DRAFT FINAL
Phase 2 Environmental Site Assessment
Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

King County Solid Waste Division
King Street Center
201 South Jackson Street
M.S. KSC-NR-701
Seattle, Washington 98104-3855

King County

June 27, 2011

A Report Prepared For:
King County Solid Waste Division
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PHASE 2 ENVIRONMENTAL SITE ASSESSMENT
FORMER SKEET RANGE
PROPOSED KING COUNTY PARK PROPERTY
MAURY ISLAND, WASHINGTON

June 27, 2011

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CDM Project No. 19897.81851

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Section 1
Introduction

This report presents the results of Camp Dresser & McKee Inc.'s (CDM) Phase 2 environmental site assessment (ESA) of a portion of a proposed King County park property located on Maury Island in unincorporated King County, Washington (Property or Subject Property). This portion of the property had previously been used periodically as a private skeet range. CDM's services were performed under King County Contract No. E00196E10, as Work Order No. 8, and in accordance with our proposal dated February 22, 2011.

1.1 Background

It is commonly known that Maury Island lies within the fallout area from the former ASARCO smelter in Ruston, Washington. Surficial soils within the fallout area are impacted by arsenic, lead, and cadmium. In addition, during a Phase 1 ESA, CDM determined that a portion of the Property had been used as a private, recreational skeet shooting range from possibly as early as the 1930s until approximately the mid-1980s. The skeet shooting activities were conducted periodically by one individual and his guests. There is no information indicating that the Subject Property was the site of a skeet club or commercial skeet range. Prior skeet shooting activities may represent an additional source of lead contamination as a result of the lead shot fallout onto the ground surface.

The Subject Property is part of a larger parcel formerly owned by Northwest Aggregates (NWA). CDM recently completed field work to assess arsenic, lead, and cadmium on the portion of the parcel that lies south of SW 260th Street (the Property lies north of SW 260th Street). Lead concentrations were found to range to a high of 830 milligrams per kilogram (mg/kg) in forest duff and 930 mg/kg (or parts per million [ppm]) in surface soils as a result of fallout from the former ASARCO smelter. In our experience, skeet and trap shooting activities at commercial or club facilities can result in lead concentrations in surficial soils on the order of several thousand to several tens of thousands of parts per million. However, given the private and periodic nature of the skeet shooting activity reported to have taken place at this location, it is reasonable to presume that shooting activities at the Subject Property were less frequent and intense and therefore would be expected to have contributed less lead to surficial soils than at other sites where more shooting activity likely occurred. We know from our experience with prior range assessments that lead impacts at trap shooting ranges can be seen as far out as 1,000 feet beyond the firing line, but that the most heavily impacted area is typically around 500 feet. Forested conditions could shorten the distances lead was distributed from the firing line.

1.2 Objectives

The objective of this investigation was to determine whether historical skeet shooting activities resulted in lead concentrations in forest duff and surface soils that are significantly higher than those on the rest of the parcel.

1.3 Scope-of-Services

CDM's scope of services consisted of the following:

- Collected soil and/or forest duff samples at 31 locations within the anticipated projected area of the skeet range and fallout zone.
- Identified sample locations using a global positioning system (GPS) unit.
- Submitted collected soil and forest duff samples to a laboratory under chain-of-custody protocol for analysis of total lead and arsenic by EPA Method 6010.
- Compared collected data to existing "area background" data in accordance with WAC 173-340-709.

Section 2
Site Description

2.1 Location and Legal Description

The Subject Property is located on the southeast side of Maury Island, which is situated in the Puget Sound, north of Tacoma, Washington. Maury Island is a 7-square mile landmass located just off the southeast side of Vashon Island, and is connected to Vashon Island at its north end by an isthmus. The two landmasses together are sometimes referred to as Vashon-Maury Island.

The Subject Property is an approximately 30 acre portion of a 241 acre tax parcel identified as follows:

Parcel No. 2822039023, 8215 SW 260th Street (241.49 acres)

The Subject Property is located on the north side of SW 260th Street, whereas the remaining approximately 210 acres is located on the south side of SW 260th Street.

The Property is located in Section 2, Township 22 North, Range 3 East, Willamette Meridian. The Property location is shown on **Figure 1**.

2.2 Property and Vicinity General Characteristics

The Property is located in an area characterized primarily by forest lands with some rural residential properties and small residential communities. The Gold Beach residential development and forest land both bound the eastern side of the Property. Forest land bounds the north and west sides of the Property. SW 260th Street, followed by the remaining approximately 210-acre portion of the parcel bounds the south side of the Property. **Figure 2** shows the approximate configuration of the Property and local land use.

Of the approximately 210-acre portion of the parcel that lies to the south off SW 260th Street, the central portion has been mined out, but un-mined upland areas on the parcel are mostly forested, primarily with Pacific Madrone, Douglas fir, and maple. Residential developments occur next to the Puget Sound just off the northeast (Gold Beach) and southwest corners of the 210-acre portion of the parcel.

2.3 Property Description

The Property is "L" shaped and approximately 30 acres in size. **Figure 2** shows the Property boundaries overlain on an aerial photograph. Photographs of the Property are included in **Appendix A**. The northern portion of the Property is forested, primarily by alders and Douglas fir with an understory of salal and ferns. The southern portion of the Property is primarily vegetated by maples, alders, hazelnut and holly, with an understory of salal. However, blackberries predominate in the western portion of the southern half of the Property.

King County maps indicate the central portion of the Property is wetland as indicated on **Figure 2**. The 1990 Sensitive Areas Map Folio[1] identifies the wetland as mapped by the National Wetlands Inventory (NWI) but not field verified by King County staff. The NWI[2] indicates that the wetland was mapped based on 1:58,000 scale color infrared imagery from the 1980s. During the field work for this project the actual size of the wetland did not appear to be as large as indicated by the 1990 Sensitive Areas Map Folio, as represented on **Figure 2.**

Several unimproved trails extend through the Property. One trail begins in the southeast corner at SW 260th Street, extends northwestward about 250 feet, and then Y's, extending northward and off the Property, and northwestward where it Y's again extending northward and westward off the Property.

A driveway used to extend into the Property from SW 260th Street near the southwest corner. The driveway used to be the entrance for a private skeet range. The skeet range reportedly had a high tower, low tower, and a shed. The approximate configuration of the skeet range, as determined from historical aerial photographs, is shown on **Figure 3**. Based on the configuration of the former skeet range, shooting would have generally occurred in a northeasterly direction.

The former skeet range area rests on a small plateau, which drops off to the north and west. The overall property topography, shown on **Figure 2**, indicates that the property has a swale that extends in a northwest-southeast direction through the center, which drops off and becomes steeper as it extends farther towards the northwest.

[1] King County, 1990. Sensitive Areas Map Folio. December.
[2] U.S. Fish and Wildlife Service, 2011. National Wetlands Inventory. http://www.fws.gov/wetlands/Data/Mapper.html

Section 3
Field Investigation

3.1 Preparation

The former skeet range area was thickly vegetated with blackberry brambles and impossible to navigate without being removed. Therefore, prior to the start of the field work, King County Parks staff mowed down the majority of the blackberry bushes growing on the former skeet range area and in portions of the adjacent slope to allow for access. The clearing was minimized to the extent practicable and the land was not graded, nor was the vegetation removed, once it was cut. Samples situated in cleared areas were collected from as minimally disturbed locations as was possible.

3.2 Field Investigation Methods

3.2.1 Sampling Methods

The field investigation was conducted on March 1 and 2, 2011. Forest duff and surficial soil samples were collected at all locations except where forest duff was not present. Subsurface soil samples (9-inch and 18-inch) were collected at three locations.

Forest Duff

The forest duff was collected by removing the upper layer of un-decomposed matter (i.e., large leaves and twigs) and then using a hand trowel to collect the forest duff layer (i.e., the organic horizon overlying mineral soils after removal of un-decomposed matter) over an approximately 3-inch square area. Forest duff samples were not sieved. The forest duff was placed in a clean, labeled plastic resealable plastic bag and then thoroughly mixed in the plastic bag. The homogenized sample was then placed into a 4-ounce laboratory supplied glass jar and labeled.

Soil

Soil samples were collected using a hand auger. For the surficial samples, the forest duff layer was cleared away and the hand auger was extended from 0 to 2 inches. The collected soil sample was discharged into a plastic resealable bag containing a disposable sieve with 1.5 millimeter (mm) openings and labeled. The process was repeated for the deeper samples. The auger was extended to a depth of approximately 8 inches, removed emptied, and cleaned, and then placed back into the hole, extended to 10 inches, removed, and the sample discharged into a plastic resealable bag. The 18-inch sample was collected in the same manner. Between each sample location and interval, the auger was decontaminated using a sprayed on solution of Alconox and water, followed by a rinse with distilled water. Because the field work occurred during the wet season and sieving was generally unsuccessful, the soil samples were transported back to CDM's Bellevue laboratory, oven dried, sieved, then placed into labeled laboratory supplied glass jars.

3.2.2 Sample Locations

Thirty-one sample locations were within the anticipated area and fallout zone of the former skeet range, as shown on **Figures 3** and **4**. Assuming a northeasterly trajectory, the samples were scattered out from the range itself in a north, northeasterly, to easterly direction.

Each sample location was determined using a hand held Trimble Global Positioning System (GPS).

3.2.3 Sampling Nomenclature

Individual sample identifications (IDs) are shown on **Table 1**. The sample IDs consist of the Unit number assigned to the Property (5); designation of the material type ("FD" for forest duff or "S" for soil); a sequential number; and, in the case of soils, the depth (i.e., 0 - surface soil; 9 – 9-inches; 18 – 18-inches). The Unit number 5 is sequential to the individual land use units that were previously identified for the approximately 210-acre portion of the parcel located to the south. Unit 5 refers to the Property, for which there had been the historical use as the skeet range. Examples of sample IDs for forest duff and soil are as follows: 5-FD-7 and 5-S-23-9.

Four duplicate samples were collected ─ two each of forest duff and soil. These sample IDs ended with a "D."

3.3 Laboratory Analysis

The samples were submitted under chain-of-custody protocol to OnSite Environmental (OnSite) in Redmond, Washington for analysis of arsenic and lead by EPA Method 6020. In addition, two duplicate forest duff and soil samples were submitted to the laboratory for analysis. The laboratory report is included in **Appendix B**.

It should be noted that the laboratory report also contains a set of soil and forest duff samples collected outside of the Subject Property boundaries that are not part of this specific investigation. These samples, which have an ID that begins with the number 6, are not discussed further in this report with the exception of the laboratory quality assurance review discussion.

Section 4
Findings

4.1 Observations

The area within approximately 300 to 400 feet of the firing line for the former skeet range was mostly densely vegetated with blackberry bushes and scotch broom until they were cut down for the purposes of this investigation. Sample locations #16 through #21 were generally located within this area. None of these locations had a duff layer sufficient for sampling. Forest duff samples were collected at all other locations. The thickness of the duff layer, where present, ranged from 1 to 8 inches, with an average of 2.7 inches. Field notes from the sampling effort are included in **Appendix C**.

Skeet shot was not observed in any of the forest duff or soil samples.

The remainder of the Property was a mix of deciduous and evergreen trees including Douglas fir, maple, Pacific Madrone, hazelnut, and alder. The understory included salal, various ferns and moss.

There were a few small inundated locations within the area mapped as a wetland. Standing water was observed at sample locations #13 and #24. Sample #13 was collected at the edge of the water and Sample #24 was collected in a submerged area.

4.2 Data Validation

The laboratory noted that the Matrix Spike/Matrix Spike Duplicate recoveries for sample 6-FD-1 were outside of control limits at (over 150 percent recovery). This was determined to be due to sample inhomogeneity because similar results were obtained when the sample was re-extracted and re-analyzed and the spike blank recovery was well within limits at 101 percent. Sample 6-FD-1 was the only forest duff sample subjected to MS/MSD analysis.

