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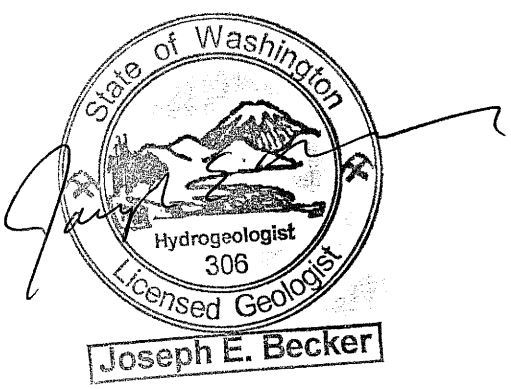
MIZUKAMI PROJECT SITE (VCP SW1137)
4524 20TH STREET EAST
FIFE, WASHINGTON
JUNE 2011 GROUNDWATER MONITORING REPORT

JULY 2011

by

John F. Hildenbrand
Associate Environmental Scientist
Environmental Services Manager



MIZUKAMI PROJECT SITE (VCP SW1137)
4524 20th Street East, Fife, Washington
June 2011 Groundwater Monitoring Report
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1.0 Introduction

1.1 Purpose and Site Identification

This report presents the results of the June 2011 groundwater monitoring event at the Mizukami project site located in Fife, Washington. The site is located at 4524 20th Street East, Fife, Pierce County, Washington. The parcel is bordered by 20th Street to the north and Frank Albert Road to the east. Across Frank Albert Road is a commercial business park. The subject site is bordered on the south and west by property under the same ownership, CMKM, LLC, as the subject site. Pierce County Assessor-Treasurer records indicate the subject property is identified as tax parcel number 0320126023.

1.2 Regional Geology/Hydrogeology

The subject property is mapped by the *Geological Map of the Puyallup 7.5 Minute Quadrangle, Washington* (Troost, in review) as being Quaternary alluvium (Qal). This alluvium is composed of over-bank deposits associated with the Puyallup River, consisting of generally fine to very fine sand, silts, and clay. The soils in the area of the subject have been classified by the United States Department of Agriculture, as published in the *Soil Survey for the Pierce County Washington Area,* 1977, as Puyallup fine sandy loam. Previous site activities found groundwater occurring within the alluvial sediments at a depth of approximately six to seven feet below ground surface.

2.0 Background

The site is currently developed as a commercial warehouse. The current owner, CMKM, LLC, purchased the (then) residential property in July 2003. At that time, a heating-oil underground storage tank (UST) was excavated for removal. An aboveground, heating-oil storage tank was also in close proximity to this excavation. Fuel-oil service lines associated with this aboveground tank failed during the winter of 2003 and resulted in a leakage of over 150 gallons of diesel fuel into the subsurface.

Previous efforts have established that groundwater concentrations of diesel and diesel-range organics do not exceed MTCA Method A groundwater levels. However, some soil contamination has been shown to remain underneath sidewalk and utility right-of-ways.

Based on previous opinions provided by the Department of Ecology (Ecology), we have identified five final closure tasks we anticipate are necessary for a no-further-action (NFA) determination. They are:

1. Replace the damaged monitoring well MW4 and obtain three additional quarters of groundwater monitoring data to supplement the previously collected data.

2. Complete a remedial action feasibility study with a disproportionate cost analysis assessing the costs of removal of the previously documented residual contamination versus leaving it in place.
3. Prepare a draft environmental covenant for Ecology's approval. Once it is approved, it will be recorded against the property.
4. A long-term groundwater monitoring plan will need to be submitted to, and approved by, Ecology.
5. Complete Environmental Information Management (EIM) data entry of all project data. This will need to be completed prior to the time the environmental covenant is filed.

3.0 Quarterly Monitoring

Robinson Noble personnel collected water samples from six monitoring wells on June 14. Prior to sampling, the wells were opened and allowed to stabilize before water levels were sounded. Originally, the site had seven monitoring wells; however, after the current development of the site, one of the monitoring wells was removed. The observed flow direction from the remaining six wells was determined to be toward the northeast. A groundwater mound was observed in the area around MW4-B. This is likely due to the location of the well in a landscaped area receiving substantial precipitation run off immediately prior to the monitoring event and the proximity of a storm drain catch basin within the road right-of-way. Table 1 displays the depth to water measured in each well.

