REMEDIAL INVESTIGATION AND CLEANUP ACTION SUMMARY

Former UCO Facility
9225 – 151st Avenue NE
Redmond, Washington
King County Tax Parcel 720170-0051

Project No. T-6776

Terra Associates, Inc.

Prepared for:

Mr. Greg Draper
Bellevue, Washington

May 12, 2014

TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

May 12, 2014
Project No. T-6776

Mr. Greg Draper
20 Enatai Drive
Bellevue, Washington 98006

Subject: Remedial Investigation and Cleanup Action Summary
Former UCO Facility
9225 – 151st Avenue NE
Redmond, Washington
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Dear Mr. Draper:

We have completed this remedial investigation for the Former UCO Facility located at approximately 9225 – 151st Avenue NE in Redmond, Washington. The purpose of our study was to assess the site for impacts from a release of machine oil and aluminum shavings that occurred in 1994. This report also summarizes remedial measures undertaken at the site of the release of oils and aluminum shavings.

As discussed in this report, it is our opinion that no further remedial work is required to address the historic release of cutting oil and aluminum shavings.

The attached report describes our study in detail. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

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

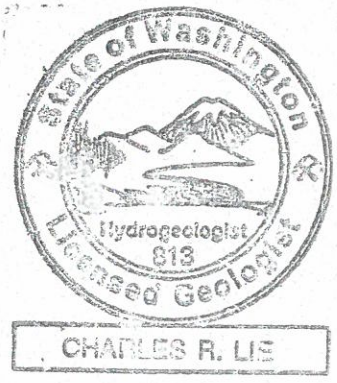

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TABLE OF CONTENTS

Remedial Investigation and Cleanup Action Summary
Former UCO Facility
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1.0 INTRODUCTION

Site Name and Address:	UCO (former occupant of site) 9552 – 151st Avenue Northeast Redmond, Washington King County Tax Parcel 720170-0051
Former Owner:	Mr. Greg Draper 20 Enatai Drive Bellevue, Washington 98006 (206) 339-2139
Consultant:	Mr. Charles R. Lie, L.H.G. Terra Associates, Inc. 12525 Willows Road, Suite 101 Kirkland, Washington 98034 (425) 821-7777
Current Owner:	Mr. Randy Cowin L & R Enterprises, LLC 21828 – 87th Avenue SE, Suite A Woodinville, Washington 98072 (425) 402-1976

The UCO business and property have been sold. The business was sold in 2005 and continued to occupy the building until 2012. The building and property were then sold to a new owner that operates a different business on-site. The purpose of this document is to present the results of site exploration and analytical testing of representative soil samples and resolve the classification of the site as a listed Hazardous Site List maintained by the Washington State Department of Ecology. The site ID is FS ID 2533. The initial site discovery is listed as being on May 21, 1993. The release consisted of an inadvertent disposal of aluminum machining scraps coated with cutting oil in a planter area behind the building. The site proceeded through the Seattle King County Public Health (SKCPH) process culminating in the ranking of the site using the Washington ranking method. The risk level was determined to be 5 on a Scale of 1 through 5 with 1 being the highest risk. The database lists that the site has confirmed soil contamination with petroleum products and priority pollutant metals. The database lists that the site is suspected of having groundwater contamination with petroleum products and priority pollutant metals.

This report has been prepared to comply with WAC 173-340-350. We submitted a Remedial Investigation Report for this project dated March 29, 2013. In our prior report, we concluded that no remedial action was required. Ecology responded with a letter dated June 14, 2014 with their conclusion that remedial action was required and that additional information regarding the site was needed. The Ecology letter stated:

- Characterization of the site is incomplete. The vertical extent if carcinogenic polycyclic aromatic hydrocarbons (cPAHs) was not delineated at soil borings TP-6 and TP-4. The horizontal extent of cPAHs has not been delineated south of soil boring TP-6. Soil contamination in the vicinity of TP-4 may extend beneath the building to the north. Additional soil borings are needed to delineate the extent of cPAH contamination in the soil. A figure indicating the location of UCO-1 is needed to illustrate that the chosen sample locations, TP-1 through TP-7, were appropriately placed to confirm site TPH-O has been addressed.
- A representative groundwater sample is needed from the site beneath the area of contamination in soil identified to confirm groundwater has not been impacted.
- Site identification and location section should discuss neighboring properties in more detail-both use (be specific) and potential past or present contaminant sources if applicable.
- A Terrestrial Ecological Evaluation (TEEE) is required to determine if cleanup levels that are protective of terrestrial species are applicable to the Site. If it is determined the Site qualifies for an exclusion, you TEE decision-making process must be documented as per WAC 173-340-7490. A TEE process interactive user's guide can be found at http://www.ecy.wa.gov/programs/tcp/terrestrial/TEEHome.html.

This report contains additional site description and discussion as sampling and documentation of site remain action to address the comments in the bullet list of the Ecology letter dated June 14, 2013. This report incorporates the information contained in the RI with the new information added in the appropriate report sections.

2.0 SITE IDENTIFICATION AND LOCATION

The site is located at 9225 – 151st Avenue NE in Redmond, Washington. This is shown on Figure 1, Vicinity Map, and Figure 2, Topographic Vicinity Map. This area is a neighborhood of office, warehouse, and light manufacturing land uses. The existing City of Redmond Comprehensive Plan dated December 17, 2011 shows the site is within a broad area designated as a Manufacturing Park (MP) zone. The City of Redmond code describes "the purpose of the Manufacturing Park (MP) zone is to provide locations for existing and future manufacturing and industrial uses, particularly those that require significant areas for storage of materials and equipment (both indoors and outdoors), and that are better suited for locations outside of Downtown and Overlake due to site requirements, noise impacts, transportation needs, or other considerations. The intent of the Manufacturing Park zone is to allow manufacturing, research and development, light industry, wholesale, assembly and distribution businesses, and essential public facilities. Office and other secondary uses are limited to those that support these primary uses. Other uses such as daycare centers, retail vehicle fuel sales, and technical colleges may be considered. Residential uses, except for secure community transition facilities, are not allowed."

Table 1 provides information on the usage of surrounding properties in the site vicinity. The location of the site relative to the surrounding properties is shown on Figure 3. Appendix A contains a summary of city directory listings for the nearby properties.

Table 1

Surrounding Businesses February 2014

Address	Business Name	Services Provided
9101 – 151st Avenue NE	Millers Bindery	Out of business
9103/9107 – 151st Avenue NE	General Business Printing/Control Seneca	Designs and prints advertisements for businesses
9117 – 151st Avenue NE	Ferguson Merchandising, LLC	Importer of craft supplies
9121 – 151st Avenue NE	BP Racing, LLC	Repair and maintain Race Cars
9123 – 151st Avenue NE	FM Sports, LLC	Fitness/Personal Training Gym
9145 – 151st Avenue NE	Cascade Auto, LLC	Auto Repair Services
9165 – 151st Avenue NE	Finishing Unlimited	Metal Finishing Products for Industrial Properties
9215 – 151st Avenue NE	Comtech	Distribution, maintenance, and repair of phone systems
9225 – 151st Avenue NE	RC Painting (Formerly UCO)	Commercial and residential painting services
9255 – 151st Avenue NE	VRM	Repair and maintenance of vintage race cars
9289 – 151st Avenue NE	Krause & Scheelar, Inc.	Manufacturer and supplier of custom door products
9320 –151st Avenue NE	Middy Plastic Products	Manufacturer and supplier of plastic office and boat supplies
15015 NE 90th Street	Aboda	Cleaning services for temporary corporate housing
15120 NE 92nd Street	Vacant	N/A
15135 NE 92nd Street	Sequoyah Electric	Electrical and network services contractor

The location of the inadvertent release is shown on Figure 4, Index Location Plan and Figure 5, Remedial Investigation Sampling Plan. Figure 6 presents the initial remedial investigation and the remedial action sample locations. Figure 7 shows a photo taken from the Metro file memo dated January 13, 1994 and a photo taken during the remedial investigation sampling. The bench mark in these photos is the vertical construction joint seen in the wall of the adjacent building.

The site of the release consists of an area measuring about 12 by 20 feet in plain view located in a planter area at the northwest corner of the tax parcel formerly occupied by the UCO Corporation. A portion of the site extends onto the landscaped perimeter of an adjacent tax parcel owned and operated by others.

The inadvertent release on-site of the machining aluminum waste was initially reported to the Redmond Fire Department by a neighbor during January of 1993. The Fire Department referred the condition to the Metro Hazardous Waste Group and then Ecology. An Early Notice Letter was sent by Ecology to UCO on April 30, 1994. On July 14, 1999, the Site Hazard Assessment was completed by the Seattle King County Public Health (SKCPH). The site was initially listed on the HSL on August 20, 1999.

Appendix B contains the Ecology and SKCPH letters and memos for this site including site discovery documentation and the opinion letter dated June 14, 2013.

Appendix C contains a legal description of the property.

3.0 ENVIRONMENTAL INVESTIGATION SUMMARY

The constituents of concern (COCs) are oil range hydrocarbons and priority pollutant metals. The COCs are based on the initial investigation conducted by the SKCHD and anecdotal information from the prior owner, Mr. Greg Draper. A secondary COC was polycyclic aromatic hydrocarbons based on an initial interpretation of Table 830-1 of the MTCA, Chapter 173-340 WAC.

In the opinion letter dated June 14, 2013, Ecology designated the contaminants of concern as being:

1. TPH in the oil range with associated cPAHs in the soils.
2. Benzene in the soils.
3. Metals including aluminum, lead, cadmium, and chromium in the soils.

The media of concern were the near-surface soils in the location of the release. The samples taken for this study were limited to the near-surface soils using hand excavated test holes. The presence of buried electrical conduits precluded the use of excavating equipment.

Surface water in this neighborhood is controlled by storm sewers in paved areas. Precipitation that falls in landscaped areas either infiltrates and/or flows onto paved areas. Roof downspouts are tightlined to the municipal stormwater management system located in the adjacent street.

Groundwater is expected to be at a depth of about ten feet below site grades. The groundwater occurs within the alluvial soils that underlie this portion of Redmond. The groundwater gradient is expected to be towards the northeast towards and sub parallel with the Sammamish River which flows towards the north.

No impacts to sediments, air quality, or vapor intrusion are expected based on the documented nature of the release of machining oil and aluminum shavings.

The site is not within an area that provides significant habitat for wildlife. No cultural history or archeological sites are documented to be in the immediate vicinity of the site.

Figure 4 shows the location of the site and of the explorations. The on-site explorations methodology is discussed in Appendix C.

4.0 PROPERTY DEVELOPMENT AND HISTORY

Historically, the site and vicinity were pasture and farmland. The current light industrial development started in the late 1970s and continues through the current time. The existing building was constructed in 1977; the surrounding buildings were built between 1978 and 1980. These buildings are the initial development of the area following the use of the site vicinity as pasture land. The land use from the initial development through the current time has remained stable.

The building and many of the surrounding buildings are pre-fabricated metal buildings. During the period of time that UCO occupied the building, the land use was as light manufacturing. Extruded aluminum was brought to the site, was cut, and then machined to create components of backpacking and mountaineering equipment. The site is currently in use as an office and warehouse space for a contractor. No significant changes in land use are expected for the foreseeable future. The zoning and comprehensive plan for the City of Redmond is consistent with the current, past, and projected use of the site.

The site is served by an urban network of paved roads. The site and vicinity are served by municipal services including sewer, drinking water, and stormwater facilities.

The potential source of contamination is the past inadvertent disposal of aluminum machining shavings coated with machine oil. In addition, as with all urban sites, there is an incidental risk of contamination with materials associated with urban development including asphalt products from fragments of pavement that may be incorporated into site soils or possible roofing materials that contain hydrocarbons and PAHs.

5.0 NATURAL CONDITIONS

5.1 Surface

The subject site is located on the former flood plain of the Sammamish River. The channelization of the river early in the 1900s and contemporary storm drainage network eliminated the flooding risk. As discussed earlier, the site and surrounding areas are developed with light industrial and commercial buildings.

5.2 Geology

Based on our experience and The Geologic Map of the Kirkland Quadrangle, by Minard 1983, the site is underlain by recent alluvium. The recent alluvium is described as consisting of poorly-drained alluvial sediments that are mostly sand and organic rich mud with some peat deposits. The thickness of the alluvium is estimated to be as thick as 12 meters.

Boring and test pit logs downloaded from the GeoMap NW site for the site vicinity are attached in Appendix D. As shown on the explorations, the site vicinity is underlain by two to three feet of fill overlying alluvial sands and gravels. The predevelopment soil profile is shown in File 006837. The test pits for this latter report show the site area as being underlain by topsoil underlain by one to three feet of volcanic ash and then sands and gravels.

5.3 Groundwater

The depth to groundwater is reported to be about ten feet. The surficial soils are imported fills and are silty sands with low permeability. The native sands and gravels will have moderate to high permeability. The groundwater gradient is expected to be towards the east or northeast towards and sub parallel with the flow of the Sammamish River.

The site is located within Wellhead Protection Area Zone 4. This is the default zone that lies outside of the ten-year travel time zone of the designated wellhead protection areas in the City of Redmond.

5.4 Surface Water

No surface water is present on the site. Stormwater is collected in catch basins and is drifted to a drainage swale with a creek about one block south of the site.

5.5 Greenbelts

No significant areas of undeveloped land are in close proximity to the site. There is an undeveloped parcel approximately 400 feet northeast of the site of the release.

6.0 CONTAMINANT OCCURRENCE AND MOVEMENT

6.1 Analytical Testing Summary

Based on the anecdotal information from the former owner, Mr. Greg Draper, the release consisted of aluminum machining shavings coated with a film of cutting oils. The source of the aluminum shavings was the machining of extruded aluminum shapes to form candle lanterns for the backpacking community and small assemblies for JanSport backpacks. In addition to the cutting oils, some oils from the air compressor were also reported to have been released at the same location.

The original file at Ecology lists the containments of concern as being priority pollutant metals and petroleum hydrocarbons. The SKCPH took 2 soil samples in 1999. Additional soil samples were taken by Terra Associates in the summer and fall of 2012. The results of the testing are summarized in the following tables. The locations of the samples taken by the SKCPH are described in their memo attached in Appendix A. The analytical test report is also attached in Appendix E. Tables 2 through 4 summarize the analytical testing done by the SKCPH.

The locations of the samples taken by Terra Associates, Inc. are shown on Figure 5. The analytical testing of initial soil samples obtained by Terra Associates for site characterization are attached in Appendix D. Tables 5 through 8 summarize the site characterization samples taken by Terra Associates.

Table 2
SKCPH Soil Samples-Hydrocarbons

Sample Number	Depth (inches)	TPH Gas Range	TPH Diesel Range	TPH Oil Range
UCO-1	8	6.5U	33U	3,200

Table 2 (continued)
SKCPH Soil Samples-Hydrocarbons

Sample Number	Depth (inches)	TPH Gas Range	TPH Diesel Range	TPH Oil Range
UCO-2	10	6.6U	33U	65U
MTCA 1999		100	200	200
MTCA 2013		30	2,000	2,000

Table 3
SKCPH Soil Samples-Volatile Organics

Sample Number	Depth (inches)	Benzene	Toluene	Ethyl Benzene	m,p-Xylene	o-Xylene
UCO-1	8	0.065U	0.065U	0.065U	0.065U	0.065U
UCO-2	10	0.066U	0.066U	0.066U	0.066U	0.066U
MTCA 1999		0.5	40	20	20	
MTCA 2013		0.03	7	6	9	

Table 4
SKCPH Soil Samples-Metals

Sample Number	Depth (inches)	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
UCO-1	8	13U	110	0.65U	38	22	0.32U	13U	0.65u
UCO-2	10	13U	110	0.66U	37	17	0.33U	13U	0.66U
MTCA 2013		20	NP	2	2,000	250	2	NP	NP
Background		7	NL	1	42	17	0.07	NL	NL

Table 5
Terra Associates, Inc. Soil Samples-Hydrocarbons

Sample Number	Depth (inches)	TPH Diesel Range	TPH Oil Range
TP-1	10	67U	550
	24	35U	70
TP-2	10	160U	620
	24	37U	130
TP-3	10	130U	380
	24	43U	170
TP-4	10	110U	310
	24	35U	69U
TP-5	10	41U	83U
TP-6	10	32U	86U
TP-7	10	39U	78U
MTCA 2013		2,000	2,000

Table 6
Terra Associates, Inc. Soil Samples-Metals

Sample Number	Depth (inches)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead
TP-1	10	5.7U	11U	0.57U	0.57U	28	21	16
	24	7.0U	16	0.7U	0.7U	51	37	7.0
TP-2	10	6.3U	13	0.63U	0.63U	35	280	23
	24	7.3U	15U	0.73U	0.73U	45 (1.5U)	43	7.3U
TP-3	10	6.2U	12U	0.62U	0.62U	29	22	12
	24	8.5U	17U	0.85U	0.85U	55	50	8.5U
TP-4	10	6.0U	12U	0.6U	0.6U	33	97	13
	24	6.9U	14	0.69U	0.69U	47	60	8.4
MTCA 2013		NP	20	160	2	2,000(19)	3,200	250
Background		NL	7	2	1	42	36	17

Sample Number	Depth (inches)	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
TP-1	10	0.28U	20	11U	0.57U	2.8U	57
	24	0.35U	34	14U	0.7U	3.5U	55
TP-2	10	0.31U	27	13U	0.63U	3.1U	170
	24	0.37U	34	15U	0.73U	3.7U	120
TP-3	10	0.31U	22	12U	0.62U	3.1U	58
	24	0.43U	35	17U	0.85U	4.3U	64
TP-4	10	0.3U	26	12U	0.6U	3.0U	120
	24	0.35U	45	14U	0.69U	3.5U	47
MTCA 2013		2	1,600	NP	NP	NP	24,000
Background		0.07	38	NL	NL	NL	86

Notes: All units are milligrams per kilograms (mg/kg), parts per million (ppm) by dry weight.
U modifier indicates that the metal was not found at the stated practical quantitation limit (PQL). PQL varies with the soil moisture content.
The value for chromium in parenthesis is for hex chrome, the cleanup value is also shown in parenthesis.
Background values are from Ecology Publication 94-115.
NL indicates that no background value is presented in the referenced publication.

Table 7
PAHs

Sample Number	Depth (inches)	Naphthalene	2-Methyl-Naphthalene	1-Methylnaphthalene	Acenphthalene	Acenaphthene	Fluorine	Phenanthrene
TP-1	10	0.0076U	0.0083	0.0076U	0.0076U	0.0076U	0.0076U	0.0076U
	24	0.0093U	0.0093U	0.0093U	0.0093U	0.0093U	0.0093U	0.0093U

Table 7 (continued)
PAHs

Sample Number	Depth (inches)	Naphthalene	2-Methyl-Naphthalene	1-Methylnaphthalene	Acenphthalene	Acenaphthene	Fluorine	Phenanthrene
TP-2	10	0.0084U	0.0084U	0.0084U	0.0084U	0.0084U	0.0084U	0.083
	24	0.0097U	0.0097U	0.0097U	0.0097U	0.0097U	0.0097U	0.0097U
TP-3	10	0.0083U	0.0083U	0.0083U	0.0083U	0.0083U	0.0083U	0.01
	24	0.011U	0.011U	0.011U	0.011U	0.011U	0.011U	0.011U
TP-4	10	0.015	0.0087	0.008U	0.043	0.18	0.29	4.7
	24	0.0093U	0.0093U	0.0093U	0.0093U	0.0093U	0.0093U	0.14
TP-5	10	0.011U	0.011U	0.011U	0.011U	0.011U	0.011U	0.011U
TP-5	10	0.085U	0.085U	0.085U	0.085U	0.085U	0.085U	0.087
TP-5	10	0.01U	0.01U	0.01U	0.01U	0.01U	0.01U	0.01U
MTCA 2013		5.0			NP	4,800	NP	NP

Sample Number	Depth (inches)	Anthracene	Fluoranthene	Pyrene	Benzo [g,h,i]perylene
TP-1	10	0.0076U	0.0076U	0.013	0.034
	24	0.0093U	0.0093U	0.0093U	0.0093U
TP-2	10	0.015	0.15	0.12	0.081
	24	0.0097U	0.0097U	0.0097U	0.0097U
TP-3	10	0.0083U	0.015	0.010	0.011
	24	0.011U	0.011U	0.011U	0.011U
TP-4	10	0.76	9.0	6.5	2.5
	24	0.036	0.27	0.19	0.055
TP-5	10	0.011U	0.031	0.024	0.014
TP-6	10	0.014	0.2	0.15	0.056
TP-7	10	0.01U	0.01U	0.01U	0.01U
MTCA 2013		24,000	3,200	2,400	NP

Notes: All units are milligrams per kilograms (mg/kg), parts per million (ppm) by dry weight.
U modifier indicates that the metal was not found at the stated practical quantitation limit (PQL).
PQL varies with the soil moisture content.
NP indicates that no cleanup value is listed for the specific analyte.

Table 8
cPAHs
Soil

TP-1
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0038	1	0.0038
benzo(a)anthracene	0.0038	0.1	0.00038
benzo(b)fluoranthene	0.0088	0.1	0.00088
benzo(k)fluoranthene	0.0038	0.1	0.00038
chrysene	0.0077	0.01	0.000077
dibenz(a,h)anthracene	0.0038	0.1	0.00038
indeno(1,2,3-cd)pyrene	0.0077	0.1	0.00077
TOTAL CPAH	0.0394		***0.006667***

TP-1
24"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0093U	1	0.00465
benzo(a)anthracene	0.0093U	0.1	0.000465
benzo(b)fluoranthene	0.0093U	0.1	0.000465
benzo(k)fluoranthene	0.0093U	0.1	0.000465
chrysene	0.0093U	0.01	0.0000465
dibenz(a,h)anthracene	0.0093U	0.1	0.000465
indeno(1,2,3-cd)pyrene	0.0093U	0.1	0.000465
TOTAL CPAH	0.0651		0.0070215

TP-2
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.081	1	0.0405
benzo(a)anthracene	0.0097U	0.1	0.000485
benzo(b)fluoranthene	0.0097U	0.1	0.000485
benzo(k)fluoranthene	0.0097U	0.1	0.000485
chrysene	0.0097U	0.01	0.0000485
dibenz(a,h)anthracene	0.0097U	0.1	0.000485
indeno(1,2,3-cd)pyrene	0.0097U	0.1	0.000485
TOTAL CPAH	0.1392		0.0429735

TP-2
24”

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0097U	1	0.00485
benzo(a)anthracene	0.0097U	0.1	0.000485
benzo(b)fluoranthene	0.0097U	0.1	0.000485

TP-2
continued

Compound	Test Result	TEF	Adjusted Value
benzo(k)fluoranthene	0.0097U	0.1	0.000485
chrysene	0.0097U	0.01	0.0000485
dibenz(a,h)anthracene	0.0097U	0.1	0.000485
indeno(1,2,3-cd)pyrene	0.0097U	0.1	0.000485
TOTAL CPAH	0.0679		0.0073235

TP-3
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0091	1	0.0091
benzo(a)anthracene	0.01	0.1	0.001
benzo(b)fluoranthene	0.015	0.1	0.0015
benzo(k)fluoranthene	0.0042	0.1	0.00042
chrysene	0.0097	0.01	0.000097
dibenz(a,h)anthracene	0.0042	0.1	0.00042
indeno(1,2,3-cd)pyrene	0.0043	0.1	0.00043
TOTAL CPAH	0.0565		***0.012967***

TP-3
24"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.011U	1	0.0055
benzo(a)anthracene	0.011U	0.1	0.00055
benzo(b)fluoranthene	0.011U	0.1	0.00055
benzo(k)fluoranthene	0.011U	0.1	0.00055
chrysene	0.011U	0.01	0.000055
dibenz(a,h)anthracene	0.011U	0.1	0.00055
indeno(1,2,3-cd)pyrene	0.011U	0.1	0.00055
TOTAL CPAH	0.077		0.008305

TP-4
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	3.1	1	3.1
benzo(a)anthracene	4	0.1	0.4
benzo(b)fluoranthene	4.7	0.1	0.47
benzo(k)fluoranthene	1.5	0.1	0.15
chrysene	3.3	0.01	0.033
dibenz(a,h)anthracene	0.57	0.1	0.057
indeno(1,2,3-cd)pyrene	2.2	0.1	0.22
TOTAL CPAH	19.37		***4.43***

TP-4
24"'

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.094	1	0.094
benzo(a)anthracene	0.12	0.1	0.012
benzo(b)fluoranthene	0.14	0.1	0.014
benzo(k)fluoranthene	0.047	0.1	0.0047
chrysene	0.13	0.01	0.0013
dibenz(a,h)anthracene	0.015	0.1	0.0015
indeno(1,2,3-cd)pyrene	0.066	0.1	0.0066
TOTAL CPAH	0.612		***0.1341***

TP-5
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.018	1	0.018
benzo(a)anthracene	0.016	0.1	0.0016
benzo(b)fluoranthene	0.026	0.1	0.0026
benzo(k)fluoranthene	0.011	0.1	0.0011
chrysene	0.02	0.01	0.0002
dibenz(a,h)anthracene	0.011	0.1	0.0011
indeno(1,2,3-cd)pyrene	0.015	0.1	0.0015
TOTAL CPAH	0.117		***0.0261***

TP-6
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.085	1	0.085
benzo(a)anthracene	0.085	0.1	0.0085
benzo(b)fluoranthene	0.13	0.1	0.013
benzo(k)fluoranthene	0.043	0.1	0.0043
chrysene	0.099	0.01	0.00099
dibenz(a,h)anthracene	0.014	0.1	0.0014
indeno(1,2,3-cd)pyrene	0.064	0.1	0.0064
TOTAL CPAH	0.52		***0.11959***

TP-7
10"

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.01U	1	0.005
benzo(a)anthracene	0.01U	0.1	0.0005
benzo(b)fluoranthene	0.01U	0.1	0.0005
benzo(k)fluoranthene	0.01U	0.1	0.0005

TP-7
continued

Compound	Test Result	TEF	Adjusted Value
chrysene	0.01U	0.01	0.00005
dibenz(a,h)anthracene	0.01U	0.1	0.0005
indeno(1,2,3-cd)pyrene	0.01U	0.1	0.0005
TOTAL CPAH	0.07		***0.00755***

Notes: TEF values are from Table 708-2.
All units are milligrams per kilograms (mg/kg), parts per million (ppm) by dry weight.
U modifier indicates that the analyte was not present at the stated Practical Quantitation Limit (PQL).
For values below the PQL, the value used for TEF is one-half of the PQL.

6.2 Original Waste Material

The original waste material that was inadvertently released in the planter consisted of machine oil and aluminum shavings.

To evaluate the PAH level of the machine oil, two samples of oil were obtained and analyzed for PAHs. The first sample was obtained on November 28, 2012 and consisted of new unused machine oil used for the same processes at the new UCO location in Tukwila. The second sample was obtained on December 20, 2012 from the UCO facility and is used oil after it has been sprayed onto the material being machined. The used oil was then collected and analyzed for PAHs. As can be seen in the lab reports attached in Appendix F, no PAHs were present in the new or used oils. PAHs are formed in the incomplete combustion of oils. The machining process does not heat the oil to the degree that PAHs are formed. The machined items can be handled by hand as soon as the machining work is done.

In addition to the machine oil, some compressor blow by oils were released at the same location. The PAHs appear to be related to the oil from the air compressor on-site.

6.3 Conceptual Model

The release consisted of the inadvertent disposal of aluminum shavings and machine oil with some lubricants from the air compressor into a planter area. The standard operating procedure was to place the aluminum shavings into a recycling container for off-site recycling.

The contaminant actually identified in the health department sampling was heavy oil range contamination at a level of 3,200 parts per million at a depth of 8 inches. The hydrocarbons were below the detection limit at a depth of 10 inches. None of the metals that were in the analysis were found to be present above their respective cleanup levels. In addition, the values for metals are consistent with the background concentrations.

The current sampling shows that the highest level of petroleum hydrocarbons is 620 parts per million in shallow samples and as shown on Table 7 at a depth of 24 inches, the level of petroleum hydrocarbons is less than the practical quantitation limits of about 60 ppm. The sampling done by Terra Associates in 2012 was at a higher density than the prior sampling and consisted of 11 samples while the health department sampling consisted of only 2 samples. The difference between the health department sampling obtained in March of 1999 and the current sampling reflected natural degradation of the hydrocarbons. The release occurred in a planter area where the topsoil and available supply of oxygen provide an environment conducive to natural degradation.