Similarly, the relative percent difference (RPD) for the laboratory duplicate of sample 5-S23-9 (26%) was outside of control limits for lead. The sample was re-extracted and re-analyzed with similar results.

Four field duplicate samples were collected ─ two each of forest duff and soil. The RPD between the four sets of duplicate samples are listed in **Table 4-1** below. The RPD for arsenic in one of the forest duff samples and lead in another of the forest duff samples were fairly significant at over 40 percent.

Table 4-1 RPD Values for Duplicate Forest Duff and Soil Samples

Sample ID	Arsenic	RPD	Lead	RPD
5-FD-13	66	14%	3200	46%
5-FD-13-D	76		2000	
5-S-13-0	93	1%	350	0%
5-S-13-0-D	94		350	
5-FD-28	72	42%	440	2%
5-FD-28-D	110		450	
5-S-28-0	160	6%	140	0%
5-28-28-0-D	170		140	

Concentrations in milligrams per kilogram.

Relatively high variability for soils is common due to the matrix. Sieving greatly reduced the variability noted between duplicate analyses in soils during this investigation. However, the forest duff samples showed a much greater variability between duplicate analyses due to the nature of the matrix and inability to completely homogenize the sample. Such variation is inherent for soil and perhaps even more so for forest duff samples. Therefore, the data are not qualified based on the basis of field duplicate, laboratory duplicate, or matrix spike/matrix spike duplicate sample results.

4.3 Data Summary

The laboratory results for individual samples are summarized on **Table 1.** **Table 2** provides summary statistics for arsenic and lead concentrations. Arsenic and lead concentrations by sample location are shown on **Figures 3** and **4**, respectively.

Natural background arsenic and lead concentrations for the Puget Sound Area are 7 mg/kg for arsenic and 24 mg/kg for lead.[3] Fallout from the former ASARCO smelter has resulted in area background concentrations for arsenic and lead at and around the Subject Property. The area background concentrations are reflected in the soil and forest duff data collected in certain areas of the parcel that lies south of SW 260th Street. **Table 2** also provides summary statistics for the arsenic and lead concentrations in the forested areas of the parcel. The statistics are a compilation of the data for Units designated as 1a, 1b, and 3b in that portion of the parcel. Units 1a and 1b were last logged around the turn of the 1900s and Unit 3b was last logged around the 1930s, so these forested areas have all been relatively undisturbed throughout most of the fallout period for the former ASARCO smelter. Accordingly, the arsenic and lead concentrations present in these forested areas at Units 1a, 1b, and 3b can be considered "area background" conditions for the central-east side of Maury Island.

The reported moisture contents of the forest duff samples ranged from 40% to 81% by weight with an average of 58 %. The reported moisture contents of the soil samples ranged from 1% to 17% by weight. The reported soil moisture contents do not reflect in situ conditions because the samples were oven-dried at CDM's office to facilitate sieving, prior to delivery to the lab.

[3] San Juan, Charles. 1994. Natural Background Soil Metals Concentrations in Washington State. Washington State Department of Ecology Toxics Cleanup Program. Publication No. 94-115. October.

4.3.1 Arsenic

Arsenic concentrations in the 25 forest duff samples ranged between 29 and 310 mg/kg and the mean concentration was 140 mg/kg. The upper 95% confidence limit for the mean is 174 mg/kg. Arsenic concentrations in the 31 surface soil samples ranged between 12 and 200 mg/kg and the mean concentration was 80 mg/kg. The upper 95% confidence limit for the mean is 100 mg/kg. Arsenic concentrations in the subsurface soil samples for both the 9- and 18-inch depth intervals (total six samples) ranged between 2.4 and 4.4 mg/kg – all within normal Puget Sound background concentrations.

The area background arsenic concentrations are similar to those of the Property, although the forest duff and surface soil data are respectively "opposite." For the forest duff, the upper 95% confidence limit for the mean is 94 mg/kg, whereas the 95% confidence limit for the mean on the surface soil is 157 mg/kg. The reasoning for these differences is unclear, but the arsenic data all generally appear consistent with causes associated with the former ASARCO smelter.

4.3.2 Lead

Lead concentrations in the 25 forest duff samples ranged between 170 and 3,200 mg/kg. However, the duplicate of the 3,200 mg/kg sample showed a lead concentration of 2,000 mg/kg for an average concentration of 2,600 mg/kg. The mean lead concentration in forest duff was 1,056 mg/kg. The upper 95% confidence limit for the mean is 1,422 mg/kg. Lead concentrations in the 31 surface soil samples ranged between 13 and 1,500 mg/kg and the mean concentration was 256 mg/kg. The upper confidence limit for the mean is 388 mg/kg. Lead concentrations in subsurface soil samples for both the 9- and 18-inch depth intervals ranged between 4.1 and 53 mg/kg – only one of the six subsurface samples moderately exceeded the background lead concentration.

Unlike arsenic, overall lead concentrations, particularly for the forest duff, are higher than background concentrations. As shown in **Table 2**, the maximum lead concentration in any of the area background forest duff samples was 817 mg/kg and in the surface soil samples it was 930 mg/kg. Therefore, a concentration of approximately 1,000 mg/kg total lead appears to be the maximum concentration that could be associated with the former ASARCO smelter for the Subject Property.

Figure 4 shows that forest duff samples exceeding 1,000 mg/kg are within 300 to 700 feet of the skeet range in a pattern consistent with shot fallout. As indicated in Section 1.1, this is entirely consistent with our experience regarding the area of highest impact on other skeet ranges. The mean lead concentration in forest duff within the projected area of impact is 1,693 mg/kg and outside this area it is 556 mg/kg. For surface soil, the mean lead concentration within the projected area of impact is 438 mg/kg and outside this area it is 126 mg/kg. The mean lead concentrations in forest duff outside of the primary projected area of impact area is still about twice as high as background concentrations, but the mean surface soil lead concentration is lower by about 100 mg/kg.

The estimated areal extent where lead concentrations exceed 1,000 mg/kg is approximately 5.5 acres as shown on **Figure 4**. The southern extent of this area may not be adequately delineated as there are no sample points that bracket Sample #23, which was collected approximately 300 feet directly east of the furthest east skeet station and contained among the highest lead concentrations.

Section 5
Discussion

Results of this investigation indicate that lead concentrations in forest duff and surface soil in a portion of the Subject Property are greater than area background concentrations. Arsenic concentrations in forest duff and surface soil are similar or below area background concentrations throughout the Subject Property.

Lead impacts above area background concentrations were found to be limited to forest duff and possibly locally in surface soils within an estimated 5.5 acres of the Subject Property. However, additional delineation should occur, particularly to the east of the former skeet range, before the extent of impact can be reliably determined.

Within the area of impact, lead concentrations in forest duff typically exceed 1,000 mg/kg, but are typically less than 3,000 mg/kg and average close to 1,700 mg/kg. Forest duff samples are composed primarily of organics and water and are therefore not sieved. As a result, the duplicates tend to be more variable than other soil layers. The significance of this factor needs to be considered when evaluating further actions at the Subject Property. Surface soil concentrations within the area of impact are less than those found in the forest duff, averaging approximately 556 mg/kg.

The forest duff layer is typically not sampled in soil contamination studies. For example, forest duff was not included in the recently completed ecological screening level study of the ASARCO smelter plume region[4]. In evaluating the need for future remediation of the Subject Property, the potential limitations of comparing forest duff data to existing cleanup criteria and models needs to be considered.

[4] Ecological Soil Screening Levels for Arsenic and Lead in the Tacoma Smelter Plume Footprint and Hanford Site Old Orchards, Department of Ecology Publication No. 11-03-006, February 2011.

Distribution

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Quality Assurance / Technical Review by:

_____

Don Clabaugh, P.E.
Principal
Camp Dresser & McKee Inc.

Tables

Table 1
Soil and Forest Duff Analytical Summary
Phase 2 ESA - Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Map Location [a]	Sample I.D.	Depth (inches)	Arsenic mg/kg	Lead mg/kg
#7	5-FD-7	Forest Duff	310	1,800
	5-S-7-0	0-2	110	350
#8	5-FD-8	Forest Duff	100	1,800
	5-S-8-0	0-2	150	750
#9	5-FD-9	Forest Duff	57	620
	5-S-9-0	0-2	90	920
#10	5-FD-10	Forest Duff	94	1,500
	5-S-10-0	0-2	110	240
#11	5-FD-11	Forest Duff	110	1,800
	5-S-11-0	0-2	41	220
#12	5-FD-12	Forest Duff	210	300
	5-S-12-0	0-2	45	98
	5-S-12-9	9	3.1	6.0
	5-S-12-18	18	2.4	6.2
#13	5-FD-13	Forest Duff	66/76 [b]	3,200/2,000 [b]
	5-S-13-0	0-2	93/94 [b]	350/350 [b]
#14	5-FD-14	Forest Duff	37	770
	5-S-14-0	0-2	99	300
#15	5-FD-15	Forest Duff	170	1,900
	5-S-15-0	0-2	96	590
#16	5-S-16-0	0-2	25	77
#17	5-S-17-0	0-2	54	120
#18	5-S-18-0	0-2	50	99
#19	5-S-19-0	0-2	57	120
#20	5-S-20-0	0-2	48	95
#21	5-S-21-0	0-2	120	420
#22	5-FD-22	Forest Duff	210	730
	5-S-22-0	0-2	44	100
#23	5-FD-23	Forest Duff	170	2,600
	5-S-23-0	0-2	190	1,500
	5-S-23-9	9	19	53
	5-S-23-18	18	1.4	4.1
#24	5-FD-24	Forest Duff	63	610
	5-S-24-0	0-2	18	78
#25	5-FD-25	Forest Duff	170	420
	5-S-25-0	0-2	98	150
#26	5-FD-26	Forest Duff	210	270
	5-S-26-0	0-2	100	120
#27	5-FD-27	Forest Duff	180	840
	5-S-27-0	0-2	37	26
#28	5-FD-28	Forest Duff	72/110 [b]	440/450 [b]
	5-S-28-0	0-2	160/170 [b]	140/140 [b]
#29	5-FD-29	Forest Duff	89	930
	5-S-29-0	0-2	39	230
	5-S-29-9	9	3.3	8.6
	5-S-29-18	18	4.4	8.7
#30	5-FD-30	Forest Duff	220	690
	5-S-30-0	0-2	64	43

Table 1
Soil and Forest Duff Analytical Summary
Phase 2 ESA - Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Map Location [a]	Sample I.D.	Depth (inches)	Arsenic	Lead
			mg/kg	
#31	5-FD-31	Forest Duff	120	800
	5-S-31-0	0-2	70	25
#32	5-FD-32	Forest Duff	210	1,400
	5-S-32-0	0-2	67	130
#33	5-FD-33	Forest Duff	77	210
	5-S-33-0	0-2	12	13
#34	5-FD-34	Forest Duff	170	470
	5-S-34-0	0-2	93	110
#35	5-FD-35	Forest Duff	190	2,300
	5-S-35-0	0-2	68	150
#36	5-FD-36	Forest Duff	29	170
	5-S-36-0	0-2	31	37
#37	5-FD-37	Forest Duff	150	430
	5-S-37-0	0-2	200	320

Notes:
a) Sample locations shown on Figures 3 and 4.
b) x/x indicates sample result/duplicate result.
mg/kg - milligrams per kilogram.

Table 2
Summary Statistics for Arsenic and Lead in Forest Duff and Soil
Phase 2 ESA - Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Arsenic

	Former Skeet Range		Area Background[a]	
	Forest Duff	Soil 0-2"	Forest Duff	Soil 0-2"
Count (n)	25	31	35	71
Count (nd)	0	0	0	0
Min (mg/kg)	29	12	10	11
Max (mg/kg)	310	200	170	477
Mean (mg/kg)	140	80	75	133
Median (mg/kg)	150	68	69	107
Standard Dev	140	80	47	90
UCL 95	174	100	94	157

Lead

	Former Skeet Range		Area Background[a]	
	Forest Duff	Soil 0-2"	Forest Duff	Soil 0-2"
Count (n)	25	31	35	53
Count (nd)	0	0	0	0
Min	170	13	9.6	1
Max	2,600	1,500	817	930
Mean	1,056	256	286	229
Median	770	130	232	167
Standard Dev	765	313	209	232
UCL 95	1,422	388	368	303

a) Statistical analysis of metals data collected from the oldest forested Units 1a, 1b, and 3b located in the 210 acre portion of the parcel that is located south of SW 260th Street.

