southwest corner has a house and shed on the property. The rest of the subject property is an open field. The property is generally flat.

2. The shallow soil samples were collected and analyzed for chemicals typically used on commercial agricultural properties. Chemical testing was completed on seventeen composite samples collected from 22 locations across the site.

3. Chemical data collected for this ESA were compared with DEQ RBCs for soil ingestion, dermal contact, and inhalation exposure pathways under the occupational exposure scenario and DEQ CFSLs.

    a. The analytical results indicate concentrations of lead to be above the CFSL for Area C.

    b. The analytical results indicate concentrations of PAHs to be above the CFSL for Area C. And benzo(a)pyrene exceeds the RBC in the area of sample C-8.

4. The lawn mowers and drums observed on the residential properties at the site that showed indications of fuel spills to the ground did not result in the detection of petroleum from the testing.

5. The lead and PAHs in Area C appear to be from the former storage of vehicles, trailers, and farm-related equipment and fuels. If project plans require off-site removal of shallow soil, special handling and disposal will likely be required due to elevated levels of lead and benzo(a)pyrene.

6. Arsenic and chromium were measured in concentrations that exceeded RBC but not CFSLs; these concentrations may be elevated due to naturally elevated background levels in the Portland Basin.

7. In our opinion, off-site soil removal should be limited. Soil berms or other landscape features should be considered to reduce off-site soil management. Areas impacted by contamination could be capped with clean soil, or the soil could be removed from the site as solid waste and disposed of at a landfill.

6 LIMITATIONS

This report has been prepared to assist the City of Happy Valley (City) in the assessment of the site. The scope is limited to the specific project, location, and activities described within this report. In the performance of an assessment of this type, specific information is obtained at specific locations at specific times, and our description of the project represents our understanding of the significant aspects of the project relevant to this work. Judgments leading to conclusions are generally made with incomplete knowledge of the subsurface and historical conditions applicable to the project area. More extensive assessments, including additional historical reviews, site exploration, soil and groundwater sampling, and chemical analyses, may be used to supplement the information presented

by this assessment. This report may be used only by the City within a reasonable time from its issuance. Land use, on- and off-site conditions, regulatory requirements, or other factors may change over time, and additional work may be required with the passage of time.

The findings presented in this report are based on our interpretation of the information obtained through the assessment procedures described in this report. No other warranty or representation, either expressed or implied, is included or intended in this report.

The conclusions and recommendations in this report are based on the data obtained from the subsurface explorations at the locations shown on Figure 2 and other sources of information discussed in this report. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in subsurface conditions may exist between exploration locations. This report does not reflect variations that may occur between these explorations. The nature and extent of variation may not become evident until construction.

We have included the Geoprofessional Business Association (GBA) guidance document "Important Information about This Geotechnical-Engineering Report/Geoenvironmental Report" to assist you and others in understanding the use and limitations of this report, included as Appendix B. We recommend you read this document.

We appreciate the opportunity to be of service to you. Please contact the undersigned if you have any questions regarding this report or require further assistance.

Submitted for GRI,

RENEWS: 02/2025

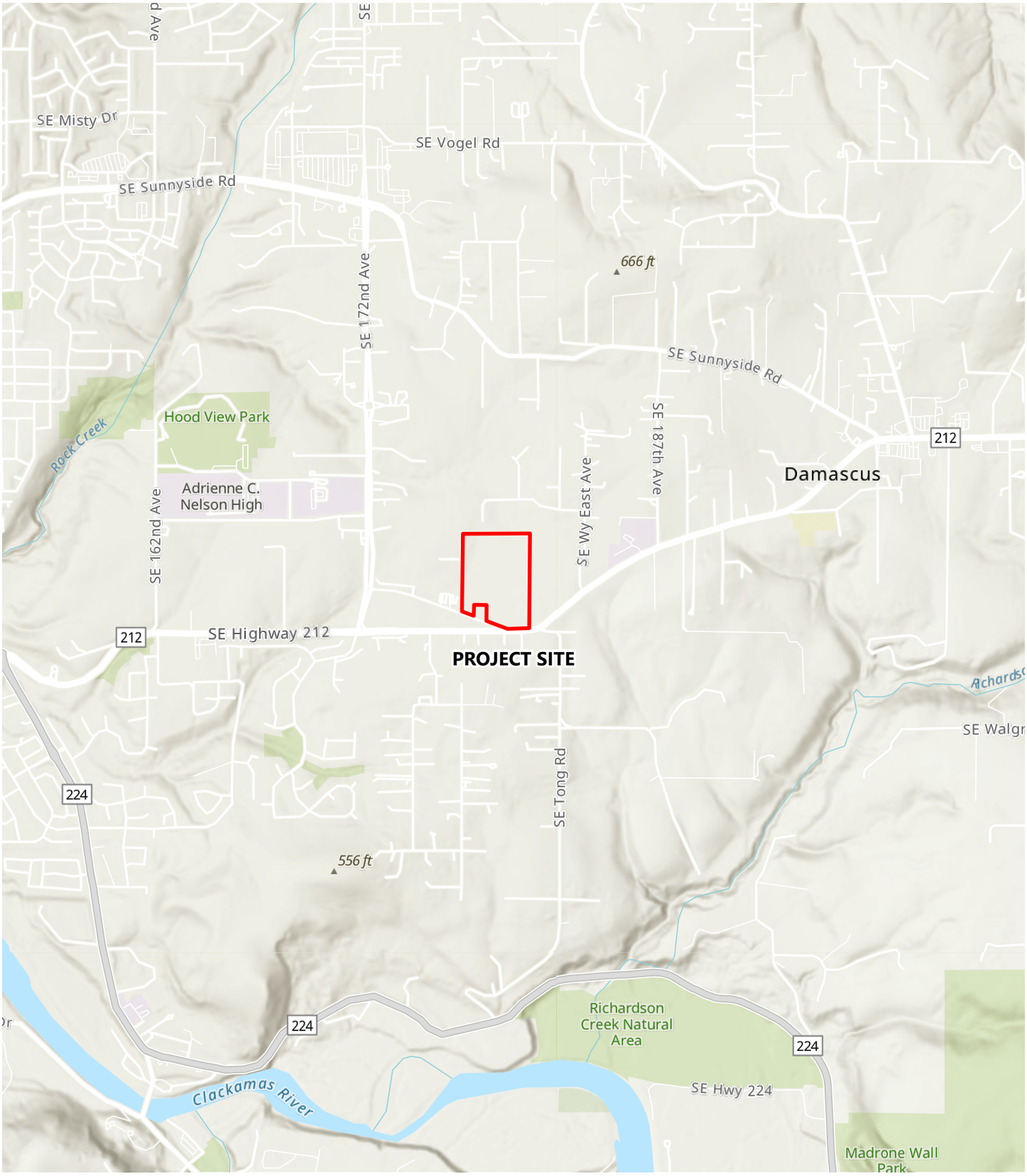
George A. Freitag, CEG
Principal

Alison E. Horst
Staff Geologist

This document has been submitted electronically.

7 REFERENCES

Wells, R. E, Haugerud, R. A., Niem, A. R., Niem, W. A., Ma, L., Evarts, R. C., O'Connor, J. E., Madin, I. P., Sherrod, D. R., Beeson, M. H., Tolan, T. L., Wheeler, K., Hanson, W., Sawlan, M. G., 2020, Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington: U.S. Geological Survey, Scientific Investigations, Map 3443



BASEMAP PROVIDED BY ESRI, 2023

N

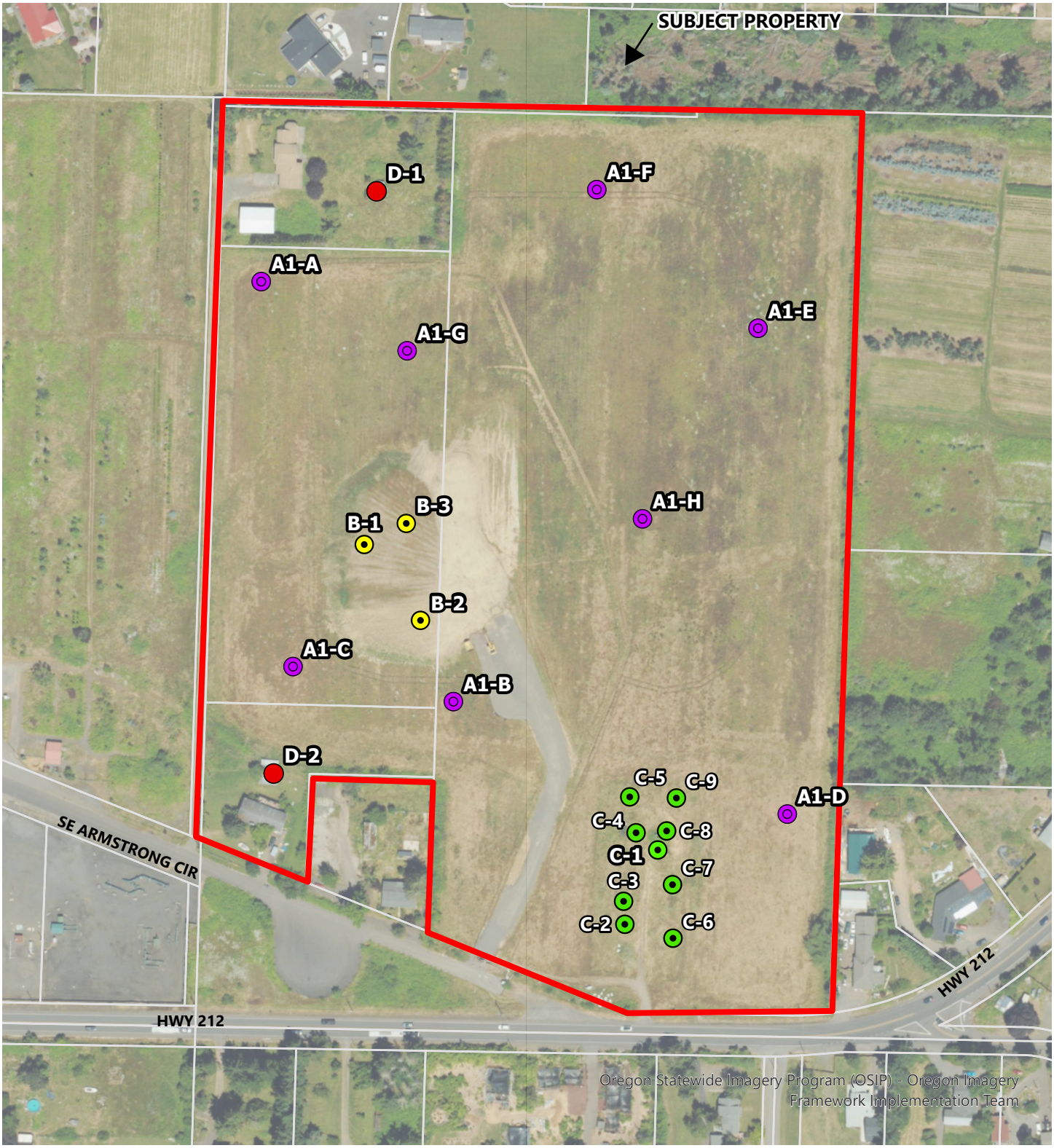
0 0.5 1 Miles

GRI

CITY OF HAPPY VALLEY
ARMSTRONG CIRCLE PHASE II ESA

VICINITY MAP

MAR. 2024 JOB NO. 6795-D FIG. 1



BASEMAP PROVIDED BY GOOGLE EARTH, 2020

Hand Auger Locations

- A- Area Samples
- B- Area Samples
- C- Area Samples
- D-Area Samples

NOTES:

1. FIGURE INTENDED FOR ELECTRONIC COLOR DISPLAY.

N

0 200 400 Feet

GRI

CITY OF HAPPY VALLEY
ARMSTRONG CIRCLE PHASE II ESA

SITE PLAN

MAR. 2024 JOB NO. 6795-D FIG. 2

APPENDIX A

Analytical Laboratory Report

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

ANALYTICAL REPORT

Wednesday, March 6, 2024

Greg Martin
GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

RE: A4A1632 - Happy Valley Ph II - 6795-C

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 A4A1632, which was received by the laboratory on 1/31/2024 at 5:55:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@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
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 3.8 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.