Table 1. June 14, 2011 Water Levels (in feet)

Well No.	Top of Casing Elevation*	Depth to Groundwater	Groundwater Elevation*
MW1	95.36	4.28	91.08
MW-2	100.26	8.17	92.09
MW-3	93.01	1.11	91.90
MW-4B	94.81	3.49	91.32
MW-6	98.07	6.45	91.62
MW-7	99.19	7.40	91.79

* Elevations are relative to an arbitrary site benchmark of 100 feet.

A peristaltic pump and dedicated tubing were used to sample each well. Samples were collected after at least three volumes of water were purged from the wells and field measurements of temperature, conductivity, total dissolved solids, and dissolved oxygen had stabilized (within measurement error limits). The groundwater monitoring field sampling notes are attached in Appendix C.

Water samples were collected from the six wells and placed into laboratory-supplied, precleaned containers with the proper preservatives for delivery to an accredited laboratory. The samples were placed in a laboratory-supplied, thick-walled cooler containing blue ice. The samples were delivered to Libby Environmental, Inc. of Olympia, Washington. The samples were submitted for analysis using Ecology NWTPH-GX, Ecology NWTPH-Dx/Dx Extended, EPA Method 8021B, and EPA Method 8270C.

3.1 Analytical Results

As indicated by the analytical results and summarized in Table 2 below (complete results attached in Appendix B), no detection of target analytes were reported above laboratory detection limits for any of the groundwater samples submitted for analysis except for MW-7. The sample collected from MW-7 was found to have gasoline-range petroleum hydrocarbons, xylenes, and ethylbenzene above laboratory detection limits[1]. The reported concentrations are, however, below the applicable MTCA Method A cleanup limits (CULs). MW-7 is located at a site where a groundwater sample from a direct-push boring was collected during the initial characterization activities that contained diesel-range petroleum hydrocarbons at a concentration of 50,000 µg/L. These concentrations are substantially lower than those noted in the March 2011 monitoring event.

Table 2. June 14, 2011 Sampling Event Analytical Results (µg/L)

Analyte/ Sample ID	MW-1	MW-2	MW-3	MW-4B	MW-6	MW-7	MTCA Method A
Gasoline	nd	nd	nd	nd	nd	170	800
Diesel	nd	nd	nd	nd	nd	nd	500
Oil	nd	nd	nd	nd	nd	nd	500
cPAH	nd	nd	nd	nd	nd	nd	0.1
Benzene	nd	nd	nd	nd	nd	nd	5
Toluene	nd	nd	nd	nd	nd	nd	1,000
Ethylbenzene	nd	nd	nd	nd	nd	nd	700
Xylenes	nd	nd	nd	nd	nd	4.5	1,000
1,2-Dichloroethane (EDC)*	nd	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	nd	nd	nd	nd	nd	nd	nd
Naphthalene	nd	nd	nd	nd	nd	nd	160

nd = analyte concentration is below the laboratory detection limit

*= Analyte added at the request of the Washington State Department of Ecology

4.0 Quality Assurance/Quality Control (QA/QC)

4.1 Daily Field QA/QC

The project manager reviewed all documentation including sample logs, custody forms, and field logs prior to samples being delivered to the laboratory. Review was done for completeness, accuracy, and consistency. As noted on the chain-of-custody sheet, MTCA 830-1 VOCs were added to the target compound list on June 21, 2011 at the request of Ecology.

4.2 Sample Packaging and Shipping

The groundwater samples collected for chemical analysis were kept out of direct sunlight and were checked for label completeness and cap tightness. All samples submitted to the laboratory were thermally preserved in the field (four degrees Celsius) immediately after sample collection by placing them upright in a pre-cooled, insulated ice chest containing uncontaminated blue

[1] The reported concentrations for MW-7 are from the laboratory duplicate. The duplicate was used to present a "worst-case" picture of the levels detected.

ice. The cooler is constructed of plastic or fiberglass standard to those provided by environmental analytic laboratories. The cooler does not have a drain.