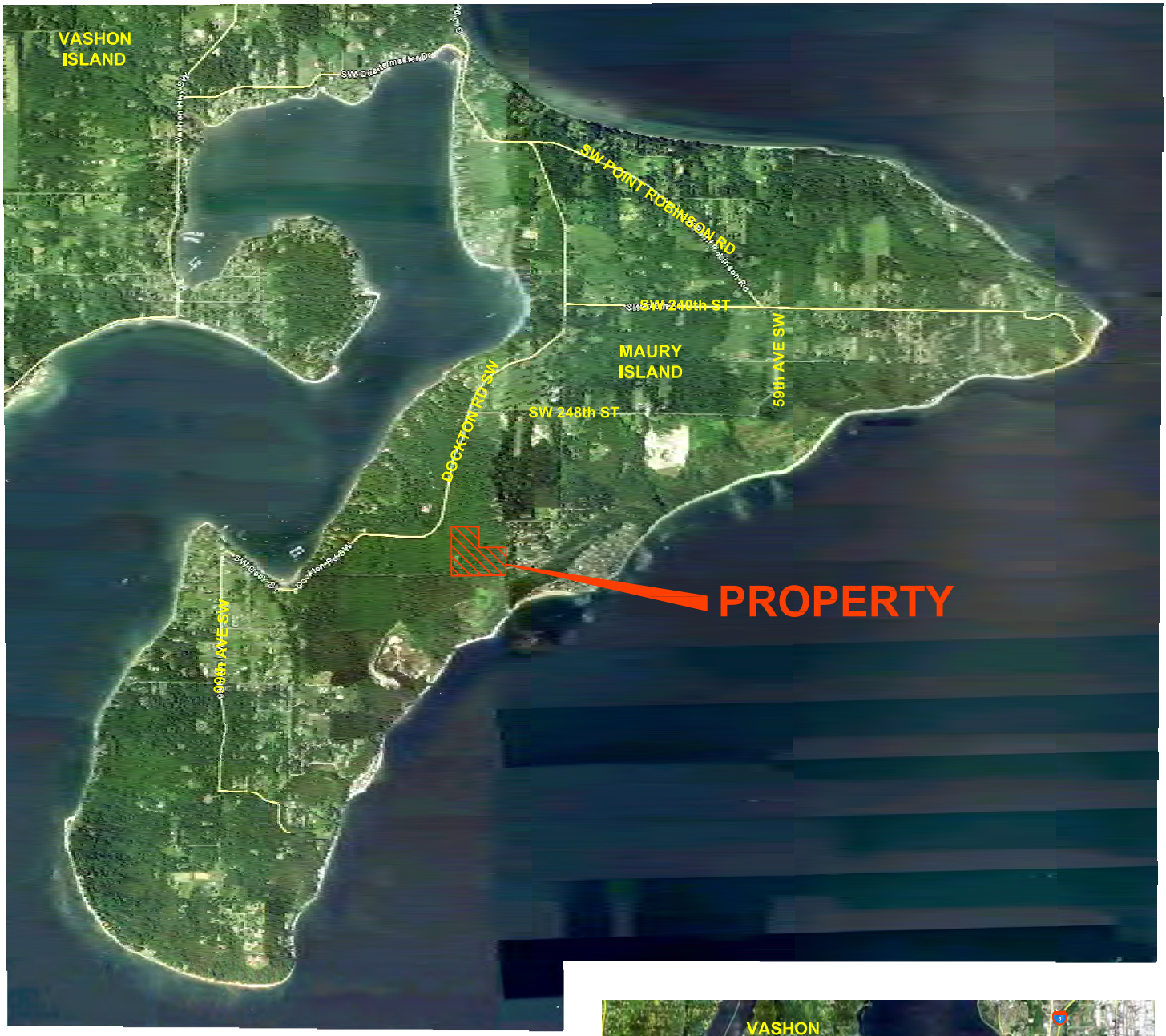
mg/kg - milligrams per kilogram.

n - number.

nd - not detected.

UCL 95 - 95% upper confidence limit for the mean

Figures

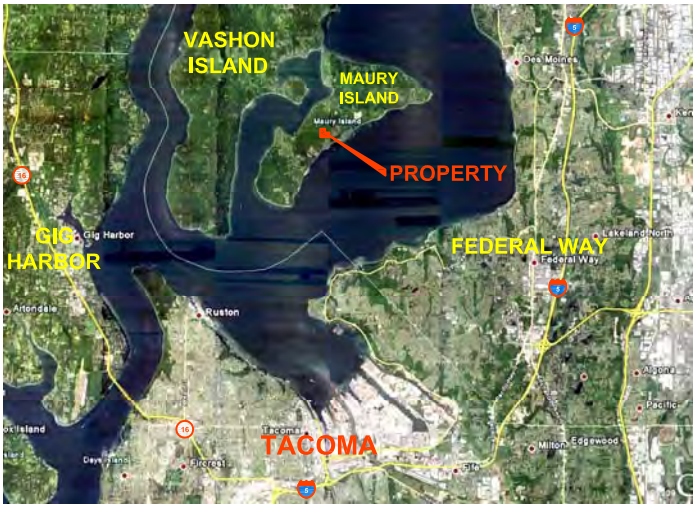


Source: GOOGLE EARTH PRO, 2010

N

0 3000

Scale in Feet



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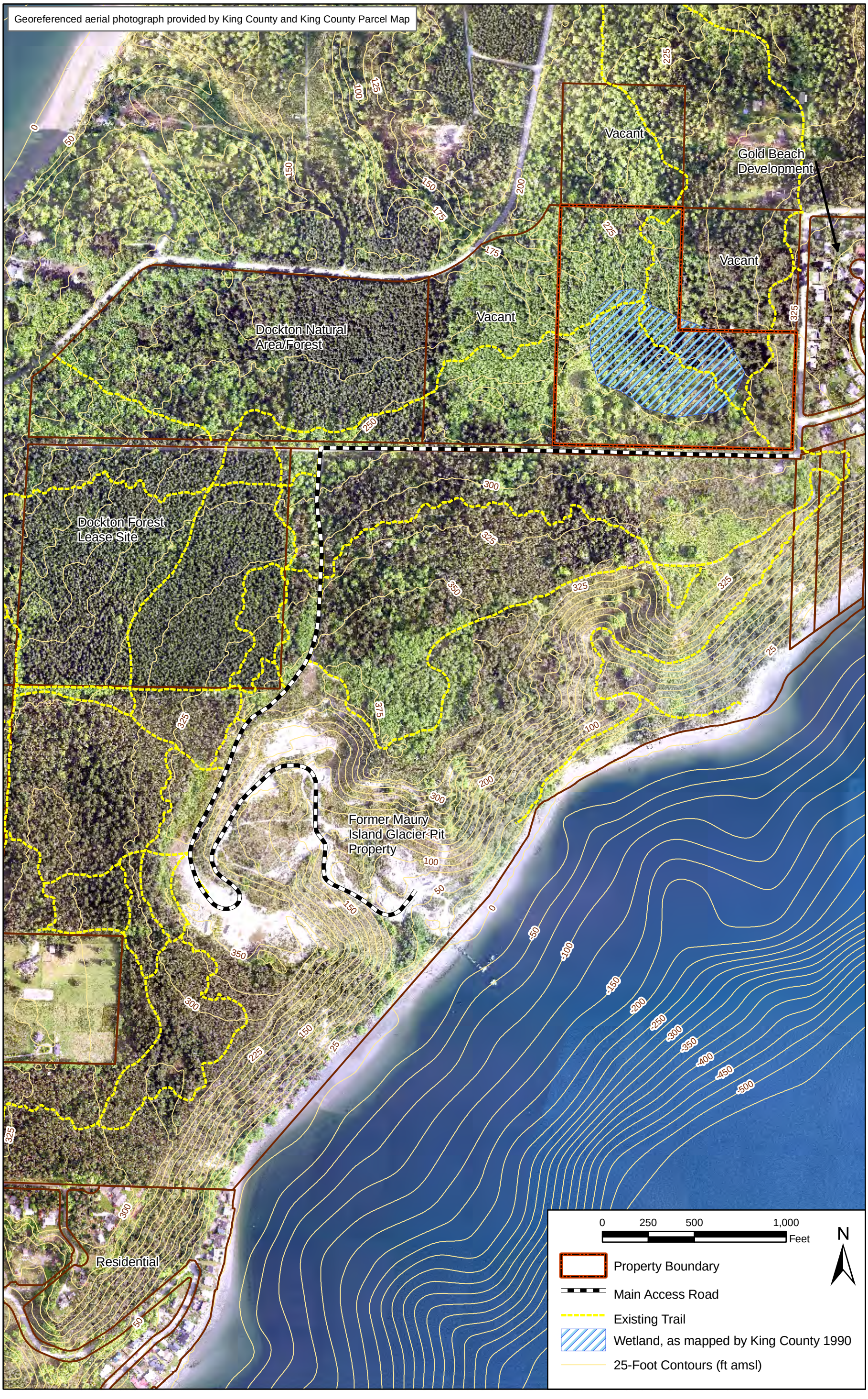
CDM

PHASE 2 ESA – FORMER SKEET RANGE
PROPOSED KING COUNTY PARK PROPERTY
MAURY ISLAND, WASHINGTON

Figure No. 1
Vicinity Map



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Phase 2 ESA - Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Figure 2
Property Area
and Features

Georeferenced aerial photograph provided by King County and King County Parcel Map

N

Vacant
(forest)

Forest/Residential

Vacant
(forest)

#34
170 (FD)
93 (S-0)

#33
77 (FD)
12 (S-0)

#31
120 (FD)
70 (S-0)

#30
220 (FD)
64 (S-0)

#25
170 (FD)
98 (S-0)

#26
210 (FD)
100 (S-0)

#32
210 (FD)
67 (S-0)

#9
57 (FD)
90 (S-0)

#7
310 (FD)
110 (S-0)

#29
89 (FD)
39 (S-0)
3.3 (S-9)
4.4 (S-18)

#35
190 (FD)
68 (S-0)

#10
94 (FD)
110 (S-0)

#11
110 (FD)
41 (S-0)

#15
170 (FD)
96 (S-0)

#27
180 (FD)
37 (S-0)

#12
210 (FD)
45 (S-0)
3.1 (S-9)
2.4 (S-18)

#8
100 (FD)
150 (S-0)

#36
29 (FD)
31 (S-0)

#28
72/110 (FD)
160/170 (S-0)

#14
37 (FD)
99 (S-0)

#13
66/76 (FD)
93/94 (S-0)

#20
48 (S-0)

#21
120 (S-0)

#37
150 (FD)
200 (S-0)

#19
57 (S-0)

#22
210 (FD)
44 (S-0)

#24
63 (FD)
18 (S-0)

#16
25 (S-0)

#18
50 (S-0)

#23
170 (FD)
190 (S-0)
19 (S-9)
1.4 (S-18)

#17
54 (S-0)

Approximate former
skeet range location

Former driveway

SW 260th St.