The health department considered the route of exposure to be the groundwater route. Given the amount of silt present in the topsoil and near-surface soils present at the site, it is our opinion that given the one time nature of the release and the quantity of the release, that the hydrocarbons would be limited in their depth of penetration and actual impact to the groundwater. As can be seen in both the original data and the new data, the hydrocarbon impacts are significantly attenuated between the near-surface samples and the deeper samples.

With the exception of the one sample with TPH in the oil range of 3,200 parts per million, none of the samples exceeded the default residual saturation level of 2,000 ppm. The 3,200 ppm was in a soil sample at a depth of 8 inches, an estimated 10 feet above the groundwater level. The soils that were impacted by the release are a silty sand with a low permeability. Given the limited amount of material that were released, the release to the surface soils, and the on-site testing, it is our opinion that the groundwater was not impacted.

6.4 Terrestrial Ecological Evaluation

The site was evaluated using the Simplified Terrestrial Ecological Evaluation procedures, WAC 173-340-7492. Under 173-340-7492(2) (a) (i) the evaluation may be ended when the total area of soil contamination is not more than 350 square feet. The area shown on Figure 6 attached to this report is about 250 square feet. Thus the evaluation may be ended.

7.0 CLEANUP STANDARDS AND AREAS REQUIRING CLEANUP

On December 18, 2013, the impacted materials were excavated and removed from the site. The area of the excavation centered on the historic sampling and release location documented in the health department notes as well as the samples obtained by Terra Associates in the sampling from November of 2012. The excavation proceeded until it had reached depths and a lateral extent that exceeded the areas defined by the prior sampling. Due to the use of cPAHs as the contaminant of concern, no field screening was possible. A total of 14.87 tons of soils were removed from the site for disposal at the landfill operated by CEMEX in Everett, Washington. The scale ticket is attached in Appendix H.

The applicable soil cleanup standard for cPAH are industrial cleanup standards shown in Table 745-1 of the MTCA. The cleanup level for the sum of the cPAHs using the TEQ values shown on Table 708-2 of the MTCA is 2.0 milligrams/kilogram. The land uses and zoning on the site and within the site vicinity is consistent with the requirements of Section WAC 173-340-745. The analytical test results of the verification testing done at the remedial excavation are summarized on Tables 7 through 9. The analytical test reports are attached in Appendix I.

Table 9

Remedial Excavation Soil Samples-TPHDx and Benzene

Sample Number	Depth (inches)	Benzene	TPH-Diesel Range	TPH-Lube Oil Range
12-18-1	8	0.0012U	32U	64U
12-18-2	8	0.0013U	34U	68U
12-18-3	8	0.0013U	33U	160

Table 9 (continued)
Remedial Excavation Soil Samples-TPHDx and Benzene

Sample Number	Depth (inches)	Benzene	TPH-Diesel Range	TPH-Lube Oil Range
12-18-4	8	0.0012U	33U	67U
12-18-5	30	0.00099U	28U	57U
12-18-6	30	0.0013U	34U	68U
MTCA 1999		0.5	200	200
MTCA 2013 Table 745-1 Industrial Cleanup Value		0.03	2,000	2,000

Table 10
Remedial Excavation Soil Samples-Metals

Sample Number	Depth (inches)	Aluminum	Cadmium	Chromium	Lead	Hexavalent Chromium
12-18-1	8	24,000	0.64U	54	9.0	NT
12-18-2	8	24,000	0.67U	52	11	NT
12-18-3	8	26,000	0.66U	54	10	NT
12-18-4	8	29,000	0.66U	61	6.6U	NT
12-18-5	30	15,000	0.57U	42	5.7U	NT
12-18-6	30	44,000	0.68U	82	9.2	1.4U
MTCA Method A		50,000	2	2,000	250	19
Background		32,600	1	48	24	N/A

Notes: All units are milligrams per kilograms (mg/kg), parts per million (ppm) by dry weight.
Background concentrations are from Ecology Publication 94-115.
Cleanup values are MTCA Method A Table 745-1 Method A cleanup levels for industrial properties except aluminum is Method B from CLARC database.

Table 11
Remedial Excavation Soil Samples-PAHs

12-18-1

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0085	1	0.00425
benzo(a)anthracene	0.0085	0.1	0.000425
benzo(b)fluoranthene	0.0085	0.1	0.000425
benzo(k)fluoranthene	0.0085	0.1	0.000425
chrysene	0.0085	0.01	0.0000425
dibenz(a,h)anthracene	0.0085	0.1	0.000425
indeno(1,2,3-cd)pyrene	0.0085	0.1	0.000425
TOTAL CPAH	0.0595		0.0064175

12-18-2

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.009	1	0.0045
benzo(a)anthracene	0.009	0.1	0.00045
benzo(b)fluoranthene	0.009	0.1	0.00045
benzo(k)fluoranthene	0.009	0.1	0.00045
chrysene	0.009	0.01	0.000045
dibenz(a,h)anthracene	0.009	0.1	0.00045
indeno(1,2,3-cd)pyrene	0.009	0.1	0.00045
TOTAL CPAH	0.063		0.006795

12-18-3

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.13	1	0.13
benzo(a)anthracene	0.14	0.1	0.014
benzo(b)fluoranthene	0.16	0.1	0.016
benzo(k)fluoranthene	0.1	0.1	0.01
chrysene	0.14	0.01	0.0014
dibenz(a,h)anthracene	0.027	0.1	0.0027
indeno(1,2,3-cd)pyrene	0.089	0.1	0.0089
TOTAL CPAH	0.786		0.183

12-18-4

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0089	1	0.00445
benzo(a)anthracene	0.0089	0.1	0.000445
benzo(b)fluoranthene	0.0089	0.1	0.000445
benzo(k)fluoranthene	0.0089	0.1	0.000445
chrysene	0.0089	0.01	0.0000445
dibenz(a,h)anthracene	0.0089	0.1	0.000445
indeno(1,2,3-cd)pyrene	0.0089	0.1	0.000445
TOTAL CPAH	0.0623		0.0067195

12-18-5

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0075	1	0.00375
benzo(a)anthracene	0.0075	0.1	0.000375
benzo(b)fluoranthene	0.0075	0.1	0.000375
benzo(k)fluoranthene	0.0075	0.1	0.000375
chrysene	0.0075	0.01	0.0000375
dibenz(a,h)anthracene	0.0075	0.1	0.000375
indeno(1,2,3-cd)pyrene	0.0075	0.1	0.000375
TOTAL CPAH	0.0525		0.0056625

12-18-6

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.0091	1	0.00455
benzo(a)anthracene	0.0091	0.1	0.000455
benzo(b)fluoranthene	0.0091	0.1	0.000455
benzo(k)fluoranthene	0.0091	0.1	0.000455
chrysene	0.0091	0.01	0.0000455
dibenz(a,h)anthracene	0.0091	0.1	0.000455
indeno(1,2,3-cd)pyrene	0.0091	0.1	0.000455
TOTAL CPAH	0.0637		0.0068705

12-20-1

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.33	1	0.33
benzo(a)anthracene	0.35	0.1	0.035
benzo(b)fluoranthene	0.39	0.1	0.039
benzo(k)fluoranthene	0.25	0.1	0.025
chrysene	0.34	0.01	0.0034
dibenz(a,h)anthracene	0.082	0.1	0.0082
indeno(1,2,3-cd)pyrene	0.23	0.1	0.023
TOTAL CPAH	1.972		0.4636

Notes: TEF values are from Table 708-2.
All units are parts per million.
U modifier indicates that the analyte was not present at the stated Practical Quantitation Limit (PQL).
For values below the PQL, the value used for TEF is one-half of the PQL.
The cleanup value for cPAHs from Table 745-1 Method A cleanup levels for industrial properties is 2.0 mg.kg.

8.0 CONCLUSIONS

Based on our observations and testing, it is our opinion that the site documentation contained in this report are sufficient to remove the site from the Hazardous Sites List and provide a No Further Action Determination for the site.

- The SKCPH did not create a figure that shows the location of UCO 1. We located the area of the release based on Mr. Greg Draper the former owner of UCO, the site photo that was attached to the 1994 Metro memo, and the actual distribution of TPH and PAHs in the field samples.
- The remedial excavation removed the soils that had levels of cPAHs above the current Method A industrial cleanup level. cPAHs typically have a low solubility; the cleanup level is based on the protection for the direct contact exposure pathway. Using equation 747-1 and a Henry's Law constant for naphthalene, the soil cleanup level of benzo(a) pyrene that is protective of groundwater is 1.9 ppm/mg/kg.
- None of the target metals were ever documented to be above their respective MTCA cleanup levels.
- No benzene was found to be present in the final confirmation samples or in prior sampling by the SKCPH.
- The highest level of petroleum hydrocarbons was 3,200 ppm in a surface sample taken by SKCPH. While that sample was significantly elevated relative to the MTCA cleanup level of 200 ppm that existed in 1998, the sample is not as elevated relative to the current cleanup level of 2,000 ppm. The 2,000 ppm cleanup level is based on protection of the groundwater based on generic residual concentration calculations. The soils on this site are silty and will have a higher residual saturation as illustrated by the SKCPH data that shows that the petroleum hydrocarbons are below their PQL at a depth of eight inches. In addition, the base samples from the remedial excavation are also below the PQL for petroleum hydrocarbons.
- Only one of the remedial investigation samples, TP-4 at 10 inches, failed the project remediation level of 2.0 mg/kg. The soils surrounding that location were removed from the site for appropriate off-site disposal.

Based on the data presented in this report, it is our opinion that the site has been remediated to MTCA Method A industrial levels and that based on historical and current data, that no groundwater sampling is warranted.

9.0 LIMITATIONS

The findings, conclusions, and recommendations presented in this report are based on our documented site observations, review of prior testing by others, interviews, and the referenced analytical testing. Our conclusions in part are based on information provided or prepared by others.

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

We prepared our conclusions and recommendations in accordance with generally accepted professional engineering practices. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the Former UCO Facility in Redmond, Washington. This report is for the exclusive use of Mr. Greg Draper and his authorized representatives.

10.0 REFERENCES

City of Redmond Zoning Code accessed on March 17, 2013 http://redmond.gov/PlansProjects/ComprehensivePlanning/ZoningCodeRewrite/

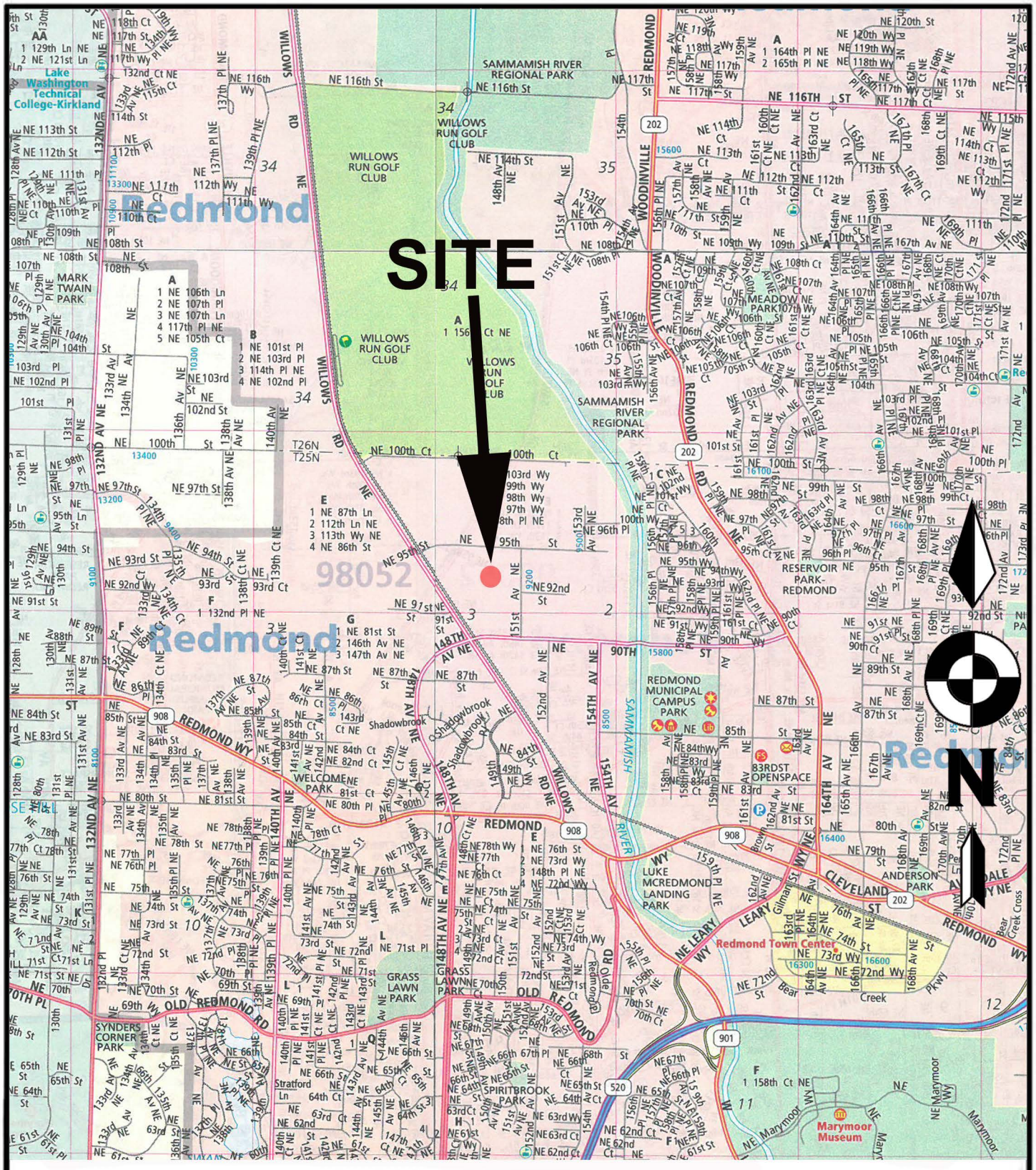
City of Redmond Comprehensive Plan, accessed on March 17, 2013 http://publ.com/F8fDOFe

City of Redmond Well Head Protection Area Definition and map, accessed March 17, 2013 http://redmond.gov/Environment/GroundwaterWellheadProtection/

San Juan, Charles *Background Concentrations of Metals in Washington State*, Ecology, Publication 94-115, dated October 1994.

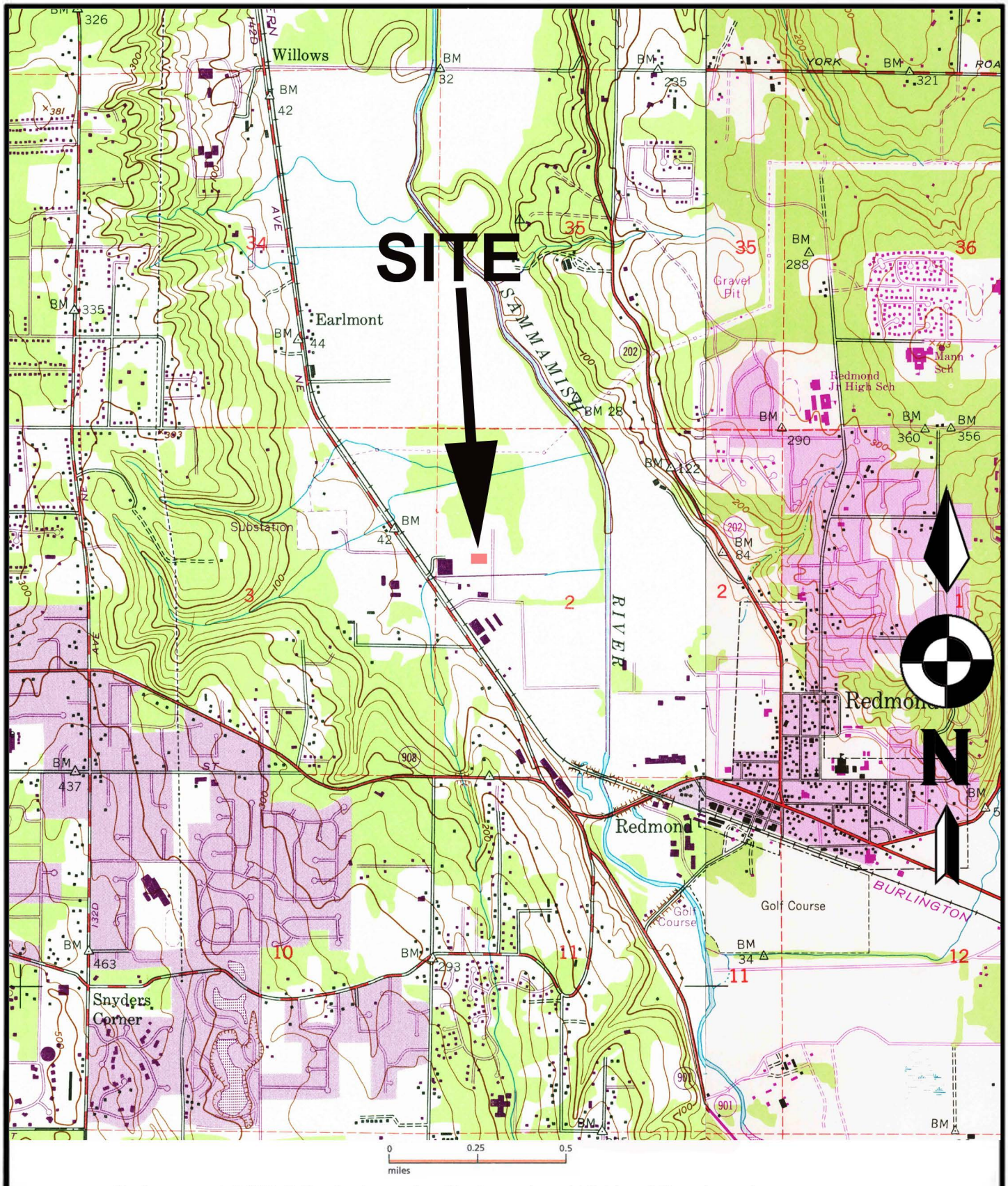
Terra Associates Inc., Remedial Investigation, UCO Report, dated March 29, 2013.

Washington State Department of Ecology, Model Toxics Control Act November 2007.



Reference: Thomas Bros King County Road Atlas.

TERRA ASSOCIATES Geotechnical Consultants	Site Vicinity Map UCO Redmond, Washington	
	Proj. No T-6776	Date May 2014	Figure 1



Reference: USGS 7.5-minute series Redmond and Kirkland Quadrangles

TERRA ASSOCIATES
Geotechnical Consultants

Topographic Vicinity Map
UCO
Redmond, Washington

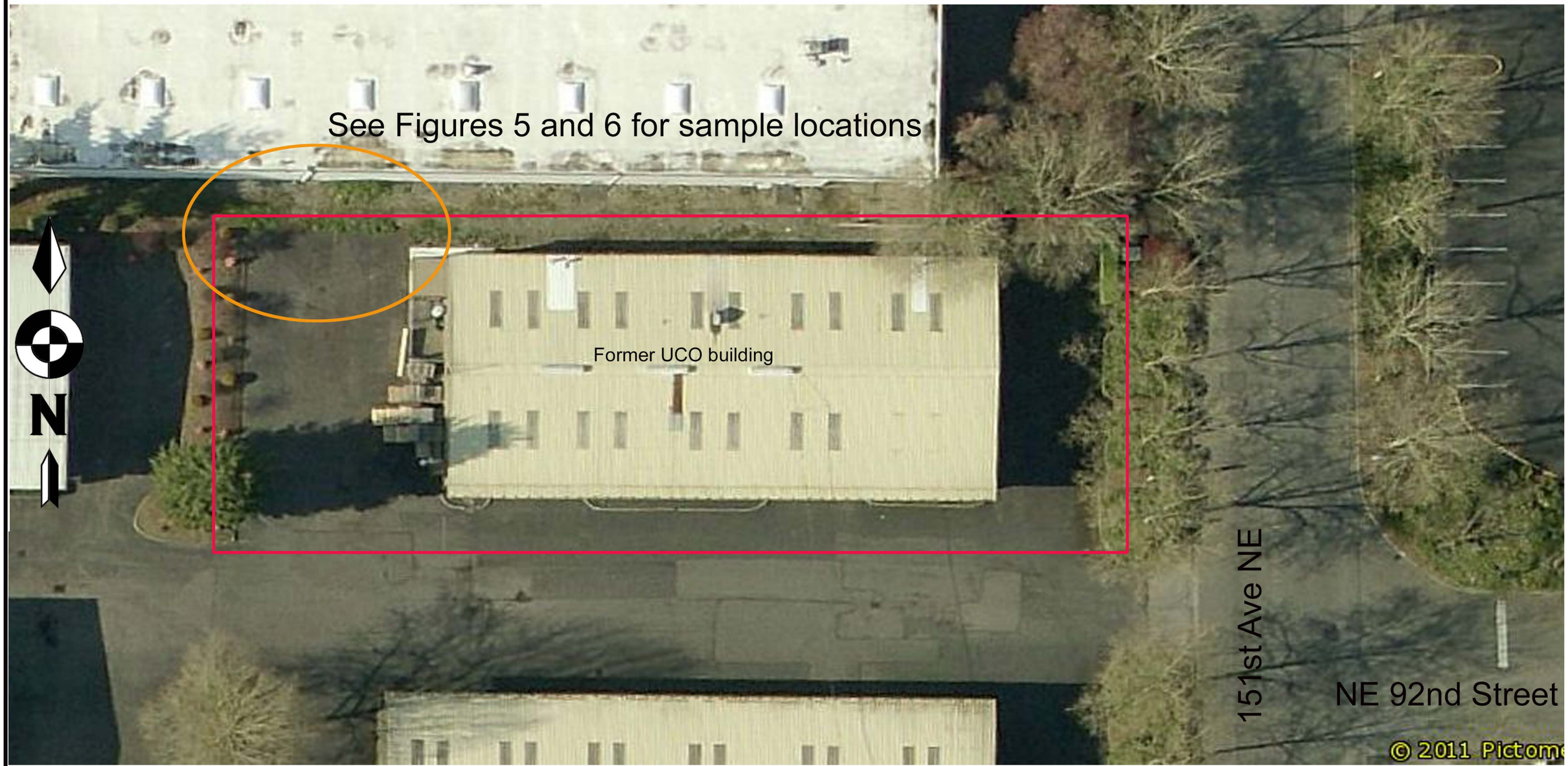
Proj. No T-6776	Date May 2014	Figure 2

Oblique view looking north. Date of Photo April 8, 2011.
Photo copyright Pictometry

TERRA ASSOCIATES
Geotechnical Consultants

Oblique Aerial Photo
UCO
Redmond, Washington

Proj. No. T-6776	Date May 2014	Figure 3



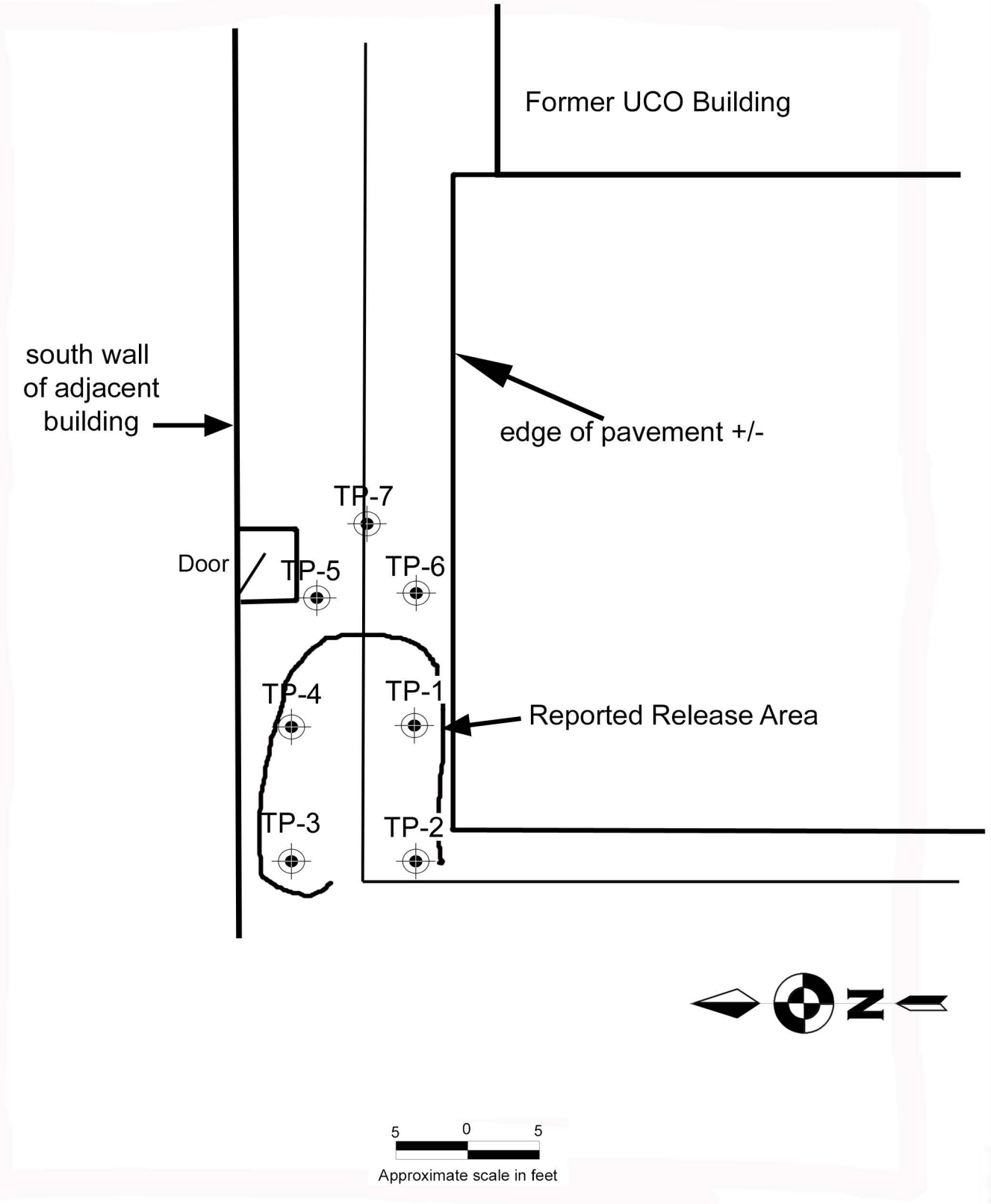
Approximate Scale 1” = 25’