Apex Laboratories

Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-1:0-1.5	A4A1632-01	Soil	01/31/24 15:39	01/31/24 17:55
B-1:0-1.5	A4A1632-02	Soil	01/31/24 12:45	01/31/24 17:55
C-1:0-1.5	A4A1632-03	Soil	01/31/24 16:04	01/31/24 17:55
D1-A:0-2	A4A1632-04	Soil	01/31/24 09:14	01/31/24 17:55
D1-B:3-5	A4A1632-05	Soil	01/31/24 09:48	01/31/24 17:55
D2-A:0-2	A4A1632-06	Soil	01/31/24 10:55	01/31/24 17:55
D2-B:3-5	A4A1632-07	Soil	01/31/24 11:29	01/31/24 17:55

Apex Laboratories

Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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
B-1:0-1.5 (A4A1632-02)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	21.5	mg/kg dry	1	02/12/24 20:45	NWTPH-Dx	
Oil	ND	---	43.0	mg/kg dry	1	02/12/24 20:45	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*02/12/24 20:45*	*NWTPH-Dx*	
C-1:0-1.5 (A4A1632-03)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	22.6	mg/kg dry	1	02/12/24 21:26	NWTPH-Dx	
Oil	ND	---	45.2	mg/kg dry	1	02/12/24 21:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 72 %*		*Limits: 50-150 %*	*1*	*02/12/24 21:26*	*NWTPH-Dx*	
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	23.0	mg/kg dry	1	02/12/24 21:46	NWTPH-Dx	
Oil	ND	---	46.0	mg/kg dry	1	02/12/24 21:46	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*02/12/24 21:46*	*NWTPH-Dx*	
D1-B:3-5 (A4A1632-05)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	23.9	mg/kg dry	1	02/12/24 22:07	NWTPH-Dx	
Oil	ND	---	47.9	mg/kg dry	1	02/12/24 22:07	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 97 %*		*Limits: 50-150 %*	*1*	*02/12/24 22:07*	*NWTPH-Dx*	
D2-A:0-2 (A4A1632-06)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	22.3	mg/kg dry	1	02/12/24 22:28	NWTPH-Dx	
Oil	ND	---	44.6	mg/kg dry	1	02/12/24 22:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*1*	*02/12/24 22:28*	*NWTPH-Dx*	
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**		**Batch: 24B0362**		
Diesel	ND	---	25.7	mg/kg dry	1	02/12/24 23:09	NWTPH-Dx	
Oil	ND	---	51.4	mg/kg dry	1	02/12/24 23:09	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*02/12/24 23:09*	*NWTPH-Dx*	

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Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
A-1:0-1.5 (A4A1632-01RE1)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Aldrin [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
alpha-BHC [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
beta-BHC [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
delta-BHC [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
trans-Chlordane [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
4,4'-DDT	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Dieldrin [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endosulfan I [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endosulfan II [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endrin [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Endrin ketone	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Heptachlor [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.00206	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.0618	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.0618	mg/kg dry	1	02/12/24 17:45	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*85 %*	*Limits: 42-129 %*	*1*	*02/12/24 17:45*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*116 %*	*55-130 %*	*1*	*02/12/24 17:45*	*EPA 8081B*	
A-1:0-1.5 (A4A1632-01RE2)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Methoxychlor [2C]	ND	---	0.00618	mg/kg dry	1	02/15/24 15:35	EPA 8081B	
B-1:0-1.5 (A4A1632-02RE1)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Aldrin [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
alpha-BHC [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
beta-BHC [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
delta-BHC [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
B-1:0-1.5 (A4A1632-02RE1)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
trans-Chlordane [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Dieldrin [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endosulfan I [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endosulfan II [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endrin [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Endrin ketone [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Heptachlor [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.00213	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.0639	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.0639	mg/kg dry	1	02/12/24 18:01	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*83 %*	*Limits: 42-129 %*	*1*	*02/12/24 18:01*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*103 %*	*55-130 %*	*1*	*02/12/24 18:01*	*EPA 8081B*	
B-1:0-1.5 (A4A1632-02RE2)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Methoxychlor [2C]	ND	---	0.00639	mg/kg dry	1	02/15/24 15:51	EPA 8081B	
C-1:0-1.5 (A4A1632-03RE1)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Aldrin [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
alpha-BHC [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
beta-BHC [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
delta-BHC [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
trans-Chlordane [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
4,4'-DDT	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Dieldrin	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Endosulfan I [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-1:0-1.5 (A4A1632-03RE1)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Endosulfan II [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Endosulfan sulfate [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Endrin [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Endrin ketone [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Heptachlor [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.00222	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.0667	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.0667	mg/kg dry	1	02/12/24 18:18	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*74 %*	*Limits: 42-129 %*	*1*	*02/12/24 18:18*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*105 %*	*55-130 %*	*1*	*02/12/24 18:18*	*EPA 8081B*	
C-1:0-1.5 (A4A1632-03RE2)				**Matrix: Soil**		**Batch: 24B0324**		**C-05**
Methoxychlor [2C]	ND	---	0.00667	mg/kg dry	1	02/15/24 16:07	EPA 8081B	

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
B-1:0-1.5 (A4A1632-02)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Anthracene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Chrysene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Fluoranthene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Fluorene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Naphthalene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Phenanthrene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Pyrene	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0105	mg/kg dry	1	02/06/24 20:50	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*83 %*	*Limits: 44-120 %*	*1*	*02/06/24 20:50*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*74 %*	*54-127 %*	*1*	*02/06/24 20:50*	*EPA 8270E SIM*	
C-1:0-1.5 (A4A1632-03)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Acenaphthylene	**0.0143**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Anthracene	**0.0218**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Benz(a)anthracene	**0.108**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Benzo(a)pyrene	**0.149**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Benzo(b)fluoranthene	**0.162**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Benzo(k)fluoranthene	**0.0568**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	**M-05**
Benzo(g,h,i)perylene	**0.108**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Chrysene	**0.177**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Dibenz(a,h)anthracene	**0.0159**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-1:0-1.5 (A4A1632-03)				**Matrix: Soil**		**Batch: 24B0173**		
Fluoranthene	**0.297**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Fluorene	ND	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**0.106**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Naphthalene	**0.0192**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Phenanthrene	**0.161**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Pyrene	**0.307**	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0114	mg/kg dry	1	02/06/24 21:15	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*80 %*	*Limits: 44-120 %*	*1*	*02/06/24 21:15*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*73 %*	*54-127 %*	*1*	*02/06/24 21:15*	*EPA 8270E SIM*	
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Anthracene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Chrysene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Fluoranthene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Fluorene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Naphthalene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Phenanthrene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Pyrene	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0113	mg/kg dry	1	02/06/24 21:40	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*78 %*	*Limits: 44-120 %*	*1*	*02/06/24 21:40*	*EPA 8270E SIM*	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**		**Batch: 24B0173**		
Surrogate: p-Terphenyl-d14 (Surr)		*Recovery: 73 %*		*Limits: 54-127 %*	*1*	*02/06/24 21:40*	*EPA 8270E SIM*	
D1-B:3-5 (A4A1632-05)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Anthracene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Chrysene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Fluoranthene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Fluorene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Naphthalene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Phenanthrene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Pyrene	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0116	mg/kg dry	1	02/06/24 22:05	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery: 80 %*		*Limits: 44-120 %*	*1*	*02/06/24 22:05*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*72 %*	*54-127 %*	*1*	*02/06/24 22:05*	*EPA 8270E SIM*	
D2-A:0-2 (A4A1632-06)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Anthracene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
D2-A:0-2 (A4A1632-06)				**Matrix: Soil**		**Batch: 24B0173**		
Chrysene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Fluoranthene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Fluorene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Naphthalene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Phenanthrene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Pyrene	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0110	mg/kg dry	1	02/06/24 22:30	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*72 %*	*Limits: 44-120 %*	*1*	*02/06/24 22:30*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*67 %*	*54-127 %*	*1*	*02/06/24 22:30*	*EPA 8270E SIM*	
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**		**Batch: 24B0173**		
Acenaphthene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Anthracene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Chrysene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Fluoranthene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Fluorene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Naphthalene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Phenanthrene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Pyrene	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**		**Batch: 24B0173**		
Dibenzofuran	ND	---	0.0129	mg/kg dry	1	02/06/24 22:55	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*83 %*	*Limits: 44-120 %*	*1*	*02/06/24 22:55*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*72 %*	*54-127 %*	*1*	*02/06/24 22:55*	*EPA 8270E SIM*	

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ORELAP ID: OR100062

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
A-1:0-1.5 (A4A1632-01)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**2.52**	---	1.22	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Barium	**143**	---	1.22	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Cadmium	ND	---	0.244	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Chromium	**30.5**	---	1.22	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Lead	**10.6**	---	0.244	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Mercury	ND	---	0.0976	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Selenium	ND	---	1.22	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
Silver	ND	---	0.244	mg/kg dry	10	02/01/24 20:02	EPA 6020B	
B-1:0-1.5 (A4A1632-02)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**3.30**	---	1.20	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Barium	**158**	---	1.20	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Cadmium	ND	---	0.239	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Chromium	**59.2**	---	1.20	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Lead	**10.8**	---	0.239	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Mercury	ND	---	0.0958	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Selenium	ND	---	1.20	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
Silver	ND	---	0.239	mg/kg dry	10	02/01/24 20:08	EPA 6020B	
C-1:0-1.5 (A4A1632-03)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**3.01**	---	1.38	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Barium	**259**	---	1.38	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Cadmium	ND	---	0.275	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Chromium	**26.5**	---	1.38	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Lead	**45.8**	---	0.275	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Mercury	ND	---	0.110	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Selenium	ND	---	1.38	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
Silver	ND	---	0.275	mg/kg dry	10	02/01/24 20:17	EPA 6020B	
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**				
Batch: 24B0020								

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**				
Arsenic	**2.62**	---	1.30	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Barium	**118**	---	1.30	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Cadmium	ND	---	0.261	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Chromium	**22.1**	---	1.30	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Lead	**14.3**	---	0.261	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Mercury	ND	---	0.104	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Selenium	ND	---	1.30	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
Silver	ND	---	0.261	mg/kg dry	10	02/01/24 20:23	EPA 6020B	
D1-B:3-5 (A4A1632-05)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**1.60**	---	1.37	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Barium	**121**	---	1.37	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Cadmium	ND	---	0.275	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Chromium	**37.2**	---	1.37	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Lead	**8.75**	---	0.275	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Mercury	ND	---	0.110	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Selenium	ND	---	1.37	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
Silver	ND	---	0.275	mg/kg dry	10	02/01/24 20:29	EPA 6020B	
D2-A:0-2 (A4A1632-06)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**2.55**	---	1.22	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Barium	**108**	---	1.22	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Cadmium	ND	---	0.243	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Chromium	**20.7**	---	1.22	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Lead	**10.1**	---	0.243	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Mercury	ND	---	0.0973	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Selenium	ND	---	1.22	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
Silver	ND	---	0.243	mg/kg dry	10	02/01/24 20:35	EPA 6020B	
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**				
Batch: 24B0020								
Arsenic	**2.41**	---	1.50	mg/kg dry	10	02/01/24 20:54	EPA 6020B	

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**				
Barium	**133**	---	1.50	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Cadmium	ND	---	0.300	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Chromium	**39.8**	---	1.50	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Lead	**10.3**	---	0.300	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Mercury	ND	---	0.120	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Selenium	ND	---	1.50	mg/kg dry	10	02/01/24 20:54	EPA 6020B	
Silver	ND	---	0.300	mg/kg dry	10	02/01/24 20:54	EPA 6020B	

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
A-1:0-1.5 (A4A1632-01)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**81.6**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
B-1:0-1.5 (A4A1632-02)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**81.9**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
C-1:0-1.5 (A4A1632-03)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**77.9**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
D1-A:0-2 (A4A1632-04)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**77.6**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
D1-B:3-5 (A4A1632-05)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**75.2**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
D2-A:0-2 (A4A1632-06)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**79.8**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	
D2-B:3-5 (A4A1632-07)				**Matrix: Soil**		**Batch: 24B0016**		
% Solids	**68.8**	---	1.00	%	1	02/02/24 06:39	EPA 8000D	

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Darwin Thomas, Business Development Director

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APEX LABORATORIES

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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 24B0362 - EPA 3546 (Fuels)							**Soil**					
Blank (24B0362-BLK1)			Prepared: 02/12/24 05:42		Analyzed: 02/12/24 20:04							
NWTPH-Dx												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 101 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (24B0362-BS1)			Prepared: 02/12/24 05:42		Analyzed: 02/12/24 20:24							
NWTPH-Dx												
Diesel	103	---	20.0	mg/kg wet	1	125	---	82	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (24B0362-DUP1)			Prepared: 02/12/24 05:42		Analyzed: 02/12/24 21:06							
QC Source Sample: B-1:0-1.5 (A4A1632-02)												
NWTPH-Dx												
Diesel	ND	---	21.9	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	43.8	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 96 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (24B0362-DUP3)			Prepared: 02/12/24 05:42		Analyzed: 02/13/24 09:55							
QC Source Sample: Non-SDG (A4B1012-03RE1)												
Diesel	ND	---	95.9	mg/kg dry	5	---	ND	---	---	---	30%	
Oil	**369**	---	192	mg/kg dry	5	---	219	---	---	**51**	**30%**	Q-17
Surr: o-Terphenyl (Surr)		*Recovery: 105 %*	*Limits: 50-150 %*		*Dilution: 5x*							*S-05*

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0324 - EPA 3546/3640A (GPC)					**Soil**							
Blank (24B0324-BLK1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 15:02							**C-05**
EPA 8081B												
Aldrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
beta-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
delta-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin aldehyde	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin ketone	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Heptachlor	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Methoxychlor	**0.00697**	---	0.00600	mg/kg wet	1	---	---	---	---	---	---	B
Chlordane (Technical)	ND	---	0.0600	mg/kg wet	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	0.0600	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 80 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*104 %*		*55-130 %*				*"*			
Blank (24B0324-BLK2)			Prepared: 02/08/24 12:55		Analyzed: 02/15/24 14:13							**C-05**
EPA 8081B												
Methoxychlor	ND	---	0.00600	mg/kg wet	1	---	---	---	---	---	---	
LCS (24B0324-BS1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 15:19							**C-05**
EPA 8081B												
Aldrin	0.0453	---	0.00200	mg/kg wet	1	0.0500	---	91	45-136%	---	---	Q-41
alpha-BHC	0.0467	---	0.00200	mg/kg wet	1	0.0500	---	93	45-137%	---	---	