0 75 150 300
Feet

Sample Location and Number

Main Access Road

Existing Trail

Approx Skeet Station Location

Property Boundary

Notes:
1) Arsenic concentrations shown are in mg/kg
FD: Forest Duff
S-0: Surface Soil 0-2"
S-9: Soil at 9"
S-18: Soil at 18"
2) 66/76 indicates sample result/duplicate result
3) mg/kg: milligrams per kilogram

CDM

Phase 2 ESA – Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Figure 3
Arsenic Concentrations
in Forest Duff and Soil

Georeferenced aerial photograph provided by King County and King County Parcel Map

N

Vacant
(forest)

Forest/Residential

Vacant
(forest)

#25
420 (FD)
150 (S-0)

#33
210 (FD)
13 (S-0)

#34
470 (FD)
110 (S-0)

#31
800 (FD)
25 (S-0)

#30
690 (FD)
43 (S-0)

#26
270 (FD)
120 (S-0)

#32
1400 (FD)
130 (S-0)

#9
620 (FD)
920 (S-0)

#7
1800 (FD)
350 (S-0)

#11
1800 (FD)
220 (S-0)

#15
1900 (FD)
590 (S-0)

#27
840 (FD)
26 (S-0)

#35
2300 (FD)
150 (S-0)

#10
1500 (FD)
240 (S-0)

#29
930 (FD)
230 (S-0)
8.6 (S-9)
8.7 (S-18)

#12
300 (FD)
98 (S-0)
6.0 (S-9)
6.2 (S-18)

#8
1800 (FD)
750 (S-0)

#36
170 (FD)
37 (S-0)

#28
440/450 (FD)
140/140 (S-0)

#14
770 (FD)
300 (S-0)

#13
3200/2000 (FD)
350/350 (S-0)

#37
430 (FD)
320 (S-0)

#20
95 (S-0)

#21
420 (S-0)

#24
610 (FD)
78 (S-0)

#19
120 (S-0)

#22
730 (FD)
100 (S-0)

#16
77 (S-0)

#18
99 (S-0)

#23
2600 (FD)
1,500 (S-0)
53 (S-9)
4.1 (S-18)

#17
120 (S-0)

Approximate former
skeet range location

Approximate area with
lead concentrations
exceeding 1,000 mg/kg

Former driveway

SW 260th St.

0 75 150 300
Feet

Sample Location and Number

Main Access Road

Existing Trail

Approx Skeet Station Location

Property Boundary

Notes:
1) Lead concentrations shown are in mg/kg
FD: Forest Duff
S-0: Surface Soil 0-2"
S-9: Soil at 9"
S-18: Soil at 18"
2) 3200/2000 indicates sample result/duplicate result
3) mg/kg: milligrams per kilogram

CDM

Phase 2 ESA – Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

Figure 4
Lead Concentrations
in Forest Duff and Soil

Appendix A
Site Photographs

FIELD PHOTOGRAPHY LOG SHEET
Phase 2 Environmental Site Assessment
Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

March 2, 2011

Photograph No. 1

Photographed By:
Kevin Lee

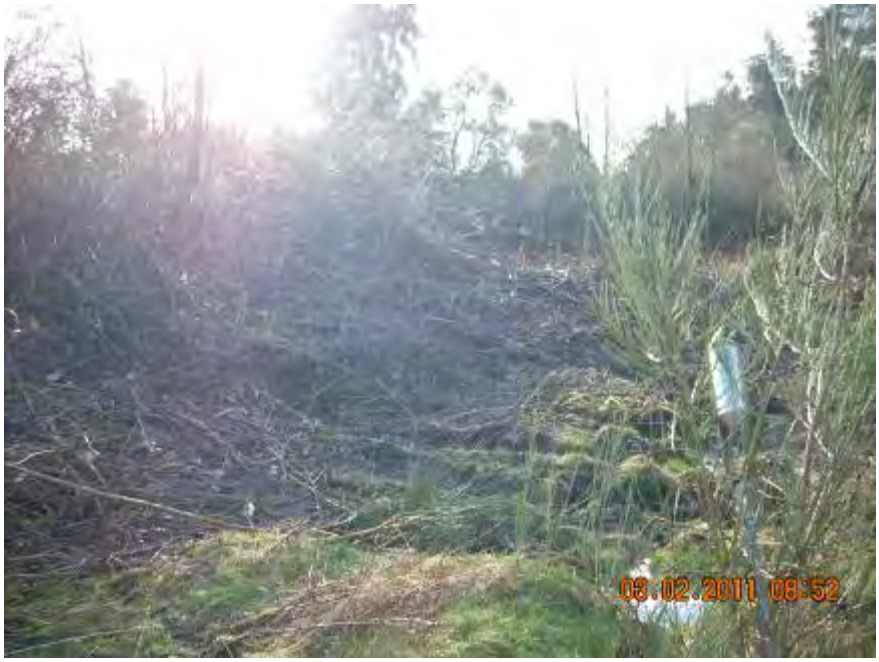
Description: Former skeet range area after blackberries have been knocked down.

March 2, 2011

Photograph No. 2

Photographed By:
Kevin Lee

Description: Photo taken at sample location #16 looking toward the south-southeast. The mound of blackberries to the left is located in the middle of sample locations #16 and #19.



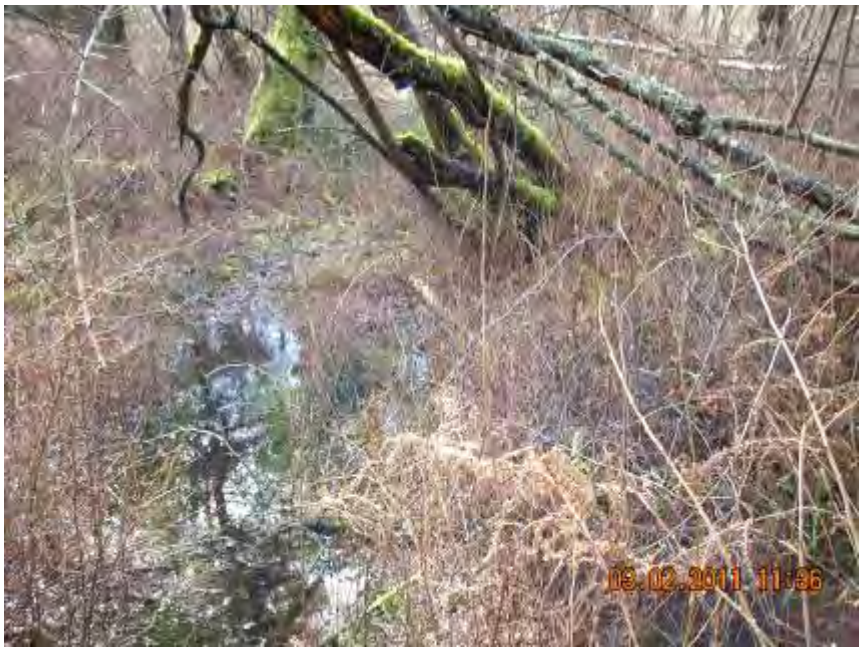
FIELD PHOTOGRAPHY LOG SHEET
Phase 2 Environmental Site Assessment
Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

March 2,2011

Photograph No. 3

Photographed By:
Kevin Lee

Description: Wetland within the Property.

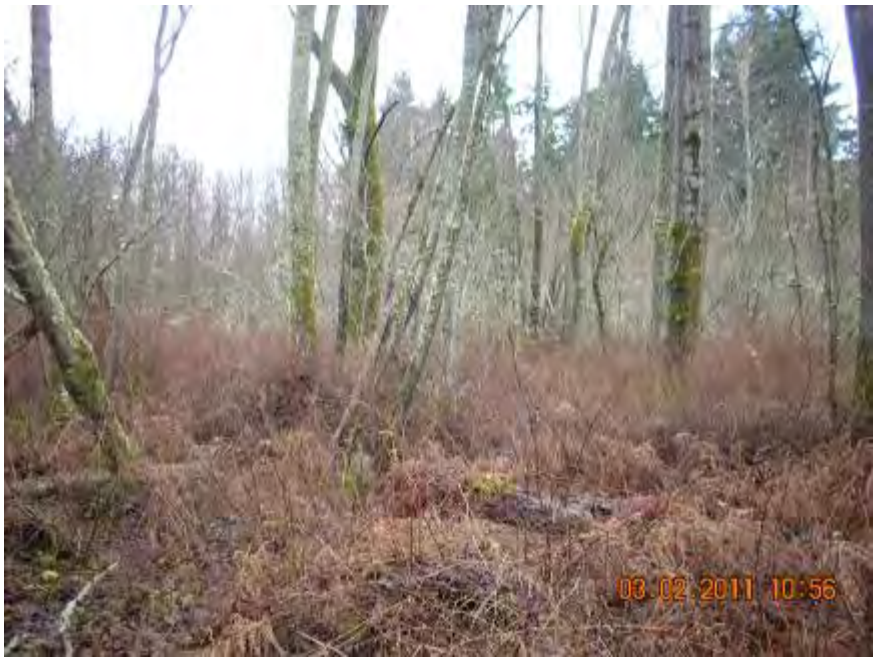


March 2, 2011

Photograph No. 4

Photographed By:
Kevin Lee

Description: Wetland area.



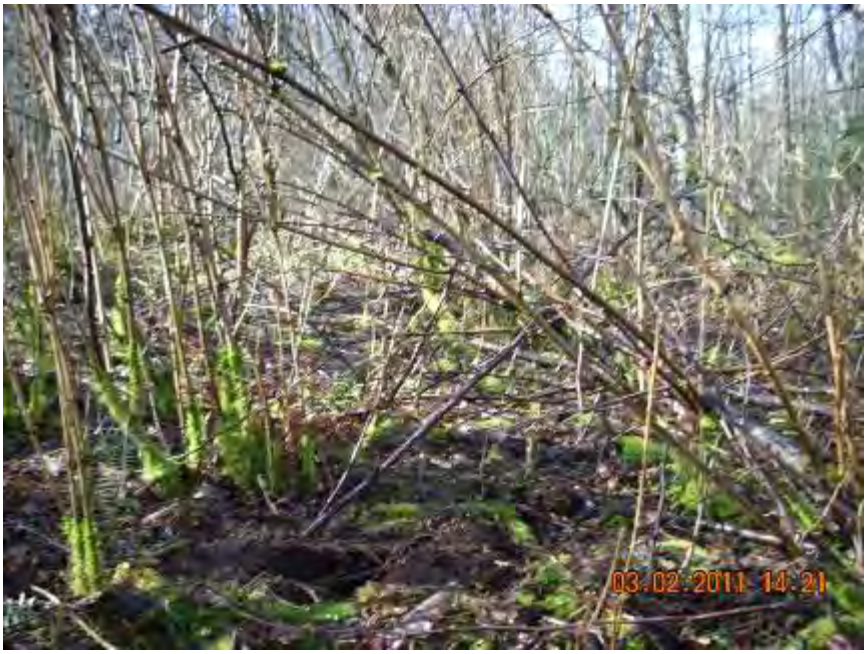
FIELD PHOTOGRAPHY LOG SHEET
Phase 2 Environmental Site Assessment
Former Skeet Range
Proposed King County Park Property
Maury Island, Washington

March 2, 2011

Photograph No. 5

Photographed By:
Kevin Lee

Description: Dense stand of salmon berry plants on the Property.

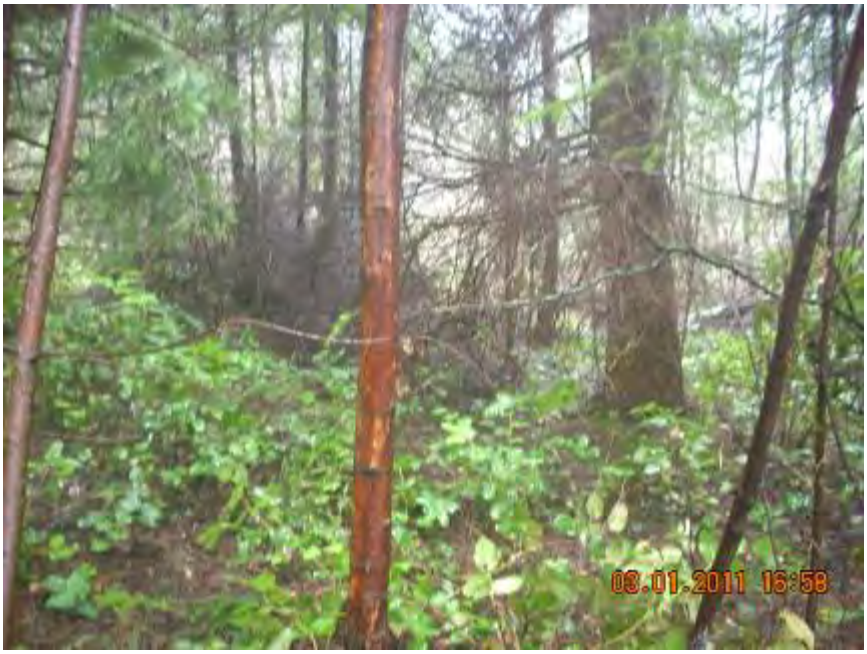


March 1, 2011

Photograph No. 6

Photographed By:
Kevin Lee

Description: Forest area north of the shooting plateau.