Orthophoto. Date of Photo April 8, 2011.
Photo copyright Pictometry

TERRA ASSOCIATES
Geotechnical Consultants

Index Location Plan
UCO
Redmond, Washington

Proj. No. T-6776	Date May 2014	Figure 4

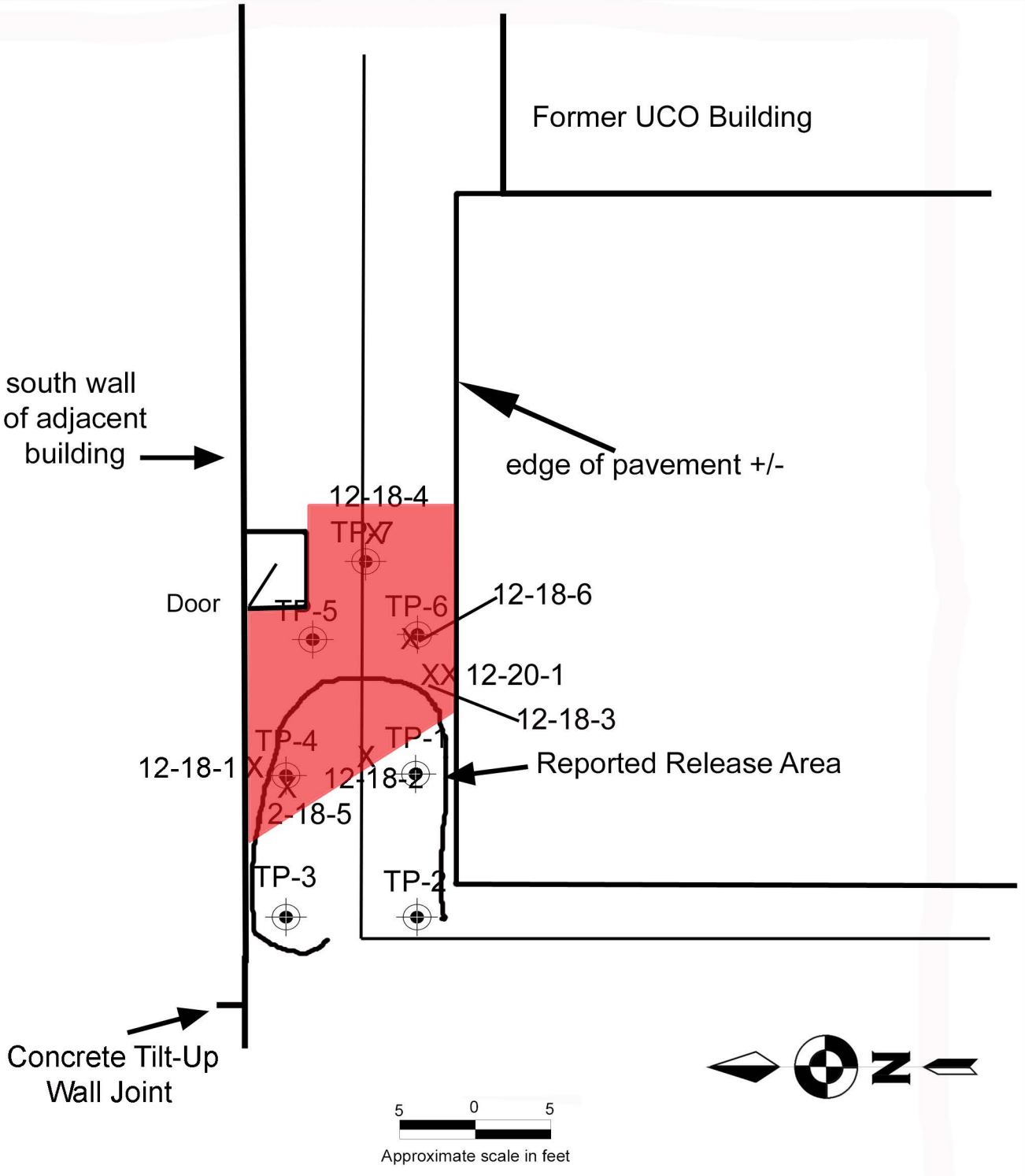


Reference: Base image taken from Figure 5 of Remedial Investigation by Terra Associates dated March 29, 2013

TERRA ASSOCIATES
Geotechnical Consultants

Remedial Investigation Sampling Plan
UCO
Redmond, Washington

Proj. No T-6776	Date May 2014	Figure 5



Shaded area represents approximate limits remedial excavation conducted on December 18, 2013

Reference: Base image taken from Figure 5 of Remedial Investigation by Terra Associates dated March 29, 2013

TERRA ASSOCIATES
Geotechnical Consultants

Remedial Excavation Sampling Plan
UCO
Redmond, Washington

Proj. No T-6776	Date May 2014	Figure 6

Photo taken by Metro
1994

Note tailgate of truck in Metro photo, Photo taken by Terra Associates was taken from a position slightly west of SKCPH photographer's location

Photo taken by Terra Associates, Inc
2012

TERRA ASSOCIATES
Geotechnical Consultants

Release Area Photos
UCO
Redmond, Washington

Proj. No. T-6776	Date May 2014	Figure 7

APPENDIX A

CITY DIRECTORY SUMMARY

1982 Polk's Bellevue Kirkland Redmond Directory		
Address	**Listed Tennant**	**Notes**
9345 – 151st Ave NE	Not listed	
9320 – 151st Ave NE	Middy Marine	Boat windshields and top manufacturers
9225 – 151st Ave NE	UCO Inc.	Metal parts manufacturers
9255 – 151st Ave NE	Krause and Scheeler Inc.	Door system manufacturers
9289 – 151st Ave NE	Not listed	
9213 – 151st Ave NE	Sage Electronics	Manufacturer irrigation systems
9213 – 151st Ave NE	Not listed	
9165 – 151st Ave NE	Not listed	
9145 – 151st Ave NE	Index Industries	Electronic equipment
9117 – 151st Ave NE	vacant	
9121 – 151st Ave NE	Sign Company	
15111 NE 92nd Street	Vacant	
15115 NE 92nd Street	Not listed	
15133 NE 92nd Street	Santa Clara Circuits North	Printed and etched circuit
15120 NE 92nd Street	Not listed	
9040 Willows Road	Not listed	
1980 Polk's Bellevue Kirkland Redmond City Directory		
Address	Listed Tennant	notes
9345 – 151st Ave NE	Not listed	
9320 – 151st Ave NE	Middy Marine	Boat windshields and top manufacturers
9225 – 151st Ave NE	UCO Inc.	Metal parts manufacturers
9255 – 151st Ave NE	Krause and Scheeler Inc.	Door system manufacturers
9289 – 151st Ave NE	Not listed	
9213 – 151st Ave NE	Sage Electronics	Manufacturer irrigation systems
9213 – 151st Ave NE	Not listed	
9165 – 151st Ave NE	Not listed	
9145 – 151st Ave NE	Index Industries	Electronic equipment
9117 – 151st Ave NE	Not listed	
9121 – 151st Ave NE	Not listed	
15111 NE 92nd Street	Not listed	
15115 NE 92nd Street	Oil Tech	Manufacturer oil containment booms
15133 NE 92nd Street	Not listed	
15120 NE 92nd Street	Northwest Manufacturing	Sheet metal manufacturing
9040 Willows Road	Lang Manufacturing	Cooking equipment manufacturing
1979 Polk's Bellevue Kirkland Redmond City Directory		
Address	Listed Tennant	Notes
9345 –151st Ave NE	Not listed	
9320 – 151st Ave NE	Middy Marine	Boat windshields and top manufacturers
9225 – 151st Ave NE	UCO Inc.	Metal parts manufacturers
9255 – 151st Ave NE	Krause and Scheeler Inc.	Door system manufacturers
9289 – 151st Ave NE	Not listed	
9213 – 151st Ave NE	Sage Electronics	Manufacturer irrigation systems
9165 – 151st Ave NE	Not listed	
9145 – 151st Ave NE	Index Industries	Electronic equipment

1979 Polk's Bellevue Kirkland Redmond City Directory (continued)		
Address	**Listed Tennant**	**Notes**
9117 – 151st Ave NE	Not listed	
9121 – 151st Ave NE	Not listed	
15111 NE 92nd Street	Not listed	
15115 NE 92nd Street	Oil Tech	Manufacturer oil containment booms
15133 NE 92nd Street	Not listed	
15120 NE 92nd Street	Northwest Manufacturing	Sheet metal manufacturing
9040 Willows Road	Lang Manufacturing	Cooking equipment manufacturing

APPENDIX B

ECOLOGY FILE SUMMARY

Response Network Reporting Form

93 00420

	Date	Time
Event Occured		
Event Reported	15-Sep-93	

Click if this an Emergency ? ☐ Yes

What type of event occurred ? General Complaint

Materials Involved

Liquids:	Volume	Comments
Oils	< = 5 gallons	

Solids:	Volume	Comments
Metals/Glass/Lumber	< = Drum (6 cu ft)	

Odors:	Location	Strength	Comments

Event Location

Name: UCO
Address: 9225 151st NE
City: Redmond
Landmarks: 9200 block of 151 St Ave NE
Environment Affected: Ground/Soil (Primary) | Storm Drain (Secondary) | (Other)

If Yes, Click Bullet
- ◉ Also Source of Problem ?
- ○ Unincorporated King County ?

Event Reporter / Caller

Callers Name	Address or Agency	Phone No.

○ Caller Wants FeedBack

Report Taker (last name)	Agency	Phone No.
Holyoke	LHWMP - Response Team	689-3077

If Yes, Click Bullet
- ◉ Confidential Call?
- ○ Caller on Site?
- ○ Happening Now?
- ○ First Time?

○ Any Pattern?
○ Source Obvious?
*if different than above company or location.

Comments - Summary of Complaint

Someone had dumped a pile of metal shavings mixed with possible lube oil onto the callers property (5 x 6 sq ft). Mark Pease of Redmond Fire Dept. was out to the site. Later the callers obsered another dumping by an employee of the building next door to them. The sign on the building says UCO.

Assigned Response Team Investigator	Ecology's Unique Number	Where Did You Hear About Us?
Holyoke	N12599	Ecology TCP

Referral
Date Ref'd :
To Agency :
Agency Contact :
Date Rec'd Back :

Referral
Date Ref'd :
To Agency :
Agency Contact :
Date Rec'd Back :

Referral
Date Ref'd :
To Agency :
Agency Contact :
Date Rec'd Back :

11

93 00420	UCO

General Comments

Field Comments

Investigator: Holyoke

	Site Visit Date	Site Visit Time	Click if Joint Visit	Joint Visit With: Name	Joint Visit With: Agency
1st	13-Jan-94		◉	Jakab	LHWMP - Response Team
2nd			○		
3rd			○		

◉ **Call Substantiated**

Contact Name: Greg Draper

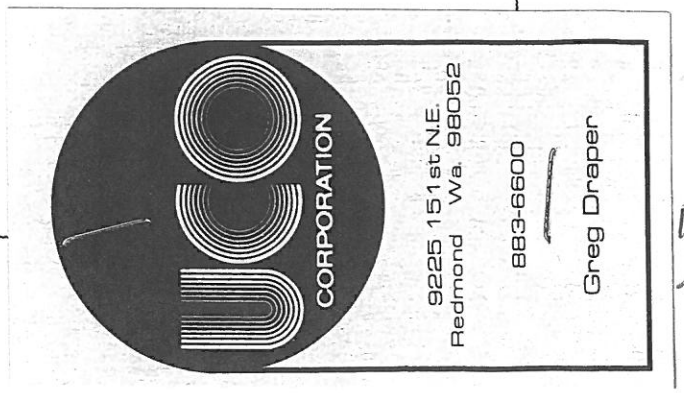
Title: Owner **Phone Number:** 883-6600

Site/Business is in an industrial park setting. UCO Corp does machine work on aluminum to make precision products. Behind the building is a small lot, and at the back corner of the parking lot you can see an eight by twelve (8 X 12) foot area stained black with distressed vegetation. Small metal flakes can be seen mixed in with the stain and water appears to bead on contact. Walking around this area, one can find more metal flakes and also metal shavings. Against the back wall of the building there is an uncovered air compressor pad with indications of oily-like runoff from the cement pad to the parking lot.

The staining appears to be a recent event (within the last few months). This conclusion is based on observations of the stained area (no dirt, dust or leaves on top or covering the stain), and the dead and distressed vegetation (a couple of thistle plants in the process of dying). The stained area is currently three (3) times larger than reported in the original complaint call (96 sq ft versus 30 sq ft). The caller is a member of the Redmond Fire Dept., and it is unlikely the caller reported stain size was incorrect by this much.

Talked with the owner of UCO, Greg Draper, explaining the complaint call and our findings. Mr. Draper admitted that in the past there was some cutting oils and compressor oil dumped and /or swept out to the back area. But he said they've stopped this practice a couple of years ago. If it is still going on, then it must be a new employee. Mr. Draper explained they sell/recycle their aluminum, so "why would we want to throw away aluminum shavings." Mr. Draper then started to talk about how competitive the market is getting and how it is difficult to compete with so many regulations. Mr. Draper assured me that he would take care of this problem and clean up anything he finds around his property.

File Closed Date: 13-Jan-94



12

9300240 c STAINED AREA

15

9300420e

METAL FILINGS on GROUND.

930420d

METAL FILINGS ON GROUND.

17

8

METRO

Municipality of Metropolitan Seattle
Hazardous Waste Management • 130 Nickerson St., Suite 100 • Seattle, WA 98109-1658

1/13/94

April 7, 1994

RECEIVED
APR 13 1994
DEPT. OF ECOLOGY

Mary O'Herron
Toxics Cleanup Program
Department of Ecology, NWRO
3190 - 160th Ave. SE
Bellevue, WA 98008-5452

YOUR REFERENCE:	N12599;	N13543;	N13573;	N14583;	N14953
OUR REFERENCE:	9300420;	9300448;	9300451;	9400527	9400558

Dear Ms. O'Herron:

Enclosed please find a copy of our reporting forms and your original ERTS forms. The following is a brief description of the outcome of our visits:

N12599 **9300420** **UCO Corp.**, We were able to substantiate the caller's complaint. UCO's owner claims these were past practices and have been corrected. However, there were indications around the site that these practices are still going on. Photos are available.

N13543 **9300448** **Fir Grove Trailer Park,** If there were abandoned vehicles, debris and waste oil containers at this site, they are gone now. The area looks like it has been recently cleaned up.

N13573 **9300451** **Bellevue Chrysler Plymouth**, Site assessment work is in progress. There are new owners at this site and they're not sure of what's going on. The former business owners, not the current owners, are working with Northwest Geotech.

N14583 **9400527** **Kurisi & Ferguson, JSH Properties,** Clean up work's still in progress. JSH Properties was waiting for final analysis on soil sample and feedback from Ecology as to how to proceed.

N14953 **9400558** **"Residence,"** Drove through the neighborhood, unable to find the site described by the caller. Drove both the streets and alleyways between and around the homes. Observed no paint overspray, garbage or tarps.

We do not have any plans to pursue these calls any further. However, of the five listed businesses above, **UCO Corp. needs additional attention**. Their site is stained and metal filings were found on the ground behind their building.

If you have any further questions regarding these issues, please call me at 689-3077.

Sincerely,

Larry Holyoke
Investigator, Response Team

enclosures

i:\user\Holyoke\9300420

DEPARTMENT OF ECOLOGY - TOXICS CLEANUP PROGRAM
SIS DATA ENTRY FORM (PAF)

SITE ID INFORMATION:

TCP ID: N-1T-5311-000 SITE NAME: U OO Corporation

SITE MASTER DESCRIPTION INFORMATION:

5/19/94

REGION: NW
COUNTY: King
SITE #: ____
SUB-SITE #: ___
STATUS: 2
ECOLOGY STATUS: 1
INDEPENDENT STATUS: 1
LOCATION ADDRESS: 9225 151st NE.
CLOSEST CITY: Redmond, Wa.
ZIP CODE: 98052-____
WARM BIN #: ___
TAX PARCEL #: _____

SITE MANAGER: ___
RESPONSIBLE UNIT: NWRO
DATA ENTRY DATE: __/__/____
UPDATED DATE: __/__/____
TOWNSHIP: ___
RANGE: ___
SECTION: ___
LEGISLATIVE DISTRICT: 45
CONGRESSIONAL DISTRICT: 1

ERTS ID: N12599__
LUST ID: ____
EPA ID: WAD_____
UBI ID: _____
AFRS PROJECT CODE: ____

	DEGREES	MINUTES	SECONDS
LONGITUDE:	122	8	12.20
LATITUDE:	47	41	2.46

METHOD ___
UBAT SITE: ___ PROGRAM PLAN: ___
NFA CODE: ___

SITE COMMENTS: material dumped just over property line, back parking lot onto Scheeler property 9255 151st Ave. NE.

AFFECTED MEDIA & CONTAMINANTS INFO:

MEDIA	STATUS	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	DW TYPE
1 Groundwater								S											
2 Surface Water																			
3 Air																			
4 Soil				S	S			C											
5 Sediment																			
6 Drinking Water																			

S = SUSPECTED

C = CONFIRMED

* Explanation of codes on reverse side.

Revised: June, 1993

5/19/94

SIS DATA ENTRY FORM
EXPLANATION OF CODES USED IN PART 1

STATUTE:
1 = CERCLA
2 = MTCA Only
3 = RCW 70.105B
4 = RCW 90.48
5 = RCRA-C
6 = RCRA-D

INDEPENDENT SITE STATUS:
1 = Release Report Received, awaiting assessment by PLP
2 = Independent Interim RA Report received
3 = Independent Final RA Report received

RESPONSIBLE UNIT:
CE = Central
EA = Eastern
EP = EPA
HA = Hanford
HQ = HQ Site Cleanup
IN = Industrial
NW = Northwest
SW = Southwest

NFA (NO FURTHER ACTION) CODE:
1 = NFA after assessment
2 = Removed from Hazardous Sites List
3 = Referred (transferred) to another Ecology program
4 = Referred to another agency
5 = Referred to local governmental entity
6 = Cleaned up under prior authority

ECOLOGY STATUS:
1 = Awaiting Assessment (by Ecology)
2 = Ranked, Awaiting RA
3 = RA in progress
4 = Independent RA
5 = RA Completed, O&M Underway
6 = RA Completed, Performance Monitoring Underway
7 = RA Conducted, residual contamination left on site; inst. contro

WARM BIN NUMBER:
0 = NPL
1 = Highest Assessed Risk
2
3
4
5 = Lowest Assessed Risk

METHOD (used to find long./lat.):
A = Address Matching Software
G = Global Positioning Satellite (GPS)
M = Manual

MEDIA & CONTAMINANTS CODES:
C = Confirmed
S = Suspected
R = Remediated

ORDER OF CONTAMINANT GROUPS:

#1 = Base/Neutral Organics
#2 = Halogenated Organic Compounds
#3 = Metals - Priority Pollutants
#4 = Metals - Other
#5 = PCB
#6 = Pesticides
#7 = Petroleum Products
#8 = Phenolic Compounds
#9 = Non-Halogenated Solvents
#10 = Dioxins
#11 = PAH
#12 = Reactive Wastes
#13 = Corrosive Wastes
#14 = Radioactive Wastes
#15 = Conventional Contaminants, Organic
#16 = Conventional Contaminants, Inorganic
#17 = Asbestos

DEPARTMENT OF ECOLOGY - TOXICS CLEANUP PROGRAM
SIS DATA ENTRY FORM (PART 3)

TCP ID: _____ SITE NAME: 11 CO Corporation

SITE ACTIVITIES:

ACTIVITY CODE	RESP. UNIT	SITE MGR.	LEGAL MECHANISM	NEGOTIATIONS START DATE	ACTION BY:	ACTIVITY START DATE	COMPLETION DATE	ACTIVITY STATUS	COMMENTS:
SD			N.A.	N.A.	4	5/21/93		C	SD by Redmond F.D.
II			N.A.	N.A.	4	9/15/93	5/19/94	C	II done by Metro
ENL			N.A.	N.A.					
SHA									
HSL			N.A.	N.A.					
EA									
IA									
RC									
RI/FS									
CAP			N.A.	N.A.					
CED									
CC									
COM									
PR			N.A.	N.A.					
RHSL			N.A.	N.A.					

KEY: "N.A." = NOT APPLICABLE

ACTIVITY CODES:
- SD = Site Discovery
- II = Initial Investigation
- ENL = Early Notice Letter
- SHA = Site Hazard Assessment
- HSL = Hazardous Sites Listing
- EA = Emergency Action
- IA = Interim Action
- RC = Routine Cleanup Action
- RI/FS = Remedial Invest./Feas. Study
- CAP = Cleanup Action Plan.
- CED = Cleanup Engineering Design
- CC = Cleanup Construction
- COM = Cleanup Operation & Maintenance
- PR = Periodic (5 Year) Review
- RHSL = Removal from Haz. Sites List

RESPONSIBLE UNIT CODES:
- CE = Central
- EA = Eastern
- EP = EPA
- HA = Hanford
- HQ = HQ Site Cleanup
- IN = Industrial Section
- NW = Northwest
- SW = Southwest

LEGAL MECHANISM CODES:
1. Enforcement Order
2. Agreed Order
3. Consent Decree
4. Governmental Action
5. Other
6. Not Applicable
7. Independent

ACTION BY CODES:
1. Ecology
2. Ecolgy w/ Contractor
3. EPA
4. Local Government
5. Other

STATUS CODES:
- P = Planned
- I = In Process
- C = Completed
- X = Cancelled

1

Revised: June, 1993

DEPA MENT OF ECOLOGY - TOXICS CLEANU PROGRAM
SIS DATA ENTRY FORM (PART 2)

TCP ID: _____ SITE NAME: UCO Corporation

SITE ADDRESSES:

	ADDRESS TYPE	OWNER TYPE	OPERATOR TYPE	ORGANIZATION / CONTACT PERSON / TELEPHONE	ADDRESS LINE 1 / ADDRESS LINE 2 / CITY / STATE ZIP CODE / COUNTRY	BEGIN DATE	END DATE
1.	1	1	1	Greg Draper (owner)	UCO Corp.		
					9225 151st NE.		
				(206) 883-6600	Redmond, Wa.		
2.							
3.							
4.							

ALTERNATE SITE NAMES:	SIC CODES:	WASTE MGMT. PRACTICE(S):
Contaminants actually dumped over property line onto Scheeler Property	precision machine parts - aluminum 3599	4

KEY:

ADDRESS TYPE CODES
1 = Current Owner
2 = Current Operator
3 = Current Generator
4 = Current Transporter
5 = Former Owner
6 = Former Operator
7 = Former Generator
8 = Former Transporter
9 = Attorney
10 = Contractor

OWNER/OPERATOR TYPE CODES
1 = Private
2 = Municipal
3 = County
4 = Federal
5 = State
6 = Tribal
7 = Mixed
8 = Other
9 = Unknown
10 = Public-Owned (Bankruptcy)
11 = Fin. Inst. Owned (Bankruptcy)

WASTE MANAGEMENT PRACTICE CODES:
1 = Drug Lab
2 = Drum
3 = Impoundment
4 = Improper Handling
5 = Landfill
6 = Land Application
7 = Pesticide Application
8 = Pesticide Disposal
9 = Spill
10 = Storm Drain
11 = Tank

Revised: June, 1993

DEP. TMENT OF ECOLOGY - TOXICS CLEAN PROGRAM
SITE DATA SUMMARY

Apr 26, 1996

SITE ID INFORMATION:
TCP ID: N-17-5311-000 SITE NAME: UCO Corporation

SITE LOCATION INFORMATION:

4/26/96

COUNTY:	ADDRESS:	CLOSEST CITY:	ZIP CODE:
17 King	9225 151st NE	Redmond	98052

	DEGREES	MINUTES	SECONDS	METHOD	TOWNSHIP	RANGE	SECTION	TAX PARCEL #
LONGITUDE:								
LATITUDE:								

LEGISLATIVE DISTRICT 45 CONGRESSIONAL DISTRICT: 1

SITE STATUS INFORMATION:

RESPONSIBLE UNIT: N NORTHWEST DATE ENTERED: Apr 26, 1996
SITE MANAGER : NORTHWEST REGION LAST UPDATE DATE Apr 26, 1996

ECOLOGY STATUS: 1 STATUTE: 2
INDEPENDENT STATUS: PROGRAM PLAN:
WARM RANK: UBAT SITE:
NFA CODE:

EPA ID PRELIMINARY ASSESSMENT RATING
SITE INSPECTION RATING:

ERTS ID: N12599 UBI ID:
LUST ID: AFRS PROJECT CODE:

SITE COMMENTS:
Material consisting of metal shavings/lube oil dumped onto soil. Dumping occurred onto adjacent property at 9255 151st Ave NE - back p

AFFECTED MEDIA & CONTAMINANTS INFO:

MEDIA	STATUS	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	DW TYPE
1 Groundwater	S							S											
4 Soil	C			S				C											

SUSPECTED

CONFIRMED

SUSPECTED

4

DEP[illegible]MENT OF ECOLOGY - TOXICS CLEAN[illegible] PROGRAM
SITE DATA SUMMARY
PART 2: SITE ADDRESSES

Apr 26, 1996

TCP ID: N-17-5311-000 SITE NAME: UCO Corporation

SITE ADDRESSES:

ADDRESS TYPE	OWNER TYPE	OPERATOR TYPE	ORGANIZATION CONTACT PERSON TELEPHONE	ADDRESS LINE 1 ADDRESS LINE 2 CITY	STATE	ZIP CODE	COUNTRY	BEGIN DATE	END DATE
1	1		UCO Corporation Greg Draper 206/883-6600	9225 151st Ave NE Redmond	WA	98052			

KEY:

ADDRESS TYPE CODES
1 = Current Owner
2 = Current Operator
3 = Current Generator
4 = Current Transporter
5 = Former Owner
6 = Former Operator
7 = Former Generator
8 = Former Transporter
9 = Attorney
10 = Contractor

OWNER/OPERATOR TYPE CODES
1 = Private
2 = Municipal
3 = County
4 = Federal
5 = State
6 = Tribal
7 = Mixed
8 = Other
9 = Unknown
10 = Public-Owned (Bankruptcy)
11 = Fin. Inst. Owned (Bankruptcy)

5

6/28/96

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (206) 649-7000

June 28, 1996

THIS STACK OF PAPERS ADDED FROM 4/18 VISIT 4/18/12

CERTIFIED MAIL
Z 143 212 099

Mr. Greg Draper
UCO Corporation
9225 151st Avenue N.E.
Redmond, WA 98052

Dear Mr. Draper:

Re: **EARLY NOTICE LETTER** #N-17-5311-000
UCO Corporation
9225 151st Ave. N.E., Redmond, WA

This letter is sent to you concerning information that the Department of Ecology (Ecology) has gathered regarding the above referenced property. As part of the process under the Model Toxics Control Act (MTCA), Ecology maintains a list of known or suspected contaminated sites. Based on available information in the department's files, it is Ecology's decision to add this property to the list as a site known to be contaminated by hazardous substances.

Enclosed is a data summary report containing information we believe reflects the current site status. A legend is also enclosed to help interpret codes used in this report. If you would like to review the inspection or referral reports, please contact our public disclosure officer, **Sally Perkins at (206) 649-7190.**

Please note that inclusion on the list **does not** mean that Ecology has determined you to be a potentially liable person responsible for cleanup under the MTCA. However, this letter is a notification that an area(s) of contamination may exist on this property. Further investigation or cleanup action will need to be done to comply with Washington State laws and regulations.

Because of considerable potential liability, please be advised to carefully consider any investigation or cleanup actions and to carefully document steps taken independent of Ecology's involvement. Guidance documents to help conduct an independent cleanup are available if you are interested in this option. In proceeding with an independent cleanup, please be aware there are requirements in State law which must be met. Some of these requirements are addressed in WAC 173-340-120(8)(B) and -300(4).

3

Ecology will use the appropriate requirements contained throughout this chapter in its evaluation of the adequacy of any independent remedial (cleanup) actions performed.

Ecology has a strong commitment to work cooperatively with individuals to accomplish prompt and effective investigations and site cleanups. However, due to limited resources and requirements in State law, we are not able to provide all the assistance requested. Your cooperation in planning or conducting a cleanup action is not an admission of guilt or liablity.

If an independent cleanup action is undertaken, and a formal review of the work is desired, a report may be submitted to Ecology through the Independent Remedial Action Program. This program was established in response to the public's need for Ecology to more rapidly review cleanup actions. A fee has been established to support this review process. Guidance documents to help conduct an independent cleanup are available if you are interested in this option.

If a cleanup action is undertaken and a formal review of the work is not desired at this time, then the information should be submitted to Ecology in order to document any assessment or cleanup activities. If no report is available, but work is in progress or anticipated, a letter describing these plans would also be helpful in updating the site record.

If an independent cleanup action does not occur on this property, Ecology will conduct a more detailed inspection at a future time that may include testing for contamination. After that, Ecology will assess what action is needed and establish a priority for that work under the formal MTCA cleanup process. At that time, the potentially liable person(s) would be determined and would be responsible for cleanup costs, including State oversight.

Should you have any questions regarding this letter or if you would like a copy of Chapter 70.105D RCW (The Model Toxics Control Act), the implementing regulations, Chapter 173-340 WAC, that detail these requirements, or a guidance document, please contact myself at (206) 649-7209. Thank you in advance for your cooperation.

Sincerely,

Louise Bardy
Toxics Cleanup Program
Northwest Regional Office

LB:lb
Enclosures: 2

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

2/4/99

February 4, 1999

Greg Draper
UCO Corp.
9225 151st Avenue NE
Redmond, WA 98052

Subject: Site Hazard Assessment – UCO Corporation
Ecology I.D. No. N-17-5311-000

Dear Mr. Draper:

The Department of Ecology (Ecology) will conduct a site hazard assessment (SHA) of UCO Corporation, 9225 151st Avenue NE, Redmond, WA 98052, under the Model Toxics Control Act (MTCA), Chapter 173-340-320 WAC. This assessment will be performed by Carsten Thomsen, Seattle-King County Department of Public Health. He will contact you in the near future to arrange a suitable time for a site visit.

The purpose of an SHA is to gather information on past/present waste management activities, along with other basic site-specific environmental data, in order to score the site following the Washington Ranking Method (WARM) Scoring Manual guidelines. Potential/actual threats to human health and the environment are evaluated for each applicable migration route, with a resultant "hazard ranking" for the site determined.