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0324 - EPA 3546/3640A (GPC)							**Soil**					
LCS (24B0324-BS1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 15:19							**C-05**
beta-BHC	0.0480	---	0.00200	mg/kg wet	1	0.0500	---	96	50-136%	---	---	
delta-BHC	0.0510	---	0.00200	mg/kg wet	1	0.0500	---	102	47-139%	---	---	
gamma-BHC (Lindane)	0.0464	---	0.00200	mg/kg wet	1	0.0500	---	93	49-135%	---	---	
cis-Chlordane	0.0500	---	0.00200	mg/kg wet	1	0.0500	---	100	54-133%	---	---	
4,4'-DDD	0.0561	---	0.00200	mg/kg wet	1	0.0500	---	112	56-139%	---	---	
4,4'-DDE	0.0537	---	0.00200	mg/kg wet	1	0.0500	---	107	56-134%	---	---	
4,4'-DDT	0.0647	---	0.00200	mg/kg wet	1	0.0500	---	129	50-141%	---	---	
Dieldrin	0.0556	---	0.00200	mg/kg wet	1	0.0500	---	111	56-136%	---	---	
Endosulfan I	0.0527	---	0.00200	mg/kg wet	1	0.0500	---	105	53-132%	---	---	
Endosulfan II	0.0576	---	0.00200	mg/kg wet	1	0.0500	---	115	53-134%	---	---	
Endosulfan sulfate	0.0581	---	0.00200	mg/kg wet	1	0.0500	---	116	55-136%	---	---	Q-41
Endrin	0.0627	---	0.00200	mg/kg wet	1	0.0500	---	125	57-140%	---	---	Q-41
Endrin aldehyde	0.0483	---	0.00200	mg/kg wet	1	0.0500	---	97	35-137%	---	---	
Endrin ketone	0.0554	---	0.00200	mg/kg wet	1	0.0500	---	111	55-136%	---	---	Q-41
Heptachlor	0.0508	---	0.00200	mg/kg wet	1	0.0500	---	102	47-136%	---	---	Q-41
Heptachlor epoxide	0.0509	---	0.00200	mg/kg wet	1	0.0500	---	102	52-136%	---	---	Q-41
Methoxychlor	0.0755	---	0.00600	mg/kg wet	1	0.0500	---	**151**	**52-143%**	---	---	B, Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 89 %*		*Limits: 42-129 %*							*Dilution: 1x*
Decachlorobiphenyl (Surr)			*112 %*		*55-130 %*							*"*
LCS (24B0324-BS2)			Prepared: 02/08/24 12:55		Analyzed: 02/13/24 15:34							**C-05**
EPA 8081B												
trans-Chlordane	0.0543	---	0.00200	mg/kg wet	1	0.0500	---	109	53-135%	---	---	
LCS (24B0324-BS3)			Prepared: 02/08/24 12:55		Analyzed: 02/15/24 14:30							**C-05**
EPA 8081B												
Methoxychlor	0.0596	---	0.00600	mg/kg wet	1	0.0500	---	119	52-143%	---	---	B
Duplicate (24B0324-DUP1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 15:51							**C-05**
QC Source Sample: Non-SDG (A4A1575-01RE1)												
Aldrin	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
beta-BHC	ND	---	0.00407	mg/kg dry	1	---	ND	---	---	---	30%	R-02

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0324 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (24B0324-DUP1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 15:51							**C-05**
QC Source Sample: Non-SDG (A4A1575-01RE1)												
delta-BHC	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	---	0.00242	mg/kg dry	1	---	ND	---	---	---	30%	R-02
cis-Chlordane	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	---	0.00220	mg/kg dry	1	---	0.00129	---	---	***	30%	
4,4'-DDT	**0.00265**	---	0.00220	mg/kg dry	1	---	0.00229	---	---	14	30%	
Dieldrin	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	**---**	**30%**	
Endosulfan II	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	**---**	**30%**	
Endosulfan sulfate	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Endrin	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Endrin aldehyde	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Endrin ketone	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Heptachlor	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	---	0.00220	mg/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	---	0.0659	mg/kg dry	1	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	---	0.0659	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)		*Recovery:*	*100 %*	*Limits:*	*42-129 %*		*Dilution:*	*1x*				
Decachlorobiphenyl (Surr)			*127 %*		*55-130 %*			*"*				
Duplicate (24B0324-DUP2)			Prepared: 02/08/24 12:55		Analyzed: 02/15/24 15:02							**C-05**
QC Source Sample: Non-SDG (A4A1575-01RE2)												
Methoxychlor	ND	---	0.00659	mg/kg dry	1	---	ND	---	---	---	30%	
Matrix Spike (24B0324-MS1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 16:24							**C-05, CONT, TEMP**
QC Source Sample: Non-SDG (A4B0889-01RE1)												
EPA 8081B												
Aldrin	0.0560	---	0.00245	mg/kg dry	1	0.0613	ND	91	45-136%	---	---	Q-41
alpha-BHC	0.0535	---	0.00245	mg/kg dry	1	0.0613	ND	87	45-137%	---	---	
beta-BHC	0.0632	---	0.00245	mg/kg dry	1	0.0613	ND	103	50-136%	---	---	
delta-BHC	0.0643	---	0.00245	mg/kg dry	1	0.0613	ND	105	47-139%	---	---	

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Darwin Thomas, Business Development Director

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ORELAP ID: OR100062

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0324 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (24B0324-MS1)			Prepared: 02/08/24 12:55		Analyzed: 02/12/24 16:24							**C-05, CONT, TEMP**
QC Source Sample: Non-SDG (A4B0889-01RE1)												
gamma-BHC (Lindane)	0.0539	---	0.00245	mg/kg dry	1	0.0613	ND	88	49-135%	---	---	
cis-Chlordane	0.0673	---	0.00245	mg/kg dry	1	0.0613	0.00395	103	54-133%	---	---	
4,4'-DDD	0.0759	---	0.00245	mg/kg dry	1	0.0613	0.00452	116	56-139%	---	---	
4,4'-DDE	0.0784	---	0.00245	mg/kg dry	1	0.0613	0.0126	107	56-134%	---	---	
4,4'-DDT	0.0871	---	0.00245	mg/kg dry	1	0.0613	0.0135	120	50-141%	---	---	
Dieldrin	0.117	---	0.00245	mg/kg dry	1	0.0613	0.0604	93	56-136%	---	---	
Endosulfan I	0.0610	---	0.00245	mg/kg dry	1	0.0613	ND	100	53-132%	---	---	Q-41
Endosulfan II	0.0683	---	0.00245	mg/kg dry	1	0.0613	ND	111	53-134%	---	---	
Endosulfan sulfate	0.0701	---	0.00245	mg/kg dry	1	0.0613	ND	114	55-136%	---	---	Q-41
Endrin	0.0726	---	0.00245	mg/kg dry	1	0.0613	ND	118	57-140%	---	---	Q-41
Endrin aldehyde	0.0600	---	0.00245	mg/kg dry	1	0.0613	ND	98	35-137%	---	---	
Endrin ketone	0.0657	---	0.00245	mg/kg dry	1	0.0613	ND	107	55-136%	---	---	Q-41
Heptachlor	0.0597	---	0.00245	mg/kg dry	1	0.0613	ND	97	47-136%	---	---	Q-41
Heptachlor epoxide	0.0592	---	0.00245	mg/kg dry	1	0.0613	ND	97	52-136%	---	---	Q-41
Methoxychlor	0.0920	---	0.00736	mg/kg dry	1	0.0613	ND	**150**	**52-143%**	---	---	B, Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 88 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*106 %*		*55-130 %*				*"*			
Matrix Spike (24B0324-MS2)			Prepared: 02/08/24 12:55		Analyzed: 02/13/24 16:06							**C-05, CONT, TEMP**
QC Source Sample: Non-SDG (A4B0889-01RE2)												
EPA 8081B												
trans-Chlordane	0.0637	---	0.00245	mg/kg dry	1	0.0613	0.00284	99	53-135%	---	---	

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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 24B0173 - EPA 3546							**Soil**					
Blank (24B0173-BLK1)			Prepared: 02/06/24 12:07		Analyzed: 02/06/24 15:20							
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	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0100	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	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	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0100	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 44-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*97 %*		*54-127 %*			*"*				
LCS (24B0173-BS1)			Prepared: 02/06/24 12:07		Analyzed: 02/06/24 15:46							
EPA 8270E SIM												
Acenaphthene	0.702	---	0.0100	mg/kg wet	1	0.800	---	88	40-123%	---	---	
Acenaphthylene	0.693	---	0.0100	mg/kg wet	1	0.800	---	87	32-132%	---	---	
Anthracene	0.687	---	0.0100	mg/kg wet	1	0.800	---	86	47-123%	---	---	
Benz(a)anthracene	0.676	---	0.0100	mg/kg wet	1	0.800	---	85	49-126%	---	---	
Benzo(a)pyrene	0.687	---	0.0100	mg/kg wet	1	0.800	---	86	45-129%	---	---	
Benzo(b)fluoranthene	0.641	---	0.0100	mg/kg wet	1	0.800	---	80	45-132%	---	---	
Benzo(k)fluoranthene	0.703	---	0.0100	mg/kg wet	1	0.800	---	88	47-132%	---	---	
Benzo(g,h,i)perylene	0.663	---	0.0100	mg/kg wet	1	0.800	---	83	43-134%	---	---	
Chrysene	0.720	---	0.0100	mg/kg wet	1	0.800	---	90	50-124%	---	---	

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Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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 24B0173 - EPA 3546							**Soil**					
LCS (24B0173-BS1)			Prepared: 02/06/24 12:07		Analyzed: 02/06/24 15:46							
Dibenz(a,h)anthracene	0.688	---	0.0100	mg/kg wet	1	0.800	---	86	45-134%	---	---	
Fluoranthene	0.676	---	0.0100	mg/kg wet	1	0.800	---	85	50-127%	---	---	
Fluorene	0.681	---	0.0100	mg/kg wet	1	0.800	---	85	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.694	---	0.0100	mg/kg wet	1	0.800	---	87	45-133%	---	---	
1-Methylnaphthalene	0.665	---	0.0100	mg/kg wet	1	0.800	---	83	40-120%	---	---	
2-Methylnaphthalene	0.677	---	0.0100	mg/kg wet	1	0.800	---	85	38-122%	---	---	
Naphthalene	0.715	---	0.0100	mg/kg wet	1	0.800	---	89	35-123%	---	---	
Phenanthrene	0.695	---	0.0100	mg/kg wet	1	0.800	---	87	50-121%	---	---	
Pyrene	0.675	---	0.0100	mg/kg wet	1	0.800	---	84	47-127%	---	---	
Dibenzofuran	0.674	---	0.0100	mg/kg wet	1	0.800	---	84	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 89 %*		*Limits: 44-120 %*				*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*91 %*		*54-127 %*				*"*			
Duplicate (24B0173-DUP1)			Prepared: 02/06/24 12:07		Analyzed: 02/06/24 16:36							
QC Source Sample: Non-SDG (A4A1487-44)												
Acenaphthene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	**0.0111**	---	0.00986	mg/kg dry	1	---	0.00514	---	---	**74**	**30%**	Q-05
Benzo(a)pyrene	**0.0128**	---	0.00986	mg/kg dry	1	---	ND	---	---		**30%**	Q-05
Benzo(b)fluoranthene	**0.0214**	---	0.00986	mg/kg dry	1	---	0.00614	---	---	**111**	**30%**	Q-05
Benzo(k)fluoranthene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	**---**	**30%**	Q-05
Benzo(g,h,i)perylene	**0.0238**	---	0.00986	mg/kg dry	1	---	0.00701	---	---	**109**	**30%**	Q-05
Chrysene	**0.0123**	---	0.00986	mg/kg dry	1	---	ND	---	---		**30%**	Q-05
Dibenz(a,h)anthracene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	**0.0130**	---	0.00986	mg/kg dry	1	---	ND	---	---		**30%**	Q-05
Fluorene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**0.0227**	---	0.00986	mg/kg dry	1	---	0.00621	---	---	**114**	**30%**	Q-05
1-Methylnaphthalene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	**0.0125**	---	0.00986	mg/kg dry	1	---	ND	---	---		**30%**	Q-05
Pyrene	**0.0132**	---	0.00986	mg/kg dry	1	---	ND	---	---		**30%**	Q-05
Dibenzofuran	ND	---	0.00986	mg/kg dry	1	---	ND	---	---	---	30%	

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Darwin Thomas, Business Development Director

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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 24B0173 - EPA 3546							**Soil**					
Duplicate (24B0173-DUP1)			Prepared: 02/06/24 12:07 Analyzed: 02/06/24 16:36									
QC Source Sample: Non-SDG (A4A1487-44)												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 44-120 %*					*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*91 %*	*54-127 %*					*"*			
Matrix Spike (24B0173-MS1)			Prepared: 02/06/24 12:07 Analyzed: 02/06/24 17:27									
QC Source Sample: Non-SDG (A4B0844-05)												
EPA 8270E SIM												
Acenaphthene	0.748	---	0.0107	mg/kg dry	1	0.859	ND	87	40-123%	---	---	
Acenaphthylene	0.738	---	0.0107	mg/kg dry	1	0.859	ND	86	32-132%	---	---	
Anthracene	0.699	---	0.0107	mg/kg dry	1	0.859	ND	81	47-123%	---	---	
Benz(a)anthracene	0.704	---	0.0107	mg/kg dry	1	0.859	ND	82	49-126%	---	---	
Benzo(a)pyrene	0.712	---	0.0107	mg/kg dry	1	0.859	ND	83	45-129%	---	---	
Benzo(b)fluoranthene	0.681	---	0.0107	mg/kg dry	1	0.859	ND	79	45-132%	---	---	
Benzo(k)fluoranthene	0.720	---	0.0107	mg/kg dry	1	0.859	ND	84	47-132%	---	---	
Benzo(g,h,i)perylene	0.694	---	0.0107	mg/kg dry	1	0.859	ND	81	43-134%	---	---	
Chrysene	0.752	---	0.0107	mg/kg dry	1	0.859	ND	88	50-124%	---	---	
Dibenz(a,h)anthracene	0.749	---	0.0107	mg/kg dry	1	0.859	ND	87	45-134%	---	---	
Fluoranthene	0.688	---	0.0107	mg/kg dry	1	0.859	ND	80	50-127%	---	---	
Fluorene	0.723	---	0.0107	mg/kg dry	1	0.859	ND	84	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.704	---	0.0107	mg/kg dry	1	0.859	ND	82	45-133%	---	---	
1-Methylnaphthalene	0.702	---	0.0107	mg/kg dry	1	0.859	ND	82	40-120%	---	---	
2-Methylnaphthalene	0.722	---	0.0107	mg/kg dry	1	0.859	ND	84	38-122%	---	---	
Naphthalene	0.752	---	0.0107	mg/kg dry	1	0.859	ND	88	35-123%	---	---	
Phenanthrene	0.717	---	0.0107	mg/kg dry	1	0.859	ND	84	50-121%	---	---	
Pyrene	0.675	---	0.0107	mg/kg dry	1	0.859	ND	79	47-127%	---	---	
Dibenzofuran	0.722	---	0.0107	mg/kg dry	1	0.859	ND	84	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 44-120 %*					*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*87 %*	*54-127 %*					*"*			