Appendix B
Laboratory Reports

OnSite Environmental Inc.

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

March 15, 2011

Pam Morrill
CDM
14432 SE Eastgate Way, Suite 100
Bellevue, WA 98007-6493

Re: Analytical Data for Project 19897-79698
Laboratory Reference No. 1103-048

Dear Pam:

Enclosed are the analytical results and associated quality control data for samples submitted on March 4, 2011.

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: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

Case Narrative

Samples were collected on March 1 and 2, 2011 and received by the laboratory on March 4, 2011. 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.

Total Metals EPA 6020 Analysis

For samples 6-FD-1 through 5-FD-25, the Matrix Spike/ Matrix Spike Duplicate recoveries for Lead are outside control limits due to matrix inhomogeniety. The samples were re-extracted and re-analyzed with similar results. The Spike Blank recovery was 101%.

For samples 5-S-23-9 through 5-S35-0, the duplicate RPD for Lead is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

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

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-01					
Client ID:	**6-FD-1**					
Arsenic	**49**	5.0	6020	3-8-11	3-10-11	
Lead	**330**	5.0	6020	3-11-11	3-11-11	
Lab ID:	03-048-02					
Client ID:	**6-FD-2**					
Arsenic	**74**	5.0	6020	3-8-11	3-10-11	
Lead	**210**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-03					
Client ID:	**6-FD-3**					
Arsenic	**14**	5.0	6020	3-8-11	3-10-11	
Lead	**130**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-04					
Client ID:	**6-FD-4**					
Arsenic	**36**	5.0	6020	3-8-11	3-10-11	
Lead	**210**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-05					
Client ID:	**6-FD-5**					
Arsenic	**61**	5.0	6020	3-8-11	3-10-11	
Lead	**340**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-06					
Client ID:	**6-FD-6**					
Arsenic	**53**	5.0	6020	3-8-11	3-10-11	
Lead	**150**	5.0	6020	3-11-11	3-15-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-07					
Client ID:	**5-FD-7**					
Arsenic	**150**	5.0	6020	3-8-11	3-10-11	
Lead	**870**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-08					
Client ID:	**5-FD-8**					
Arsenic	**41**	5.0	6020	3-8-11	3-10-11	
Lead	**690**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-09					
Client ID:	**5-FD-9**					
Arsenic	**22**	5.0	6020	3-8-11	3-10-11	
Lead	**240**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-10					
Client ID:	**5-FD-10**					
Arsenic	**44**	5.0	6020	3-8-11	3-10-11	
Lead	**720**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-11					
Client ID:	**5-FD-11**					
Arsenic	**56**	5.0	6020	3-8-11	3-10-11	
Lead	**950**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-12					
Client ID:	**5-FD-12**					
Arsenic	**75**	5.0	6020	3-8-11	3-10-11	
Lead	**100**	5.0	6020	3-11-11	3-15-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-13					
Client ID:	**5-FD-13**					
Arsenic	**21**	5.0	6020	3-8-11	3-10-11	
Lead	**1000**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-14					
Client ID:	**5-FD-13-D**					
Arsenic	**23**	5.0	6020	3-8-11	3-10-11	
Lead	**610**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-15					
Client ID:	**5-FD-14**					
Arsenic	**16**	5.0	6020	3-8-11	3-10-11	
Lead	**340**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-16					
Client ID:	**5-FD-15**					
Arsenic	**59**	5.0	6020	3-8-11	3-10-11	
Lead	**670**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-17					
Client ID:	**5-FD-22**					
Arsenic	**120**	5.0	6020	3-8-11	3-10-11	
Lead	**410**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-18					
Client ID:	**5-FD-23**					
Arsenic	**68**	5.0	6020	3-8-11	3-10-11	
Lead	**1000**	5.0	6020	3-11-11	3-15-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-19					
Client ID:	**5-FD-24**					
Arsenic	**12**	5.0	6020	3-8-11	3-10-11	
Lead	**120**	5.0	6020	3-11-11	3-15-11	
Lab ID:	03-048-20					
Client ID:	**5-FD-25**					
Arsenic	**55**	5.0	6020	3-8-11	3-10-11	
Lead	**140**	5.0	6020	3-11-11	3-15-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-21					
Client ID:	**5-FD-26**					
Arsenic	**110**	5.0	6020	3-8-11	3-10-11	
Lead	**130**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-22					
Client ID:	**5-FD-27**					
Arsenic	**96**	5.0	6020	3-8-11	3-10-11	
Lead	**450**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-23					
Client ID:	**5-FD-28**					
Arsenic	**23**	5.0	6020	3-8-11	3-10-11	
Lead	**140**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-24					
Client ID:	**5-FD-28-D**					
Arsenic	**37**	5.0	6020	3-8-11	3-10-11	
Lead	**150**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-25					
Client ID:	**5-FD-29**					
Arsenic	**42**	5.0	6020	3-8-11	3-10-11	
Lead	**450**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-26					
Client ID:	**5-FD-30**					
Arsenic	**63**	5.0	6020	3-8-11	3-10-11	
Lead	**200**	5.0	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-27					
Client ID:	**5-FD-31**					
Arsenic	**36**	5.0	6020	3-8-11	3-10-11	
Lead	**230**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-28					
Client ID:	**5-FD-32**					
Arsenic	**78**	5.0	6020	3-8-11	3-10-11	
Lead	**510**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-29					
Client ID:	**5-FD-33**					
Arsenic	**35**	5.0	6020	3-8-11	3-10-11	
Lead	**94**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-30					
Client ID:	**5-FD-34**					
Arsenic	**88**	5.0	6020	3-8-11	3-10-11	
Lead	**250**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-31					
Client ID:	**5-FD-35**					
Arsenic	**100**	5.0	6020	3-8-11	3-10-11	
Lead	**1200**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-32					
Client ID:	**5-FD-36**					
Arsenic	**17**	5.0	6020	3-8-11	3-10-11	
Lead	**100**	5.0	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-33					
Client ID:	**5-FD-37**					
Arsenic	**77**	5.0	6020	3-8-11	3-10-11	
Lead	**220**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-34					
Client ID:	**6-S-1-0**					
Arsenic	**110**	5.0	6020	3-8-11	3-10-11	
Lead	**61**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-35					
Client ID:	**6-S-2-0**					
Arsenic	**27**	5.0	6020	3-8-11	3-10-11	
Lead	**45**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-36					
Client ID:	**6-S-3-0**					
Arsenic	**69**	5.0	6020	3-8-11	3-10-11	
Lead	**140**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-37					
Client ID:	**6-S-4-0**					
Arsenic	**120**	5.0	6020	3-8-11	3-10-11	
Lead	**200**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-38					
Client ID:	**6-S-5-0**					
Arsenic	**100**	5.0	6020	3-8-11	3-10-11	
Lead	**35**	5.0	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-39					
Client ID:	**6-S-6-0**					
Arsenic	**64**	5.0	6020	3-8-11	3-10-11	
Lead	**60**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-40					
Client ID:	**5-S-7-0**					
Arsenic	**95**	5.0	6020	3-8-11	3-10-11	
Lead	**300**	5.0	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-41					
Client ID:	**5-S-8-0**					
Arsenic	**130**	2.5	6020	3-8-11	3-10-11	
Lead	**630**	2.5	6020	3-8-11	3-10-11	
Lab ID:	03-048-42					
Client ID:	**5-S-9-0**					
Arsenic	**75**	5.0	6020	3-8-11	3-10-11	
Lead	**770**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-43					
Client ID:	**5-S-10-0**					
Arsenic	**99**	5.0	6020	3-8-11	3-10-11	
Lead	**220**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-44					
Client ID:	**5-S-11-0**					
Arsenic	**40**	5.0	6020	3-8-11	3-10-11	
Lead	**210**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-45					
Client ID:	**5-S-12-0**					
Arsenic	**42**	5.0	6020	3-8-11	3-10-11	
Lead	**91**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-46					
Client ID:	**5-S-12-9**					
Arsenic	**3.1**	1.3	6020	3-8-11	3-10-11	
Lead	**6.0**	5.0	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-47					
Client ID:	**5-S-12-18**					
Arsenic	**2.3**	1.3	6020	3-8-11	3-10-11	
Lead	**6.1**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-48					
Client ID:	**5-S-13-0**					
Arsenic	**88**	5.0	6020	3-8-11	3-10-11	
Lead	**330**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-49					
Client ID:	**5-S-13-0-D**					
Arsenic	**88**	5.0	6020	3-8-11	3-10-11	
Lead	**330**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-50					
Client ID:	**5-S-14-0**					
Arsenic	**88**	5.0	6020	3-8-11	3-10-11	
Lead	**260**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-51					
Client ID:	**5-S-16-0**					
Arsenic	**24**	5.0	6020	3-8-11	3-10-11	
Lead	**73**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-52					
Client ID:	**5-S-18-0**					
Arsenic	**47**	5.0	6020	3-8-11	3-10-11	
Lead	**92**	5.0	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-53					
Client ID:	**5-S-20-0**					
Arsenic	**48**	5.0	6020	3-8-11	3-10-11	
Lead	**94**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-54					
Client ID:	**5-S-21-0**					
Arsenic	**110**	5.0	6020	3-8-11	3-10-11	
Lead	**370**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-55					
Client ID:	**5-S-22-0**					
Arsenic	**44**	5.0	6020	3-8-11	3-10-11	
Lead	**100**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-56					
Client ID:	**5-S-36-0**					
Arsenic	**31**	5.0	6020	3-8-11	3-10-11	
Lead	**37**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-57					
Client ID:	**5-S-15-0**					
Arsenic	**92**	5.0	6020	3-8-11	3-10-11	
Lead	**570**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-58					
Client ID:	**5-S-19-0**					
Arsenic	**50**	5.0	6020	3-8-11	3-10-11	
Lead	**110**	5.0	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-59					
Client ID:	**5-S-17-0**					
Arsenic	**52**	5.0	6020	3-8-11	3-10-11	
Lead	**120**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-60					
Client ID:	**5-S-23-18**					
Arsenic	**1.4**	1.3	6020	3-8-11	3-10-11	
Lead	**4.0**	2.5	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-61					