Sites are ranked on a scale of one to five, with one representing the highest level of concern, and five the lowest, relative to all other assessed/ranked sites in the state. The level of relative concern may be such that a recommendation of "No Further Action" (NFA) is made, and your site will then be removed from Ecology's Site Information System (SIS) list.

For your information, Ecology will publish a notice in an upcoming issue of the Site Register that an SHA is scheduled for this site. This notice may evoke media inquiries. Likewise, the outcome of the SHA, either as a ranked site or a determination as NFA, will be published in the Site Register.

In addition to any required field work, the following information will be considered in scoring this site:

- Ecology Northwest Regional Office Site Files
- Seattle-King County Department of Public Health Site Files

You are requested to submit any additional environmental information regarding this site to:

Mr. Carsten Thomsen
Environmental Health
Seattle-King County Department of Public Health
999 Third Street, Suite 700
Seattle WA 98104-4099

Additional data could include any environmental assessments or laboratory analyses which have been conducted regarding this site and which have not previously been submitted to Ecology. Every attempt will be made to obtain the most recent and accurate data for scoring your site. If you have better information or comments on the adequacy of the data we already have, please let us know as soon as possible. The final site rank and eventual site priority will be based primarily on the information used in the scoring. Your active participation in the assessment and scoring process is important to insure that only the best data available is used.

Fact sheets describing Site Hazard Assessments, the Washington Ranking Method and the Hazardous Sites List are enclosed for your information. If you have any questions please call me at (360) 407-7195 or Carsten Thomsen at (206) 296-4830.

Sincerely,

Michael J. Spencer
Site Hazard Assessments
Toxics Cleanup Program

MJS:ms
Enclosures

cc: Carsten Thomsen, Seattle-King County Department of Public Health
Norm Peck, Ecology Toxics Cleanup Program, NWRO

WORKSHEET 1
SUMMARY SCORE SHEET

8/31/99

Site Name/Location (Street, City, County, Section/Township/Range):

UCO Corporation
9225 151st Avenue Northeast
Redmond, WA 98052
King County
T-25N, R-5E, Sec-02
TCP ID: N-17-5311-000
Longitude: 122* 8' 22.2"
Latitude: 47* 41' 2.46"
Site scored for August 31, 1999 update

Site Description (Include management areas, substances of concern, and quantities):

UCO Corporation is a manufacturer of outdoor, recreational products made from aluminum. The company is located in the city of Redmond in a commercial and/or manufacturing area. The site covers approximately 0.43 acres with 151st Avenue Northeast as its eastern border. Other commercial businesses encompass the north, south, east and west boundaries of the site. The surrounding area is served by municipal water and sewer systems. Currently, there is a building consisting of office space, storage facility, and manufacturing plant. Within the manufacturing plant, there are several machines used for processing that are powered by pressurized hydraulic fluid. Paved parking surrounds the building with the exception of the northern side which is a gravel-covered side yard.

During January of 1994, the Metro response team received a complaint from the Redmond Fire Department regarding contamination of the site with petroleum products and metal shavings. Upon the initial complaint investigation, the Metro team discovered an 8-foot by 12-foot area that appeared to be contaminated with a petroleum product and some metal shavings amongst the stained area. The location of the stained area is in a planting strip northwest of the UCO building behind a paved parking area. Indications from the property owner suggest that former employees in the past may have disposed hydraulic fluid and aluminum shavings in the contaminated area.

Based on the findings of the initial investigation performed by the Metro response team, the Department of Ecology (Ecology) listed the UCO Corporation on Ecology's Site Information Systems (SIS) list on April 26, 1996.

Carsten Thomsen and Yolanda King of the Seattle-King County Department of Public Health (SKCDPH) performed a site hazard assessment (SHA) visit on February 24, 1999. Greg Draper, owner of UCO Corporation, conducted a tour and gave a historical background of the site. Presence of aluminum shavings were detected at time of the site visit, however, no visual evidence of other contaminants were present. Due to the site history and information obtained during the initial investigation and the SHA interview, the SKCDPH deemed it necessary to test for potential contaminants.

On March 12, 1999, Carsten Thomsen and Yolanda King of the SKCDPH sampled two different locations within the area of the gravel-covered side yard. Two soil samples were analyzed for Total Petroleum Hydrocarbons Diesel Extended (TPH-Dx), Total Petroleum Hydrocarbons Gas (TPH-Gas), and total metals. Sample one was taken at a depth of eight inches and sample two was taken at a depth of ten inches. Both soil samples had non-detectable levels TPH-Diesel and TPH-Gas, and trace amounts of chromium and lead which were below the Model Toxics Control Act (MTCA) Method A

clean-up levels. However, sample one had 3200 ppm of heavy oil which is above the MTCA Method A clean-up level. Since the contaminated area is enclosed by buildings, bermed planting strips and paved parking areas, it was felt that the only route of concern would be the groundwater route.

On the basis of this SHA, completed by the SKCDPH's Environmental Health Division, this site will be scored for the groundwater route under the MTCA regulations.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site): N/A

ROUTE SCORES:

Surface Water/Human Health: N/A

Surface Water/Environ.: N/A

Air/Human Health: N/A

Air/Environmental: N/A

Ground Water/Human Health: 8.8

OVERALL RANK: 5

WORKSHEET 3
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	WOE	Carcino-genicity PF*	Val.
1. TPH-Heavy oil	ND	--	ND	--	2.0	1	ND	-	-

*Potency Factor

Source: 2,3
Highest Value: 1 (Max.=10)

+2 Bonus Points? ____
Final Toxicity Value: 1 (Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= <10 Source: 1 **Value:** 0 (Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3= ; 4= ; 5= ; 6= .

1.3 Substance Quantity: < 10 cubic yards Source: 3 **Value:** 1 (Max.=10)
Explain basis: 5'x5'x2' area

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value:** 10 (Max.=10)
Explain basis: spill discharge to soil

2.2 Net Precipitation: 18.7 inches Source: 4 **Value:** 2 (Max.=5)

2.3 Subsurface Hydraulic Conductivity: silt/clay/till Source: 3 **Value:** 2 (Max.=4)

2.4 Vertical Depth to Ground Water: 0-25 feet Source: 3 **Value:** 8 (Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: public supply/alternate sources Source: 6 **Value:** 4 (Max.=10)

3.2 Distance to Nearest Drinking Water Well: 4600 ft Source: 6 **Value:** 2 (Max.=5)

3.3 Population Served within 2 Miles: $\sqrt{}$pop.=$\sqrt{}$405 = 20 Source: 6 **Value:** 20 (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75$\sqrt{}$no.acres=224
0.75$\sqrt{}$224 =0.75 (15) = 11 Source: 7 **Value:** 11 (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: no confirmed release Source: 3 **Value:** 0 (Max.=5)

SOURCES USED IN SCORING

1. WA ranking method toxicological data-base.
2. Analytical results for UCO Corp., Onsite Environmental Inc., 1999.
3. Site hazard assessment, King Co. Health, March 1999.
4. National Weather Service Data.
5. Model Toxics Control Act cleanup regulations, chapter 173-340 WAC.
6. WA State DOH public water supply listing.
7. WA State water use data.

City of Seattle
Paul Schell, *Mayor*

King County
Ron Sims, *Executive*

Seattle-King County Department of Public Health

Alonzo L. Plough, Ph.D., MPH, *Director*

8/3/99

August 3, 1999

Greg Draper
UCO Corporation
9225 151st Avenue NE
Redmond, WA 98052

Dear Mr. Draper:

The King County Health Department has completed the site hazard assessment (SHA) of the UCO Corporation site, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined to be a **5**, where 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this and other recently assessed sites in the August 31, 1999 Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site-specific considerations in determining Ecology's priority for future actions.

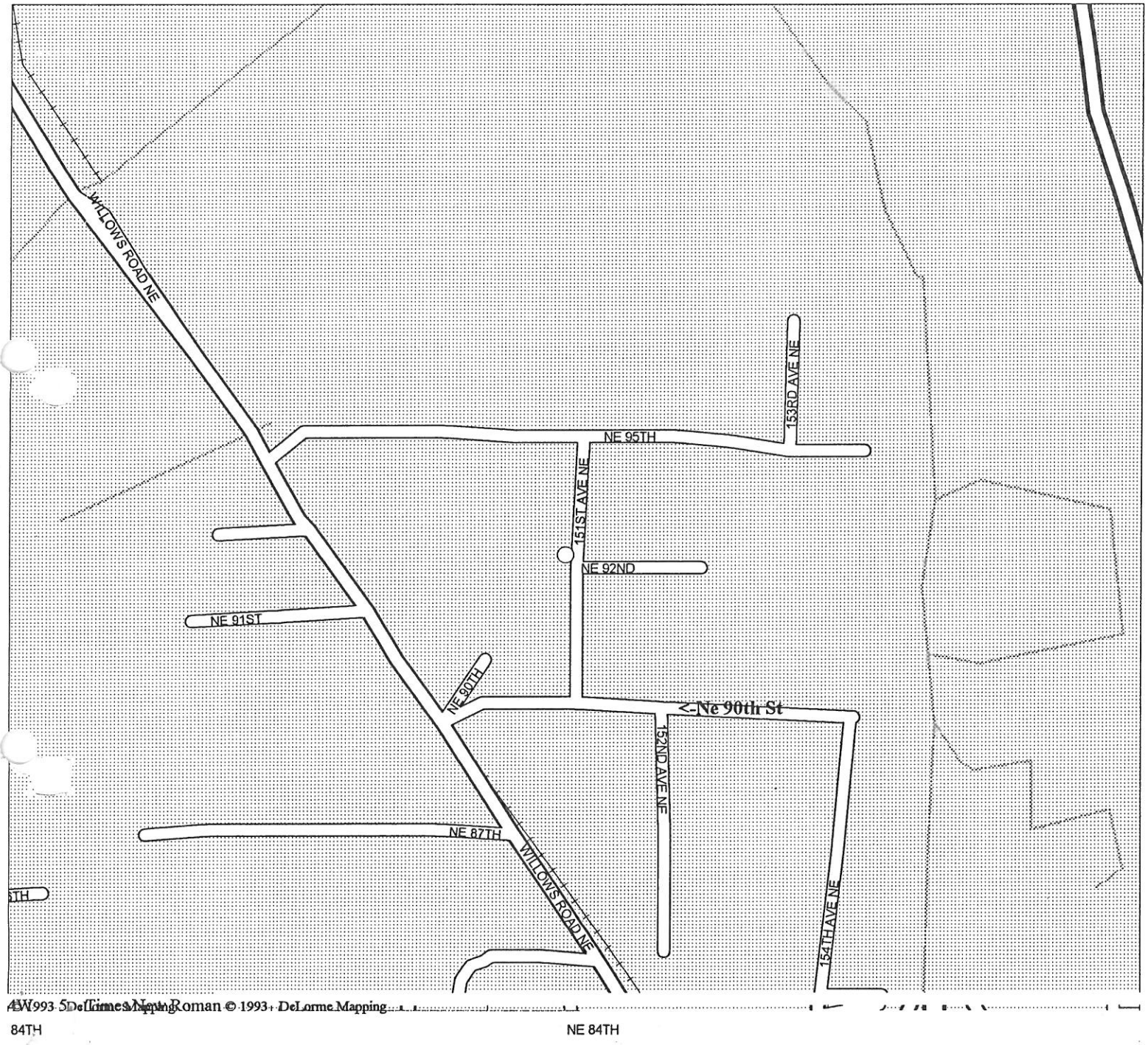
Please contact me at (206) 296-4830 if you have any questions relating to the SHA of your site. If you have any inquiries/comments about the site scoring/ranking process, please call Michael Spencer at (360) 407-7195. For inquiries regarding any further activities at your site now that it is on Ecology's Hazardous Sites List, please call Norm Peck at (425) 649-7047.

Sincerely,

Carsten Thomsen

Carsten Thomsen

cc: Michael Spencer, Washington Department of Ecology
Norm Peck, Washington Department of Ecology



UCO Corp 47 41 2.46/122 8 22.20
Mag 16.00
Thu Dec 05 15:38:43 1996

Scale 1:7,812 (at center)
500 Feet
200 Meters

LEGEND
- Population Center
- Street, Road
- Major Street/Road
- State Route
- Railroad
- River

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

3/18/99

March 18, 1999

Carsten Thomsen
Seattle - King County
Department of Public Health
1st Interstate Center
999 3rd Avenue, Suite 700
Seattle, WA 98104-4099

Re: Analytical Data for Project UCO CORP
Laboratory Reference No. 9903-087

Dear Carsten:

Enclosed are the analytical results and associated quality control data for samples submitted on March 12, 1999.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**UCO-1**			**UCO-2**		
Lab ID:	03-087-01			03-087-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.065	**ND**		0.066
Toluene	**ND**		0.065	**ND**		0.066
Ethyl Benzene	**ND**		0.065	**ND**		0.066
m,p-Xylene	**ND**		0.065	**ND**		0.066
o-Xylene	**ND**		0.065	**ND**		0.066
TPH-Gas	**ND**		6.5	**ND**		6.6
Surrogate Recovery:						
Fluorobenzene	85%			90%		

1/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0312S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 106%

2/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	03-087-01 **Original**	03-087-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	85%	87%		

3/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	03-087-01 **MS**	Percent Recovery	03-087-01 **MSD**	Percent Recovery	RPD
Benzene	**0.876**	**88**	**0.883**	**88**	0.85
Toluene	**0.886**	**89**	**0.892**	**89**	0.73
Ethyl Benzene	**0.887**	**89**	**0.897**	**90**	1.2
m,p-Xylene	**0.890**	**89**	**0.899**	**90**	1.1
o-Xylene	**0.912**	**91**	**0.921**	**92**	1.0

Surrogate Recovery:

Fluorobenzene	90%	89%

4/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx

Date Extracted:	3-12-99
Date Analyzed:	3-15-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	UCO-1	UCO-2
Lab ID:	03-087-01	03-087-02
Diesel Fuel:	ND	ND
PQL:	33	33
Heavy Oil:	3200	ND
PQL:	65	66
Surrogate Recovery:		
o-Terphenyl	85%	115%

Flags:

5/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-12-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0312S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	119%

Flags:

6/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-12-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-060-05	03-060-05 DUP
Diesel Fuel:	801	857
PQL:	25	25
RPD:	6.8	
Surrogate Recovery:		
o-Terphenyl	121%	122%

Flags:

7/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-15-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-088-02	03-088-02 DUP
Diesel Fuel:	35.5	38.8
PQL:	25	25
RPD:	8.9	
Surrogate Recovery:		
o-Terphenyl	99%	114%

Flags:

8/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-087-01
Client ID: UCO-1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	13
Barium	6010B	**110**	0.65
Cadmium	6010B	**ND**	0.65
Chromium	6010B	**38**	0.65
Lead	6010B	**22**	6.5
Mercury	7471A	**ND**	0.32
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.65

9/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-087-02
Client ID: UCO-2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	13
Barium	6010B	**110**	0.66
Cadmium	6010B	**ND**	0.66
Chromium	6010B	**37**	0.66
Lead	6010B	**17**	6.6
Mercury	7471A	**ND**	0.33
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.66

10/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0316S1&MB0317S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

11/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-071-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**10.4**	NA	10	
Barium	**7.80**	**9.05**	15	0.50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**3.49**	**4.08**	16	0.50	
Lead	**ND**	**ND**	NA	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

12/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-071-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**91.3**	91	**94.2**	94	3.1	
Barium	100	**102**	94	**101**	93	1.4	
Cadmium	50	**46.7**	93	**46.0**	92	1.6	
Chromium	100	**102**	98	**98.5**	95	3.1	
Lead	250	**240**	96	**240**	96	0	
Mercury	1.0	**0.938**	94	**0.980**	98	4.4	
Selenium	100	**91.2**	91	**96.1**	96	5.2	
Silver	50	**37.2**	74	**44.6**	89	18	

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

Date Analyzed: 3-12-99

% MOISTURE

Client ID	Lab ID	% Moisture
UCO-1	03-087-01	23
UCO-2	03-087-02	24

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

3/99 Page 1 of 1

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: King County Health Dept

Project No.:

Project Name: UCO Corp.

Project Manager: Carsten Thomsen 206 296-4[illegible]30

Turn Around Requested (Check One)

- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ ______ (other)

Project Chemist:

Laboratory No. 03-087

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx (Extended)	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
	UCO-1	3/12/99	[illegible]	S	1		X	X						X				
	UCO-2	3/12/99	[illegible]	S	1		X	X						X				

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Carsten Thomsen	3/12/99	[illegible]	3/12/99
FIRM	TIME	FIRM: [illegible]	TIME: 10:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 14, 2013

Mr. Greg Draper
20 Enatai Drive
Bellevue, WA 98004-7408

Re: Opinion Pursuant to WAC 173-340-515(5) on Request for Removal from the Hazardous Site List for the Following Hazardous Waste Site:

- **Name:** UCO Corporation
- **Address:** 9225 151st NE, Redmond, WA
- **Facility/Site No.:** 2533
- **CS ID:** 2669
- **VCP No.:** NW2710

Dear Mr. Draper:

Thank you for submitting documents regarding your proposed remedial action for the UCO Corporation facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Total Petroleum Hydrocarbons (TPH) heavy oil and associated carcinogenic polycyclic aromatic hydrocarbons (cPAHs) into the soil
- Benzene into the soil
- Metals including aluminum, lead, cadmium and chromium into the soil

UCO Corporation is a manufacturer of outdoor, recreational products made from aluminum. In 1993, the Redmond Fire Department responded to a complaint regarding improper disposal of aluminum shavings and petroleum products into a planter area north of a paved parking lot on

the west side of the former UCO building. Seattle-King County Department of Public Health conducted a site hazard assessment (SHA) in 1999 (WARM ranking = 5) and collected soil samples confirming the presence of heavy oil (3,200 mg/kg at 8 inches below ground surface) above the MTCA Method A cleanup level. The dimensions of the affected area were estimated to be eight by 12 feet.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your proposed remedial actions:

1. Terra Associates, Inc., *Remedial Investigation, Former UCO Facility 9225 151st Avenue NE, Redmond, Washington, King County Tax Parcel 720170-0051*, Received April 2, 2013.

The report listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release(s):

- Total Petroleum Hydrocarbons (TPH) heavy oil and associated carcinogenic polycyclic aromatic hydrocarbons (cPAHs) into the soil
- Benzene into the soil
- Metals including aluminum, lead, cadmium, chromium into the soil

The description of the Site is based solely on the information contained in the document listed above.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Characterization of the Site is incomplete. The vertical extent of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) was not delineated at soil borings TP-6 and TP-4. The horizontal extent of cPAHs has not been delineated south of soil boring TP-6. Soil contamination in the vicinity of TP-4 may extend beneath the building to the north. Additional soil borings are needed to delineate the extent of cPAH contamination in the soil. A figure indicating the location of UCO-1 is needed to illustrate that the chosen sample locations, TP-1 through TP-7, were appropriately placed to confirm Site TPH-O contamination has been addressed.
- A representative groundwater sample is needed from the Site beneath the area of contamination in soil identified to confirm groundwater has not been impacted.
- The Site Identification and Location section should discuss neighboring properties in more detail - both use (be specific) and potential past or present contaminant sources if applicable.
- A Terrestrial Ecological Evaluation (TEE) is required to determine if cleanup levels that are protective of terrestrial species are applicable to the Site. If it is determined the Site qualifies for an exclusion, your TEE decision-making process must be documented as per WAC 173-340-7490. A TEE process interactive user's guide can be found at: http://www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

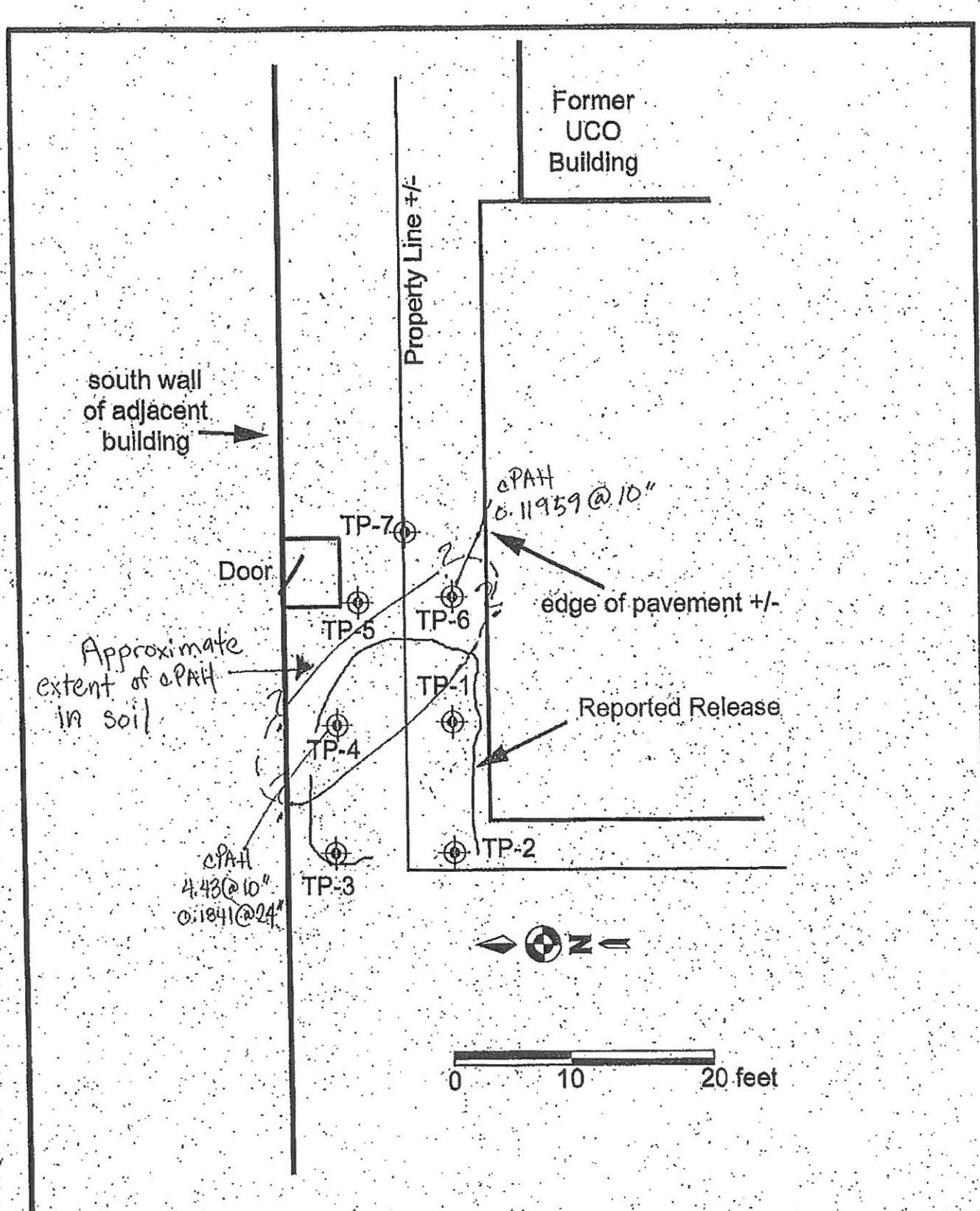
If you have any questions regarding this opinion, please contact me at (425) 649-7097 or e-mail desc461@ecy.wa.gov.

Sincerely,

Diane Escobedo
Site Manager
Toxics Cleanup Program

Enclosure: A – Site Diagram

cc: Charles Lie, Terra Associates Inc.
Sonia Fernandez, VCP Coordinator, Ecology



TERRA ASSOCIATES
Geotechnical Consultants

Sample Location Plan
UCO
Redmond, Washington

Proj. No T-6776	Date March 2013	Figure 5

WORKSHEET 3
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	WOE	Carcino-genicity PF*	Val.
1. TPH-Heavy oil	ND	--	ND	--	2.0	1	ND	-	-

*Potency Factor

Source: 2,3
Highest Value: 1 (Max.=10)

+2 Bonus Points? ____
Final Toxicity Value: 1 (Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= <10 Source: 1 **Value:** 0 (Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3= ; 4= ; 5= ; 6= .

1.3 Substance Quantity: < 10 cubic yards Source: 3 **Value:** 1 (Max.=10)
Explain basis: 5'x5'x2' area

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value:** 10 (Max.=10)
Explain basis: spill discharge to soil

2.2 Net Precipitation: 18.7 inches Source: 4 **Value:** 2 (Max.=5)

2.3 Subsurface Hydraulic Conductivity: silt/clay/till Source: 3 **Value:** 2 (Max.=4)

2.4 Vertical Depth to Ground Water: 0-25 feet Source: 3 **Value:** 8 (Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: public supply/alternate sources Source: 6 **Value:** 4 (Max.=10)

3.2 Distance to Nearest Drinking Water Well: 4600 ft Source: 6 **Value:** 2 (Max.=5)

3.3 Population Served within 2 Miles: $\sqrt{}$pop.=$\sqrt{}$405 = 20 Source: 6 **Value:** 20 (Max.=100)

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75$\sqrt{}$no.acres=224
0.75$\sqrt{}$224 =0.75 (15) = 11 Source: 7 **Value:** 11 (Max.=50)

4.0 RELEASE

Explain basis for scoring a release to ground water: no confirmed release Source: 3 **Value:** 0 (Max.=5)

SOURCES USED IN SCORING

1. WA ranking method toxicological data-base.
2. Analytical results for UCO Corp., Onsite Environmental Inc., 1999.
3. Site hazard assessment, King Co. Health, March 1999.
4. National Weather Service Data.
5. Model Toxics Control Act cleanup regulations, chapter 173-340 WAC.
6. WA State DOH public water supply listing.
7. WA State water use data.

City of Seattle
Paul Schell, *Mayor*

King County
Ron Sims, *Executive*

Seattle-King County Department of Public Health

Alonzo L. Plough, Ph.D., MPH, *Director*

8/3/99

August 3, 1999

Greg Draper
UCO Corporation
9225 151st Avenue NE
Redmond, WA 98052

Dear Mr. Draper:

The King County Health Department has completed the site hazard assessment (SHA) of the UCO Corporation site, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined to be a **5**, where 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this and other recently assessed sites in the August 31, 1999 Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site-specific considerations in determining Ecology's priority for future actions.

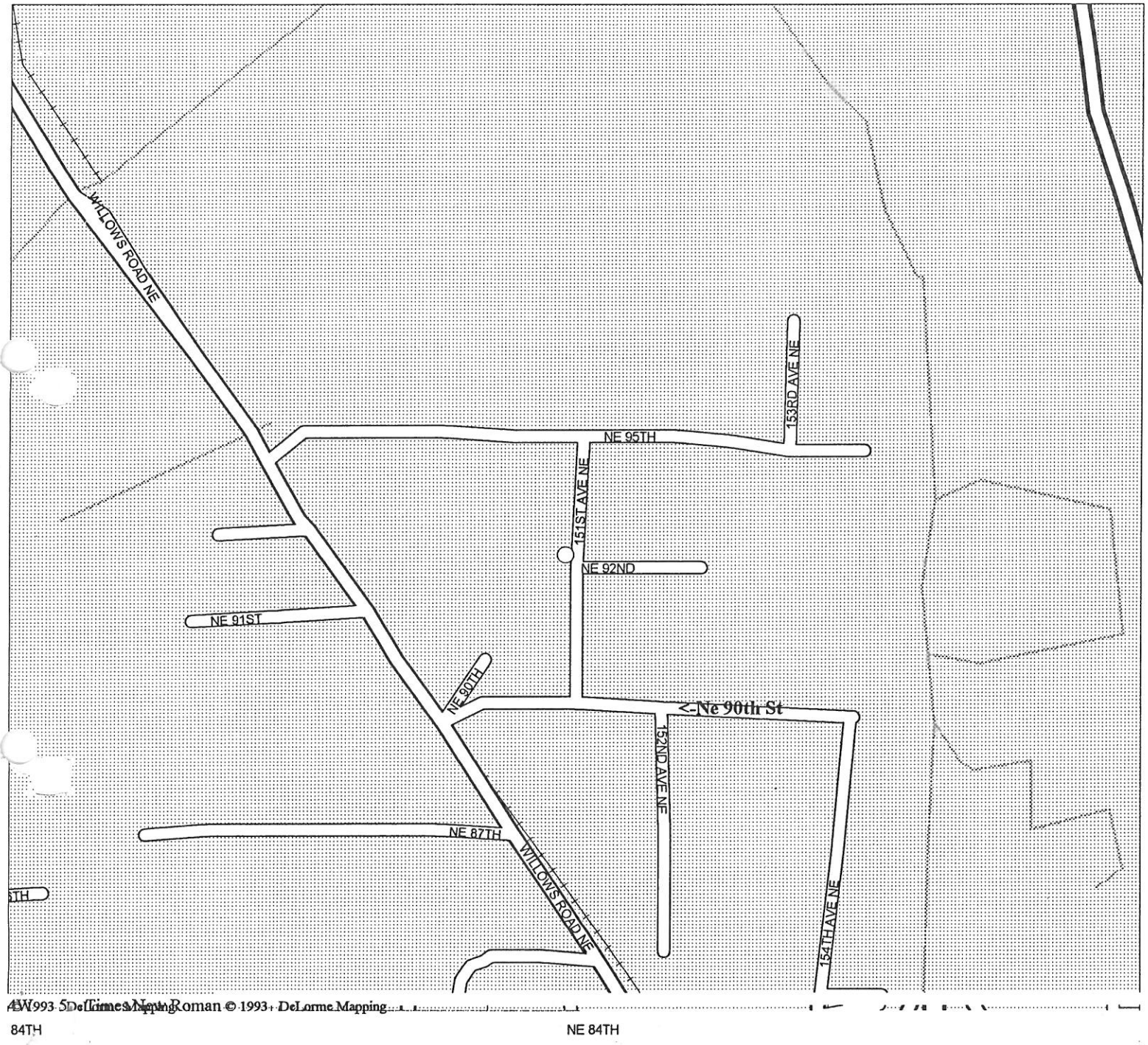
Please contact me at (206) 296-4830 if you have any questions relating to the SHA of your site. If you have any inquiries/comments about the site scoring/ranking process, please call Michael Spencer at (360) 407-7195. For inquiries regarding any further activities at your site now that it is on Ecology's Hazardous Sites List, please call Norm Peck at (425) 649-7047.