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ORELAP ID: OR100062

ANALYTICAL REPORT

GRI	Project: Happy Valley Ph II	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: 6795-C	Report ID:
Tigard, OR 97224	Project Manager: Greg Martin	A4A1632 - 03 06 24 1014

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0020 - EPA 3051A							Soil					
Blank (24B0020-BLK1)			Prepared: 02/01/24 10:21 Analyzed: 02/01/24 18:29									
EPA 6020B												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (24B0020-BS1)			Prepared: 02/01/24 10:21 Analyzed: 02/01/24 18:41									
EPA 6020B												
Arsenic	50.8	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Barium	54.2	---	1.00	mg/kg wet	10	50.0	---	108	80-120%	---	---	
Cadmium	52.2	---	0.200	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Chromium	53.1	---	1.00	mg/kg wet	10	50.0	---	106	80-120%	---	---	
Lead	48.4	---	0.200	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Mercury	0.966	---	0.0800	mg/kg wet	10	1.00	---	97	80-120%	---	---	
Selenium	23.9	---	1.00	mg/kg wet	10	25.0	---	96	80-120%	---	---	
Silver	25.9	---	0.200	mg/kg wet	10	25.0	---	103	80-120%	---	---	
Duplicate (24B0020-DUP1)			Prepared: 02/01/24 10:21 Analyzed: 02/01/24 19:00									
QC Source Sample: Non-SDG (A4A1483-02)												
Arsenic	**3.04**	---	1.06	mg/kg dry	10	---	2.98	---	---	2	20%	PRO
Barium	**242**	---	1.06	mg/kg dry	10	---	243	---	---	0.3	20%	PRO
Cadmium	ND	---	0.212	mg/kg dry	10	---	0.110	---	---	***	**20%**	PRO
Chromium	**17.2**	---	1.06	mg/kg dry	10	---	17.2	---	---	0.2	20%	PRO
Lead	**9.34**	---	0.212	mg/kg dry	10	---	9.59	---	---	3	20%	PRO
Mercury	ND	---	0.0850	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Selenium	ND	---	1.06	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Silver	ND	---	0.212	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Matrix Spike (24B0020-MS1)			Prepared: 02/01/24 10:21 Analyzed: 02/01/24 19:06									

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0020 - EPA 3051A							**Soil**					
Matrix Spike (24B0020-MS1)			Prepared: 02/01/24 10:21		Analyzed: 02/01/24 19:06							
QC Source Sample: Non-SDG (A4A1483-02)												
EPA 6020B												
Arsenic	50.3	---	0.978	mg/kg dry	10	48.9	2.98	97	75-125%	---	---	PRO
Barium	302	---	0.978	mg/kg dry	10	48.9	243	121	75-125%	---	---	PRO
Cadmium	50.5	---	0.196	mg/kg dry	10	48.9	0.110	103	75-125%	---	---	PRO
Chromium	72.0	---	0.978	mg/kg dry	10	48.9	17.2	112	75-125%	---	---	PRO
Lead	58.0	---	0.196	mg/kg dry	10	48.9	9.59	99	75-125%	---	---	PRO
Mercury	1.02	---	0.0782	mg/kg dry	10	0.978	ND	104	75-125%	---	---	PRO
Selenium	20.5	---	0.978	mg/kg dry	10	24.4	ND	84	75-125%	---	---	PRO
Silver	24.3	---	0.196	mg/kg dry	10	24.4	ND	100	75-125%	---	---	PRO

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0016 - Total Solids (Dry Weight) - 2022							**Soil**					
Duplicate (24B0016-DUP1)			Prepared: 02/01/24 09:46		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A3L1020-01)												
% Solids	**75.7**	---	1.00	%	1	---	76.9	---	---	2	10%	
Duplicate (24B0016-DUP2)			Prepared: 02/01/24 09:46		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A3L1020-02)												
% Solids	**74.8**	---	1.00	%	1	---	75.6	---	---	1	10%	
Duplicate (24B0016-DUP3)			Prepared: 02/01/24 09:46		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A3L1020-03)												
% Solids	**91.3**	---	1.00	%	1	---	90.7	---	---	0.7	10%	
Duplicate (24B0016-DUP4)			Prepared: 02/01/24 09:46		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A3L1020-04)												
% Solids	**94.3**	---	1.00	%	1	---	94.2	---	---	0.08	10%	
Duplicate (24B0016-DUP5)			Prepared: 02/01/24 19:17		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A4B0755-02)												
% Solids	**56.7**	---	1.00	%	1	---	57.7	---	---	2	10%	
Duplicate (24B0016-DUP6)			Prepared: 02/01/24 19:17		Analyzed: 02/02/24 06:39							
QC Source Sample: Non-SDG (A4B0771-06)												
% Solids	**79.6**	---	1.00	%	1	---	80.6	---	---	1	10%	

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

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0362							
A4A1632-02	Soil	NWTPH-Dx	01/31/24 12:45	02/12/24 05:42	11.36g/5mL	10g/5mL	0.88
A4A1632-03	Soil	NWTPH-Dx	01/31/24 16:04	02/12/24 05:42	11.37g/5mL	10g/5mL	0.88
A4A1632-04	Soil	NWTPH-Dx	01/31/24 09:14	02/12/24 05:42	11.21g/5mL	10g/5mL	0.89
A4A1632-05	Soil	NWTPH-Dx	01/31/24 09:48	02/12/24 05:42	11.11g/5mL	10g/5mL	0.90
A4A1632-06	Soil	NWTPH-Dx	01/31/24 10:55	02/12/24 05:42	11.22g/5mL	10g/5mL	0.89
A4A1632-07	Soil	NWTPH-Dx	01/31/24 11:29	02/12/24 05:42	11.31g/5mL	10g/5mL	0.88

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0324							
A4A1632-01RE1	Soil	EPA 8081B	01/31/24 15:39	02/08/24 12:55	11.89g/10mL	10g/5mL	1.68
A4A1632-01RE2	Soil	EPA 8081B	01/31/24 15:39	02/08/24 12:55	11.89g/10mL	10g/5mL	1.68
A4A1632-02RE1	Soil	EPA 8081B	01/31/24 12:45	02/08/24 12:55	11.47g/10mL	10g/5mL	1.74
A4A1632-02RE2	Soil	EPA 8081B	01/31/24 12:45	02/08/24 12:55	11.47g/10mL	10g/5mL	1.74
A4A1632-03RE1	Soil	EPA 8081B	01/31/24 16:04	02/08/24 12:55	11.55g/10mL	10g/5mL	1.73
A4A1632-03RE2	Soil	EPA 8081B	01/31/24 16:04	02/08/24 12:55	11.55g/10mL	10g/5mL	1.73

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

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0173							
A4A1632-02	Soil	EPA 8270E SIM	01/31/24 12:45	02/06/24 12:07	11.66g/5mL	10g/5mL	0.86
A4A1632-03	Soil	EPA 8270E SIM	01/31/24 16:04	02/06/24 12:07	11.24g/5mL	10g/5mL	0.89
A4A1632-04	Soil	EPA 8270E SIM	01/31/24 09:14	02/06/24 12:07	11.35g/5mL	10g/5mL	0.88
A4A1632-05	Soil	EPA 8270E SIM	01/31/24 09:48	02/06/24 12:07	11.46g/5mL	10g/5mL	0.87
A4A1632-06	Soil	EPA 8270E SIM	01/31/24 10:55	02/06/24 12:07	11.36g/5mL	10g/5mL	0.88
A4A1632-07	Soil	EPA 8270E SIM	01/31/24 11:29	02/06/24 12:07	11.25g/5mL	10g/5mL	0.89

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0020							

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ORELAP ID: OR100062

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4A1632-01	Soil	EPA 6020B	01/31/24 15:39	02/01/24 10:21	0.502g/50mL	0.5g/50mL	1.00
A4A1632-02	Soil	EPA 6020B	01/31/24 12:45	02/01/24 10:21	0.51g/50mL	0.5g/50mL	0.98
A4A1632-03	Soil	EPA 6020B	01/31/24 16:04	02/01/24 10:21	0.466g/50mL	0.5g/50mL	1.07
A4A1632-04	Soil	EPA 6020B	01/31/24 09:14	02/01/24 10:21	0.494g/50mL	0.5g/50mL	1.01
A4A1632-05	Soil	EPA 6020B	01/31/24 09:48	02/01/24 10:21	0.484g/50mL	0.5g/50mL	1.03
A4A1632-06	Soil	EPA 6020B	01/31/24 10:55	02/01/24 10:21	0.515g/50mL	0.5g/50mL	0.97
A4A1632-07	Soil	EPA 6020B	01/31/24 11:29	02/01/24 10:21	0.485g/50mL	0.5g/50mL	1.03

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0016							
A4A1632-01	Soil	EPA 8000D	01/31/24 15:39	02/01/24 09:46			NA
A4A1632-02	Soil	EPA 8000D	01/31/24 12:45	02/01/24 09:46			NA
A4A1632-03	Soil	EPA 8000D	01/31/24 16:04	02/01/24 09:46			NA
A4A1632-04	Soil	EPA 8000D	01/31/24 09:14	02/01/24 09:46			NA
A4A1632-05	Soil	EPA 8000D	01/31/24 09:48	02/01/24 09:46			NA
A4A1632-06	Soil	EPA 8000D	01/31/24 10:55	02/01/24 09:46			NA
A4A1632-07	Soil	EPA 8000D	01/31/24 11:29	02/01/24 09:46			NA

Apex Laboratories

Darwin Thomas, Business Development Director

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

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

QUALIFIER DEFINITIONS

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

Apex Laboratories

B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
CONT	The Sample Container provided for this analysis was not provided by Apex Laboratories, and has not been verified as part of the Apex Quality System.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.
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-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
TEMP	Sample was received outside of recommended temperature.

Apex Laboratories

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

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) may not be 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).

Apex Laboratories

Darwin Thomas, Business Development Director

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Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

REPORTING NOTES AND CONVENTIONS (Cont.):

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.

-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, if results are not reported to the MDL.

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.

Apex Laboratories

Darwin Thomas, Business Development Director

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ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darwin Thomas, Business Development Director

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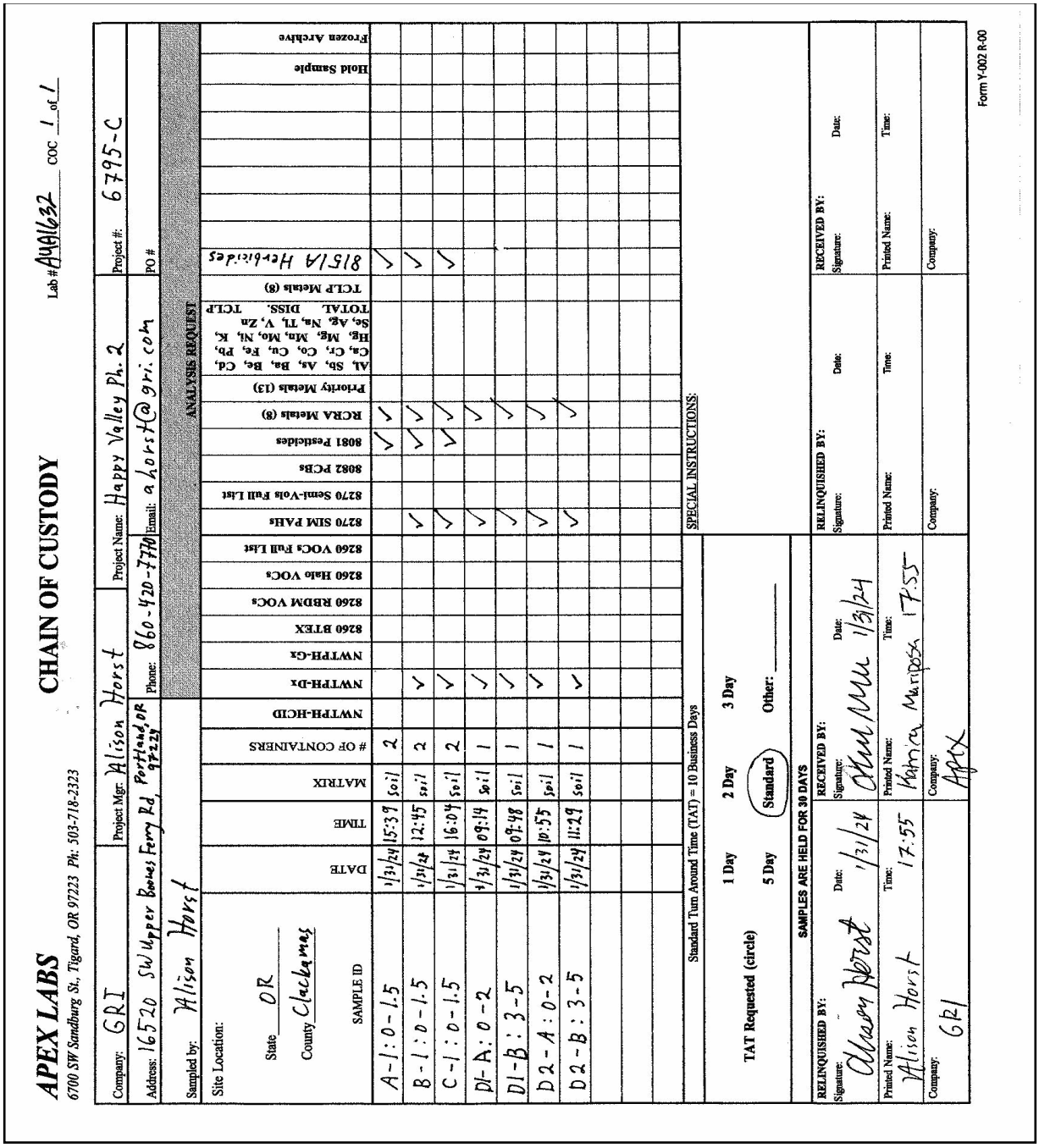
ANALYTICAL REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **Happy Valley Ph II**
Project Number: **6795-C**
Project Manager: **Greg Martin**