4.3 Chain-of-Custody

A chain-of-custody form accompanied samples submitted to the laboratory. Chain-of-custody forms were in order as noted in the analytical narrative from the contractor laboratory.

4.4 Laboratory QA/QC

A narrative regarding quality assurance and quality control is provided with the laboratory analysis reports. This narrative indicated quality control was within acceptable limits.

5.0 Feasibility Study and Disproportionate Cost Analysis

Subsequent to excavation of impacted soils, Robinson Noble completed remedial investigation efforts in 2005 and 2006. That work is documented in reports dated April 2005 and January 2006. The data presented in these reports, along with subsequent monitoring events, indicates that a small area of soil contamination remains in a utility right-of- way in the northeastern corner of the property.

MTCA defines that the evaluation of whether or not a cleanup action uses permanent solutions to the "maximum extent practicable" should be based on a disproportionate cost analysis consistent with the requirements of WAC 173-340-360(e). In that analysis, cleanup alternatives are arranged from most to least permanent based on the criteria contained in WAC 173-340-360(f).

The disproportionate cost analysis then compares the relative environmental benefits of each alternative against those provided by the most permanent alternative evaluated. The assessment of benefits can be qualitative as well as quantitative. Costs are disproportionate to benefits if the incremental costs of the more permanent alternative exceed the incremental degree of benefits achieved by the other lower-cost alternative (WAC 173-340-360(e) (i)). Alternatives which exhibit such disproportionate costs are considered "impracticable." Where the quantitative and qualitative benefits of two alternatives are equivalent, MTCA specifies that Department of Ecology shall select the less costly alternative (WAC 173-340-360(e)(ii)(c)).

5.1 Existing Status

As previously documented and noted above, an area of impacted soil remains within utility corridors on the Northeastern corner of the property. Based on the data generated to date, we estimate the amount of impacted soil remaining is less than 50 cubic yards.

5.2 Remedial Action Options

The existing data indicate that the residual soil concentrations are close to MCTA Method A cleanup levels. These relatively low levels, along with the absence of groundwater contaminants above MTCA limits, preclude the practical consideration of in-situ remedial options. However, in order to assess the relative costs, two options were compared. These options include excavation and off-site disposal of impacted soil and the implementation of institutional controls and long-term groundwater monitoring

The selected options were evaluated according to the criteria specified in WAC 173-340-360 3(e) which are 1) protectiveness, 2) permanence, 3) cost, 4) long-term effectiveness, 5) short-term risk management, 6) implementability (technical and administrative), and 7) consideration of public concerns. The results of our evaluation are as follows:

1. **Protectiveness** – The excavation and off-site removal of the residual soil contamination is the more protective of the two options. However, the soil is located in a utility corridor, and groundwater contamination is not present. This, combined with the commercial nature of the subject and surrounding area, indicates that the use of institutional controls does not present any likely exposure issues.

2. **Permanence** – Neither option permanently destroys the contaminants. While the off-site disposal option can be considered to be permanent with respect to the presence of contaminants on site, in reality, it only relocates the contaminants to another location. Thus, both options are essentially equal in permanence.

3. **Costs** – As outlined in the following table, the implementation of institutional controls and long-term monitoring is considerably less than excavation and off-site disposal. The estimated cost of the latter is roughly 876% greater.

Table 3. Cost Comparison

Task	Excavation and off-site disposal	Institutional control and long-term groundwater monitoring
Contaminated soil excavation*	$5,000	N/A
Contaminated soil transport and* disposal	$4,000	N/A
Engineering and permitting for utility relocation and restoration	$25,000	N/A
Utility relocation and restoration	$50,000	N/A
Engineering and permitting for roadway/side walk removal and repair	$10,000	N/A
Sidewalk and roadway repair	$100,000	N/A
Preparation and filing of environmental covenant	N/A	$1,000
**Long-term monitoring (5 years)	N/A	$20,000
Total Cost	$194,000	$21,000

* The excavation estimates are based on 100 tons of contaminated soil requiring removal and disposal
** Assumes five years of monitoring at 18-month intervals

4. **Effectiveness over the long term** – Given the stable nature of the contaminants and the nature of the selected options, both options are equally effective, although the on-site option will require restrictive environmental covenants. The nature of the proposed on-site disposal will not require significant ongoing or long-term maintenance/operation costs, and any use restrictions or other controls will be clearly detailed in an environmental restrictive covenant.