Sincerely,

Carsten Thomsen

Carsten Thomsen

cc: Michael Spencer, Washington Department of Ecology
Norm Peck, Washington Department of Ecology



UCO Corp 47 41 2.46/122 8 22.20
Mag 16.00
Thu Dec 05 15:38:43 1996

Scale 1:7,812 (at center)
500 Feet
200 Meters

LEGEND
- Population Center
- Street, Road
- Major Street/Road
- State Route
- Railroad
- River

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

3/18/99

March 18, 1999

Carsten Thomsen
Seattle - King County
Department of Public Health
1st Interstate Center
999 3rd Avenue, Suite 700
Seattle, WA 98104-4099

Re: Analytical Data for Project UCO CORP
Laboratory Reference No. 9903-087

Dear Carsten:

Enclosed are the analytical results and associated quality control data for samples submitted on March 12, 1999.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**UCO-1**			**UCO-2**		
Lab ID:	03-087-01			03-087-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.065	**ND**		0.066
Toluene	**ND**		0.065	**ND**		0.066
Ethyl Benzene	**ND**		0.065	**ND**		0.066
m,p-Xylene	**ND**		0.065	**ND**		0.066
o-Xylene	**ND**		0.065	**ND**		0.066
TPH-Gas	**ND**		6.5	**ND**		6.6
Surrogate Recovery:						
Fluorobenzene	85%			90%		

1/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0312S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 106%

2/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	03-087-01 **Original**	03-087-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	85%	87%		

3/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 3-12-99
Date Analyzed: 3-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	03-087-01 **MS**	Percent Recovery	03-087-01 **MSD**	Percent Recovery	RPD
Benzene	**0.876**	**88**	**0.883**	**88**	0.85
Toluene	**0.886**	**89**	**0.892**	**89**	0.73
Ethyl Benzene	**0.887**	**89**	**0.897**	**90**	1.2
m,p-Xylene	**0.890**	**89**	**0.899**	**90**	1.1
o-Xylene	**0.912**	**91**	**0.921**	**92**	1.0

Surrogate Recovery:

Fluorobenzene	90%	89%

4/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx

Date Extracted:	3-12-99
Date Analyzed:	3-15-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	UCO-1	UCO-2
Lab ID:	03-087-01	03-087-02
Diesel Fuel:	ND	ND
PQL:	33	33
Heavy Oil:	3200	ND
PQL:	65	66
Surrogate Recovery:		
o-Terphenyl	85%	115%

Flags:

5/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-12-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0312S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	119%

Flags:

6/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-12-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-060-05	03-060-05 DUP
Diesel Fuel:	801	857
PQL:	25	25
RPD:	6.8	
Surrogate Recovery:		
o-Terphenyl	121%	122%

Flags:

7/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-12-99
Date Analyzed:	3-15-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	03-088-02	03-088-02 DUP
Diesel Fuel:	35.5	38.8
PQL:	25	25
RPD:	8.9	
Surrogate Recovery:		
o-Terphenyl	99%	114%

Flags:

8/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-087-01
Client ID: UCO-1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	13
Barium	6010B	**110**	0.65
Cadmium	6010B	**ND**	0.65
Chromium	6010B	**38**	0.65
Lead	6010B	**22**	6.5
Mercury	7471A	**ND**	0.32
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.65

9/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-087-02
Client ID: UCO-2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	13
Barium	6010B	**110**	0.66
Cadmium	6010B	**ND**	0.66
Chromium	6010B	**37**	0.66
Lead	6010B	**17**	6.6
Mercury	7471A	**ND**	0.33
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.66

10/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0316S1&MB0317S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

11/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-071-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**10.4**	NA	10	
Barium	**7.80**	**9.05**	15	0.50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**3.49**	**4.08**	16	0.50	
Lead	**ND**	**ND**	NA	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

12/14

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 3-16&17-99
Date Analyzed: 3-16&17-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-071-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**91.3**	91	**94.2**	94	3.1	
Barium	100	**102**	94	**101**	93	1.4	
Cadmium	50	**46.7**	93	**46.0**	92	1.6	
Chromium	100	**102**	98	**98.5**	95	3.1	
Lead	250	**240**	96	**240**	96	0	
Mercury	1.0	**0.938**	94	**0.980**	98	4.4	
Selenium	100	**91.2**	91	**96.1**	96	5.2	
Silver	50	**37.2**	74	**44.6**	89	18	

Date of Report: March 18, 1999
Samples Submitted: March 12, 1999
Lab Traveler: 03-087
Project: UCO CORP

Date Analyzed: 3-12-99

% MOISTURE

Client ID	Lab ID	% Moisture
UCO-1	03-087-01	23
UCO-2	03-087-02	24

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Chain of Custody

3/99

Page 1 of 1

Company: King County Health Dept
Project No.:
Project Name: UCO Corp.
Project Manager: Carsten Thomsen 206 296-4830

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ ______ (other)

Project Chemist:

Laboratory No. 03-087

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx (Extended)	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
	UCO-1	3/12/99	[illegible]	S	1		X	X						X				
	UCO-2	3/12/99	[illegible]	S	1		X	X						X				

RELINQUISHED BY: Carsten Thomsen	DATE: 3/12/99	RECEIVED BY: [signature]	DATE: 3/12/99
FIRM	TIME	FIRM: OnSite Env. Inc.	TIME: 10:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

APPENDIX C

LEGAL DESCRIPTION

Home
Quick answers
Property assessments
Taxpayer assistance
Online services
Reports, data
Forms
News room
Contact us
About us
Site map

Department of Assessments
500 Fourth Avenue,
Suite ADM-AS-0708,
Seattle, WA 98104

Office Hours:
Mon - Fri
8:30 a.m. to 4:30 p.m.

TEL: 206-296-7300
FAX: 206-296-5107
TTY: 206-296-7888

Send us mail

New Search | Property Tax Bill | Map This Property | Glossary of Terms | Area Report | Property Detail

PARCEL

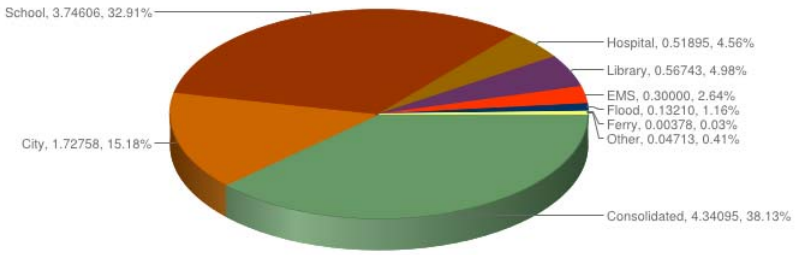
Parcel Number	720170-0051
Name	L & R ENTERPRISES LLC
Site Address	9225 151ST AVE NE 98052
Legal	REDMOND INDUSTRIAL CENTER DIV 1 PARCEL 1 REDMOND SHORT PLAT NO 77-14 REC NO 7705090743

BUILDING 1

Year Built	1977
Building Net Square Footage	7620
Construction Class	PREFAB STEEL
Building Quality	LOW COST
Lot Size	18528
Present Use	Industrial(Gen Purpose)
Views	N
Waterfront	

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2013 **Levy Code:** 2020 **Total Levy Rate:** $11.38398 **Total Senior Rate:** $7.26353



36.20% Voter Approved

Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

Valued Year	Tax Year	Appraised Land Value	Appraised Imps Value	Appraised Total	Taxable Land Value	Taxable Imps Value	Taxable Total
2012	2013	$287,100	$344,800	$631,900	$287,100	$344,800	$631,900
2011	2012	$296,400	$404,600	$701,000	$296,400	$404,600	$701,000
2010	2011	$296,400	$427,500	$723,900	$296,400	$427,500	$723,900
2009	2010	$296,400	$450,300	$746,700	$296,400	$450,300	$746,700
2008	2009	$296,400	$404,600	$701,000	$296,400	$404,600	$701,000
2007	2008	$259,300	$289,300	$548,600	$259,300	$289,300	$548,600
2006	2007	$222,300	$311,100	$533,400	$222,300	$311,100	$533,400
2005	2006	$222,300	$282,200	$504,500	$222,300	$282,200	$504,500
2004	2005	$185,200	$255,000	$440,200	$185,200	$255,000	$440,200
2003	2004	$185,200	$223,500	$408,700	$185,200	$223,500	$408,700
2002	2003	$176,000	$212,200	$388,200	$176,000	$212,200	$388,200
2001	2002	$148,200	$240,000	$388,200	$148,200	$240,000	$388,200
2000	2001	$111,200	$277,000	$388,200	$111,200	$277,000	$388,200
1999	2000	$111,200	$163,000	$274,200	$111,200	$163,000	$274,200
1998	1999	$111,200	$163,000	$274,200	$111,200	$163,000	$274,200
1997	1998	$0	$0	$0	$111,200	$163,000	$274,200
1996	1997	$0	$0	$0	$111,200	$147,400	$258,600
1994	1995	$0	$0	$0	$111,200	$147,400	$258,600

Reference Links:

- King County Taxing Districts Codes and Levies (.PDF)
- King County Tax Links
- Property Tax Advisor
- Washington State Department of Revenue (External link)
- Washington State Board of Tax Appeals (External link)
- Board of Appeals/Equalization
- Districts Report
- iMap
- Recorder's Office

  Scanned images of surveys and other map documents

  Scanned images of plats

1992	1993	$0	$0	$0	$111,200	$147,400	$258,600
1990	1991	$0	$0	$0	$83,400	$191,900	$275,300
1989	1990	$0	$0	$0	$83,400	$210,200	$293,600
1988	1989	$0	$0	$0	$83,400	$210,200	$293,600
1986	1987	$0	$0	$0	$69,900	$200,500	$270,400
1984	1985	$0	$0	$0	$64,800	$185,700	$250,500
1982	1983	$0	$0	$0	$48,600	$185,000	$233,600

Updated: Feb. 22, 2013

APPENDIX D
INITIAL SOIL SAMPLING AND LABORATORY TEST REPORTS

Field sampling was done on September 14 and November 8, 2012. Prior to the excavation of the test holes at the location of the release, a standard underground utility location request was made, and a private locate was conducted to identify the underground utilities that cross beneath the location of the release. It was found that a series of high voltage power line extends east-west through the location of the release. This precluded the use of power equipment to excavate test pits. The test pits were hand excavated under the observation of a staff geologist from our firm. At selected intervals, samples were taken for analytical testing.

All samples were put into laboratory prepared glassware and refrigerated pending delivery to the analytical laboratory of OnSite Environmental. Chain of Custody protocols were followed.

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

September 25, 2012

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1209-102

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 14, 2012.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

Case Narrative

Samples were collected on September 14, 2012 and received by the laboratory on September 14, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-1-2'**					
Laboratory ID:	09-102-01					
Diesel Range Organics	**ND**	35	NWTPH-Dx	9-17-12	9-19-12	
Lube Oil Range Organics	**70**	70	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**TP-1-10"**					
Laboratory ID:	09-102-02					
Diesel Range Organics	**ND**	67	NWTPH-Dx	9-17-12	9-19-12	U1
Lube Oil	**550**	57	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**TP-2-10"**					
Laboratory ID:	09-102-03					
Diesel Range Organics	**ND**	160	NWTPH-Dx	9-17-12	9-19-12	U1
Lube Oil	**620**	63	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*109*	*50-150*				
Client ID:	**TP-2-2'**					
Laboratory ID:	09-102-04					
Diesel Range Organics	**ND**	37	NWTPH-Dx	9-17-12	9-19-12	
Lube Oil Range Organics	**130**	73	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**TP-3-10"**					
Laboratory ID:	09-102-05					
Diesel Range Organics	**ND**	130	NWTPH-Dx	9-17-12	9-19-12	U1
Lube Oil	**380**	62	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*109*	*50-150*				
Client ID:	**TP-3-2'**					
Laboratory ID:	09-102-06					
Diesel Range Organics	**ND**	43	NWTPH-Dx	9-17-12	9-19-12	
Lube Oil Range Organics	**170**	85	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-4-10"**					
Laboratory ID:	09-102-07					
Diesel Range Organics	**ND**	110	NWTPH-Dx	9-17-12	9-20-12	U1
Lube Oil	**310**	60	NWTPH-Dx	9-17-12	9-20-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				
Client ID:	**TP-4-2'**					
Laboratory ID:	09-102-08					
Diesel Range Organics	**ND**	35	NWTPH-Dx	9-17-12	9-20-12	
Lube Oil Range Organics	**ND**	69	NWTPH-Dx	9-17-12	9-20-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0917S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-17-12	9-19-12	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-17-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*134*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	09-102-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**50.2**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*105* *124*	*50-150*			

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-1-2'**					
Laboratory ID:	09-102-01					
Naphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
2-Methylnaphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
1-Methylnaphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthylene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Fluorene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Phenanthrene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Anthracene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Fluoranthene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Pyrene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]anthracene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Chrysene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[b]fluoranthene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo(j,k)fluoranthene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]pyrene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Dibenz[a,h]anthracene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[g,h,i]perylene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*62*	*43 - 116*				
Pyrene-d10	*65*	*33 - 124*				
Terphenyl-d14	*74*	*38 - 125*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-2-2'**					
Laboratory ID:	09-102-04					
Naphthalene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
2-Methylnaphthalene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
1-Methylnaphthalene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthylene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Fluorene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Phenanthrene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Anthracene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Fluoranthene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Pyrene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]anthracene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Chrysene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[b]fluoranthene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo(j,k)fluoranthene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]pyrene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Dibenz[a,h]anthracene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[g,h,i]perylene	**ND**	0.0097	EPA 8270D/SIM	9-19-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*43 - 116*				
Pyrene-d10	*67*	*33 - 124*				
Terphenyl-d14	*76*	*38 - 125*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-3-2'**					
Laboratory ID:	09-102-06					
Naphthalene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
2-Methylnaphthalene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
1-Methylnaphthalene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthylene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Fluorene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Phenanthrene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Anthracene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Fluoranthene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Pyrene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]anthracene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Chrysene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[b]fluoranthene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo(j,k)fluoranthene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]pyrene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Dibenz[a,h]anthracene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[g,h,i]perylene	**ND**	0.011	EPA 8270D/SIM	9-19-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*43 - 116*				
Pyrene-d10	*70*	*33 - 124*				
Terphenyl-d14	*77*	*38 - 125*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-4-2'**					
Laboratory ID:	09-102-08					
Naphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
2-Methylnaphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
1-Methylnaphthalene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthylene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Fluorene	**ND**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Phenanthrene	**0.14**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Anthracene	**0.036**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Fluoranthene	**0.27**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Pyrene	**0.19**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]anthracene	**0.12**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Chrysene	**0.13**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[b]fluoranthene	**0.14**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo(j,k)fluoranthene	**0.047**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]pyrene	**0.094**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Indeno(1,2,3-c,d)pyrene	**0.066**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Dibenz[a,h]anthracene	**0.015**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[g,h,i]perylene	**0.055**	0.0093	EPA 8270D/SIM	9-19-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*44*	*43 - 116*				
Pyrene-d10	*53*	*33 - 124*				
Terphenyl-d14	*58*	*38 - 125*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0919S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	9-19-12	9-19-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*43 - 116*				
Pyrene-d10	*89*	*33 - 124*				
Terphenyl-d14	*104*	*38 - 125*				

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-106-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0603**	**0.0651**	0.0833	0.0833	ND	72	78	47 - 99	8	30	
Acenaphthylene	**0.0655**	**0.0662**	0.0833	0.0833	ND	79	79	41 - 118	1	26	
Acenaphthene	**0.0671**	**0.0672**	0.0833	0.0833	ND	81	81	43 - 112	0	28	
Fluorene	**0.0637**	**0.0647**	0.0833	0.0833	ND	76	78	41 - 119	2	25	
Phenanthrene	**0.0603**	**0.0611**	0.0833	0.0833	ND	72	73	40 - 115	1	24	
Anthracene	**0.0632**	**0.0638**	0.0833	0.0833	ND	76	77	41 - 117	1	25	
Fluoranthene	**0.0663**	**0.0684**	0.0833	0.0833	ND	80	82	36 -128	3	26	
Pyrene	**0.0666**	**0.0686**	0.0833	0.0833	ND	80	82	36 - 123	3	24	
Benzo[a]anthracene	**0.0770**	**0.0800**	0.0833	0.0833	ND	92	96	33 - 126	4	26	
Chrysene	**0.0854**	**0.0869**	0.0833	0.0833	ND	103	104	35 - 123	2	25	
Benzo[b]fluoranthene	**0.0634**	**0.0664**	0.0833	0.0833	ND	76	80	30 - 125	5	28	
Benzo(j,k)fluoranthene	**0.0697**	**0.0702**	0.0833	0.0833	ND	84	84	31 - 122	1	30	
Benzo[a]pyrene	**0.0626**	**0.0633**	0.0833	0.0833	ND	75	76	29 - 125	1	28	
Indeno(1,2,3-c,d)pyrene	**0.0602**	**0.0617**	0.0833	0.0833	ND	72	74	28 - 125	2	27	
Dibenz[a,h]anthracene	**0.0625**	**0.0665**	0.0833	0.0833	ND	75	80	32 - 124	6	27	
Benzo[g,h,i]perylene	**0.0615**	**0.0633**	0.0833	0.0833	ND	74	76	30 - 120	3	26	
Surrogate:											
2-Fluorobiphenyl						*64*	*64*	*43 - 116*			
Pyrene-d10						*79*	*82*	*33 - 124*			
Terphenyl-d14						*90*	*92*	*38 - 125*			

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-01					
Client ID:	**TP-1-2'**					
Antimony	**ND**	7.0	6010C	9-21-12	9-21-12	
Arsenic	**16**	14	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.70	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.70	6010C	9-21-12	9-21-12	
Chromium	**51**	0.70	6010C	9-21-12	9-21-12	
Copper	**37**	1.4	6010C	9-21-12	9-21-12	
Lead	**ND**	7.0	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.35	7471B	9-21-12	9-21-12	
Nickel	**34**	3.5	6010C	9-21-12	9-21-12	
Selenium	**ND**	14	6010C	9-21-12	9-21-12	
Silver	**ND**	0.70	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.5	6020A	9-21-12	9-24-12	
Zinc	**55**	3.5	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-02					
Client ID:	**TP-1-10"**					
Antimony	**ND**	5.7	6010C	9-21-12	9-21-12	
Arsenic	**ND**	11	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.57	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.57	6010C	9-21-12	9-21-12	
Chromium	**28**	0.57	6010C	9-21-12	9-21-12	
Copper	**21**	1.1	6010C	9-21-12	9-21-12	
Lead	**16**	5.7	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.28	7471B	9-21-12	9-21-12	
Nickel	**20**	2.8	6010C	9-21-12	9-21-12	
Selenium	**ND**	11	6010C	9-21-12	9-21-12	
Silver	**ND**	0.57	6010C	9-21-12	9-21-12	
Thallium	**ND**	2.8	6020A	9-21-12	9-24-12	
Zinc	**57**	2.8	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-03					
Client ID:	**TP-2-10"**					
Antimony	**ND**	6.3	6010C	9-21-12	9-21-12	
Arsenic	**ND**	13	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.63	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.63	6010C	9-21-12	9-21-12	
Chromium	**35**	0.63	6010C	9-21-12	9-21-12	
Copper	**280**	1.3	6010C	9-21-12	9-21-12	
Lead	**23**	6.3	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.31	7471B	9-21-12	9-21-12	
Nickel	**27**	3.1	6010C	9-21-12	9-21-12	
Selenium	**ND**	13	6010C	9-21-12	9-21-12	
Silver	**ND**	0.63	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.1	6020A	9-21-12	9-24-12	
Zinc	**170**	3.1	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-04					
Client ID:	**TP-2-2'**					
Antimony	**ND**	7.3	6010C	9-21-12	9-21-12	
Arsenic	**ND**	15	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.73	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.73	6010C	9-21-12	9-21-12	
Chromium	**45**	0.73	6010C	9-21-12	9-21-12	
Copper	**43**	1.5	6010C	9-21-12	9-21-12	
Lead	**ND**	7.3	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.37	7471B	9-21-12	9-21-12	
Nickel	**34**	3.7	6010C	9-21-12	9-21-12	
Selenium	**ND**	15	6010C	9-21-12	9-21-12	
Silver	**ND**	0.73	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.7	6020A	9-21-12	9-24-12	
Zinc	**120**	3.7	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-05					
Client ID:	**TP-3-10"**					
Antimony	**ND**	6.2	6010C	9-21-12	9-21-12	
Arsenic	**ND**	12	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.62	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.62	6010C	9-21-12	9-21-12	
Chromium	**29**	0.62	6010C	9-21-12	9-21-12	
Copper	**22**	1.2	6010C	9-21-12	9-21-12	
Lead	**12**	6.2	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.31	7471B	9-21-12	9-21-12	
Nickel	**22**	3.1	6010C	9-21-12	9-21-12	
Selenium	**ND**	12	6010C	9-21-12	9-21-12	
Silver	**ND**	0.62	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.1	6020A	9-21-12	9-24-12	
Zinc	**58**	3.1	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-06					
Client ID:	**TP-3-2'**					
Antimony	**ND**	8.5	6010C	9-21-12	9-21-12	
Arsenic	**ND**	17	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.85	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.85	6010C	9-21-12	9-21-12	
Chromium	**55**	0.85	6010C	9-21-12	9-21-12	
Copper	**50**	1.7	6010C	9-21-12	9-21-12	
Lead	**ND**	8.5	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.43	7471B	9-21-12	9-21-12	
Nickel	**35**	4.3	6010C	9-21-12	9-21-12	
Selenium	**ND**	17	6010C	9-21-12	9-21-12	
Silver	**ND**	0.85	6010C	9-21-12	9-21-12	
Thallium	**ND**	4.3	6020A	9-21-12	9-24-12	
Zinc	**64**	4.3	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-07					
Client ID:	**TP-4-10"**					
Antimony	**ND**	6.0	6010C	9-21-12	9-21-12	
Arsenic	**ND**	12	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.60	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.60	6010C	9-21-12	9-21-12	
Chromium	**33**	0.60	6010C	9-21-12	9-21-12	
Copper	**97**	1.2	6010C	9-21-12	9-21-12	
Lead	**13**	6.0	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.30	7471B	9-21-12	9-21-12	
Nickel	**26**	3.0	6010C	9-21-12	9-21-12	
Selenium	**ND**	12	6010C	9-21-12	9-21-12	
Silver	**ND**	0.60	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.0	6020A	9-21-12	9-24-12	
Zinc	**120**	3.0	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-08					
Client ID:	**TP-4-2'**					
Antimony	**ND**	6.9	6010C	9-21-12	9-21-12	
Arsenic	**14**	14	6010C	9-21-12	9-21-12	
Beryllium	**ND**	0.69	6010C	9-21-12	9-21-12	
Cadmium	**ND**	0.69	6010C	9-21-12	9-21-12	
Chromium	**47**	0.69	6010C	9-21-12	9-21-12	
Copper	**60**	1.4	6010C	9-21-12	9-21-12	
Lead	**8.4**	6.9	6010C	9-21-12	9-21-12	
Mercury	**ND**	0.35	7471B	9-21-12	9-21-12	
Nickel	**45**	3.5	6010C	9-21-12	9-21-12	
Selenium	**ND**	14	6010C	9-21-12	9-21-12	
Silver	**ND**	0.69	6010C	9-21-12	9-21-12	
Thallium	**ND**	3.5	6020A	9-21-12	9-24-12	
Zinc	**47**	3.5	6010C	9-21-12	9-21-12	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B
METHOD BLANK QUALITY CONTROL

Date Extracted: 9-21-12
Date Analyzed: 9-21&24-12

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S1&MB0921SH1

Analyte	Method	Result	PQL
Antimony	6010C	**ND**	5.0
Arsenic	6010C	**ND**	10
Beryllium	6010C	**ND**	0.50
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Copper	6010C	**ND**	1.0
Lead	6010C	**ND**	5.0
Mercury	7471B	**ND**	0.25
Nickel	6010C	**ND**	2.5
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	0.50
Thallium	6020A	**ND**	2.5
Zinc	6010C	**ND**	2.5

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-21-12
Date Analyzed: 9-21&24-12

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-102-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Antimony	**ND**	**ND**	NA	5.0	
Arsenic	**ND**	**ND**	NA	10	
Beryllium	**ND**	**ND**	NA	0.50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**28.1**	**28.9**	3	0.50	
Copper	**223**	**201**	10	1.0	
Lead	**18.4**	**18.2**	1	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Nickel	**21.8**	**21.6**	1	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	
Thallium	**ND**	**ND**	NA	2.5	
Zinc	**137**	**139**	1	2.5	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

TOTAL METALS
EPA 6010C/6020A/7471B
MS/MSD QUALITY CONTROL

Date Extracted: 9-21-12
Date Analyzed: 9-21&24-12

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-102-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Antimony	100	**91.0**	91	**91.7**	92	1	
Arsenic	100	**103**	103	**104**	104	1	
Beryllium	50.0	**52.9**	106	**51.8**	104	2	
Cadmium	50.0	**49.6**	99	**49.3**	99	1	
Chromium	100	**129**	100	**132**	104	2	
Copper	50	**278**	111	**287**	128	3	A
Lead	250	**255**	95	**252**	93	1	
Mercury	0.500	**0.456**	91	**0.442**	88	3	
Nickel	100	**122**	101	**121**	99	1	
Selenium	100	**100**	100	**99.0**	99	1	
Silver	25.0	**24.2**	97	**24.1**	96	0	
Thallium	50.0	**53.0**	106	**52.4**	105	1	
Zinc	100	**244**	106	**235**	98	4	

Date of Report: September 25, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102
Project: 6776

% MOISTURE

Date Analyzed: 9-17-12

Client ID	Lab ID	% Moisture
TP-1-2’	09-102-01	28
TP-1-10"	09-102-02	12
TP-2-10"	09-102-03	20
TP-2-2’	09-102-04	32
TP-3-10"	09-102-05	19
TP-3-2’	09-102-06	41
TP-4-10"	09-102-07	17
TP-4-2’	09-102-08	28

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

Chain of Custody

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

Company: TAI
Project Number: 6776
Project Name: ———
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffmann

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 09-102

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	Priority Pollutant Metals				% Moisture
1	TP-1 -2'	9/14/12	8:30	Soil	1				X				X									X				10
2	TP-1 -10"		8:35						X													X				
3	TP-2 -10"		8:40						X													X				
4	TP-2 -2'		8:45						X				X									X				
5	TP-3 -10"		8:50						X													X				
6	TP-3 -2'		8:55						X				X									X				
7	TP-4 -10"		9:00						X													X				
8	TP-4 -2'	↓	9:05	↓	↓				X				X									X				↓

	Signature	Company	Date	Time
Relinquished	[signature]	TAI	9/14/12	9130
Received	[signature]	Onsite Env	9/14/12	930
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

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

October 9, 2012

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1209-102B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 14, 2012.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

Case Narrative

Samples were collected on September 14, 2012 and received by the laboratory on September 14, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

PAHs EPA 8270D/SIM Analysis

The samples were extracted and analyzed 10 days out of holding time.