Report ID:
A4A1632 - 03 06 24 1014



APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A4A1632 COC 1 of 1

Company: GRI | Project Mgr: Alison Horst | Project Name: Happy Valley Ph. 2 | Project #: 6795-C
Address: 16520 SW Upper Boones Ferry Rd, Portland, OR 97224 | Phone: 860-420-7770 | Email: ahorst@gri.com | PO #
Sampled by: Alison Horst

Site Location: State OR County Clackamas

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	8151A Herbicides	Hold Sample	Frozen Archive
A-1: 0-1.5	1/31/24	15:39	soil	2											✓	✓				✓		
B-1: 0-1.5	1/31/24	12:45	soil	2		✓						✓			✓	✓				✓		
C-1: 0-1.5	1/31/24	16:04	soil	2		✓						✓			✓	✓				✓		
D1-A: 0-2	1/31/24	09:14	soil	1		✓						✓				✓						
D1-B: 3-5	1/31/24	09:48	soil	1		✓						✓				✓						
D2-A: 0-2	1/31/24	10:55	soil	1		✓						✓				✓						
D2-B: 3-5	1/31/24	11:29	soil	1		✓						✓				✓						

SPECIAL INSTRUCTIONS:

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | (Standard) | Other: _____

SAMPLES ARE HELD FOR 30 DAYS

	RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:	Alison Horst		Signature:	
Printed Name:	Alison Horst	Time: 17:55	Printed Name:	Time:
Company:	GRI		Company:	

	RELINQUISHED BY:	Date:	RECEIVED BY:	Date:
Signature:			Signature:	
Printed Name:		Time:	Printed Name:	Time:
Company:			Company:	

	RELINQUISHED BY:	Date: 1/31/24	RECEIVED BY:	Date:
Signature:	Darwin Thomas		Signature:	
Printed Name:	Darwin Thomas	Time: 17:55	Printed Name:	Time:
Company:	Apex		Company:	

Form Y-002 R-00

Apex Laboratories

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

GRI	Project: **Happy Valley Ph II**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **6795-C**	**Report ID:**
Tigard, OR 97224	Project Manager: **Greg Martin**	**A4A1632 - 03 06 24 1014**

APEX LABS COOLER RECEIPT FORM

Client: GRI Element WO#: A4A1632

Project/Project #: Happy Valley ph.2 / 6795-C

Delivery Info:

Date/time received: 1/31/24 @ 17:55 By: KAM

Delivered by: Apex__ Client X ESS__ FedEx__ UPS__ Radio__ Morgan__ SDS__ Evergreen__ Other__

Cooler Inspection Date/time inspected: 1/31/24 @ 17:55 By: KAM

Chain of Custody included? Yes X No ____

Signed/dated by client? Yes X No ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.8						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

KAM 1/31

Cooler out of temp? (Y/(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: 1/31/24 @ 18:23 By: KAM

All samples intact? Yes X No ___ Comments: ____

Bottle labels/COCs agree? Yes X No ___ Comments: ____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X pH ID:____

Comments: ____

Additional information: ____

Labeled by: KAM Witness: AM Cooler Inspected by: KAM

Form Y-003 R-01 -

Apex Laboratories

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Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Friday, March 22, 2024

Mike Marshall
GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

RE: A4B1600 - 6795-C - [none]

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 A4B1600, which was received by the laboratory on 2/28/2024 at 2:50:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@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
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.
(See Cooler Receipt Form for details)
Default Cooler 1.6 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.

Apex Laboratories

Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-2	A4B1600-01	Soil	02/28/24 09:55	02/28/24 14:50
C-3	A4B1600-02	Soil	02/28/24 10:15	02/28/24 14:50
C-4	A4B1600-03	Soil	02/28/24 10:30	02/28/24 14:50
C-5	A4B1600-04	Soil	02/28/24 10:48	02/28/24 14:50
C-6	A4B1600-05	Soil	02/28/24 11:55	02/28/24 14:50
C-7	A4B1600-06	Soil	02/28/24 11:40	02/28/24 14:50
C-8	A4B1600-07	Soil	02/28/24 11:26	02/28/24 14:50
C-9	A4B1600-08	Soil	02/28/24 11:15	02/28/24 14:50

Apex Laboratories

Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL CASE NARRATIVE

A4B1600	**Apex Laboratories**

Amended Report Revision 1:

Additional Metals Data-

The final report has been amended to include TCLP lead (Pb) data by EPA methods 1311/6020 to sample C-8 (Apex ID: A4B1600-07)

Darwin Thomas
Business Development Director
3/15/2024

Apex Laboratories

Darwin Thomas, Business Development Director

APEX LABORATORIES

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

ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750

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
C-2 (A4B1600-01)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	21.2	mg/kg dry	1	03/01/24 00:03	NWTPH-Dx	
Oil	ND	---	42.3	mg/kg dry	1	03/01/24 00:03	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 117 %*		*Limits: 50-150 %*	*1*	*03/01/24 00:03*	*NWTPH-Dx*	
C-3 (A4B1600-02)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	22.8	mg/kg dry	1	03/01/24 00:24	NWTPH-Dx	
Oil	**86.5**	---	45.6	mg/kg dry	1	03/01/24 00:24	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 137 %*		*Limits: 50-150 %*	*1*	*03/01/24 00:24*	*NWTPH-Dx*	
C-4 (A4B1600-03)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	22.4	mg/kg dry	1	03/01/24 00:44	NWTPH-Dx	
Oil	ND	---	44.8	mg/kg dry	1	03/01/24 00:44	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 121 %*		*Limits: 50-150 %*	*1*	*03/01/24 00:44*	*NWTPH-Dx*	
C-5 (A4B1600-04)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	21.4	mg/kg dry	1	03/01/24 01:04	NWTPH-Dx	
Oil	**137**	---	42.7	mg/kg dry	1	03/01/24 01:04	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 125 %*		*Limits: 50-150 %*	*1*	*03/01/24 01:04*	*NWTPH-Dx*	
C-6 (A4B1600-05)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	21.7	mg/kg dry	1	03/01/24 02:45	NWTPH-Dx	
Oil	ND	---	43.4	mg/kg dry	1	03/01/24 02:45	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 117 %*		*Limits: 50-150 %*	*1*	*03/01/24 02:45*	*NWTPH-Dx*	
C-7 (A4B1600-06)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	20.6	mg/kg dry	1	03/01/24 03:06	NWTPH-Dx	
Oil	ND	---	41.3	mg/kg dry	1	03/01/24 03:06	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 131 %*		*Limits: 50-150 %*	*1*	*03/01/24 03:06*	*NWTPH-Dx*	
C-8 (A4B1600-07)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	22.5	mg/kg dry	1	03/01/24 03:26	NWTPH-Dx	
Oil	**66.6**	---	44.9	mg/kg dry	1	03/01/24 03:26	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: 135 %*		*Limits: 50-150 %*	*1*	*03/01/24 03:26*	*NWTPH-Dx*	

Apex Laboratories

Darwin Thomas, Business Development Director

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

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

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
C-9 (A4B1600-08)				**Matrix: Soil**		**Batch: 24B0989**		
Diesel	ND	---	22.6	mg/kg dry	1	03/01/24 04:07	NWTPH-Dx	
Oil	ND	---	45.2	mg/kg dry	1	03/01/24 04:07	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 117 %*	*Limits: 50-150 %*		*1*	*03/01/24 04:07*	*NWTPH-Dx*	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-2 (A4B1600-01)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Anthracene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Chrysene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Fluoranthene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Fluorene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Naphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Phenanthrene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Pyrene	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0110	mg/kg dry	1	03/01/24 15:20	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*86 %*	*Limits: 44-120 %*	*1*	*03/01/24 15:20*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*78 %*	*54-127 %*	*1*	*03/01/24 15:20*	*EPA 8270E SIM*	
C-3 (A4B1600-02)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Anthracene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Benz(a)anthracene	**0.0262**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Benzo(a)pyrene	**0.0324**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Benzo(b)fluoranthene	**0.0384**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Benzo(k)fluoranthene	**0.0143**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	**M-05**
Benzo(g,h,i)perylene	**0.0291**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Chrysene	**0.0368**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	

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Darwin Thomas, Business Development Director

APEX LABORATORIES

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

ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-3 (A4B1600-02)				**Matrix: Soil**		**Batch: 24C0009**		
Fluoranthene	**0.0617**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Fluorene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**0.0273**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Naphthalene	**0.0142**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Phenanthrene	**0.0341**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Pyrene	**0.0652**	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0111	mg/kg dry	1	03/01/24 15:45	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*81 %*	*Limits: 44-120 %*	*1*	*03/01/24 15:45*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*70 %*	*54-127 %*	*1*	*03/01/24 15:45*	*EPA 8270E SIM*	
C-4 (A4B1600-03)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Anthracene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Benz(a)anthracene	**0.0119**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Benzo(a)pyrene	**0.0138**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Benzo(b)fluoranthene	**0.0160**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Benzo(g,h,i)perylene	**0.0117**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Chrysene	**0.0143**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Fluoranthene	**0.0250**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Fluorene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**0.0122**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Naphthalene	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Phenanthrene	**0.0137**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Pyrene	**0.0243**	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0110	mg/kg dry	1	03/01/24 16:10	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*79 %*	*Limits: 44-120 %*	*1*	*03/01/24 16:10*	*EPA 8270E SIM*	

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Darwin Thomas, Business Development Director

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-4 (A4B1600-03)				**Matrix: Soil**		**Batch: 24C0009**		
Surrogate: p-Terphenyl-d14 (Surr)			*Recovery: 71 %*	*Limits: 54-127 %*	*1*	*03/01/24 16:10*	*EPA 8270E SIM*	
C-5 (A4B1600-04)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Acenaphthylene	**0.0668**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Anthracene	**0.119**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Benz(a)anthracene	**0.183**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Benzo(a)pyrene	**0.240**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Benzo(b)fluoranthene	**0.259**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Benzo(k)fluoranthene	**0.0981**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	**M-05**
Benzo(g,h,i)perylene	**0.510**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Chrysene	**0.246**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Dibenz(a,h)anthracene	**0.0540**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Fluoranthene	**0.559**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Fluorene	**0.0216**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**0.414**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Naphthalene	**0.0263**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Phenanthrene	**0.377**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Pyrene	**0.544**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Dibenzofuran	**0.0139**	---	0.0102	mg/kg dry	1	03/01/24 16:36	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 84 %*	*Limits: 44-120 %*	*1*	*03/01/24 16:36*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*72 %*	*54-127 %*	*1*	*03/01/24 16:36*	*EPA 8270E SIM*	
C-6 (A4B1600-05)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Anthracene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	

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Darwin Thomas, Business Development Director

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Tigard, OR 97223
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-6 (A4B1600-05)				**Matrix: Soil**		**Batch: 24C0009**		
Chrysene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Fluoranthene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Fluorene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Naphthalene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Phenanthrene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Pyrene	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0106	mg/kg dry	1	03/01/24 17:01	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*81 %*	*Limits: 44-120 %*	*1*	*03/01/24 17:01*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*65 %*	*54-127 %*	*1*	*03/01/24 17:01*	*EPA 8270E SIM*	
C-7 (A4B1600-06)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Anthracene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Benz(a)anthracene	**0.0112**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Benzo(a)pyrene	**0.0130**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Benzo(b)fluoranthene	**0.0152**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	**M-05**
Benzo(k)fluoranthene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Chrysene	**0.0128**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Fluoranthene	**0.0211**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Fluorene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**0.0106**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Naphthalene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Phenanthrene	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Pyrene	**0.0207**	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	