Client ID:	**5-S-23-9**					
Arsenic	**19**	5.0	6020	3-9-11	3-10-11	
Lead	**53**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-62					
Client ID:	**5-S-23-0**					
Arsenic	**190**	5.0	6020	3-9-11	3-10-11	
Lead	**1500**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-63					
Client ID:	**5-S-24-0**					
Arsenic	**18**	5.0	6020	3-9-11	3-10-11	
Lead	**76**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-64					
Client ID:	**5-S-25-0**					
Arsenic	**96**	5.0	6020	3-9-11	3-10-11	
Lead	**150**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-65					
Client ID:	**5-S-26-0**					
Arsenic	**99**	5.0	6020	3-9-11	3-10-11	
Lead	**110**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-66					
Client ID:	**5-S-27-0**					
Arsenic	**37**	5.0	6020	3-9-11	3-10-11	
Lead	**26**	5.0	6020	3-9-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-67					
Client ID:	**5-S-28-0**					
Arsenic	**160**	5.0	6020	3-9-11	3-10-11	
Lead	**140**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-68					
Client ID:	**5-S-28-0-D**					
Arsenic	**160**	5.0	6020	3-9-11	3-10-11	
Lead	**140**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-69					
Client ID:	**5-S-29-0**					
Arsenic	**38**	5.0	6020	3-9-11	3-10-11	
Lead	**230**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-70					
Client ID:	**5-S-29-9**					
Arsenic	**3.2**	2.5	6020	3-9-11	3-10-11	
Lead	**8.5**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-71					
Client ID:	**5-S-29-18**					
Arsenic	**4.3**	2.5	6020	3-9-11	3-10-11	
Lead	**8.6**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-72					
Client ID:	**5-S-30-0**					
Arsenic	**62**	5.0	6020	3-9-11	3-10-11	
Lead	**42**	5.0	6020	3-9-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Wet weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-73					
Client ID:	**5-S-31-0**					
Arsenic	**68**	5.0	6020	3-9-11	3-10-11	
Lead	**24**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-74					
Client ID:	**5-S-32-0**					
Arsenic	**66**	5.0	6020	3-9-11	3-10-11	
Lead	**120**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-75					
Client ID:	**5-S-33-0**					
Arsenic	**12**	5.0	6020	3-9-11	3-10-11	
Lead	**13**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-76					
Client ID:	**5-S-37-0**					
Arsenic	**190**	5.0	6020	3-9-11	3-10-11	
Lead	**320**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-77					
Client ID:	**5-S-34-0**					
Arsenic	**91**	5.0	6020	3-9-11	3-10-11	
Lead	**110**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-78					
Client ID:	**5-S-35-0**					
Arsenic	**67**	5.0	6020	3-9-11	3-11-11	
Lead	**150**	5.0	6020	3-9-11	3-11-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-01					
Client ID:	**6-FD-1**					
Arsenic	**120**	13	6020	3-8-11	3-10-11	
Lead	**840**	13	6020	3-11-11	3-11-11	
Lab ID:	03-048-02					
Client ID:	**6-FD-2**					
Arsenic	**130**	8.9	6020	3-8-11	3-10-11	
Lead	**380**	8.9	6020	3-11-11	3-15-11	
Lab ID:	03-048-03					
Client ID:	**6-FD-3**					
Arsenic	**48**	17	6020	3-8-11	3-10-11	
Lead	**440**	17	6020	3-11-11	3-15-11	
Lab ID:	03-048-04					
Client ID:	**6-FD-4**					
Arsenic	**100**	14	6020	3-8-11	3-10-11	
Lead	**580**	14	6020	3-11-11	3-15-11	
Lab ID:	03-048-05					
Client ID:	**6-FD-5**					
Arsenic	**170**	14	6020	3-8-11	3-10-11	
Lead	**970**	14	6020	3-11-11	3-15-11	
Lab ID:	03-048-06					
Client ID:	**6-FD-6**					
Arsenic	**120**	11	6020	3-8-11	3-10-11	
Lead	**330**	11	6020	3-11-11	3-15-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-07					
Client ID:	**5-FD-7**					
Arsenic	**310**	10	6020	3-8-11	3-10-11	
Lead	**1800**	10	6020	3-11-11	3-15-11	
Lab ID:	03-048-08					
Client ID:	**5-FD-8**					
Arsenic	**100**	13	6020	3-8-11	3-10-11	
Lead	**1800**	13	6020	3-11-11	3-15-11	
Lab ID:	03-048-09					
Client ID:	**5-FD-9**					
Arsenic	**57**	13	6020	3-8-11	3-10-11	
Lead	**620**	13	6020	3-11-11	3-15-11	
Lab ID:	03-048-10					
Client ID:	**5-FD-10**					
Arsenic	**94**	11	6020	3-8-11	3-10-11	
Lead	**1500**	11	6020	3-11-11	3-15-11	
Lab ID:	03-048-11					
Client ID:	**5-FD-11**					
Arsenic	**110**	9.6	6020	3-8-11	3-10-11	
Lead	**1800**	9.6	6020	3-11-11	3-15-11	
Lab ID:	03-048-12					
Client ID:	**5-FD-12**					
Arsenic	**210**	14	6020	3-8-11	3-10-11	
Lead	**300**	14	6020	3-11-11	3-15-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-13					
Client ID:	**5-FD-13**					
Arsenic	**66**	16	6020	3-8-11	3-10-11	
Lead	**3200**	16	6020	3-11-11	3-15-11	
Lab ID:	03-048-14					
Client ID:	**5-FD-13-D**					
Arsenic	**76**	17	6020	3-8-11	3-10-11	
Lead	**2000**	17	6020	3-11-11	3-15-11	
Lab ID:	03-048-15					
Client ID:	**5-FD-14**					
Arsenic	**37**	11	6020	3-8-11	3-10-11	
Lead	**770**	11	6020	3-11-11	3-15-11	
Lab ID:	03-048-16					
Client ID:	**5-FD-15**					
Arsenic	**170**	14	6020	3-8-11	3-10-11	
Lead	**1900**	14	6020	3-11-11	3-15-11	
Lab ID:	03-048-17					
Client ID:	**5-FD-22**					
Arsenic	**210**	8.9	6020	3-8-11	3-10-11	
Lead	**730**	8.9	6020	3-11-11	3-15-11	
Lab ID:	03-048-18					
Client ID:	**5-FD-23**					
Arsenic	**170**	13	6020	3-8-11	3-10-11	
Lead	**2600**	13	6020	3-11-11	3-15-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-19					
Client ID:	**5-FD-24**					
Arsenic	**63**	26	6020	3-8-11	3-10-11	
Lead	**610**	26	6020	3-11-11	3-15-11	
Lab ID:	03-048-20					
Client ID:	**5-FD-25**					
Arsenic	**170**	16	6020	3-8-11	3-10-11	
Lead	**420**	16	6020	3-11-11	3-15-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-21					
Client ID:	**5-FD-26**					
Arsenic	**210**	10.0	6020	3-8-11	3-10-11	
Lead	**270**	10.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-22					
Client ID:	**5-FD-27**					
Arsenic	**180**	9.5	6020	3-8-11	3-10-11	
Lead	**840**	9.5	6020	3-8-11	3-10-11	
Lab ID:	03-048-23					
Client ID:	**5-FD-28**					
Arsenic	**72**	16.0	6020	3-8-11	3-10-11	
Lead	**440**	16.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-24					
Client ID:	**5-FD-28-D**					
Arsenic	**110**	15.0	6020	3-8-11	3-10-11	
Lead	**450**	15.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-25					
Client ID:	**5-FD-29**					
Arsenic	**89**	10.0	6020	3-8-11	3-10-11	
Lead	**930**	10.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-26					
Client ID:	**5-FD-30**					
Arsenic	**220**	18.0	6020	3-8-11	3-10-11	
Lead	**690**	18.0	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-27					
Client ID:	**5-FD-31**					
Arsenic	**120**	17.0	6020	3-8-11	3-10-11	
Lead	**800**	17.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-28					
Client ID:	**5-FD-32**					
Arsenic	**210**	14.0	6020	3-8-11	3-10-11	
Lead	**1400**	14.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-29					
Client ID:	**5-FD-33**					
Arsenic	**77**	11.0	6020	3-8-11	3-10-11	
Lead	**210**	11.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-30					
Client ID:	**5-FD-34**					
Arsenic	**170**	9.4	6020	3-8-11	3-10-11	
Lead	**470**	9.4	6020	3-8-11	3-10-11	
Lab ID:	03-048-31					
Client ID:	**5-FD-35**					
Arsenic	**190**	9.2	6020	3-8-11	3-10-11	
Lead	**2300**	9.2	6020	3-8-11	3-10-11	
Lab ID:	03-048-32					
Client ID:	**5-FD-36**					
Arsenic	**29**	8.3	6020	3-8-11	3-10-11	
Lead	**170**	8.3	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-33					
Client ID:	**5-FD-37**					
Arsenic	**150**	9.8	6020	3-8-11	3-10-11	
Lead	**430**	9.8	6020	3-8-11	3-10-11	
Lab ID:	03-048-34					
Client ID:	**6-S-1-0**					
Arsenic	**120**	5.3	6020	3-8-11	3-10-11	
Lead	**64**	5.3	6020	3-8-11	3-10-11	
Lab ID:	03-048-35					
Client ID:	**6-S-2-0**					
Arsenic	**27**	5.1	6020	3-8-11	3-10-11	
Lead	**46**	5.1	6020	3-8-11	3-10-11	
Lab ID:	03-048-36					
Client ID:	**6-S-3-0**					
Arsenic	**77**	5.6	6020	3-8-11	3-10-11	
Lead	**150**	5.6	6020	3-8-11	3-10-11	
Lab ID:	03-048-37					
Client ID:	**6-S-4-0**					
Arsenic	**130**	5.2	6020	3-8-11	3-10-11	
Lead	**210**	5.2	6020	3-8-11	3-10-11	
Lab ID:	03-048-38					
Client ID:	**6-S-5-0**					
Arsenic	**110**	5.7	6020	3-8-11	3-10-11	
Lead	**39**	5.7	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-39					
Client ID:	**6-S-6-0**					
Arsenic	**72**	5.6	6020	3-8-11	3-10-11	
Lead	**66**	5.6	6020	3-8-11	3-10-11	
Lab ID:	03-048-40					
Client ID:	**5-S-7-0**					
Arsenic	**110**	5.8	6020	3-8-11	3-10-11	
Lead	**350**	5.8	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-41					
Client ID:	**5-S-8-0**					
Arsenic	**150**	3.0	6020	3-8-11	3-10-11	
Lead	**750**	3.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-42					
Client ID:	**5-S-9-0**					
Arsenic	**90**	6.0	6020	3-8-11	3-10-11	
Lead	**920**	6.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-43					
Client ID:	**5-S-10-0**					
Arsenic	**110**	5.4	6020	3-8-11	3-10-11	
Lead	**240**	5.4	6020	3-8-11	3-10-11	
Lab ID:	03-048-44					
Client ID:	**5-S-11-0**					
Arsenic	**41**	5.2	6020	3-8-11	3-10-11	
Lead	**220**	5.2	6020	3-8-11	3-10-11	
Lab ID:	03-048-45					
Client ID:	**5-S-12-0**					
Arsenic	**45**	5.4	6020	3-8-11	3-10-11	
Lead	**98**	5.4	6020	3-8-11	3-10-11	
Lab ID:	03-048-46					
Client ID:	**5-S-12-9**					
Arsenic	**3.1**	1.3	6020	3-8-11	3-10-11	
Lead	**6.0**	5.0	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-47					
Client ID:	**5-S-12-18**					
Arsenic	**2.4**	1.3	6020	3-8-11	3-10-11	
Lead	**6.2**	5.1	6020	3-8-11	3-10-11	
Lab ID:	03-048-48					
Client ID:	**5-S-13-0**					
Arsenic	**93**	5.3	6020	3-8-11	3-10-11	
Lead	**350**	5.3	6020	3-8-11	3-10-11	
Lab ID:	03-048-49					
Client ID:	**5-S-13-0-D**					
Arsenic	**94**	5.3	6020	3-8-11	3-10-11	
Lead	**350**	5.3	6020	3-8-11	3-10-11	
Lab ID:	03-048-50					
Client ID:	**5-S-14-0**					
Arsenic	**99**	5.6	6020	3-8-11	3-10-11	
Lead	**300**	5.6	6020	3-8-11	3-10-11	
Lab ID:	03-048-51					
Client ID:	**5-S-16-0**					
Arsenic	**25**	5.3	6020	3-8-11	3-10-11	
Lead	**77**	5.3	6020	3-8-11	3-10-11	
Lab ID:	03-048-52					
Client ID:	**5-S-18-0**					
Arsenic	**50**	5.4	6020	3-8-11	3-10-11	
Lead	**99**	5.4	6020	3-8-11	3-10-11	