Sample TP-2-10" had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

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

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-1-10"**					
Laboratory ID:	09-102-02					
Naphthalene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
2-Methylnaphthalene	**0.0083**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
1-Methylnaphthalene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthylene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Fluorene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Phenanthrene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Anthracene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Fluoranthene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Pyrene	**0.013**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]anthracene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Chrysene	**0.0077**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[b]fluoranthene	**0.0088**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Indeno(1,2,3-c,d)pyrene	**0.0077**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[g,h,i]perylene	**0.034**	0.0076	EPA 8270D/SIM	10-8-12	10-9-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*44*	*43 - 116*				
Pyrene-d10	*37*	*33 - 124*				
Terphenyl-d14	*71*	*38 - 125*				

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-2-10"**					
Laboratory ID:	09-102-03					
Naphthalene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
2-Methylnaphthalene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
1-Methylnaphthalene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthylene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Fluorene	**ND**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Phenanthrene	**0.083**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Anthracene	**0.015**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Fluoranthene	**0.15**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Pyrene	**0.12**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]anthracene	**0.089**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Chrysene	**0.055**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[b]fluoranthene	**0.12**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo(j,k)fluoranthene	**0.033**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]pyrene	**0.081**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Indeno(1,2,3-c,d)pyrene	**0.063**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Dibenz[a,h]anthracene	**0.016**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[g,h,i]perylene	**0.081**	0.0084	EPA 8270D/SIM	10-8-12	10-9-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*41*	*43 - 116*				Q
Pyrene-d10	*41*	*33 - 124*				
Terphenyl-d14	*49*	*38 - 125*				

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-3-10"**					
Laboratory ID:	09-102-05					
Naphthalene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthylene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Acenaphthene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Fluorene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Phenanthrene	**0.010**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Anthracene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Fluoranthene	**0.015**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Pyrene	**0.010**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]anthracene	**0.010**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Chrysene	**0.0097**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[b]fluoranthene	**0.015**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]pyrene	**0.0091**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Indeno(1,2,3-c,d)pyrene	**0.0085**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[g,h,i]perylene	**0.011**	0.0083	EPA 8270D/SIM	10-8-12	10-9-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*57*	*43 - 116*				
Pyrene-d10	*39*	*33 - 124*				
Terphenyl-d14	*73*	*38 - 125*				

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-4-10"**					
Laboratory ID:	09-102-07					
Naphthalene	**0.015**	0.0080	EPA 8270D/SIM	10-8-12	10-8-12	
2-Methylnaphthalene	**0.0087**	0.0080	EPA 8270D/SIM	10-8-12	10-8-12	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270D/SIM	10-8-12	10-8-12	
Acenaphthylene	**0.043**	0.0080	EPA 8270D/SIM	10-8-12	10-8-12	
Acenaphthene	**0.18**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Fluorene	**0.29**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Phenanthrene	**4.7**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Anthracene	**0.76**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Fluoranthene	**9.0**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Pyrene	**6.5**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]anthracene	**4.0**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Chrysene	**3.3**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[b]fluoranthene	**4.7**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo(j,k)fluoranthene	**1.5**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[a]pyrene	**3.1**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Indeno(1,2,3-c,d)pyrene	**2.2**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Dibenz[a,h]anthracene	**0.57**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Benzo[g,h,i]perylene	**2.5**	0.16	EPA 8270D/SIM	10-8-12	10-9-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*46*	*43 - 116*				
Pyrene-d10	*53*	*33 - 124*				
Terphenyl-d14	*75*	*38 - 125*				

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1008S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	10-8-12	10-8-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*92*	*43 - 116*				
Pyrene-d10	*96*	*33 - 124*				
Terphenyl-d14	*108*	*38 - 125*				

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1008S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0783**	**0.0780**	0.0833	0.0833	94	94	45 - 109	0	29	
Acenaphthylene	**0.0781**	**0.0775**	0.0833	0.0833	94	93	54 - 118	1	18	
Acenaphthene	**0.0804**	**0.0794**	0.0833	0.0833	97	95	60 - 108	1	14	
Fluorene	**0.0755**	**0.0735**	0.0833	0.0833	91	88	61 - 113	3	13	
Phenanthrene	**0.0713**	**0.0642**	0.0833	0.0833	86	77	63 - 106	10	13	
Anthracene	**0.0793**	**0.0775**	0.0833	0.0833	95	93	55 - 117	2	13	
Fluoranthene	**0.0795**	**0.0780**	0.0833	0.0833	95	94	66 - 118	2	13	
Pyrene	**0.0801**	**0.0784**	0.0833	0.0833	96	94	69 - 112	2	12	
Benzo[a]anthracene	**0.0653**	**0.0630**	0.0833	0.0833	78	76	58 - 115	4	13	
Chrysene	**0.0835**	**0.0821**	0.0833	0.0833	100	99	64 - 114	2	11	
Benzo[b]fluoranthene	**0.0747**	**0.0702**	0.0833	0.0833	90	84	52 - 125	6	19	
Benzo(j,k)fluoranthene	**0.0836**	**0.0824**	0.0833	0.0833	100	99	50 - 126	1	22	
Benzo[a]pyrene	**0.0795**	**0.0781**	0.0833	0.0833	95	94	43 - 123	2	16	
Indeno(1,2,3-c,d)pyrene	**0.0880**	**0.0858**	0.0833	0.0833	106	103	55 - 118	3	16	
Dibenz[a,h]anthracene	**0.0883**	**0.0869**	0.0833	0.0833	106	104	57 - 120	2	15	
Benzo[g,h,i]perylene	**0.0904**	**0.0888**	0.0833	0.0833	109	107	58 - 113	2	18	
Surrogate:										
2-Fluorobiphenyl					*89*	*86*	*43 - 116*			
Pyrene-d10					*94*	*91*	*33 - 124*			
Terphenyl-d14					*103*	*99*	*38 - 125*			

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	09-102-04					
Client ID:	**TP-2-2'**					
Hexavalent Chromium	**ND**	1.5	7196A mod	10-2-12	10-2-12	

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-2-12
Date Analyzed:	10-2-12
Matrix:	Solid
Units:	mg/kg (ppm)
Lab ID:	MB1002S1

Analyte	Method	Result	PQL
Hexavalent Chromium	7196A mod	**ND**	1.0

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
DUPLICATE QUALITY CONTROL

Date Extracted:	10-2-12
Date Analyzed:	10-2-12
Matrix:	Solid
Units:	mg/kg (ppm)
Lab ID:	09-219-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Hexavalent Chromium	**ND**	**ND**	NA	1.0	

Date of Report: October 9, 2012
Samples Submitted: September 14, 2012
Laboratory Reference: 1209-102B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
MS/MSD QUALITY CONTROL

Date Extracted:	10-2-12
Date Analyzed:	10-2-12
Matrix:	Solid
Units:	mg/kg (ppm)
Lab ID:	09-219-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Hexavalent Chromium	5.00	**4.09**	82	**4.22**	84	3	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

OnSite Environmental Inc.

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

November 15, 2012

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

Re: Analytical Data for Project T-6776
Laboratory Reference No. 1211-066

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 8, 2012.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

Case Narrative

Samples were collected on November 8, 2012 and received by the laboratory on November 8, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-5 @ 10"**					
Laboratory ID:	11-066-01					
Diesel Range Organics	**ND**	41	NWTPH-Dx	11-14-12	11-14-12	
Lube Oil Range Organics	**ND**	83	NWTPH-Dx	11-14-12	11-14-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*127*	*50-150*				
Client ID:	**TP-6 @ 10"**					
Laboratory ID:	11-066-02					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-14-12	11-14-12	
Lube Oil	**86**	64	NWTPH-Dx	11-14-12	11-14-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*125*	*50-150*				
Client ID:	**TP-7 @ 10"**					
Laboratory ID:	11-066-03					
Diesel Range Organics	**ND**	39	NWTPH-Dx	11-14-12	11-14-12	
Lube Oil Range Organics	**ND**	78	NWTPH-Dx	11-14-12	11-14-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*121*	*50-150*				

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1114S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-14-12	11-14-12	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-14-12	11-14-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	11-044-02						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	U1
Lube Oil	**724**	**628**			14	NA	
Surrogate:							
o-Terphenyl			*105* *95*	*50-150*			

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-5 @ 10"**					
Laboratory ID:	11-066-01					
Naphthalene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
2-Methylnaphthalene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
1-Methylnaphthalene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthylene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Fluorene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Phenanthrene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Anthracene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Fluoranthene	**0.031**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Pyrene	**0.024**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]anthracene	**0.016**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Chrysene	**0.020**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[b]fluoranthene	**0.026**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo(j,k)fluoranthene	**0.011**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]pyrene	**0.018**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Indeno(1,2,3-c,d)pyrene	**0.015**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Dibenz[a,h]anthracene	**ND**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[g,h,i]perylene	**0.014**	0.011	EPA 8270D/SIM	11-13-12	11-13-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*43 - 116*				
Pyrene-d10	*75*	*33 - 124*				
Terphenyl-d14	*96*	*38 - 125*				

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-6 @ 10"**					
Laboratory ID:	11-066-02					
Naphthalene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Phenanthrene	**0.087**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Anthracene	**0.014**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Fluoranthene	**0.20**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Pyrene	**0.15**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Benzo[a]anthracene	**0.085**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Chrysene	**0.099**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Benzo[b]fluoranthene	**0.13**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Benzo(j,k)fluoranthene	**0.043**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Benzo[a]pyrene	**0.085**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Indeno(1,2,3-c,d)pyrene	**0.064**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Dibenz[a,h]anthracene	**0.014**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Benzo[g,h,i]perylene	**0.056**	0.0085	EPA 8270D/SIM	11-13-12	11-14-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*83*	*43 - 116*				
Pyrene-d10	*80*	*33 - 124*				
Terphenyl-d14	*102*	*38 - 125*				

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP-7 @ 10"**					
Laboratory ID:	11-066-03					
Naphthalene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
2-Methylnaphthalene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
1-Methylnaphthalene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthylene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Fluorene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Phenanthrene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Anthracene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Fluoranthene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Pyrene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]anthracene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Chrysene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]pyrene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270D/SIM	11-13-12	11-13-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*43 - 116*				
Pyrene-d10	*83*	*33 - 124*				
Terphenyl-d14	*105*	*38 - 125*				

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1113S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	11-13-12	11-13-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*43 - 116*				
Pyrene-d10	*81*	*33 - 124*				
Terphenyl-d14	*100*	*38 - 125*				

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	11-071-21										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0670**	**0.0673**	0.0833	0.0833	ND	80	81	47 - 99	0	30	
Acenaphthylene	**0.0734**	**0.0694**	0.0833	0.0833	ND	88	83	41 - 118	6	26	
Acenaphthene	**0.0729**	**0.0741**	0.0833	0.0833	ND	88	89	43 - 112	2	28	
Fluorene	**0.0749**	**0.0692**	0.0833	0.0833	ND	90	83	41 - 119	8	25	
Phenanthrene	**0.0727**	**0.0743**	0.0833	0.0833	ND	87	89	40 - 115	2	24	
Anthracene	**0.0770**	**0.0785**	0.0833	0.0833	ND	92	94	41 - 117	2	25	
Fluoranthene	**0.0810**	**0.0758**	0.0833	0.0833	ND	97	91	36 -128	7	26	
Pyrene	**0.0866**	**0.0765**	0.0833	0.0833	ND	104	92	36 - 123	12	24	
Benzo[a]anthracene	**0.0817**	**0.0842**	0.0833	0.0833	ND	98	101	33 - 126	3	26	
Chrysene	**0.0804**	**0.0813**	0.0833	0.0833	ND	97	98	35 - 123	1	25	
Benzo[b]fluoranthene	**0.0847**	**0.0769**	0.0833	0.0833	ND	102	92	30 - 125	10	28	
Benzo(j,k)fluoranthene	**0.0833**	**0.0850**	0.0833	0.0833	ND	100	102	31 - 122	2	30	
Benzo[a]pyrene	**0.0737**	**0.0763**	0.0833	0.0833	ND	88	92	29 - 125	3	28	
Indeno(1,2,3-c,d)pyrene	**0.0717**	**0.0786**	0.0833	0.0833	ND	86	94	28 - 125	9	27	
Dibenz[a,h]anthracene	**0.0719**	**0.0818**	0.0833	0.0833	ND	86	98	32 - 124	13	27	
Benzo[g,h,i]perylene	**0.0711**	**0.0779**	0.0833	0.0833	ND	85	94	30 - 120	9	26	
Surrogate:											
2-Fluorobiphenyl						*83*	*79*	*43 - 116*			
Pyrene-d10						*97*	*86*	*33 - 124*			
Terphenyl-d14						*91*	*92*	*38 - 125*			

Date of Report: November 15, 2012
Samples Submitted: November 8, 2012
Laboratory Reference: 1211-066
Project: T-6776

% MOISTURE

Date Analyzed: 11-13-12

Client ID	Lab ID	% Moisture
TP-5 @ 10"	11-066-01	39
TP-6 @ 10"	11-066-02	21
TP-7 @ 10"	11-066-03	36

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

Z -

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

APPENDIX E

GEOLOGIC INFORMATION

DocID 6837

Source: King County Roads (Renton)

~~KC Project No.~~ folder (ID#1) Misc. Consultants Soil Reports

~~Binder No.~~ Drawer (ID#2) Upstairs Cab 4 Drawer 1

Site Address Willows Rd & NE 110th St

Date Copied 7/30/01 By KMD

- ☑ **Title page with the following information:**
  - *Company (Author) name*
  - *Report date*
  - *Project Name*
  - *Company's job number*
  - *Site address*
- ☑ Executive Summary / Introduction of the report
- ☐ Table of contents
- ☐ Project Location Map / Vicinity Map
- ☑ **Site / Exploration Plans, Boring Location Plans**
- ☐ Cross-sections / Subsurface profiles
- ☑ **Exploration Logs**
- ☐ Monitoring Well Logs
- ☐ Cone Penetrometer Logs
- ☐ Groundwater Elevation Tables / Data

- ☐ Includes data from Previous Reports
- ☐ No new data / data review
- ☐ Missing Data / Illegible Data
  Explanation _____

Comments: _____

DAMES & MOORE

1911 DEXTER AVENUE NORTH • SEATTLE, WASHINGTON 98109 • (206) 284-9660
CABLE DAMEMORE TWX: 910-444-2021

September 25, 1972

Palmer Supply Company
250 Andover Park West
Tukwila, Washington 98168

Gentlemen:

Report of Roadway Subgrade Evaluation
Industrial Subdivision
Redmond, Washington

INTRODUCTION

This report summarizes the results of our investigation of soil and drainage conditions along roadway alignments in the western portion of your industrial subdivision in Redmond, Washington. The subdivision and the roadway layout is shown with respect to existing features on the Plot Plan, Plate 1.

The subdivision adjoins Willows Road and the Burlington Northern Railroad tracks on the west and extends eastward to the Sammamish River. Some of the lots in the western portion of the division have been developed and are served by gravel roadways. Primary access to the subdivision is by N. E. 90th Street which leaves Willows Road and runs eastward. Approximately the western 500 to 600 feet of this road has been developed with a gravel surface. The major north-south road through this portion of the subdivision will be 151st Avenue N. E. Approximately the southern 300 feet of this road now exists with a gravel surface. The remaining east-west roads will be N. E. 92nd Street and N. E. 95th Street. An additional street, 154th Place N. E., will eventually be developed in the eastern portion of the development. However, current plans anticipate developing only Division 1, which is approximately the western 60 to 70 percent of the total area. Division 1 will include a total of about 3,400 feet of roadways, including those portions which now exist and are surfaced with gravel.

We understand that none of the planned streets will be arterials. It is anticipated that, initially, they will provide service only to the industrial subdivision. Future development will probably lead to their extension to the north and south, but the City of Redmond does not expect this type of expansion to occur in the near future.

The subdivision will be occupied by light industry-type businesses. A significant amount of truck traffic, including some heavy axle loads, is anticipated.

The purpose of our work is to evaluate soil and drainage conditions along the roadway alignments in order to develop recommendations with regard to pavement design and embankment construction.

FIELD EXPLORATIONS AND LABORATORY TESTING

The site was explored by excavating 12 test pits with a tractor-mounted backhoe. The locations of the exploration points are shown on the Plot Plan, Plate 1. A detailed log of the soils encountered in each pit was maintained by our field representative, an engineering geologist. These logs are presented on Plate 2. The soils were classified in accordance with the Unified Soil Classification System which is described on Plate 3.

Laboratory testing was performed on relatively undisturbed samples and also bulk samples extracted from the test pits. Our testing included determinations of in-place density and field moisture content. This information is presented on Plate 4. One grain-size distribution analysis was performed; it indicated that the fine-grained surficial soils are composed almost entirely of silt-sized particles. A compaction test was carried out on a bulk sample of the granular soils which underlie the site. The results of this test are presented on Plate 5.

SITE CONDITIONS

The industrial development is located entirely on the Sammamish River floodplain. It is near the western side of the Sammamish Valley where the terrain has a very gentle slope down to the east and northeast. The total elevation change across Division 1 of the development is about 10 feet. The topographic nature of the site, together with its general location, suggests that it may actually lie on an alluvial fan built into the valley by a small tributary stream.

The area has generally good surface drainage, with the exception of local shallow depressions, and most of our test pits did not encounter a groundwater table to depths of 8 to 12 feet. Test Pit 5, adjacent to the Rawson Boat Company property, encountered groundwater at a depth of 4 feet. We would expect that the groundwater level probably rises somewhat during the wet winter season.

The surficial soil profile in the project area generally consists of a layer of sod and topsoil overlying sand and gravel. This general profile is complicated in some areas by a layer of volcanic ash which occurs at varying but shallow depth. In addition, Test Pit 1, in the southwest portion of the development, encountered somewhat different subsurface conditions.

Where the ash layer is not present, the gravel formation is covered by ½ to 2 feet of sod and organic silty topsoil. This condition was encountered

TEST PIT 1

0' - ½' GRAY SAND AND GRAVEL (FILL)
½' - 2' GRAY MEDIUM TO COARSE SAND (LOOSE)
2' - 6' GRAY SILT AND CLAYEY SILT WITH ORGANIC MATTER (MODERATELY FIRM)
6' - 6½' GRAY MEDIUM TO COARSE SAND (MODERATELY COMPACT)
6½' - 8' DARK BROWN ORGANIC SILT AND PEAT (MODERATELY SOFT)
8' - 9' GRAY SILTY SAND AND GRAVEL (COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED
UNDISTURBED SAMPLES TAKEN AT 2½' & 8½'

TEST PIT 2

0' - ½' SOD MAT
½' - 1½' BROWN SAND AND GRAVEL (MODERATELY LOOSE)
1½' - 3' LIGHT GRAY CLAYEY SILT (FIRM) (VOLCANIC ASH)
3' - 12' GRAYISH BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED
UNDISTURBED SAMPLE TAKEN AT 2½'

TEST PIT 3

0' - 2' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
2' - 5' GRAY SANDY CLAYEY SILT (MODERATELY FIRM)
GRADES WITH OCCASIONAL GRAVEL AT 3½'
5' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
8' - 11' BROWN MEDIUM TO COARSE SAND (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED
UNDISTURBED SAMPLE TAKEN AT 2½'

TEST PIT 4

0' - 1' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
1' - 2' LIGHT GRAY CLAYEY SILT WITH OCCASIONAL ORGANIC MATTER (FIRM) (VOLCANIC ASH)
2' - 10' GRAY SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED
UNDISTURBED SAMPLE TAKEN AT 1½'

TEST PIT 5

0' - ½' SOD MAT
½' - 2½' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
2½' - 3½' LIGHT GRAY CLAYEY SILT WITH OCCASIONAL ORGANIC MATTER (FIRM) (VOLCANIC ASH)
3½' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
WATER LEVEL AT 4'
UNDISTURBED SAMPLE TAKEN AT 3'
BULK SAMPLE TAKEN AT 7½'

TEST PIT 6

0' - ½' SOD MAT
½' - 2½' LIGHT GRAYISH BROWN CLAYEY SILT WITH OCCASIONAL ORGANIC MATTER (FIRM) (VOLCANIC ASH)
2½' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED
UNDISTURBED SAMPLE TAKEN AT 1'

TEST PIT 7

0' - 1' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
1' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
GRADES TO GRAY IN COLOR AT 5'
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

TEST PIT 8

0' - 2' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
2' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

TEST PIT 9

0' - 1' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
1' - 7½' BROWN SLIGHTLY SILTY SAND AND GRAVEL (MODERATELY COMPACT)
GRADES TO CLEAN SAND AND GRAVEL AT 4'
GRADES TO GRAY IN COLOR AT 7'
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

TEST PIT 10

0' - 1' SOD AND ORGANIC RICH SILT (MODERATELY LOOSE) (TOPSOIL)
1' - 11' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

TEST PIT 11

0' - ½' SOD MAT
½' - 3' BROWN SILTY SAND AND GRAVEL (MODERATELY COMPACT)
3' - 9½' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
GRADES TO GRAY IN COLOR AT 6½'
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

TEST PIT 12

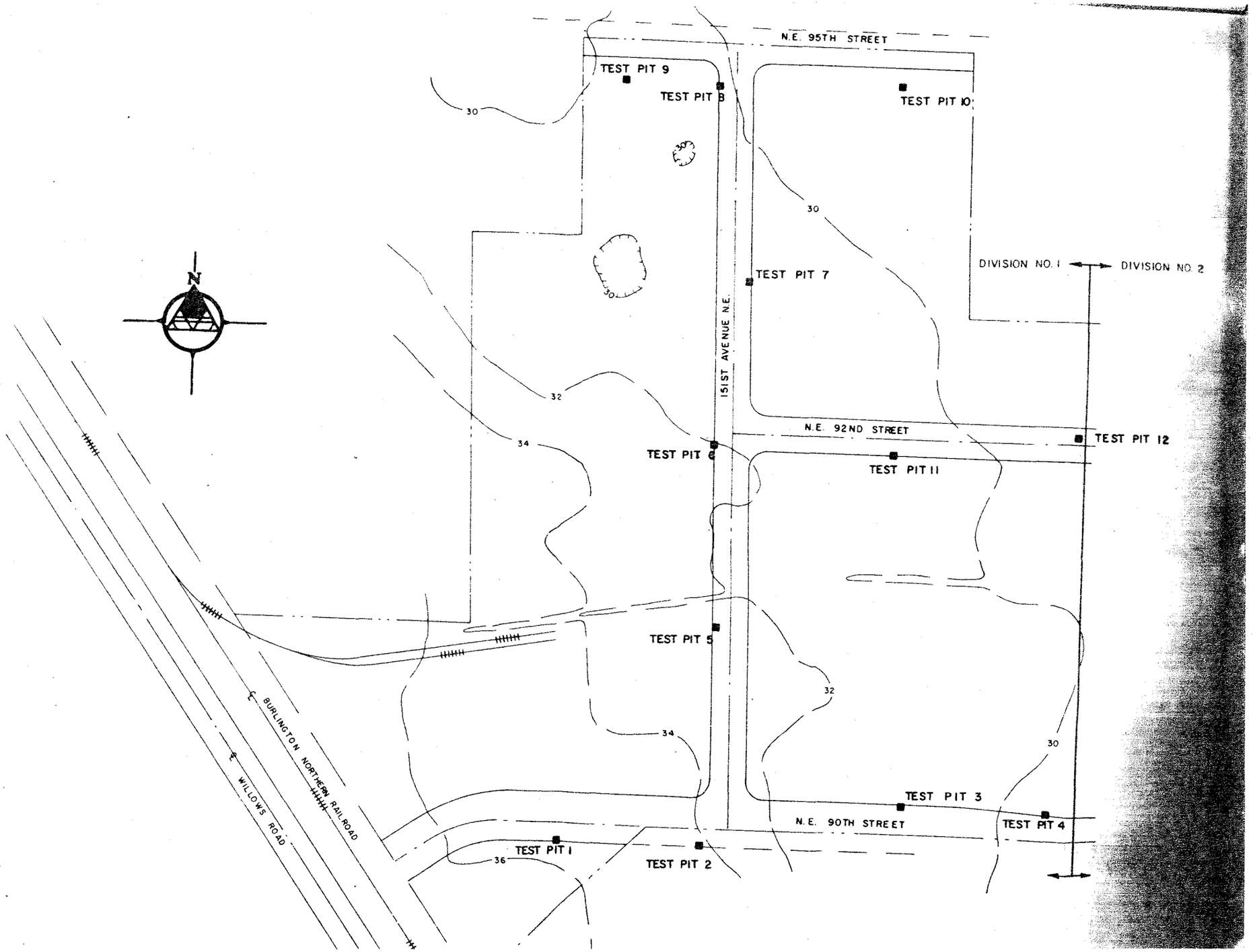
0' - ½' SOD MAT
½' - 8' BROWN SAND AND GRAVEL (MODERATELY COMPACT)
TEST PIT COMPLETED 9-18-72
NO WATER ENCOUNTERED

THE DISCUSSION IN THE TEXT OF THIS REPORT IS NECESSARY TO A PROPER UNDERSTANDING OF THE NATURE OF THE SUBSURFACE MATERIALS.

LOG OF TEST PITS

DAMES & MOORE

PLATE 2


N.E. 95TH STREET
TEST PIT 9
TEST PIT 8
TEST PIT 10
30
30
30
DIVISION NO. 1
DIVISION NO. 2
TEST PIT 7
151ST AVENUE N.E.
32
N.E. 92ND STREET
TEST PIT 12
34
TEST PIT 6
TEST PIT 11
TEST PIT 5
32
34
30
TEST PIT 3
N.E. 90TH STREET
TEST PIT 4
TEST PIT 1
TEST PIT 2
36
℄ BURLINGTON NORTHERN RAILROAD
℄ WILLOWS ROAD
N

DocID 04484

Source: Redmond Public Works

Local ID#1 NC

Local ID#2 02-05

Site Address 9449 151st Ave NE

Date Copied 6/1/2002 By SW

- [x] **Title page with the following information:**
  - *Company (Author) name*
  - *Report date*
  - *Project Name*
  - *Company's job number*
  - *Site address*
- [x] Executive Summary / Introduction of the report
- [ ] Table of contents
- [ ] Project Location Map / Vicinity Map
- [x] **Site / Exploration Plans, Boring Location Plans**
- [ ] Cross-sections / Subsurface profiles
- [x] **Exploration Logs**
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- [ ] Groundwater Elevation Tables / Data

- [ ] Includes data from Previous Reports
- [ ] No new data / data review
- [ ] Missing Data / Illegible Data
  Explanation _____

Comments: _____

GEOTECH
CONSULTANTS, INC.

13256 N.E. 20th St. (Northup Way), Suite 16
Bellevue, WA 98005
(206) 747-5618
FAX 747-8561

(6484)

December 17, 1993

JN 93371

The Hirai Family
c/o David Kehle Architects
12878 Interurban Avenue South
Seattle, Washington 98168

PERMIT # 4216-94

4/4

Attention: David Kehle

Subject: Geotechnical Engineering Study
Proposed Hirai Building
South of 9449 - 151st Avenue Northeast
Redmond, Washington

Dear Mr. Kehle:

We are pleased to present this geotechnical engineering report for the proposed office/warehouse to be constructed in Redmond, Washington. The purpose of our work was to explore site surface and subsurface conditions, and to provide general earthwork recommendations and design criteria for foundations, and pavements. The work was authorized by the acceptance of our proposal, P-3154 dated November 3, 1993.

The subsurface conditions of the proposed building site were explored with four test pits. Below the surficial organic soils and 1 to 2 feet of loose fill, the explorations encountered loose native sand and gravel which became medium-dense at depths of 2 to 4 feet below the current ground surface. The proposed structure can be supported by conventional footings bearing on the native sand and gravel soils following recompaction of the excavated footing subgrade.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or if we can be of further assistance during the design phase of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

Marc R. McGinnis

Marc R. McGinnis P.E.
Associate

GEOTECHNICAL ENGINEERING STUDY

PROPOSED HIRAI BUILDING
SOUTH OF 9449-151ST AVENUE NORTHEAST
REDMOND, WASHINGTON

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed office/warehouse building in Redmond, Washington. The general location of the site is illustrated on the Vicinity Map, Plate 1.