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Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-7 (A4B1600-06)				**Matrix: Soil**		**Batch: 24C0009**		
Dibenzofuran	ND	---	0.0105	mg/kg dry	1	03/01/24 17:26	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*87 %*	*Limits: 44-120 %*	*1*	*03/01/24 17:26*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*76 %*	*54-127 %*	*1*	*03/01/24 17:26*	*EPA 8270E SIM*	
C-8 (A4B1600-07)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0218	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	R-02
Acenaphthylene	**0.291**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Anthracene	**0.686**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Benz(a)anthracene	**2.22**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Benzo(a)pyrene	**2.72**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Benzo(b)fluoranthene	**2.59**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	**M-05**
Benzo(k)fluoranthene	**0.998**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	**M-05**
Benzo(g,h,i)perylene	**1.72**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Chrysene	**2.83**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Dibenz(a,h)anthracene	**0.325**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Fluorene	**0.120**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	**1.73**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
1-Methylnaphthalene	**0.0189**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
2-Methylnaphthalene	**0.0429**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Naphthalene	**0.382**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Phenanthrene	**2.99**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Dibenzofuran	**0.0743**	---	0.0115	mg/kg dry	1	03/01/24 17:52	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*84 %*	*Limits: 44-120 %*	*1*	*03/01/24 17:52*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*69 %*	*54-127 %*	*1*	*03/01/24 17:52*	*EPA 8270E SIM*	
C-8 (A4B1600-07RE1)				**Matrix: Soil**		**Batch: 24C0009**		
Fluoranthene	**6.31**	---	0.115	mg/kg dry	10	03/01/24 18:42	EPA 8270E SIM	
Pyrene	**6.54**	---	0.115	mg/kg dry	10	03/01/24 18:42	EPA 8270E SIM	
C-9 (A4B1600-08)				**Matrix: Soil**		**Batch: 24C0009**		
Acenaphthene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Anthracene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-9 (A4B1600-08)				**Matrix: Soil**		**Batch: 24C0009**		
Benzo(a)pyrene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Chrysene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Fluoranthene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Fluorene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Naphthalene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Phenanthrene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Pyrene	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0117	mg/kg dry	1	03/01/24 14:29	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*74 %*	*Limits: 44-120 %*	*1*	*03/01/24 14:29*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*64 %*	*54-127 %*	*1*	*03/01/24 14:29*	*EPA 8270E SIM*	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-2 (A4B1600-01)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**14.3**	---	0.248	mg/kg dry	10	03/04/24 20:37	EPA 6020B	
C-3 (A4B1600-02)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**65.6**	---	0.271	mg/kg dry	10	03/04/24 20:44	EPA 6020B	
C-4 (A4B1600-03)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**54.0**	---	0.262	mg/kg dry	10	03/04/24 20:50	EPA 6020B	
C-5 (A4B1600-04RE2)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**38.0**	---	0.246	mg/kg dry	10	03/05/24 15:24	EPA 6020B	
C-6 (A4B1600-05RE1)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**12.1**	---	0.256	mg/kg dry	10	03/05/24 02:07	EPA 6020B	
C-7 (A4B1600-06RE1)				**Matrix: Soil**				
Batch: 24C0083								
Lead	**12.9**	---	0.256	mg/kg dry	10	03/05/24 02:14	EPA 6020B	
C-8 (A4B1600-07)				**Matrix: Soil**				
Batch: 24C0087								
Lead	**284**	---	0.273	mg/kg dry	10	03/06/24 02:15	EPA 6020B	
C-9 (A4B1600-08)				**Matrix: Soil**				
Batch: 24C0087								
Lead	**18.9**	---	0.256	mg/kg dry	10	03/06/24 02:21	EPA 6020B	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-8 (A4B1600-07RE1)				**Matrix: Soil**				
Batch: 24C0611								
Lead	ND	---	0.0500	mg/L	10	03/20/24 17:30	1311/6020B	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-2 (A4B1600-01)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**80.2**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-3 (A4B1600-02)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**78.5**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-4 (A4B1600-03)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**80.7**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-5 (A4B1600-04)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**85.1**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-6 (A4B1600-05)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**79.7**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-7 (A4B1600-06)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**82.2**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-8 (A4B1600-07)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**79.3**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	
C-9 (A4B1600-08)				**Matrix: Soil**		**Batch: 24B1004**		
% Solids	**75.9**	---	1.00	%	1	03/01/24 06:49	EPA 8000D	

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AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

ANALYTICAL SAMPLE RESULTS

TCLP Extraction by EPA 1311

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
C-8 (A4B1600-07)				**Matrix: Soil**		**Batch: 24C0490**		
TCLP Extraction	PREP	---		N/A	1	03/14/24 15:00	EPA 1311	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

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 24B0989 - EPA 3546 (Fuels)								Soil				
Blank (24B0989-BLK1)			Prepared: 02/29/24 04:47		Analyzed: 02/29/24 10:47							
NWTPH-Dx												
Diesel	ND	---	20.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	40.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 109 %*		*Limits: 50-150 %*			*Dilution: 1x*					*Q-41*
LCS (24B0989-BS1)			Prepared: 02/29/24 04:47		Analyzed: 02/29/24 11:08							
NWTPH-Dx												
Diesel	118	---	20.0	mg/kg wet	1	125	---	95	38-132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 122 %*		*Limits: 50-150 %*			*Dilution: 1x*					*Q-41*
Duplicate (24B0989-DUP1)			Prepared: 02/29/24 04:47		Analyzed: 02/29/24 11:49							
QC Source Sample: Non-SDG (A4B1616-07)												
Diesel	ND	---	19.2	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	38.5	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 119 %*		*Limits: 50-150 %*			*Dilution: 1x*					*Q-41*
Duplicate (24B0989-DUP2)			Prepared: 02/29/24 11:30		Analyzed: 03/01/24 04:27							
QC Source Sample: C-9 (A4B1600-08)												
NWTPH-Dx												
Diesel	ND	---	23.8	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	47.6	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	---	47.6	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 112 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750

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 24C0009 - EPA 3546												**Soil**
Blank (24C0009-BLK1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 12:47									
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	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0100	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	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	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0100	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 44-120 %*				*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*82 %*	*54-127 %*				*"*				
LCS (24C0009-BS1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 13:13									
EPA 8270E SIM												
Acenaphthene	0.744	---	0.0100	mg/kg wet	1	0.800	---	93	40-123%	---	---	
Acenaphthylene	0.729	---	0.0100	mg/kg wet	1	0.800	---	91	32-132%	---	---	
Anthracene	0.713	---	0.0100	mg/kg wet	1	0.800	---	89	47-123%	---	---	
Benz(a)anthracene	0.718	---	0.0100	mg/kg wet	1	0.800	---	90	49-126%	---	---	
Benzo(a)pyrene	0.753	---	0.0100	mg/kg wet	1	0.800	---	94	45-129%	---	---	
Benzo(b)fluoranthene	0.702	---	0.0100	mg/kg wet	1	0.800	---	88	45-132%	---	---	
Benzo(k)fluoranthene	0.759	---	0.0100	mg/kg wet	1	0.800	---	95	47-132%	---	---	
Benzo(g,h,i)perylene	0.729	---	0.0100	mg/kg wet	1	0.800	---	91	43-134%	---	---	
Chrysene	0.783	---	0.0100	mg/kg wet	1	0.800	---	98	50-124%	---	---	

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ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750

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 24C0009 - EPA 3546							Soil					
LCS (24C0009-BS1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 13:13									
Dibenz(a,h)anthracene	0.800	---	0.0100	mg/kg wet	1	0.800	---	100	45-134%	---	---	
Fluoranthene	0.750	---	0.0100	mg/kg wet	1	0.800	---	94	50-127%	---	---	
Fluorene	0.713	---	0.0100	mg/kg wet	1	0.800	---	89	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.772	---	0.0100	mg/kg wet	1	0.800	---	96	45-133%	---	---	
1-Methylnaphthalene	0.695	---	0.0100	mg/kg wet	1	0.800	---	87	40-120%	---	---	
2-Methylnaphthalene	0.706	---	0.0100	mg/kg wet	1	0.800	---	88	38-122%	---	---	
Naphthalene	0.731	---	0.0100	mg/kg wet	1	0.800	---	91	35-123%	---	---	
Phenanthrene	0.729	---	0.0100	mg/kg wet	1	0.800	---	91	50-121%	---	---	
Pyrene	0.744	---	0.0100	mg/kg wet	1	0.800	---	93	47-127%	---	---	
Dibenzofuran	0.728	---	0.0100	mg/kg wet	1	0.800	---	91	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 93 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*83 %*	*54-127 %*			*"*					
Duplicate (24C0009-DUP1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 14:04									
QC Source Sample: Non-SDG (A4B1558-02)												
Acenaphthene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Anthracene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Chrysene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Fluorene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
1-Methylnaphthalene	**0.135**	---	0.0997	mg/kg dry	10	---	0.0742	---	---	**58**	**30%**	Q-04
2-Methylnaphthalene	**0.140**	---	0.0997	mg/kg dry	10	---	0.0682	---	---	**69**	**30%**	Q-04
Naphthalene	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	
Phenanthrene	ND	---	0.140	mg/kg dry	10	---	ND	---	---	---	30%	R-02
Pyrene	**0.911**	---	0.0997	mg/kg dry	10	---	0.469	---	---	**64**	**30%**	Q-04
Dibenzofuran	ND	---	0.0997	mg/kg dry	10	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

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 24C0009 - EPA 3546								Soil				
Duplicate (24C0009-DUP1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 14:04									
QC Source Sample: Non-SDG (A4B1558-02)												
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 93 %*	*Limits: 44-120 %*			*Dilution: 10x*					
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*			*"*					
Matrix Spike (24C0009-MS1)			Prepared: 03/01/24 07:32 Analyzed: 03/01/24 14:54									
QC Source Sample: C-9 (A4B1600-08)												
EPA 8270E SIM												
Acenaphthene	0.713	---	0.0110	mg/kg dry	1	0.883	ND	81	40-123%	---	---	
Acenaphthylene	0.700	---	0.0110	mg/kg dry	1	0.883	ND	79	32-132%	---	---	
Anthracene	0.673	---	0.0110	mg/kg dry	1	0.883	ND	76	47-123%	---	---	
Benz(a)anthracene	0.680	---	0.0110	mg/kg dry	1	0.883	ND	77	49-126%	---	---	
Benzo(a)pyrene	0.702	---	0.0110	mg/kg dry	1	0.883	ND	79	45-129%	---	---	
Benzo(b)fluoranthene	0.658	---	0.0110	mg/kg dry	1	0.883	ND	74	45-132%	---	---	
Benzo(k)fluoranthene	0.701	---	0.0110	mg/kg dry	1	0.883	ND	79	47-132%	---	---	
Benzo(g,h,i)perylene	0.663	---	0.0110	mg/kg dry	1	0.883	ND	75	43-134%	---	---	
Chrysene	0.728	---	0.0110	mg/kg dry	1	0.883	ND	82	50-124%	---	---	
Dibenz(a,h)anthracene	0.698	---	0.0110	mg/kg dry	1	0.883	ND	79	45-134%	---	---	
Fluoranthene	0.722	---	0.0110	mg/kg dry	1	0.883	ND	82	50-127%	---	---	
Fluorene	0.672	---	0.0110	mg/kg dry	1	0.883	ND	76	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	0.690	---	0.0110	mg/kg dry	1	0.883	ND	78	45-133%	---	---	
1-Methylnaphthalene	0.691	---	0.0110	mg/kg dry	1	0.883	ND	78	40-120%	---	---	
2-Methylnaphthalene	0.709	---	0.0110	mg/kg dry	1	0.883	ND	80	38-122%	---	---	
Naphthalene	0.749	---	0.0110	mg/kg dry	1	0.883	ND	85	35-123%	---	---	
Phenanthrene	0.689	---	0.0110	mg/kg dry	1	0.883	ND	78	50-121%	---	---	
Pyrene	0.733	---	0.0110	mg/kg dry	1	0.883	ND	83	47-127%	---	---	
Dibenzofuran	0.690	---	0.0110	mg/kg dry	1	0.883	ND	78	44-120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 82 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*70 %*	*54-127 %*			*"*					

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0083 - EPA 3051A								Soil				
Blank (24C0083-BLK1)			Prepared: 03/04/24 10:38 Analyzed: 03/04/24 18:35									
EPA 6020B												
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (24C0083-BS1)			Prepared: 03/04/24 10:38 Analyzed: 03/04/24 18:42									
EPA 6020B												
Lead	49.8	---	0.200	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Duplicate (24C0083-DUP1)			Prepared: 03/04/24 10:38 Analyzed: 03/04/24 18:55									
QC Source Sample: Non-SDG (A4B1279-41)												
Lead	**34.4**	---	0.253	mg/kg dry	10	---	26.7	---	---	**25**	**20%**	Q-17
Matrix Spike (24C0083-MS1)			Prepared: 03/04/24 10:38 Analyzed: 03/04/24 19:07									
QC Source Sample: Non-SDG (A4B1312-01)												
EPA 6020B												
Lead	84.1	---	0.323	mg/kg dry	10	80.8	5.09	98	75-125%	---	---	

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0087 - EPA 3051A							Soil					
Blank (24C0087-BLK1)			Prepared: 03/04/24 11:02 Analyzed: 03/06/24 01:04									
EPA 6020B												
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (24C0087-BS1)			Prepared: 03/04/24 11:02 Analyzed: 03/06/24 01:10									
EPA 6020B												
Lead	51.0	---	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Duplicate (24C0087-DUP1)			Prepared: 03/04/24 11:02 Analyzed: 03/06/24 01:23									
QC Source Sample: Non-SDG (A4B1325-02)												
Lead	**1.66**	---	0.222	mg/kg dry	10	---	1.81	---	---	9	20%	
Matrix Spike (24C0087-MS1)			Prepared: 03/04/24 11:02 Analyzed: 03/06/24 01:36									
QC Source Sample: Non-SDG (A4B1325-04)												
EPA 6020B												
Lead	60.8	---	0.230	mg/kg dry	10	57.6	2.25	102	75-125%	---	---	