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TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-53					
Client ID:	**5-S-20-0**					
Arsenic	**48**	5.1	6020	3-8-11	3-10-11	
Lead	**95**	5.1	6020	3-8-11	3-10-11	
Lab ID:	03-048-54					
Client ID:	**5-S-21-0**					
Arsenic	**120**	5.7	6020	3-8-11	3-10-11	
Lead	**420**	5.7	6020	3-8-11	3-10-11	
Lab ID:	03-048-55					
Client ID:	**5-S-22-0**					
Arsenic	**44**	5.1	6020	3-8-11	3-10-11	
Lead	**100**	5.1	6020	3-8-11	3-10-11	
Lab ID:	03-048-56					
Client ID:	**5-S-36-0**					
Arsenic	**31**	5.0	6020	3-8-11	3-10-11	
Lead	**37**	5.0	6020	3-8-11	3-10-11	
Lab ID:	03-048-57					
Client ID:	**5-S-15-0**					
Arsenic	**96**	5.3	6020	3-8-11	3-10-11	
Lead	**590**	5.3	6020	3-8-11	3-10-11	
Lab ID:	03-048-58					
Client ID:	**5-S-19-0**					
Arsenic	**57**	5.7	6020	3-8-11	3-10-11	
Lead	**120**	5.7	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-59					
Client ID:	**5-S-17-0**					
Arsenic	**54**	5.2	6020	3-8-11	3-10-11	
Lead	**120**	5.2	6020	3-8-11	3-10-11	
Lab ID:	03-048-60					
Client ID:	**5-S-23-18**					
Arsenic	**1.4**	1.3	6020	3-8-11	3-10-11	
Lead	**4.1**	2.5	6020	3-8-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-61					
Client ID:	**5-S-23-9**					
Arsenic	**19**	5.1	6020	3-9-11	3-10-11	
Lead	**53**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-62					
Client ID:	**5-S-23-0**					
Arsenic	**190**	5.1	6020	3-9-11	3-10-11	
Lead	**1500**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-63					
Client ID:	**5-S-24-0**					
Arsenic	**18**	5.1	6020	3-9-11	3-10-11	
Lead	**78**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-64					
Client ID:	**5-S-25-0**					
Arsenic	**98**	5.1	6020	3-9-11	3-10-11	
Lead	**150**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-65					
Client ID:	**5-S-26-0**					
Arsenic	**100**	5.1	6020	3-9-11	3-10-11	
Lead	**120**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-66					
Client ID:	**5-S-27-0**					
Arsenic	**37**	5.1	6020	3-9-11	3-10-11	
Lead	**26**	5.1	6020	3-9-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-67					
Client ID:	**5-S-28-0**					
Arsenic	**160**	5.1	6020	3-9-11	3-10-11	
Lead	**140**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-68					
Client ID:	**5-S-28-0-D**					
Arsenic	**170**	5.1	6020	3-9-11	3-10-11	
Lead	**140**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-69					
Client ID:	**5-S-29-0**					
Arsenic	**39**	5.1	6020	3-9-11	3-10-11	
Lead	**230**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-70					
Client ID:	**5-S-29-9**					
Arsenic	**3.3**	2.5	6020	3-9-11	3-10-11	
Lead	**8.6**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-71					
Client ID:	**5-S-29-18**					
Arsenic	**4.4**	2.5	6020	3-9-11	3-10-11	
Lead	**8.7**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-72					
Client ID:	**5-S-30-0**					
Arsenic	**64**	5.1	6020	3-9-11	3-10-11	
Lead	**43**	5.1	6020	3-9-11	3-10-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020

Matrix: Soil
Units: mg/kg (ppm) Dry weight

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	03-048-73					
Client ID:	**5-S-31-0**					
Arsenic	**70**	5.1	6020	3-9-11	3-10-11	
Lead	**25**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-74					
Client ID:	**5-S-32-0**					
Arsenic	**67**	5.1	6020	3-9-11	3-10-11	
Lead	**130**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-75					
Client ID:	**5-S-33-0**					
Arsenic	**12**	5.0	6020	3-9-11	3-10-11	
Lead	**13**	5.0	6020	3-9-11	3-10-11	
Lab ID:	03-048-76					
Client ID:	**5-S-37-0**					
Arsenic	**200**	5.1	6020	3-9-11	3-10-11	
Lead	**320**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-77					
Client ID:	**5-S-34-0**					
Arsenic	**93**	5.1	6020	3-9-11	3-10-11	
Lead	**110**	5.1	6020	3-9-11	3-10-11	
Lab ID:	03-048-78					
Client ID:	**5-S-35-0**					
Arsenic	**68**	5.1	6020	3-9-11	3-11-11	
Lead	**150**	5.1	6020	3-9-11	3-11-11	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-8&11-11
Date Analyzed:	3-10&11-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0308S2&MB0311S2

Analyte	Method	Result	PQL
Arsenic	6020	**ND**	0.50
Lead	6020	**ND**	0.50

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-8-11
Date Analyzed:	3-10-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0308S3

Analyte	Method	Result	PQL
Arsenic	6020	**ND**	0.50
Lead	6020	**ND**	0.50

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-8-11
Date Analyzed:	3-10-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0308S5

Analyte	Method	Result	PQL
Arsenic	6020	**ND**	0.50
Lead	6020	**ND**	0.50

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-8&11-11
Date Analyzed:	3-10&11-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0309S5

Analyte	Method	Result	PQL
Arsenic	6020	**ND**	0.50
Lead	6020	**ND**	0.50

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
DUPLICATE QUALITY CONTROL

Date Extracted: 3-8&11-11
Date Analyzed: 3-10&11-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**49.5**	**44.7**	10	5.0	
Lead	**333**	**403**	19	5.0	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
DUPLICATE QUALITY CONTROL

Date Extracted: 3-8-11
Date Analyzed: 3-10-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-40

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**94.9**	**94.7**	0	5.0	
Lead	**304**	**303**	0	5.0	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
DUPLICATE QUALITY CONTROL

Date Extracted: 3-8-11
Date Analyzed: 3-10-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-41

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**126**	**116**	8	5.0	
Lead	**634**	**557**	13	5.0	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
DUPLICATE QUALITY CONTROL

Date Extracted: 3-8&11-11
Date Analyzed: 3-10&11-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-61

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**19.1**	**18.0**	6	5.0	
Lead	**52.6**	**40.6**	26	5.0	K

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
MS/MSD QUALITY CONTROL

Date Extracted: 3-8&11-11
Date Analyzed: 3-10&11-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**146**	96	**147**	97	1	
Lead	250	**724**	156	**718**	154	1	V

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
MS/MSD QUALITY CONTROL

Date Extracted: 3-8-11
Date Analyzed: 3-10-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-40

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**206**	111	**196**	101	5	
Lead	250	**586**	113	**562**	103	4	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
MS/MSD QUALITY CONTROL

Date Extracted: 3-8-11
Date Analyzed: 3-10-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-41

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**219**	93	**216**	91	1	
Lead	250	**849**	86	**852**	87	0	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

TOTAL METALS
EPA 6020
MS/MSD QUALITY CONTROL

Date Extracted: 3-8&11-11
Date Analyzed: 3-10&11-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-048-61

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**111**	92	**113**	94	2	
Lead	250	**284**	93	**304**	100	7	

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

% MOISTURE

Date Analyzed: 3-8-11

Client ID	Lab ID	% Moisture
6-FD-1	03-048-01	60
6-FD-2	03-048-02	44
6-FD-3	03-048-03	70
6-FD-4	03-048-04	64
6-FD-5	03-048-05	65
6-FD-6	03-048-06	55
5-FD-7	03-048-07	52
5-FD-8	03-048-08	61
5-FD-9	03-048-09	61
5-FD-10	03-048-10	53
5-FD-11	03-048-11	48
5-FD-12	03-048-12	65
5-FD-13	03-048-13	69
5-FD-13-D	03-048-14	70
5-FD-14	03-048-15	56
5-FD-15	03-048-16	65
5-FD-22	03-048-17	44
5-FD-23	03-048-18	60
5-FD-24	03-048-19	81
5-FD-25	03-048-20	68
5-FD-26	03-048-21	50
5-FD-27	03-048-22	47
5-FD-28	03-048-23	68
5-FD-28-D	03-048-24	67
5-FD-29	03-048-25	52
5-FD-30	03-048-26	72
5-FD-31	03-048-27	71

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

% MOISTURE

Date Analyzed: 3-8-11

Client ID	Lab ID	% Moisture
5-FD-32	03-048-28	63
5-FD-33	03-048-29	55
5-FD-34	03-048-30	47
5-FD-35	03-048-31	46
5-FD-36	03-048-32	40
5-FD-37	03-048-33	49
6-S-1-0	03-048-34	5
6-S-2-0	03-048-35	3
6-S-3-0	03-048-36	10
6-S-4-0	03-048-37	4
6-S-5-0	03-048-38	12
6-S-6-0	03-048-39	10
5-S-7-0	03-048-40	13
5-S-8-0	03-048-41	16
5-S-9-0	03-048-42	17
5-S-10-0	03-048-43	8
5-S-11-0	03-048-44	4
5-S-12-0	03-048-45	7
5-S-12-9	03-048-46	1
5-S-12-18	03-048-47	2
5-S-13-0	03-048-48	6
5-S-13-0-D	03-048-49	6
5-S-14-0	03-048-50	11
5-S-16-0	03-048-51	5
5-S-18-0	03-048-52	7
5-S-20-0	03-048-53	1
5-S-21-0	03-048-54	13

Date of Report: March 15, 2011
Samples Submitted: March 4, 2011
Laboratory Reference: 1103-048
Project: 19897-79698

% MOISTURE

Date Analyzed: 3-8-11

Client ID	Lab ID	% Moisture
5-S-22-0	03-048-55	2
5-S-36-0	03-048-56	1
5-S-15-0	03-048-57	5
5-S-19-0	03-048-58	12
5-S-17-0	03-048-59	3
5-S-23-18	03-048-60	1
5-S-23-9	03-048-61	1
5-S-23-0	03-048-62	2
5-S-24-0	03-048-63	2
5-S-25-0	03-048-64	2
5-S-26-0	03-048-65	2
5-S-27-0	03-048-66	1
5-S-28-0	03-048-67	3
5-S-28-0-D	03-048-68	3
5-S-29-0	03-048-69	3
5-S-29-9	03-048-70	1
5-S-29-18	03-048-71	1
5-S-30-0	03-048-72	2
5-S-31-0	03-048-73	3
5-S-32-0	03-048-74	2
5-S-33-0	03-048-75	1
5-S-37-0	03-048-76	2
5-S-34-0	03-048-77	1
5-S-35-0	03-048-78	2

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

Company: CDM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Marill
Sampled by: KLE/MLF

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total Pb & As EPA 6010						% Moisture
1	6-FD-1	3/1/11	0820	Duff	1																✓						✓
2	6-FD-2		1120		1																✓						✓
3	6-FD-3		0904		1																✓						✓
4	6-FD-4		0950		1																✓						✓
5	6-FD-5		1015		1																✓						✓
6	6-FD-6		1030		1																✓						✓
7	5-FD-7		1240		1																✓						✓
8	5-FD-8		1256		1																✓						✓
9	5-FD-9		1350		1																✓						✓
10	5-FD-10		1400		1																✓						✓

	Signature	Company	Date	Time
Relinquished	MaryLou Fox	CDM	3/4/11	0955
Received		CDM	3/4/11	1200
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) ☐ _____

Chain of Custody

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

Company: CDM
Project Number: 19897-79698
Project Name: KC Mercer Island
Project Manager: Pam Morrill
Sampled by: KLL & MLF