Because the property development is in the planning stage, detailed plans were not made available to us. The plan provided to us included the location of the existing northern building, two proposed building footprints, and proposed parking areas. No site topography, existing or proposed, was shown on the plan.

SITE CONDITIONS

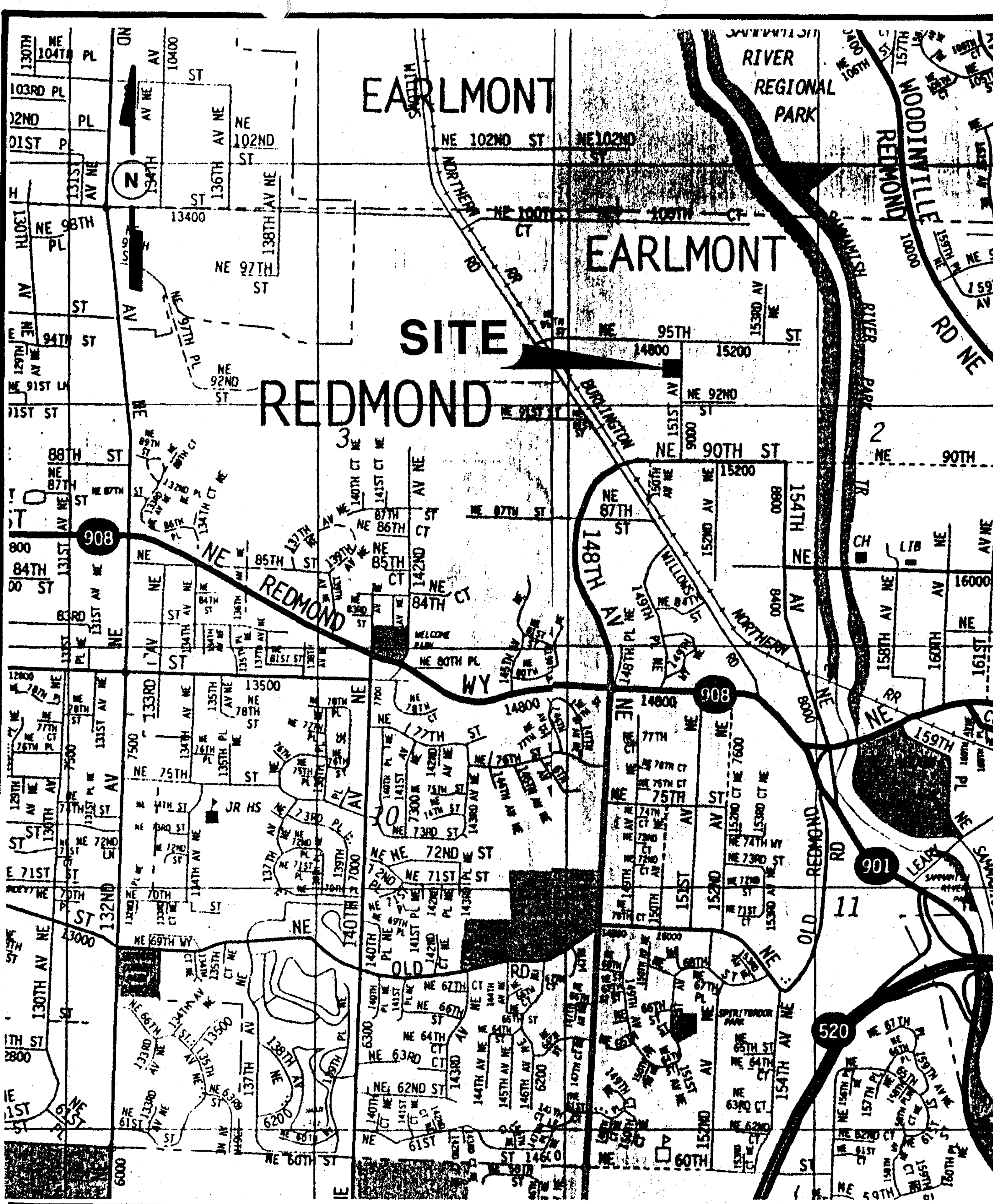
SURFACE

The 35,690-square-foot rectangular site has approximately 158 feet of frontage along 151st Avenue Northeast to the east and is approximately 226 feet deep. The subject property slopes slightly from the edge of the existing parking area downward to the south. A small pile of gravel, some asphalt debris, and some yard waste has been dumped about the site, and the remainder of the site is covered with low weeds.

The northern neighboring office/warehouse structure and parking area actually extend about 40 feet onto the northern portion of the subject property. Office/warehouse buildings are located to the south and west of the site, and the site is bordered along the east by 151st Avenue Northeast.

SUBSURFACE

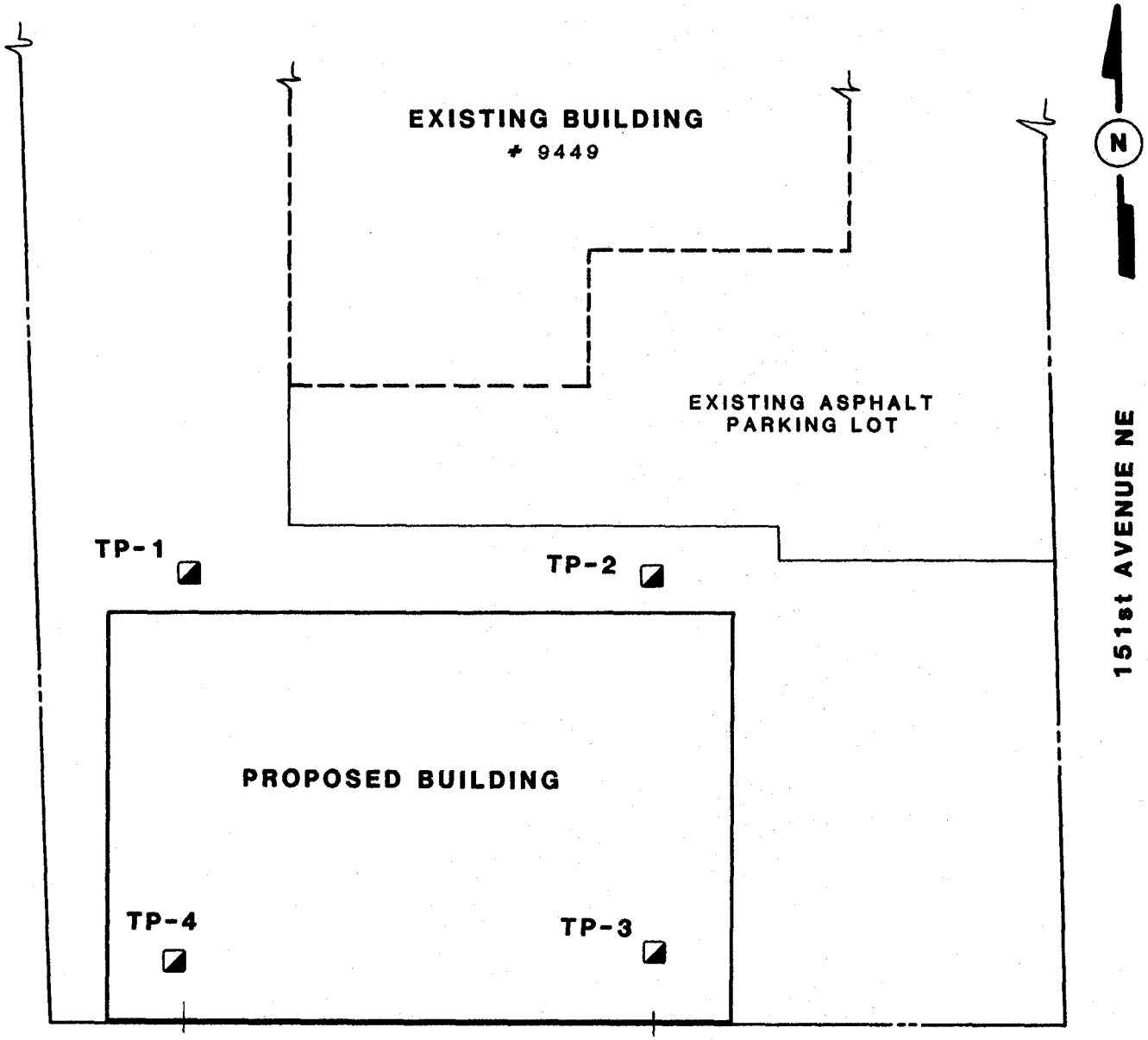
The subsurface conditions were explored by four test pits at the approximate locations shown on the Site Exploration Plan, Plate 2. The field exploration program was based upon the proposed construction and required design criteria, site



GEOTECH CONSULTANTS

VICINITY MAP
SOUTH OF
9449 151st AVEUNE NE
REDMOND, WA

Job No.:	Date:		Plate:
93371	DEC 1993		1



1" = 32'

LEGEND:

◪ APPROXIMATE TEST PIT LOCATIONS

GEOTECH
CONSULTANTS

SITE EXPLORATION PLAN
SOUTH OF
9449 151st AVEUNE NE
REDMOND, WA

Job No.:	Date:		Plate:
93371	DEC 1993	NTS	2

TEST PIT 1

Depth(ft.)	Moisture Content	USCS	Description
0	21.0	FILL	Dark brown, gravelly, sandy SILT, very wet, loose (FILL)
5	7.9	SP	Brown to gray, gravelly, coarse to medium grained SAND with traces of silt, moist, loose -becomes gray, medium dense, more gravel -becomes medium to fine grained, wet, no gravel
10			
15			

Test pit terminated at 9.0 feet below grade on 12-7-93
No groundwater encountered during excavation.
Slight to moderate caving below 4 feet.

TEST PIT 2

Depth(ft.)	Moisture Content	USCS	Description
0	7.5	FILL	Dark brown to orangish brown, gravelly, slightly sandy SILT, wet, loose (FILL)
5	6.0	GP	Brown to reddish brown, sandy GRAVEL, wet, medium dense -becomes gray with traces of silt
10		SP	Gray, coarse to medium grained SAND with traces of gravel, very moist, medium dense
15			

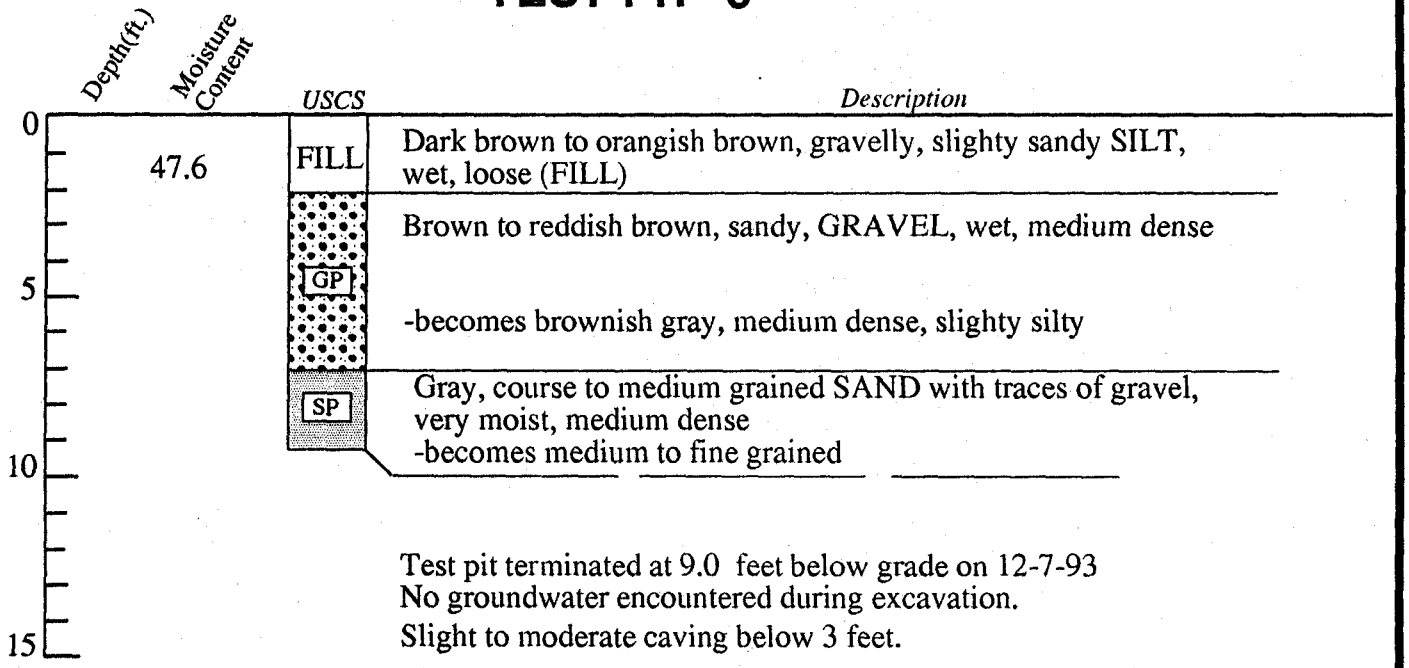
Test pit terminated at 10.0 feet below grade on 12-7-93
No groundwater encountered during excavation.
Moderate caving below 3 feet.

GEOTECH
CONSULTANTS, INC.

TEST PIT LOGS
SOUTH OF
9449 151st AVENUE NE
REDMOND, WA

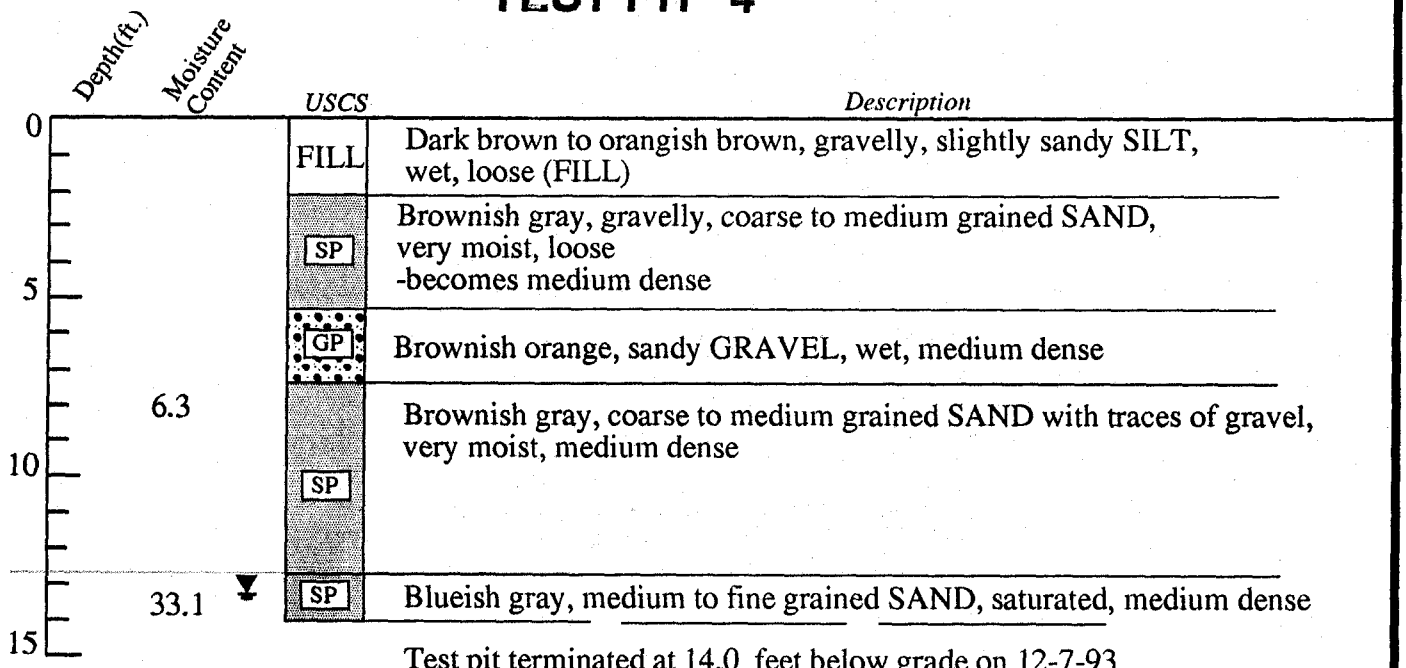
Job No:	Date:	Logged by:	Plate:
93371	DEC 1993	JHS	3

TEST PIT 3



Test pit terminated at 9.0 feet below grade on 12-7-93
No groundwater encountered during excavation.
Slight to moderate caving below 3 feet.

TEST PIT 4



Test pit terminated at 14.0 feet below grade on 12-7-93
Groundwater was encountered at 13.5 during excavation.
Slight to moderate caving below 3 feet.

GEOTECH
CONSULTANTS, INC.

TEST PIT LOGS
SOUTH OF
9449 151st AVENUE NE
REDMOND, WA

Job No:	Date:	Logged by:	Plate:
93371	DEC 1993	JHS	4

DocID 6497

Source: Redmond Public Works

Local ID#1 NO

Local ID#2 P305

Site Address 15135 NE 90th St

Date Copied 6/10/02 By SW

- [x] **Title page with the following information:**
  - *Company (Author) name*
  - *Report date*
  - *Project Name*
  - *Company's job number*
  - *Site address*
- [ ] Executive Summary / Introduction of the report
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- [ ] Missing Data / Illegible Data
  Explanation _____

Comments: _____

DODDS
GEOSCIENCES INC.

Post Office Box 6966
Bellevue, WA 98008-0966
Telephone (206) 867-3297
Facsimile (206) 881-8641

6497

John J. Price, Inc.
2815 - 2nd Avenue, Suite 370
Seattle, WA 98121

Job Number 6034
April 19, 1996

Attention: John J. Price

Subject: Geotechnical Engineering Report
Northwest Manufacturing Addition
15135 Northeast 92nd Street
Redmond, Washington

Dear Client:

We are pleased to present this Geotechnical Engineering Report for the proposed addition to the Northwest Manufacturing Structure at 15135 Northeast 92nd Street in Redmond, Washington. The purposes of our work were to professionally evaluate subsurface soil and groundwater conditions, recommend general procedures for the grading and underslab treatment in the buildings, and recommend bearing capacities for shallow wall footings. The scope of our services included:

1) Logging and sampling two test borings drilled to a depth of fourteen feet below existing grades. The test borings were located in a manner to provide broad coverage of the proposed building site. The test borings were drilled with a truck-mounted drill rig and logged by a geotechnical engineer. Selected samples were taken of subsurface soils.

2) Reviewing collected soil samples in our office and assigning appropriate laboratory tests consisting of moisture content and sieve gradation tests. At the conclusion of the testing program, laboratory results were analyzed and compared with field notes and logs.

3) Preparation of this summary report in accordance with our understanding of project requirements, and generally recognized geotechnical engineering practices. No other warranty is expressed or implied. Plate 1, attached, provides the guidelines in the use of this report.

Project Understandings

This office was provided with a Site Plan which documented lot dimensions, the approximate location of the new addition with building dimensions, and existing conditions. Our knowledge of this project is generally limited to the information contained on these sheets and our discussions with Mr. John J. Price.

We anticipate the new structure will be a concrete tilt-up structure with a concrete slab-on-grade. We anticipate the lower finish floor of the structure will be near existing grades. Finish grades around the exterior of the structure will also remain near existing grades. If our understandings are incorrect, a revision of this report may be necessary.

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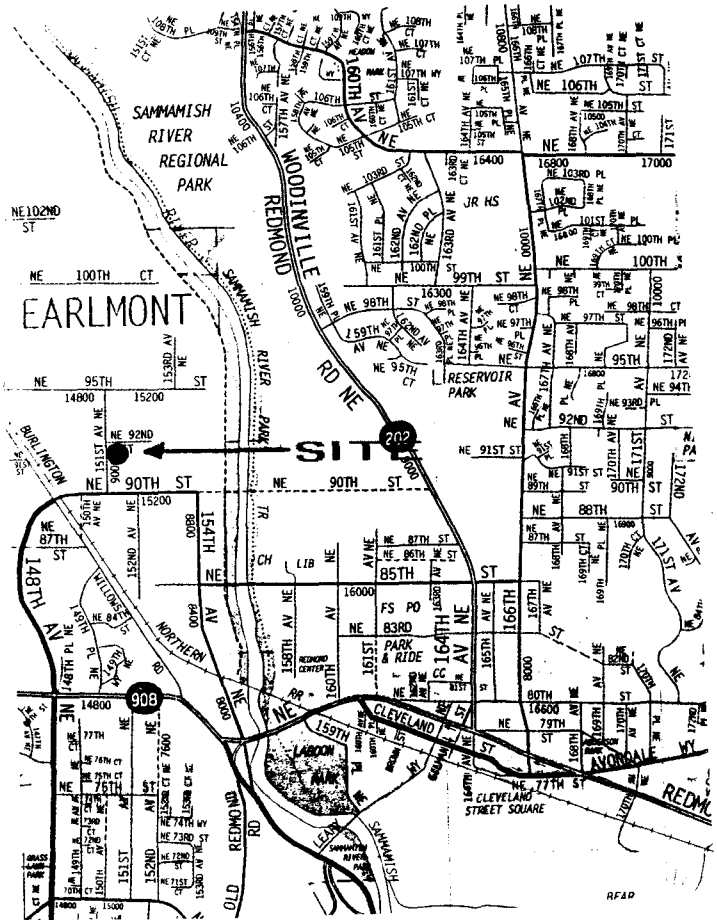
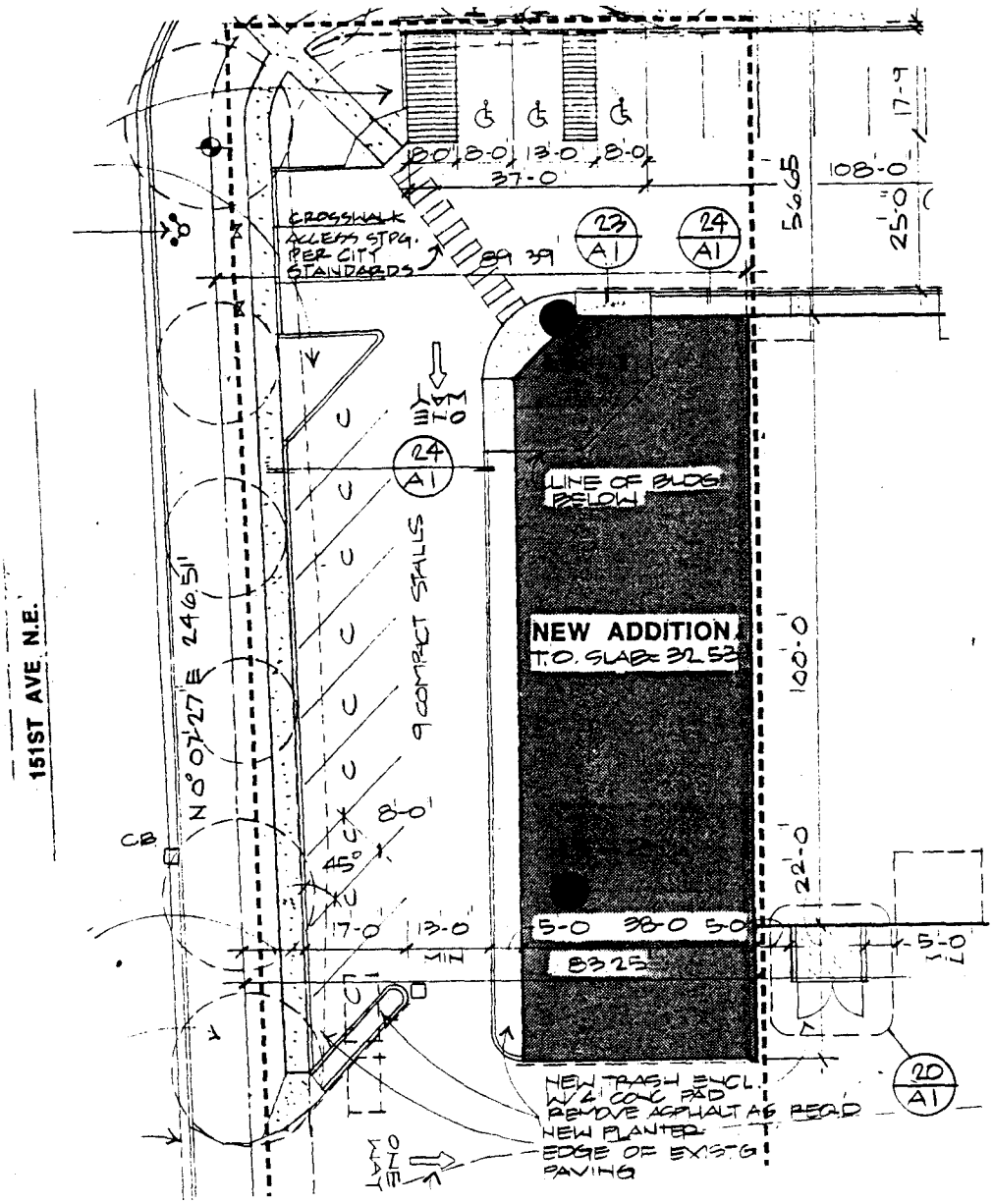


Job Number 6034 - Plate 2
Vicinity Map
NW Manufacturing Addition
15135 NE 92nd
Redmond, Washington

DODDS GEOSCIENCES INC.

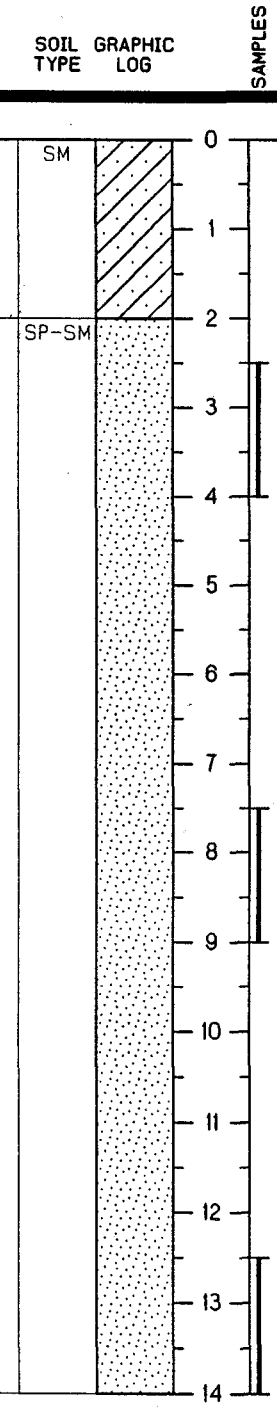


Job Number 6034 - Plate 3
Site Plan
NW Manufacturing Addition
15135 NE 92nd
Redmond, Washington

Hole No. B-1

PROJECT: 15135 NE 92nd, Redmond
DRILL RIG: Truck-Mounted
HOLE DIA: 8 in.
INITIAL WATER DEPTH: 10.5 ft.
FINAL WATER DEPTH: 10.5 ft.

DATE DRILLED: 4/15/96
LOGGED BY: Denny Green
SAMPLER: SPT
HOLE ELEV: ± Adjacent Road
TOTAL DEPTH: 14.0 ft.



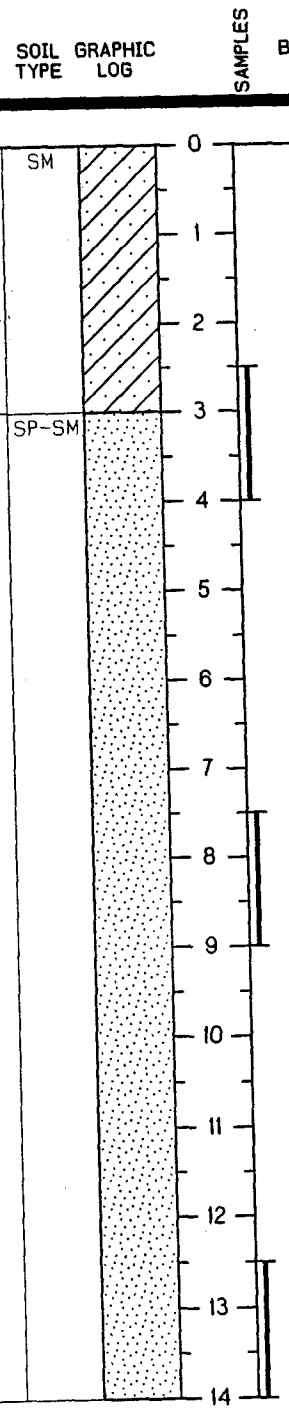
DESCRIPTION	SOIL TYPE	GRAPHIC LOG	BLOWS /Ft.	REMARKS
Surface – 2" Asphalt underlain with 8" base course. Dark brown Clayey Silty Sand with Gravel, moist, loose.	SM			
Brown Gravelly Sand with some Silt, moist, medium-dense.	SP-SM		15	Moisture Content = 12.9%
with lenses of Clayey Silt.			25	Moisture Content = 5.4%
Groundwater table at 10.5 feet.				
becomes sandier and dense.			37	Moisture Content = 13.2%

Bottom of Boring 1. Groundwater table near 10.5 feet during drilling.