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16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24C0611 - EPA 1311/3015A							**Solid**					
Blank (24C0611-BLK1)			Prepared: 03/18/24 10:30 Analyzed: 03/18/24 23:06									
1311/6020B												
Lead	ND	---	0.0500	mg/L	10	---	---	---	---	---	---	TCLP
LCS (24C0611-BS1)			Prepared: 03/18/24 10:30 Analyzed: 03/18/24 23:12									
1311/6020B												
Lead	5.18	---	0.0500	mg/L	10	5.00	---	104	80-120%	---	---	TCLP
Duplicate (24C0611-DUP1)			Prepared: 03/18/24 10:30 Analyzed: 03/18/24 23:49									
QC Source Sample: Non-SDG (A4C1113-02)												
Lead	ND	---	0.0500	mg/L	10	---	ND	---	---	---	20%	
Matrix Spike (24C0611-MS1)			Prepared: 03/18/24 10:30 Analyzed: 03/18/24 23:24									
QC Source Sample: C-8 (A4B1600-07)												
1311/6020B												
Lead	5.41	---	0.0500	mg/L	10	5.00	ND	108	50-150%	---	---	
Matrix Spike (24C0611-MS2)			Prepared: 03/18/24 10:30 Analyzed: 03/18/24 23:37									
QC Source Sample: Non-SDG (A4C1113-01)												
1311/6020B												
Lead	5.25	---	0.0500	mg/L	10	5.00	ND	105	50-150%	---	---	
Matrix Spike (24C0611-MS4)			Prepared: 03/18/24 10:30 Analyzed: 03/20/24 18:27									
QC Source Sample: Non-SDG (A4C1150-01RE1)												
1311/6020B												
Lead	5.58	---	0.0500	mg/L	10	5.00	0.0472	111	50-150%	---	---	Q-16

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ANALYTICAL REPORT

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GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B1004 - Total Solids (Dry Weight) - 2022								Soil				
Duplicate (24B1004-DUP1)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-2 (A4B1600-01)												
EPA 8000D												
% Solids	**80.9**	---	1.00	%	1	---	80.2	---	---	0.8	10%	
Duplicate (24B1004-DUP2)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-3 (A4B1600-02)												
EPA 8000D												
% Solids	**80.9**	---	1.00	%	1	---	78.5	---	---	3	10%	
Duplicate (24B1004-DUP3)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-4 (A4B1600-03)												
EPA 8000D												
% Solids	**80.7**	---	1.00	%	1	---	80.7	---	---	0.06	10%	
Duplicate (24B1004-DUP4)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-5 (A4B1600-04)												
EPA 8000D												
% Solids	**79.3**	---	1.00	%	1	---	85.1	---	---	7	10%	
Duplicate (24B1004-DUP5)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-6 (A4B1600-05)												
EPA 8000D												
% Solids	**78.7**	---	1.00	%	1	---	79.7	---	---	1	10%	
Duplicate (24B1004-DUP6)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-7 (A4B1600-06)												
EPA 8000D												
% Solids	**82.4**	---	1.00	%	1	---	82.2	---	---	0.3	10%	
Duplicate (24B1004-DUP7)			Prepared: 02/29/24 09:35 Analyzed: 03/01/24 06:49									
QC Source Sample: C-8 (A4B1600-07)												
EPA 8000D												

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B1004 - Total Solids (Dry Weight) - 2022							Soil					
Duplicate (24B1004-DUP7)			Prepared: 02/29/24 09:35		Analyzed: 03/01/24 06:49							
QC Source Sample: C-8 (A4B1600-07)												
% Solids	**80.0**	---	1.00	%	1	---	79.3	---	---	0.8	10%	
Duplicate (24B1004-DUP8)			Prepared: 02/29/24 09:35		Analyzed: 03/01/24 06:49							
QC Source Sample: C-9 (A4B1600-08)												
EPA 8000D												
% Solids	**75.6**	---	1.00	%	1	---	75.9	---	---	0.3	10%	
Duplicate (24B1004-DUP9)			Prepared: 02/29/24 09:35		Analyzed: 03/01/24 06:49							
QC Source Sample: Non-SDG (A4B1602-01)												
% Solids	**91.0**	---	1.00	%	1	---	88.5	---	---	3	10%	
Duplicate (24B1004-DUPA)			Prepared: 02/29/24 09:35		Analyzed: 03/01/24 06:49							
QC Source Sample: Non-SDG (A4B1602-02)												
% Solids	**89.7**	---	1.00	%	1	---	86.2	---	---	4	10%	
Duplicate (24B1004-DUPB)			Prepared: 02/29/24 09:35		Analyzed: 03/01/24 06:49							
QC Source Sample: Non-SDG (A4B1602-03)												
% Solids	**86.9**	---	1.00	%	1	---	88.6	---	---	2	10%	
Duplicate (24B1004-DUPC)			Prepared: 02/29/24 19:43		Analyzed: 03/01/24 06:49							
QC Source Sample: Non-SDG (A4B1666-01)												
% Solids	**78.9**	---	1.00	%	1	---	78.7	---	---	0.3	10%	
Duplicate (24B1004-DUPD)			Prepared: 02/29/24 19:43		Analyzed: 03/01/24 06:49							
QC Source Sample: Non-SDG (A4B1666-02)												
% Solids	**74.6**	---	1.00	%	1	---	74.6	---	---	0.02	10%	

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

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B0989							
A4B1600-01	Soil	NWTPH-Dx	02/28/24 09:55	02/29/24 11:30	11.78g/5mL	10g/5mL	0.85
A4B1600-02	Soil	NWTPH-Dx	02/28/24 10:15	02/29/24 11:30	11.17g/5mL	10g/5mL	0.90
A4B1600-03	Soil	NWTPH-Dx	02/28/24 10:30	02/29/24 11:30	11.06g/5mL	10g/5mL	0.90
A4B1600-04	Soil	NWTPH-Dx	02/28/24 10:48	02/29/24 11:30	11g/5mL	10g/5mL	0.91
A4B1600-05	Soil	NWTPH-Dx	02/28/24 11:55	02/29/24 11:30	11.57g/5mL	10g/5mL	0.86
A4B1600-06	Soil	NWTPH-Dx	02/28/24 11:40	02/29/24 11:30	11.79g/5mL	10g/5mL	0.85
A4B1600-07	Soil	NWTPH-Dx	02/28/24 11:26	02/29/24 11:30	11.22g/5mL	10g/5mL	0.89
A4B1600-08	Soil	NWTPH-Dx	02/28/24 11:15	02/29/24 11:30	11.66g/5mL	10g/5mL	0.86

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

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24C0009							
A4B1600-01	Soil	EPA 8270E SIM	02/28/24 09:55	03/01/24 07:32	11.31g/5mL	10g/5mL	0.88
A4B1600-02	Soil	EPA 8270E SIM	02/28/24 10:15	03/01/24 07:32	11.42g/5mL	10g/5mL	0.88
A4B1600-03	Soil	EPA 8270E SIM	02/28/24 10:30	03/01/24 07:32	11.31g/5mL	10g/5mL	0.88
A4B1600-04	Soil	EPA 8270E SIM	02/28/24 10:48	03/01/24 07:32	11.48g/5mL	10g/5mL	0.87
A4B1600-05	Soil	EPA 8270E SIM	02/28/24 11:55	03/01/24 07:32	11.87g/5mL	10g/5mL	0.84
A4B1600-06	Soil	EPA 8270E SIM	02/28/24 11:40	03/01/24 07:32	11.63g/5mL	10g/5mL	0.86
A4B1600-07	Soil	EPA 8270E SIM	02/28/24 11:26	03/01/24 07:32	11.01g/5mL	10g/5mL	0.91
A4B1600-07RE1	Soil	EPA 8270E SIM	02/28/24 11:26	03/01/24 07:32	11.01g/5mL	10g/5mL	0.91
A4B1600-08	Soil	EPA 8270E SIM	02/28/24 11:15	03/01/24 07:32	11.25g/5mL	10g/5mL	0.89

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24C0083							
A4B1600-01	Soil	EPA 6020B	02/28/24 09:55	03/04/24 10:38	0.503g/50mL	0.5g/50mL	0.99
A4B1600-02	Soil	EPA 6020B	02/28/24 10:15	03/04/24 10:38	0.47g/50mL	0.5g/50mL	1.06
A4B1600-03	Soil	EPA 6020B	02/28/24 10:30	03/04/24 10:38	0.473g/50mL	0.5g/50mL	1.06
A4B1600-04RE2	Soil	EPA 6020B	02/28/24 10:48	03/04/24 10:38	0.477g/50mL	0.5g/50mL	1.05
A4B1600-05RE1	Soil	EPA 6020B	02/28/24 11:55	03/04/24 10:38	0.49g/50mL	0.5g/50mL	1.02
A4B1600-06RE1	Soil	EPA 6020B	02/28/24 11:40	03/04/24 10:38	0.476g/50mL	0.5g/50mL	1.05
Batch: 24C0087							

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4B1600-07	Soil	EPA 6020B	02/28/24 11:26	03/04/24 11:02	0.462g/50mL	0.5g/50mL	1.08
A4B1600-08	Soil	EPA 6020B	02/28/24 11:15	03/04/24 11:02	0.514g/50mL	0.5g/50mL	0.97

TCLP Metals by EPA 6020B (ICPMS)

Prep: EPA 1311/3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24C0611							
A4B1600-07RE1	Soil	1311/6020B	02/28/24 11:26	03/18/24 10:30	10mL/50mL	10mL/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24B1004							
A4B1600-01	Soil	EPA 8000D	02/28/24 09:55	02/29/24 09:35			NA
A4B1600-02	Soil	EPA 8000D	02/28/24 10:15	02/29/24 09:35			NA
A4B1600-03	Soil	EPA 8000D	02/28/24 10:30	02/29/24 09:35			NA
A4B1600-04	Soil	EPA 8000D	02/28/24 10:48	02/29/24 09:35			NA
A4B1600-05	Soil	EPA 8000D	02/28/24 11:55	02/29/24 09:35			NA
A4B1600-06	Soil	EPA 8000D	02/28/24 11:40	02/29/24 09:35			NA
A4B1600-07	Soil	EPA 8000D	02/28/24 11:26	02/29/24 09:35			NA
A4B1600-08	Soil	EPA 8000D	02/28/24 11:15	02/29/24 09:35			NA

TCLP Extraction by EPA 1311

Prep: EPA 1311 (TCLP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24C0490							
A4B1600-07	Soil	EPA 1311	02/28/24 11:26	03/14/24 15:00	100g/2000g	100g/2000g	NA

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

QUALIFIER DEFINITIONS

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

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F-13	The chromatographic pattern does not resemble the fuel standard used for quantitation
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.
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.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 24C0490.

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GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

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'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

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) may not be 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).

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Laboratories, LLC

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

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

REPORTING NOTES AND CONVENTIONS (Cont.):

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.

-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, if results are not reported to the MDL.

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.

Apex Laboratories

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
16520 SW Upper Boones Ferry Rd, Ste 100	Project Number: **[none]**	**Report ID:**
Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

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 provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darwin Thomas, Business Development Director

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ORELAP ID: **OR100062**

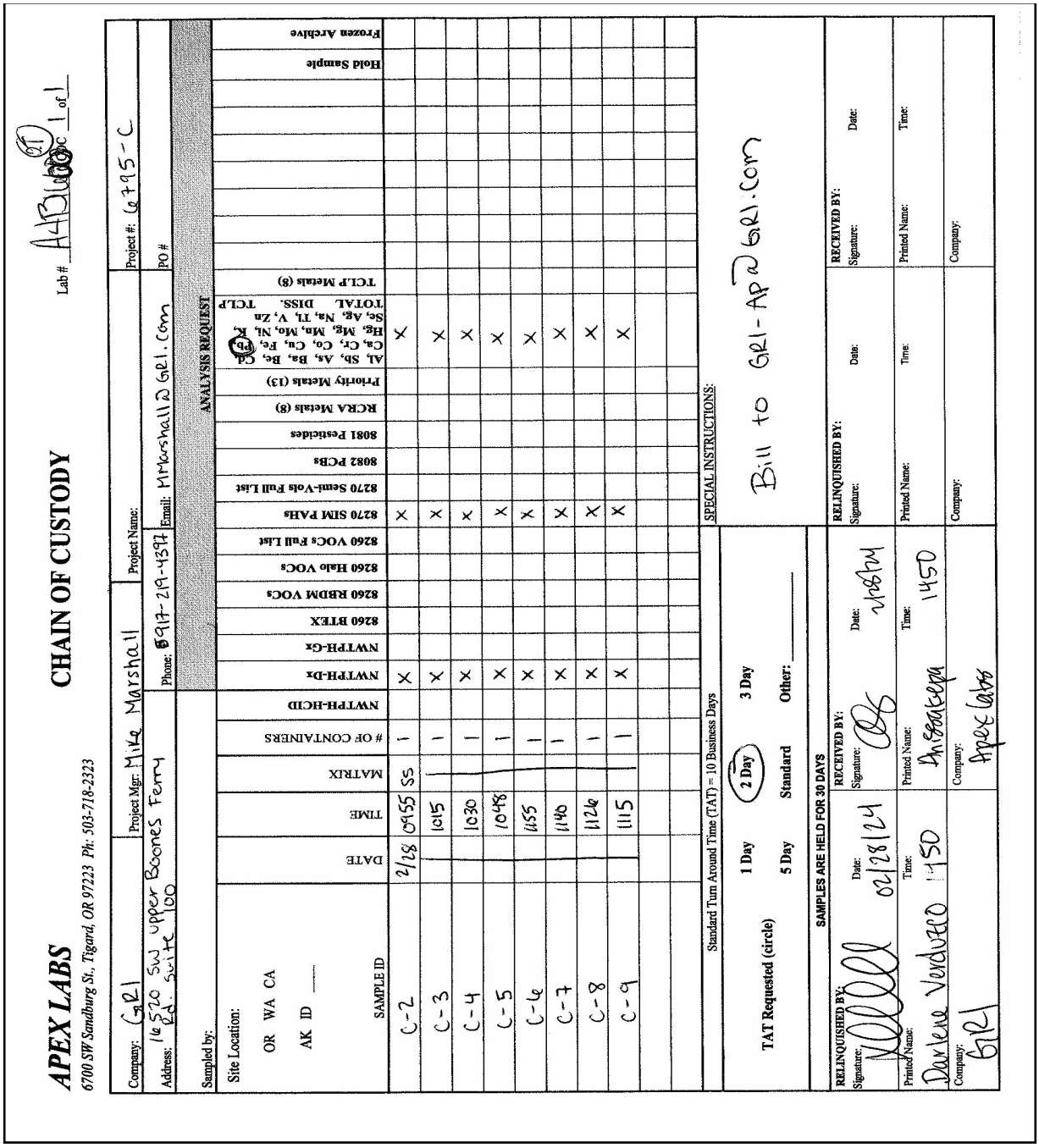
ANALYTICAL REPORT

AMENDED REPORT

GRI
16520 SW Upper Boones Ferry Rd, Ste 100
Tigard, OR 97224

Project: **6795-C**
Project Number: **[none]**
Project Manager: **Mike Marshall**