5. **Management of short-term risks** – The short-term risks posed by excavation and off-site disposal consist primarily of potential worker exposure to contaminants during excavation activities and from safety risks posed by working in and near active roadways.

   Given the current stable nature of the site, there are no significant short-term risks associated with the implementation of institutional controls and groundwater monitoring.

6. **Implementability** – Excavation and off-site disposal requires substantial design and planning efforts. These efforts involve acquiring permission to temporarily re-route fiber optic communications line and to occupy and disturb public sidewalk and street right-of-ways. Receiving this permission will include engineering efforts, and receipt of permission is not guaranteed. Thus, while technically possible, it is not certain that excavation and removal will be allowed. Implementation of institutional controls and monitoring, including filing of the environmental covenant, is possible and can be achieved rapidly.

7. **Consideration of public concerns** –Given the scope of the project and the commercial nature of the area, public concern is not expected for either option.

5.3 Summary

Considering the technical challenges and uncertainty of obtaining permission associated with the removal and off-site disposal of contaminants located in the right-of-way, the practical protectiveness of this option is limited. This limitation leads us to opine that the proposed implementation of institutional controls and long-term groundwater monitoring option is at least equally protective. As shown above, the institutional control option possesses substantially lower implementation costs. Therefore, the cost of excavation and off-site disposal is considered to be disproportionate to the reduction in risk when compared to the preferred option of implementing institutional controls.

6.0 Terrestrial Ecological Evaluation

The subject property and surrounding area is zoned industrial or regional commercial center by the City of Fife, Washington. The residual soil contamination is covered by existing sidewalks and asphalt roadway. As noted on the Terrestrial Ecological Evaluation process Primary Exclusion Documentation Form located in Appendix E, the site qualifies for primary exclusion number two.

7.0 Conclusions

The results of this monitoring event indicate the previously established trend of the absence of target compounds above MTCA Method A limits is continuing. This indicates the residual soil contamination located within the right-of-way does not appear to be impacting groundwater. Additionally, the decreasing concentrations of target compound concentrations below MTCA Method A limits in MW-7 indicate groundwater in that area is not significantly impacted. A summary of the groundwater data collected for this site is located in Appendix D

The evaluation of remedial options detailed in Section 5, show that, given the absence of groundwater contamination above MTCA method A limits and the previous removal of the majority of the impacted contaminated soil, the application of further remedial actions designed to remove or further reduce the remaining residual soil contaminants is substantially disproportionate to the additional reduction in risk when compared to the implementation of institutional controls. Further, the analysis indicates there is little risk to the terrestrial ecosystem proximal to the subject. Thus, closure of this site by implementing institutional controls and long-term groundwater monitoring is appropriate and protective of human and ecological health.