Hole No. B-2

PROJECT: 15135 NE 92nd, Redmond
DRILL RIG: Truck-Mounted
HOLE DIA: 8 in.
INITIAL WATER DEPTH: 12.0 ft.
FINAL WATER DEPTH: 12.0 ft.

DATE DRILLED: 4/15/96
LOGGED BY: Denny Green
SAMPLER: SPT
HOLE ELEV: ± Adjacent Road
TOTAL DEPTH: 14.0 ft.



DESCRIPTION	SOIL TYPE	BLOWS /Ft.	REMARKS
Surface – 2" Asphalt underlain with 4" base course. Dark brown Clayey Silty Sand with some Gravel, moist, medium-dense.	SM		
Brown Gravelly Sand with some Silt, moist to wet, medium-dense.	SP-SM	17	Moisture Content = 18.4%
		15	Moisture Content = 6.3%
Groundwater table at 12.0 feet.			
becomes dense.		34	Moisture Content = 16.1%
Bottom of Boring 2. Groundwater table near 12.0 feet during drilling.			

APPENDIX F

ANALYTICAL TESTING-CUTTING OIL

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

December 6, 2012

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1211-205

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on November 28, 2012.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 6, 2012
Samples Submitted: November 28, 2012
Laboratory Reference: 1211-205
Project: 6776

Case Narrative

Samples were collected on November 27, 2012 and received by the laboratory on November 28, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

cPAHs EPA 8270D/SIM Analysis

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

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

Date of Report: December 6, 2012
Samples Submitted: November 28, 2012
Laboratory Reference: 1211-205
Project: 6776

cPAHs by EPA 8270D/SIM

Matrix: Liquid
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Cutting Oil Sample #1**					
Laboratory ID:	11-205-01					
Benzo[a]anthracene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Chrysene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Benzo[b]fluoranthene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Benzo(j,k)fluoranthene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Benzo[a]pyrene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Indeno(1,2,3-c,d)pyrene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Dibenz[a,h]anthracene	**ND**	3.9	EPA 8270D/SIM	12-4-12	12-5-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*43 - 116*				
Pyrene-d10	*65*	*33 - 124*				
Terphenyl-d14	*100*	*38 - 125*				

Date of Report: December 6, 2012
Samples Submitted: November 28, 2012
Laboratory Reference: 1211-205
Project: 6776

cPAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Liquid
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1204P1					
Benzo[a]anthracene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Chrysene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Benzo[b]fluoranthene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Benzo(j,k)fluoranthene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Benzo[a]pyrene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Indeno(1,2,3-c,d)pyrene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Dibenz[a,h]anthracene	**ND**	4.0	EPA 8270D/SIM	12-4-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*105*	*43 - 116*				
Pyrene-d10	*105*	*33 - 124*				
Terphenyl-d14	*138*	*38 - 125*				Q

Date of Report: December 6, 2012
Samples Submitted: November 28, 2012
Laboratory Reference: 1211-205
Project: 6776

cPAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Liquid
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1204P1									
	SB	SBD	SB	SBD	SB	SBD				
Benzo[a]anthracene	**148**	**149**	125	125	118	120	60 - 130	1	13	
Chrysene	**122**	**127**	125	125	98	102	60 - 130	4	11	
Benzo[b]fluoranthene	**130**	**151**	125	125	104	120	60 - 130	15	19	
Benzo(j,k)fluoranthene	**138**	**145**	125	125	110	116	60 - 130	5	22	
Benzo[a]pyrene	**140**	**152**	125	125	112	122	60 - 130	8	16	
Indeno(1,2,3-c,d)pyrene	**120**	**140**	125	125	96	112	60 - 130	15	16	
Dibenz[a,h]anthracene	**132**	**132**	125	125	106	106	60 - 130	0	15	
Surrogate:										
2-Fluorobiphenyl					*96*	*100*	*43 - 116*			
Pyrene-d10					*90*	*100*	*33 - 124*			
Terphenyl-d14					*125*	*117*	*38 - 125*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

Z -

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

Chain of Custody

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

Company: Terra Associates Inc.
Project Number: 6776
Project Name:
Project Manager:
Sampled by:

Turnaround Request (in working days)

(Check One)

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

☒ hold
(other)

Laboratory Number: 11-205

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs) PLI 12/4/12	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	% Moisture
1	~~Secret Wonderland~~ CUTTING OIL SAMPLE #1 PLI 12/4/12	11/27/12		liquid	7							X										

	Signature	Company	Date	Time
Relinquished		Terra Associates Inc	11/28/12	11:00
Received		OSE	11/28/12	1100
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

December 27, 2012

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

Re: Analytical Data for Project VCO
Laboratory Reference No. 1212-143

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 20, 2012.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 27, 2012
Samples Submitted: December 20, 2012
Laboratory Reference: 1212-143
Project: VCO

Case Narrative

Samples were collected on December 20, 2012 and received by the laboratory on December 20, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Date of Report: December 27, 2012
Samples Submitted: December 20, 2012
Laboratory Reference: 1212-143
Project: VCO

PAHs by EPA 8270D/SIM

Matrix: Liquid
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**#2**					
Laboratory ID:	12-143-01					
Naphthalene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
2-Methylnaphthalene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
1-Methylnaphthalene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Acenaphthylene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Acenaphthene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Fluorene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Phenanthrene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Anthracene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Fluoranthene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Pyrene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[a]anthracene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Chrysene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[b]fluoranthene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo(j,k)fluoranthene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[a]pyrene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Indeno(1,2,3-c,d)pyrene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Dibenz[a,h]anthracene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[g,h,i]perylene	**ND**	3.8	EPA 8270D/SIM	12-26-12	12-26-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*97*	*70 - 130*				
Pyrene-d10	*87*	*70 - 130*				
Terphenyl-d14	*72*	*70 - 130*				

Date of Report: December 27, 2012
Samples Submitted: December 20, 2012
Laboratory Reference: 1212-143
Project: VCO

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Liquid
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1226P1					
Naphthalene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
2-Methylnaphthalene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
1-Methylnaphthalene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Acenaphthylene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Acenaphthene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Fluorene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Phenanthrene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Anthracene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Fluoranthene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Pyrene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[a]anthracene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Chrysene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[b]fluoranthene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo(j,k)fluoranthene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[a]pyrene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Indeno(1,2,3-c,d)pyrene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Dibenz[a,h]anthracene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Benzo[g,h,i]perylene	**ND**	4.0	EPA 8270D/SIM	12-26-12	12-26-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*99*	*70 - 130*				
Pyrene-d10	*112*	*70 - 130*				
Terphenyl-d14	*117*	*70 - 130*				

Date of Report: December 27, 2012
Samples Submitted: December 20, 2012
Laboratory Reference: 1212-143
Project: VCO

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Liquid
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1226P1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**134**	**126**	125	125	107	101	70 - 130	6	20	
Acenaphthylene	**135**	**131**	125	125	108	105	70 - 130	3	20	
Acenaphthene	**132**	**129**	125	125	106	103	70 - 130	2	20	
Fluorene	**139**	**142**	125	125	111	114	70 - 130	2	20	
Phenanthrene	**123**	**129**	125	125	98	103	70 - 130	5	20	
Anthracene	**128**	**143**	125	125	102	114	70 - 130	11	20	
Fluoranthene	**140**	**145**	125	125	112	116	70 - 130	4	20	
Pyrene	**140**	**151**	125	125	112	121	70 - 130	8	20	
Benzo[a]anthracene	**153**	**152**	125	125	122	122	70 - 130	1	20	
Chrysene	**112**	**120**	125	125	90	96	70 - 130	7	20	
Benzo[b]fluoranthene	**140**	**139**	125	125	112	111	70 - 130	1	20	
Benzo(j,k)fluoranthene	**105**	**120**	125	125	84	96	70 - 130	13	20	
Benzo[a]pyrene	**131**	**137**	125	125	105	110	70 - 130	4	20	
Indeno(1,2,3-c,d)pyrene	**107**	**129**	125	125	86	103	70 - 130	19	20	
Dibenz[a,h]anthracene	**103**	**121**	125	125	82	97	70 - 130	16	20	
Benzo[g,h,i]perylene	**104**	**124**	125	125	83	99	70 - 130	18	20	
Surrogate:										
2-Fluorobiphenyl					*108*	*96*	*70 - 130*			
Pyrene-d10					*104*	*112*	*70 - 130*			
Terphenyl-d14					*108*	*116*	*70 - 130*			

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

Z -

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

Chain of Custody

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

Company: Terra Associates Inc
Project Number: #
Project Name: UCO
Project Manager: Chuck Lio
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 12-143

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	#2	12/20/12	8:00	liquid	1								X													

	Signature	Company	Date	Time
Relinquished		TAI	12/20/12	10:25
Received			12/20/12	1025
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

APPENDIX G

TRUCK TICKET

CEMEX

ENERGY STAR PARTNER

INVOICE

CEMEX Construction Materials Pacific, LLC
Rinker Materials Nevada
Associated Sand & Gravel

Date	12/18/13
Invoice No.	9427616437
Reference No.	

Terms: Net 20th prox **Please note change of terms**

Payment Due On 01/20/14
Job No. 13857306
Legal Address: REDMOND TERRA
Customer Job No. REDMOND TERRA
Account: 3165846

Remit To:

CEMEX
PO Box 100497
Pasadena, CA 91189-0497

For All Inquiries Call: 800-355-2772

D01150

IO ENVIRONMENTAL & INFRASTRUCTURE INC
2840 ADAMS AVE STE 301
SAN DIEGO, CA 92116-1405

CEMEX
PO Box 2037
Everett, WA 98213-2037

PO Number	Delivery Address	City	Zip Code

DATE SHIPPED	DELIVERY NUMBER	REF#	PRODUCT CODE	PRODUCT DESCRIPTION	DELIVERED QTY	DELIVERED UOM	NET UNIT PRICE	PRICED BY	PRICED UOM	PRICED UNITS	MATERIAL AMOUNT	FREIGHT
040-017-002			REDMOND TERRA					EVERETT				98203
12/18/13	8060479094	1876069086	1192508	CLASS 3 SOIL DUMPED BY TON	14.870	TON	38.50	1 TON	TON	14.870	572.50	0.00

PO Subtotal: 0.00 Yards 14.87 Tons 572.50 Material 0.00 Freight 20.61 Oil 20.61 Other 0.00 Tax 593.11 Total

1655 1653
040-018-0057
1/1
12/30/13

RECEIVED
DEC 26 2013

Yards	0.00	Tons	14.87	Freight Total	0.00	Other	20.61	Sales Tax Total	otal	0.00	Invoice Total	593.11

PAGE # 1

APPENDIX H
REMEDIAL EXCAVATION SOIL SAMPLING AND LABORATORY TEST REPORTS

Field sampling was done on December 18, 2013 during the removal of the cPAH impacted soils. Prior to the excavation of soils at the location of the release, a standard underground utility location request was made, and a private locate was conducted to identify the underground utilities that cross beneath the location of the release. It was found that a series of high voltage power line extends east-west through the location of the release. Soil samples were taken from the sidewalls and base of the excavation by entering the excavation. The excavation was shallow and direct entry was safe.

All samples were put into laboratory prepared glassware and refrigerated pending delivery to the analytical laboratory of OnSite Environmental. Chain of Custody protocols were followed.

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

December 19, 2013

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1312-130

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 18, 2013.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

Case Narrative

Samples were collected on December 18, 2013 and received by the laboratory on December 18, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Benzene EPA 8260C Analysis

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

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

Total Metals EPA 6010C Analysis

Due to the high concentration of aluminum in the QC sample, the amount spiked was insufficient for meaningful MS/MSD recovery data. The Spike Blank recovery was 106%.

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

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

BENZENE
EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-1**					
Laboratory ID:	12-130-01					
Benzene	ND	0.0012	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*115*	*65-129*				
Toluene-d8	*111*	*77-122*				
4-Bromofluorobenzene	*98*	*73-124*				
Client ID:	**12-18-2**					
Laboratory ID:	12-130-02					
Benzene	ND	0.0013	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*65-129*				
Toluene-d8	*110*	*77-122*				
4-Bromofluorobenzene	*88*	*73-124*				
Client ID:	**12-18-3**					
Laboratory ID:	12-130-03					
Benzene	ND	0.0013	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*86*	*73-124*				
Client ID:	**12-18-4**					
Laboratory ID:	12-130-04					
Benzene	ND	0.0012	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*114*	*65-129*				
Toluene-d8	*112*	*77-122*				
4-Bromofluorobenzene	*93*	*73-124*				
Client ID:	**12-18-5**					
Laboratory ID:	12-130-05					
Benzene	ND	0.00099	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*106*	*77-122*				
4-Bromofluorobenzene	*93*	*73-124*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

BENZENE
EPA 8260C

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-6**					
Laboratory ID:	12-130-06					
Benzene	ND	0.0013	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*65-129*				
Toluene-d8	*110*	*77-122*				
4-Bromofluorobenzene	*95*	*73-124*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

BENZENE
EPA 8260C
QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1218S2					
Benzene	ND	0.0010	EPA 8260C	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*105*	*77-122*				
4-Bromofluorobenzene	*95*	*73-124*				

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1218S2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0589**	**0.0564**	0.0500	0.0500	118	113	56-141	4	15	
Benzene	**0.0545**	**0.0520**	0.0500	0.0500	109	104	70-121	5	15	
Trichloroethene	**0.0553**	**0.0532**	0.0500	0.0500	111	106	74-118	4	15	
Toluene	**0.0535**	**0.0511**	0.0500	0.0500	107	102	75-120	5	15	
Chlorobenzene	**0.0538**	**0.0521**	0.0500	0.0500	108	104	75-120	3	15	
Surrogate:										
Dibromofluoromethane					*109*	*108*	*65-129*			
Toluene-d8					*106*	*104*	*77-122*			
4-Bromofluorobenzene					*94*	*92*	*73-124*			

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-1**					
Laboratory ID:	12-130-01					
Diesel Range Organics	**ND**	32	NWTPH-Dx	12-18-13	12-19-13	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**12-18-2**					
Laboratory ID:	12-130-02					
Diesel Range Organics	**ND**	34	NWTPH-Dx	12-18-13	12-19-13	
Lube Oil Range Organics	**ND**	68	NWTPH-Dx	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				
Client ID:	**12-18-3**					
Laboratory ID:	12-130-03					
Diesel Range Organics	**ND**	33	NWTPH-Dx	12-18-13	12-18-13	
Lube Oil	**160**	66	NWTPH-Dx	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**12-18-4**					
Laboratory ID:	12-130-04					
Diesel Range Organics	**ND**	33	NWTPH-Dx	12-18-13	12-18-13	
Lube Oil Range Organics	**ND**	67	NWTPH-Dx	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				
Client ID:	**12-18-5**					
Laboratory ID:	12-130-05					
Diesel Range Organics	**ND**	28	NWTPH-Dx	12-18-13	12-18-13	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*113*	*50-150*				
Client ID:	**12-18-6**					
Laboratory ID:	12-130-06					
Diesel Range Organics	**ND**	34	NWTPH-Dx	12-18-13	12-18-13	
Lube Oil Range Organics	**ND**	68	NWTPH-Dx	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1218S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	12-18-13	12-18-13	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	12-18-13	12-18-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*112*	*50-150*				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	12-130-01							
	ORIG	DUP						
Diesel Range Organics	**ND**	**ND**				NA	NA	
Lube Oil Range Organics	**ND**	**ND**				NA	NA	
Surrogate:								
o-Terphenyl			*96*	*94*	*50-150*			

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-1**					
Laboratory ID:	12-130-01					
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*75*	*43 - 116*				
Pyrene-d10	*83*	*33 - 124*				
Terphenyl-d14	*81*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-2**					
Laboratory ID:	12-130-02					
Benzo[a]anthracene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0090	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*43 - 116*				
Pyrene-d10	*73*	*33 - 124*				
Terphenyl-d14	*70*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-3**					
Laboratory ID:	12-130-03					
Benzo[a]anthracene	**0.13**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**0.14**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**0.16**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**0.10**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**0.14**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**0.089**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**0.027**	0.0088	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*43 - 116*				
Pyrene-d10	*90*	*33 - 124*				
Terphenyl-d14	*79*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-4**					
Laboratory ID:	12-130-04					
Benzo[a]anthracene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0089	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*53*	*43 - 116*				
Pyrene-d10	*59*	*33 - 124*				
Terphenyl-d14	*56*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-5**					
Laboratory ID:	12-130-05					
Benzo[a]anthracene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*72*	*43 - 116*				
Pyrene-d10	*85*	*33 - 124*				
Terphenyl-d14	*81*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-18-6**					
Laboratory ID:	12-130-06					
Benzo[a]anthracene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0091	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*59*	*43 - 116*				
Pyrene-d10	*64*	*33 - 124*				
Terphenyl-d14	*58*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1218S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	12-18-13	12-19-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*43 - 116*				
Pyrene-d10	*92*	*33 - 124*				
Terphenyl-d14	*90*	*38 - 125*				

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1218S1									
	SB	SBD	SB	SBD	SB	SBD				
Benzo[a]anthracene	**0.0798**	**0.0865**	0.0833	0.0833	96	104	58 - 115	8	13	
Chrysene	**0.0709**	**0.0757**	0.0833	0.0833	85	91	64 - 114	7	11	
Benzo[b]fluoranthene	**0.0756**	**0.0769**	0.0833	0.0833	91	92	52 - 125	2	19	
Benzo(j,k)fluoranthene	**0.0705**	**0.0806**	0.0833	0.0833	85	97	50 - 126	13	22	
Benzo[a]pyrene	**0.0772**	**0.0846**	0.0833	0.0833	93	102	43 - 123	9	16	
Indeno(1,2,3-c,d)pyrene	**0.0746**	**0.0811**	0.0833	0.0833	90	97	55 - 118	8	16	
Dibenz[a,h]anthracene	**0.0734**	**0.0801**	0.0833	0.0833	88	96	57 - 120	9	15	
Surrogate:										
2-Fluorobiphenyl					*79*	*83*	*43 - 116*			
Pyrene-d10					*87*	*94*	*33 - 124*			
Terphenyl-d14					*84*	*90*	*38 - 125*			

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

TOTAL METALS
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	12-130-01					
Client ID:	**12-18-1**					
Aluminum	**24000**	64	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.64	6010C	12-18-13	12-18-13	
Chromium	**54**	0.64	6010C	12-18-13	12-18-13	
Lead	**9.0**	6.4	6010C	12-18-13	12-18-13	
Lab ID:	12-130-02					
Client ID:	**12-18-2**					
Aluminum	**24000**	67	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.67	6010C	12-18-13	12-18-13	
Chromium	**52**	0.67	6010C	12-18-13	12-18-13	
Lead	**11**	6.7	6010C	12-18-13	12-18-13	
Lab ID:	12-130-03					
Client ID:	**12-18-3**					
Aluminum	**26000**	66	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.66	6010C	12-18-13	12-18-13	
Chromium	**54**	0.66	6010C	12-18-13	12-18-13	
Lead	**10**	6.6	6010C	12-18-13	12-18-13	
Lab ID:	12-130-04					
Client ID:	**12-18-4**					
Aluminum	**29000**	66	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.66	6010C	12-18-13	12-18-13	
Chromium	**61**	0.66	6010C	12-18-13	12-18-13	
Lead	**ND**	6.6	6010C	12-18-13	12-18-13	

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

TOTAL METALS
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	12-130-05					
Client ID:	**12-18-5**					
Aluminum	**15000**	57	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.57	6010C	12-18-13	12-18-13	
Chromium	**42**	0.57	6010C	12-18-13	12-18-13	
Lead	**ND**	5.7	6010C	12-18-13	12-18-13	
Lab ID:	12-130-06					
Client ID:	**12-18-6**					
Aluminum	**44000**	68	6010C	12-18-13	12-18-13	
Cadmium	**ND**	0.68	6010C	12-18-13	12-18-13	
Chromium	**82**	0.68	6010C	12-18-13	12-18-13	
Lead	**9.2**	6.8	6010C	12-18-13	12-18-13	

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-18-13
Date Analyzed:	12-18-13
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1218SM2

Analyte	Method	Result	PQL
Aluminum	6010C	**ND**	5.0
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 12-18-13
Date Analyzed: 12-18-13

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 12-130-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Aluminum	**17700**	**16800**	5	50	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**38.7**	**38.0**	2	0.50	
Lead	**8.20**	**8.00**	3	5.0	

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 12-18-13
Date Analyzed: 12-18-13

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 12-130-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Aluminum	1000	**19200**	148	**18300**	61	5	A
Cadmium	50.0	**49.0**	98	**49.0**	98	0	
Chromium	100	**133**	95	**132**	94	1	
Lead	250	**253**	98	**254**	98	0	

Date of Report: December 19, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130
Project: 6776

% MOISTURE

Date Analyzed: 12-18-13

Client ID	Lab ID	% Moisture
12-18-1	12-130-01	22
12-18-2	12-130-02	26
12-18-3	12-130-03	24
12-18-4	12-130-04	25
12-18-5	12-130-05	12
12-18-6	12-130-06	27

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

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

Z -

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

Chain of Custody

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

Laboratory Number: 12-130

Company: Tara Associates Inc.
Project Number: 6776
Project Name: —
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffman

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

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	~~NWTPH-Gx/BTEX~~ Benzene 8260	NWTPH-Gx	NWTPH-Dx Heavy oil	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs) cPAH's	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	Aluminum, Lead, Cadmium, Chromium						% Moisture
1	12-18-1	12/18/13	11:00	Soil	4		X		X			X									X						X
2	12-18-2		11:05				X		X			X									X						
3	12-18-3		11:10				X		X			X									X						
4	12-18-4		11:15				X		X			X									X						
5	12-18-5		11:20				X		X			X									X						
6	12-18-6		11:25				X		X			X									X						

	Signature	Company	Date	Time
Relinquished		TAI	12/18/13	12:00
Received			12/18/13	1200
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

December 20, 2013

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1312-130B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 18, 2013.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 20, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130B
Project: 6776

Case Narrative

Samples were collected on December 18, 2013 and received by the laboratory on December 18, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Date of Report: December 20, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	12-130-06					
Client ID:	**12-18-6**					
Hexavalent Chromium	**ND**	1.4	7196A mod	12-20-13	12-20-13	

Date of Report: December 20, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-20-13
Date Analyzed:	12-20-13
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1220S1

Analyte	Method	Result	PQL
Hexavalent Chromium	7196A mod	**ND**	1.0

Date of Report: December 20, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
DUPLICATE QUALITY CONTROL

Date Extracted:	12-20-13
Date Analyzed:	12-20-13
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	12-130-06

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Hexavalent Chromium	**ND**	**ND**	NA	1.0	

Date of Report: December 20, 2013
Samples Submitted: December 18, 2013
Laboratory Reference: 1312-130B
Project: 6776

SOLUBLE HEXAVALENT CHROMIUM
WATER EXTRACTION
EPA 7196A
MS/MSD QUALITY CONTROL

Date Extracted:	12-20-13
Date Analyzed:	12-20-13
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	12-130-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Hexavalent Chromium	5.00	**5.16**	103	**5.42**	108	5	

OnSite Environmental Inc.

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I - Compound recovery is outside of the control limits.

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

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Q - Surrogate recovery is outside of the control limits.

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

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

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

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Z -

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

Chain of Custody

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

Laboratory Number: 12-130

Company: Tara Associates Inc.
Project Number: 6776
Project Name: —
Project Manager: Chuck Lia
Sampled by: Nicolas R. Hoffman

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

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	~~NWTPH-Gx/BTEX~~ Benzene 8260	NWTPH-Gx	NWTPH-Dx Heavy oil	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs) cPAH's	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	Aluminum, Lead, Cadmium, Chromium						% Moisture
1	12-18-1	12/18/13	11:00	Soil	4		X		X			X									X						X
2	12-18-2		11:05				X		X			X									X						
3	12-18-3		11:10				X		X			X									X						
4	12-18-4		11:15				X		X			X									X						
5	12-18-5		11:20				X		X			X									X						
6	12-18-6		11:25				X		X			X									X						

	Signature	Company	Date	Time
Relinquished		TAI	12/18/13	12:00
Received			12/18/13	1200
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

December 20, 2013

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

Re: Analytical Data for Project 6776
Laboratory Reference No. 1312-158

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on December 20, 2013.

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

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

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: December 20, 2013
Samples Submitted: December 20, 2013
Laboratory Reference: 1312-158
Project: 6776

Case Narrative

Samples were collected on December 20, 2013 and received by the laboratory on December 20, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

Date of Report: December 20, 2013
Samples Submitted: December 20, 2013
Laboratory Reference: 1312-158
Project: 6776

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**12-20-1**					
Laboratory ID:	12-158-01					
Benzo[a]anthracene	**0.33**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Chrysene	**0.35**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo[b]fluoranthene	**0.39**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo(j,k)fluoranthene	**0.25**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo[a]pyrene	**0.34**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Indeno(1,2,3-c,d)pyrene	**0.23**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Dibenz[a,h]anthracene	**0.082**	0.0086	EPA 8270D/SIM	12-20-13	12-20-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*49*	*43 - 116*				
Pyrene-d10	*59*	*33 - 124*				
Terphenyl-d14	*54*	*38 - 125*				

Date of Report: December 20, 2013
Samples Submitted: December 20, 2013
Laboratory Reference: 1312-158
Project: 6776

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1220S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	12-20-13	12-20-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*94*	*43 - 116*				
Pyrene-d10	*96*	*33 - 124*				
Terphenyl-d14	*98*	*38 - 125*				

Date of Report: December 20, 2013
Samples Submitted: December 20, 2013
Laboratory Reference: 1312-158
Project: 6776

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1220S1									
	SB	SBD	SB	SBD	SB	SBD				
Benzo[a]anthracene	**0.0777**	**0.0751**	0.0833	0.0833	93	90	58 - 115	3	13	
Chrysene	**0.0674**	**0.0663**	0.0833	0.0833	81	80	64 - 114	2	11	
Benzo[b]fluoranthene	**0.0719**	**0.0671**	0.0833	0.0833	86	81	52 - 125	7	19	
Benzo(j,k)fluoranthene	**0.0687**	**0.0707**	0.0833	0.0833	82	85	50 - 126	3	22	
Benzo[a]pyrene	**0.0779**	**0.0759**	0.0833	0.0833	94	91	43 - 123	3	16	
Indeno(1,2,3-c,d)pyrene	**0.0802**	**0.0779**	0.0833	0.0833	96	94	55 - 118	3	16	
Dibenz[a,h]anthracene	**0.0794**	**0.0768**	0.0833	0.0833	95	92	57 - 120	3	15	
Surrogate:										
2-Fluorobiphenyl					*85*	*82*	*43 - 116*			
Pyrene-d10					*87*	*84*	*33 - 124*			
Terphenyl-d14					*88*	*85*	*38 - 125*			

Date of Report: December 20, 2013
Samples Submitted: December 20, 2013
Laboratory Reference: 1312-158
Project: 6776

% MOISTURE

% MOISTURE

Date Analyzed: 12-20-13

Client ID	Lab ID	% Moisture
12-20-1	12-158-01	23

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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RPD - Relative Percent Difference

Chain of Custody

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

Company: Terra Associates Inc
Project Number: 6776
Project Name: —
Project Manager: Chuck Liu
Sampled by: Nicolas R. Hoffman

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

Laboratory Number: 12-158

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs) cPAHs	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A							% Moisture
1	12-20-1	12/20/13	8:42	Soil	5							X															X

	Signature	Company	Date	Time
Relinquished		TAI	12/20/13	857
Received		OSE	12/20/13	853
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____