Report ID:
A4B1600 - 03 22 24 0750



CHAIN OF CUSTODY

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Lab # A4B1600 1 of 1

Company: GRI | Project Mgr: Mike Marshall | Project Name: | Project #: 6795-C
Address: 16520 SW Upper Boones Ferry Rd. Suite 100 | Phone: 503-219-4397 | Email: MMarshall@GRI.com | PO #
Sampled by:

Site Location: OR WA CA
AK ID ____

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
C-2	2/28	0955	SS	1		X						X						X			
C-3		1015		1		X						X						X			
C-4		1030		1		X						X						X			
C-5		1048		1		X						X						X			
C-6		1055		1		X						X						X			
C-7		1140		1		X						X						X			
C-8		1124		1		X						X						X			
C-9		1115		1		X						X						X			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS: Bill to GRI-AP@GRI.com

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: | Date: 02/28/24 | Time: 1450 | Printed Name: Darlene Verduzco | Company: GRI

RECEIVED BY: Signature: | Date: 2/28/24 | Time: 1450 | Printed Name: Angelica M | Company: Apex Labs

RELINQUISHED BY: Signature: | Date: | Time: | Printed Name: | Company:

RECEIVED BY: Signature: | Date: | Time: | Printed Name: | Company:

Apex Laboratories

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Darwin Thomas, Business Development Director

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ANALYTICAL REPORT

AMENDED REPORT

GRI	Project: **6795-C**	
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Tigard, OR 97224	Project Manager: **Mike Marshall**	**A4B1600 - 03 22 24 0750**

APEX LABS COOLER RECEIPT FORM

Client: GRI Element WO#: A4 B1600

Project/Project #: #6795-C

Delivery Info:

Date/time received: 3/22/24 @ 1450 By: AKK

Delivered by: Apex__ Client X ESS__ FedEx__ UPS__ Radio__ Morgan__ SDS__ Evergreen__ Other__

Cooler Inspection Date/time inspected: 3/22/24 @ 1450 By: AKK

Chain of Custody included? Yes X No ____

Signed/dated by client? Yes X No ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.6						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/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: 3/22/24 @ 1527 By: JS

All samples intact? Yes X No ___ Comments: ____

Bottle labels/COCs agree? Yes X No ___ Comments: ____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ____

Water samples: pH checked: Yes___ No___ NA X pH appropriate? Yes___ No___ NA X pH ID:____

Comments: ____

Additional information: ____

Labeled by: JS Witness: [illegible] Cooler Inspected by: JS

Form Y-003 R-01 -

Apex Laboratories

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Darwin Thomas, Business Development Director

APPENDIX B

Geoprofessional Business Association Guidance Document

Important Information about This

Geoenvironmental Report

Geoenvironmental studies are commissioned to gain information about environmental conditions on and beneath the surface of a site. The more comprehensive the study, the more reliable the assessment is likely to be. But remember: Any such assessment is to a greater or lesser extent based on professional opinions about conditions that cannot be seen or tested. Accordingly, no matter how many data are developed, risks created by unanticipated conditions will always remain. *Have realistic expectations.* Work with your geoenvironmental consultant to manage known and unknown risks. Part of that process should already have been accomplished, through the risk allocation provisions you and your geoenvironmental professional discussed and included in your contract's general terms and conditions. This document is intended to explain some of the concepts that may be included in your agreement, and to pass along information and suggestions to help you manage your risk.

Beware of Change; Keep Your Geoenvironmental Professional Advised

The design of a geoenvironmental study considers a variety of factors that are subject to change. Changes can undermine the applicability of a report's findings, conclusions, and recommendations. *Advise your geoenvironmental professional about any changes you become aware of.* Geoenvironmental professionals cannot accept responsibility or liability for problems that occur because a report fails to consider conditions that did not exist when the study was designed. Ask your geoenvironmental professional about the types of changes you should be particularly alert to. Some of the most common include:

- modification of the proposed development or ownership group,
- sale or other property transfer,
- replacement of or additions to the financing entity,
- amendment of existing regulations or introduction of new ones, or
- changes in the use or condition of adjacent property.

Should you become aware of any change, *do not rely on a geoenvironmental report.* Advise your geoenvironmental professional immediately; follow the professional's advice.

Recognize the Impact of Time

A geoenvironmental professional's findings, recommendations, and conclusions cannot remain valid indefinitely. The more time that passes, the more likely it is that important latent changes will occur. *Do not rely on a geoenvironmental report if too much time has elapsed since it was completed.* Ask your environmental professional to define "too much time." In the case of Phase I Environmental Site Assessments (ESAs), for example, more than 180 days after submission is generally considered "too much."

Prepare To Deal with Unanticipated Conditions

The findings, recommendations, and conclusions of a Phase I ESA report typically are based on a review of historical information, interviews, a site "walkover," and other forms of noninvasive research. When site subsurface conditions are not sampled in any way, the risk of unanticipated conditions is higher than it would otherwise be.

While borings, installation of monitoring wells, and similar invasive test methods can help reduce the risk of unanticipated conditions, *do not overvalue the effectiveness of testing.* Testing provides information about actual conditions only at the precise locations where samples are taken, and only when they are taken. Your geoenvironmental

professional has applied that specific information to develop a general opinion about environmental conditions. *Actual conditions in areas not sampled may differ (sometimes sharply) from those predicted in a report.* For example, a site may contain an unregistered underground storage tank that shows no surface trace of its existence. *Even conditions in areas that were tested can change*, sometimes suddenly, due to any number of events, not the least of which include occurrences at adjacent sites. Recognize, too, that *even some conditions in tested areas may go undiscovered,* because the tests or analytical methods used were designed to detect only those conditions assumed to exist.

Manage your risks by retaining your geoenvironmental professional to work with you as the project proceeds. Establish a contingency fund or other means to enable your geoenvironmental professional to respond rapidly, in order to limit the impact of unforeseen conditions. And to help prevent any misunderstanding, identify those empowered to authorize changes and the administrative procedures that should be followed.

Do Not Permit Any Other Party To Rely on the Report

Geoenvironmental professionals design their studies and prepare their reports to meet the specific needs of the clients who retain them, in light of the risk management methods that the client and geoenvironmental professional agree to, and the statutory, regulatory, or other requirements that apply. The study designed for a developer may differ sharply from one designed for a lender, insurer, public agency...or even another developer. *Unless the report specifically states otherwise, it was developed for you and only you.* Do not unilaterally permit any other party to rely on it. The report and the study underlying it may not be adequate for another party's needs, and you could be held liable for shortcomings your geoenvironmental professional was powerless to prevent or anticipate. Inform your geoenvironmental professional when you know or expect that someone else—a third-party—will want to use or rely on the report. *Do not permit third-party use or reliance until you first confer with the geoenvironmental professional who prepared the report.* Additional testing, analysis, or study may be required and, in any event, appropriate terms and conditions should be agreed to so both you and your geoenvironmental professional are protected from third-party risks. *Any party who relies on a geoenvironmental report without the express written permission of the professional who prepared it and the client for whom it was prepared may be solely liable for any problems that arise.*

Avoid Misinterpretation of the Report

Design professionals and other parties may want to rely on the report in developing plans and specifications. They need to be advised, in writing, that their needs may not have been considered when the study's scope was developed, and, even if their needs were considered, they might misinterpret geoenvironmental findings, conclusions, and recommendations. *Commission your geoenvironmental professional to explain pertinent elements of the report to others who are permitted to rely on it, and to review any plans, specifications or other instruments of professional service that incorporate any of the report's findings, conclusions, or recommendations.* Your geoenvironmental professional has the best understanding of the issues involved, including the fundamental assumptions that underpinned the study's scope.

Give Contractors Access to the Report

Reduce the risk of delays, claims, and disputes by giving contractors access to the full report, *providing that it is accompanied by a letter of transmittal that can protect you* by making it unquestionably clear that: 1) the study was not conducted and the report was not prepared for purposes of bid development, and 2) the findings, conclusions, and recommendations included in the report are based on a variety of opinions, inferences, and assumptions and are subject to interpretation. Use the letter to also advise contractors to consult with your geoenvironmental professional to obtain clarifications, interpretations, and guidance (a fee may be required for this service), and that—in any event—they should conduct additional studies to obtain the specific type and extent of information each prefers for preparing a bid or cost estimate. Providing access to the full report, with the appropriate caveats, helps prevent formation of adversarial attitudes and claims of concealed or differing conditions. If a contractor elects to ignore the warnings and advice in the letter of transmittal, it would do so at its own risk. Your geoenvironmental professional should be able to help you prepare an effective letter.

Do Not Separate Documentation from the Report

Geoenvironmental reports often include supplemental documentation, such as maps and copies of regulatory files, permits, registrations, citations, and correspondence with regulatory agencies. If subsurface explorations were performed, the report may contain final boring logs and copies of laboratory data. If remediation activities occurred on site, the report may include: copies of daily field reports; waste manifests; and information about the disturbance of subsurface materials, the type and thickness of any fill placed on site, and fill placement practices, among other types of documentation. *Do not separate supplemental documentation from the report. Do not, and do not permit any other party to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.*

Understand the Role of Standards

Unless they are incorporated into statutes or regulations, standard practices and standard guides developed by the American Society for Testing and Materials (ASTM) and other recognized standards-developing organizations (SDOs) are little more than aspirational methods agreed to by a consensus of a committee. The committees that develop standards may not comprise those best-qualified to establish methods and, no matter what, no standard method can possibly consider the infinite client- and project-specific variables that fly in the face of the theoretical "standard conditions" to which standard practices and standard guides apply. In fact, these variables can be so pronounced that geoenvironmental professionals who comply with every directive of an ASTM or other standard procedure could run afoul of local custom and practice, thus violating the standard of care. Accordingly, when geoenvironmental professionals indicate in their reports that they have performed a service "in general compliance" with one standard or another, it means they have applied professional judgement in creating and implementing a scope of service designed for the specific client and project involved, and which follows some of the general precepts laid out in the referenced standard. To the extent that a report indicates "general compliance" with a standard, you may wish to speak with your geoenvironmental professional to learn more about what was and was not done. *Do not assume a given standard was followed to the letter.* Research indicates that that seldom is the case.

Realize That Recommendations May Not Be Final

The technical recommendations included in a geoenvironmental report are based on assumptions about actual conditions, and so are preliminary or tentative. Final recommendations can be prepared only by observing actual conditions as they are exposed. For that reason, you should retain the geoenvironmental professional of record to observe construction and/or remediation activities on site, to permit rapid response to unanticipated conditions. *The geoenvironmental professional who prepared the report cannot assume responsibility or liability for the report's recommendations if that professional is not retained to observe relevant site operations.*

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in the scope of professional service, a report is not likely to relate any findings, conclusions, or recommendations about the suitability of subsurface materials for construction purposes, especially when site remediation has been accomplished through the removal, replacement, encapsulation, or chemical treatment of on-site soils. The equipment, techniques, and testing used by geotechnical engineers differ markedly from those used by geoenvironmental professionals; their education, training, and experience are also significantly different. If you plan to build on the subject site, but have not yet had a geotechnical engineering study conducted, your geoenvironmental professional should be able to provide guidance about the next steps you should take. The same firm may provide the services you need.

Read Responsibility Provisions Closely

Geoenvironmental studies cannot be exact; they are based on professional judgement and opinion. Nonetheless, some clients, contractors, and others assume geoenvironmental reports are or certainly should be unerringly precise. Such assumptions have created unrealistic expectations that have led to wholly unwarranted claims and disputes. To help prevent such problems, geoenvironmental professionals have developed a number of report provisions and contract terms that explain who is responsible for what, and how risks are to be allocated. Some people mistake these for "exculpatory clauses," that is, provisions whose purpose is to transfer one party's rightful responsibilities and liabilities to someone else. Read the responsibility provisions included in a report and in the contract you and your geoenvironmental professional agreed to. *Responsibility provisions are not "boilerplate."* They are important.

Rely on Your Geoenvironmental Professional for Additional Assistance

Membership in the Geoprofessional Business Association exposes geoenvironmental professionals to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a geoenvironmental project. Confer with your GBA-member geoenvironmental professional for more information.

GEOPROFESSIONAL BUSINESS ASSOCIATION

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