8.0 Recommendations

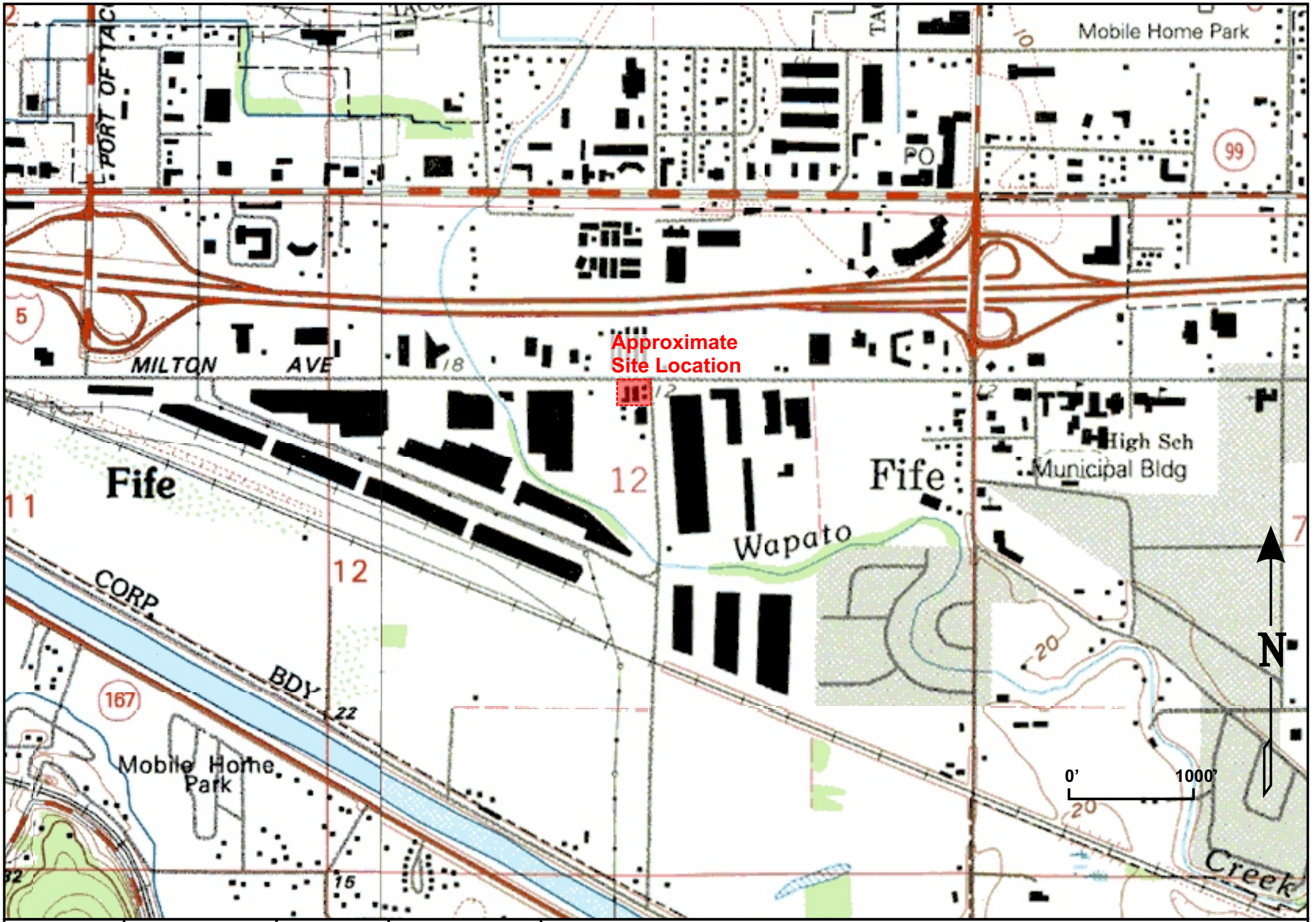
A long-term groundwater monitoring plan should be prepared and submitted to Ecology for review and approval. Subsequent to determination by the Washington State Department of Ecology that a no-further-action determination is likely, an environmental covenant specifying the institutional controls and requisite long-term groundwater monitoring program should be prepared and recorded with the Pierce County Auditor.