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	total Pb ε As EPA 6010						% Moisture
11	5-FD-11	3/1/11	1420	Duff	1																✓						✓
12	5-FD-12		1520		1																✓						✓
13	5-FD-13		1555		1																✓						✓
14	5-FD-13-D		1600		1																✓						-
15	5-FD-14		1625		1																✓						✓
16	5-FD-15	″	1650		1																✓						✓
17	5-FD-22	3/2/11	1030		1																✓						✓
18	5-FD-23		1050		1																✓						✓
19	5-FD-24		1120		1																✓						✓
20	5-FD-~~15~~ 3-3-11 425	″	1150	″	1																✓						✓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Mary Lou Fox	CDM	3/4/11	0955	
Received		CDM	3/4/11	1200	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

Chain of Custody

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

Company: CDM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Merrill
Sampled by: KLL & MLF

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As, Pb, EPA 6010						% Moisture
21	5-FD-26	3/2/11	1205	Soil	1																✓						✓
22	5-FD-27		1235		1																✓						✓
23	5-FD-28		1255		1																✓						✓
24	5-FD-28-D		1300		1																✓						✓
25	5-FD-29 MLF 3.3.11		1415		1																✓						✓
26	5-FD-30		1445		1																✓						✓
27	5-FD-31		1520		1																✓						✓
28	5-FD-32		1540		1																✓						✓
29	5-FD-33		1600		1																✓						✓
30	5-FD-34	↓	1610	↓	1																✓						✓

	Signature	Company	Date	Time
Relinquished	Mary Lou Fox	CDM	3/4/11	0955
Received		CDM	3/4/11	1200
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) ☐ _____

Chain of Custody

Page 4 of 8

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

Company: CDM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Morrill
Sampled by: KLL & MLF

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As, Pb EPA 6010						% Moisture
31	S-FD-35	3/2/11	1625	Duff	1																✓						✓
32	S-FD-36	MLF 3/3/11	1640	↓	1																✓						✓
33	S-FD-37	↓	1710	↓	1																✓						✓
34	6-S-1-0	3/1/11	0823	Soil	1																✓						✓
35	6-S-2-0		0836		1																✓						✓
36	6-S-3-0		0910		1																✓						✓
37	6-S-4-0		0955		1																✓						✓
38	6-S-5-0		1020		1																✓						✓
39	6-S-6-0		1034		1																✓						✓
40	5-S-7-0	↓	1238	↓	1																✓						✓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Mary Lou Fox	CDM	3/4/11	0955	
Received		ORE	3/4/11	1200	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

Chain of Custody

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

Company: COM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Morrill
Sampled by: KLL & MLF

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As & Pb, EPA 6010						% Moisture
41	5-S-8-0	3/1/11	1302	Soil	1																✓						✓
42	5-S-9-0		1355		1																✓						✓
43	5-S-10-0		1404		1																✓						✓
44	5-S-11-0		1423		1																✓						✓
45	5-S-12-0		1525		1																✓						✓
46	5-S-12-9		1528		1																✓						✓
47	5-S-12-18		1535		1																✓						✓
48	5-S-13-0		1605		1																✓						✓
49	5-S-13-0-SD (D3)		1610		1																✓						✓
50	5-S-14-0		1638		1																✓						✓

	Signature	Company	Date	Time
Relinquished	Mary Lou Fox	COM	3/4/11	0955
Received		OSE	3/4/11	1200
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) ☐ _____

Chain of Custody

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

Company: COM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Morrill
Sampled by: KLL & MLF

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As & Pb, EPA 6010						% Moisture
51	5-S-16-0	3/2/11	0855	Soil	1																✓						✓
52	5-S-18-0		0915		1																✓						✓
53	5-S-20-0		1010		1																✓						✓
54	5-S-21-0		1020		1																✓						✓
55	5-S-22-0		1035		1																✓						✓
56	5-S-36-0	↓	1635		1																✓						✓
57	5-S-15-0	3/1/11	1655		1																✓						✓
58	5-S-19-0	3/2/11	0925		1																✓						✓
59	5-S-17-0	3/2/11	0905		1																✓						✓
60	5-S-23-18	3/2/11	1100	↓	1																✓						✓

	Signature	Company	Date	Time
Relinquished	Mary Lou Fox	COM	3/4/11	0955
Received		COE	3/4/11	1200
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) ☐ _____

Chain of Custody

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

Company: COM
Project Number: 19897-79698
Project Name: KC Marine Island
Project Manager: Pam Merrill
Sampled by: KLL & MLF

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As & Pb, EPA 6010					% Moisture
61	S-S-23-9	3/2/11	1055	Soil	1																✓					✓
62	S-S-23-0		1050		1																✓					✓
63	S-S-24-0		1125		1																✓					✓
64	S-S-25-0		1155		1																✓					✓
65	S-S-26-0		1210		1																✓					✓
66	S-S-27-0		1245		1																✓					✓
67	S-S-28-0 3/4/11 MLF		1300		1																✓					✓
68	S-S-28-0-~~2~~ D		1305		1																✓					✓
69	S-S-29-0		1425		1																✓					✓
70	S-S-29-9	↓	1430	↓	1																✓					✓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Mary Lou Fox	COM	3/4/11	0955	
Received		OSE	3/4/11	1200	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

Chain of Custody

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

Company: COM
Project Number: 19897-79698
Project Name: KC Maury Island
Project Manager: Pam Morrill
Sampled by: Kellen LF

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 03-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Total As, Pb, EPA 6010						% Moisture
71	S-S-29-18	3/2/11	1435	Soil	1																✓						✓
72	S-S-30-0		1480 MLF 3-4-11		1																✓						✓
73	S-S-31-0		1525		1																✓						✓
74	S-S-32-0		1545		1																✓						✓
75	S-S-33-0		1605 MLF 3-4-11		1																✓						✓
76	S-S-37-0		1715		1																✓						✓
77	S-S-34-0		1615		1																✓						✓
78	S-S-35-0		1630		1																✓						✓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	MaryLou Fox	COM	3/4/11	0955	
Received		OSE	3/4/11	1200	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

Appendix C
Field Documentation

Project KC Maury Island
Project No. 19897-79698
Location Maury Island, WA
Date 03/01/11
Equipment Rental ________ Company ________
To File
Equipment Hours ________ F.E. Time from: ________ to: ________
By (KL) Kevin Lee

Sample Log

total #	Sample ID	date	time	Description / comments
1	6-fd-1	3/01/11	0820	dead/fallen trees nearby, ~~maybe~~ KL
2	6-S-1-0		0823	
3	6-S-2-0		0836	
4	6-fd-3		0904	
5	6-S-3-0		0940	
6	6-fd-4		0950	Forest mix of deciduous and evergreens, 4" duff layer
7	6-S-4-0		0955	light brown
8	6-fd-5		1015	6-7" duff layer
9	6-S-5-0		1020	
10	6-fd-6		1030	1" duff layer large boulders and small dead trees in area
11	6-S-6-0		1034	
12	6-fd-2		1120	3" duff layer ~5 ft from soil sample point
13	5-fd-7		1240	2" duff layer, salal, fern underbrush.
14	5-S-7-0		1238	
15	5-fd-8		1256	1" duff layer
16	5-S-8-0		1302	
17	5-S-9-0		1355	
18	5-fd-9		1350	1" duff
19	5-fd-10		~~1410~~ 1400	
20	5-S-10-0		1404	
21	5-fd-11		1420	2" duff
22	5-S-11-0		1423	
23	5-fd-12		1520	salal in underbrush, unhealthy Douglas firs nearby
24	5-S-12-0		1525	1" duff layer
25	5-S-12-9		1528	light brown, fine
26	5-S-12-18		1535	
27	5-fd-13	3/01/11	1605	ferns moss ~~edge of wetlands~~

[illegible] (left margin note beside row 24)

Project KC Maury Island
Location Maury Island, WA
Project No. 19897-79698
Date 03/01/11
Equipment Rental _____ Company _____
To File
Equipment Hours _____ F.E. Time from: _____ to: _____
By (KLL) Kevin Lee

Sample Log

Total #	Sample ID	date	time	Description / Comments
28	S-fd-13-D	03/01/11	1600	
29	S-S-13-Ø		1605	
30	S-S-13-Ø-D		1610	
31	S-fd-14		1625	
32	S-S-14-0		1638	
33	S-fd-15		1650	
34	S-S-15-0		1655	

Project KC Maury Island | Project No.
Location Maury Island, WA | Date 03/02/2011
Equipment Rental | Company | To File
Equipment Hours | F.E. Time from: | to: | By (KLL) Kevin Lee

Sample Log

total #	Sample ID	date	time	Description / Comments
35	S-S-16-0	3/2/11	0855	- highly disturbed area, sample taken in most relatively undisturbed area (scotch broom + grass patch surrounded by cleared blackberries) — no duff layer
36	S-S-17-0		0905	- highly disturbed, sample taken in relatively undisturbed moss patch. No duff. In cleared sticker bushes. Shotgun casing found nearby
37	S-S-18-0		0915	- highly disturbed surroundings, sample taken in relatively undisturbed grass patch. No duff.
38	S-S-19-0		0925	- highly disturbed surroundings, sample taken in relatively undisturbed grass patch. No Duff.
39	S-S-20-0		1010	- beneath drip line of maple tree. nearby holly bush. No Duff sandier soils observed on in samples taken on plateau.
40	S-S-21-0		1020	- EL mossy area w/ ferns. No Duff under the ferns.
41	S-fd-22		1030	- 3" duff layer, ferns around for understory, under douglas firs.
42	S-S-22-0		1035	- area to south is cleared and disturbed blackberries.
43	S-fd-23		1050	- 1-1.5" duff layer. dead trees near by. Wetland to N
44	S-S-23-0		1055	- brown. silty sand
45	S-S-23-9		1055	- brown
46	S-S-23-18		1100	- light brown less silty, more saturated.
47	S-fd-24-		1120	- in ~~wetlands~~, wetland tall grass nearby. near fir treeline. 2" duff layer
48	S-S-24-0		1125	- ~~standing water~~ ~ 1" soil mark, sample saturated.
49	S-fd-25		1150	- 2" duff layer firs, madrona, ferns, salal nearby.
50	S-S-25-0		1155	- light brown
51	S-S-26		1205	- moss and ferns understory, magnolias and aspen? up.
52	S-S-26-0		1210	- light brown, many roots imbedded.
53	S-fd-27		1235	- 3" duff, near large dead madrona, fir, salal, ferns
54	S-S-27-0		1245	- light brown
55	S-fd-28		1255	- duplicate taken, heavy salal understory. Near douglas fir tree line
		3/4	1700	- 4" of duff + moss

Project Kc Maury Island | Project No.
Location Maury Island, WA | Date 3/2/11
Equipment Rental | Company | To File
Equipment Hours | F.E. Time from: | to: | By (KLL) Kevin Lee

Sample Log

total #	Sample ID	Date	time	Description / comments
57	5-fd-29	3/2/11	1415	- alders, ferns and moss for veg. 3" duff
58	5-s-29-0		1425	- light brown
59	5-s-29-9		1430	- light brown
60	5-s-29-18		1435	- silty, light brown/grey, sticky
61	5-fd-30		1445	- downed trees, near by salal, madrona, aspen, charcoal (from old burned trees) in duff
62	5-s-30-0		1450	- light brown
63	5-fd-31		1520	- nearby dying madrona, minimal underbrush. 8" duff layer
64	5-s-31-0		1525	- light brown
65	5-fd-32		1540	- minimal underbrush, few ferns.
66	5-s-32-0		1545	- light brown, 4" below duff.
67	5-fd-33		1600	- 1" duff layer, sample taken in slope of a ravine going East to West.
68	5-s-33-0		1605	- light brown
69	5-fd-34		1610	- 2" duff minimal underbrush, nearby maple
70	5-s-34-0		1615	
71	5-fd-35		1625	- minimal underbrush, moss ~30 ft from shooting plateau
72	5-s-35-0		1630	- 2-3" below duff layer
73	5-fd-36		1640	- gravel in duff and soil ~2" deep duff layer
74	5-s-36-0		1645	- containing sand and gravel, light brown
75	5-fd-37		1710	- 15' off trail, small clearing
76	5-s-37-0	3/2/11	1715	- 2" below duff

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