9.0 Limitations

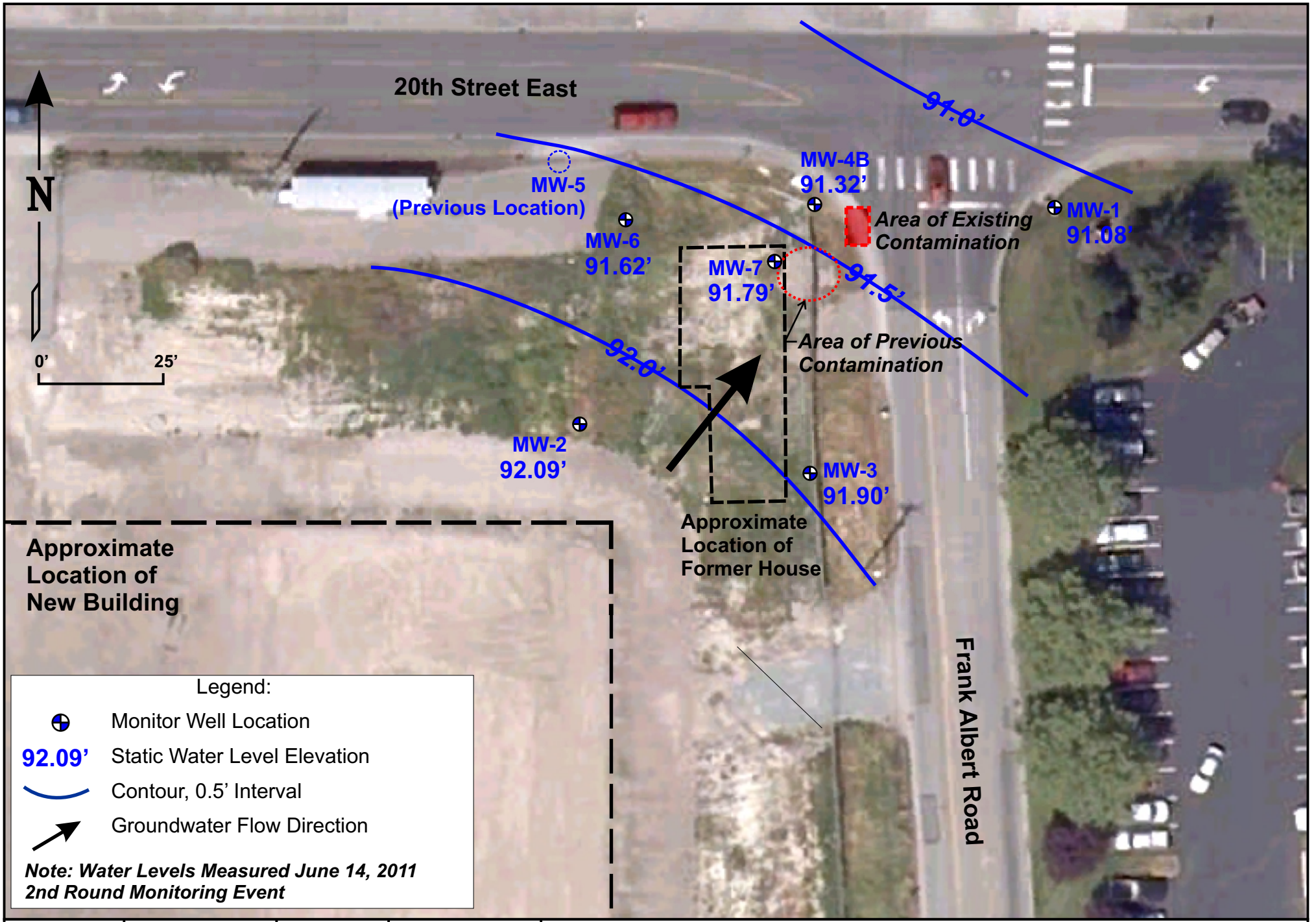
The services described in this report were performed consistently with generally accepted environmental consulting principles and practices. No other warranty, expressed or implied, is made. These services were consistent with the Robinson Noble, Inc. agreement with the client. This report is solely for the use and information of the client unless otherwise noted. Any reliance on this report by a third party is at the party's sole risk.

Opinions and recommendations contained in this report apply to existing conditions when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. Since site conditions and regulations beyond our control could change at any time after the completion of our site visit, we are not responsible for the impacts of any changes in environmental conditions, standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor do we warrant the use of segregated portions of this report.

APPENDIX A



ROBINSON NOBLE	Note: Image taken from USGS Puyallup Quad.	PM: JFH July 2011 2203-001B	Pierce County T 20 N/R 03 E - 12 Scale 1" = 1000'	Figure 1 Vicinity Map Mizukami Project: 20th Street/Remedial Investigation



ROBINSON NOBLE	Note: Image taken from USGS Terra Server Website	PM: JFH July 2011 2203-001B	Pierce County T 20 N/R 03 E - 12 Scale 1" = 25'	Figure 2 Potentiometric Surface Contour Map Mizukami Project: 20th Street/Remedial Investigation

APPENDIX B

Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

June 22, 2011

John Hildenbrand
Robinson Noble
3011 Huson Street South
Suite A
Tacoma, WA 98409

Dear Mr. Hildenbrand:

Please find enclosed the analytical data report for the Gensco-Langseth Project located in Fife, Washington. Water samples were analyzed for Diesel & Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx and BTEX by EPA Method 8021B, Specific Halogenated and Aromatic Hydrocarbons by EPA Method 8260C and PAH (Polyaromatic Hydrocarbons) by EPA Method 8270 on June 15, 17 & 22, 2011.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is enclosed.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
President
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

GENSCO-LANGSETH PROJECT
Fife, Washington
Robinson Noble, Inc.
Client Project # 2203-001B
Libby Project No. L110615-3

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	Surrogate Recovery (%)
Method Blank	6/17/11	nd	nd	nd	nd	nd	95
LCS	6/17/11	95%	104%				92
MW-1	6/17/11	nd	nd	nd	nd	nd	92
MW-3	6/17/11	nd	nd	nd	nd	nd	95
MW-2	6/17/11	nd	nd	nd	nd	nd	95
MW-4B	6/17/11	nd	nd	nd	nd	nd	97
MW-6	6/17/11	nd	nd	nd	nd	nd	90
MW-7	6/17/11	nd	nd	nd	4.5	170	94
MW-7 Dup	6/17/11	nd	nd	nd	4.4	230	97
L110611-2 MS	6/17/11	90%	117%				98
L110611-2 MSI	6/17/11	99%	112%				95
Practical Quantitation Limit		1	2	1	3	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

GENSCO-LANGSETH PROJECT
Fife, Washington
Robinson Noble, Inc.
Client Project # 2203-001B
Libby Project No. L110615-3

Specific Halogenated and Aromatic Hydrocarbons (EPA 8260C) in Water

Sample Description		Method Blank	MW-1	MW-3	MW-2	MW-4B	MW-6
Date Sampled		n/a	6/15/11	6/15/11	6/15/11	6/15/11	6/15/11
Date Analyzed		6/17/11	6/17/11	6/17/11	6/17/11	6/17/11	6/17/11
	PQL (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Benzene	1.0	nd	nd	nd	nd	nd	nd
Toluene	1.0	nd	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd	nd	nd
Total Xylenes	1.0	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	0.01	nd	nd	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	nd	nd	nd	nd	nd
MTBE	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		89.0	97.1	98.1	101	106	101
1,2-Dichloroethane-d4		97.0	78.3	74.9	76.5	82.3	75.4
Toluene-d8		94.9	92.5	95.2	94.9	96.6	90.4
4-Bromofluorobenzene		92.9	103	102	101	101	102

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

GENSCO-LANGSETH PROJECT
Fife, Washington
Robinson Noble, Inc.
Client Project # 2203-001B
Libby Project No. L110615-3

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)	Mineral Oil (ug/l)	Oil (ug/l)
Method Blank	6/15/11	95	nd	nd	nd
MW-1	6/15/11	91	nd	nd	nd
MW-3	6/15/11	86	nd	nd	nd
MW-2	6/15/11	90	nd	nd	nd
MW-4B	6/15/11	87	nd	nd	nd
MW-6	6/15/11	85	nd	nd	nd
MW-7	6/15/11	83	nd	nd	nd
MW-7 Dup	6/15/11	88	nd	nd	nd
Practical Quantitation Limit			200	400	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

GENSCO-LANGSETH PROJECT
Fife, Washington
Robinson Noble, Inc.
Client Project # 2203-001B
Libby Project No. L110615-3

Specific Halogenated and Aromatic Hydrocarbons (EPA 8260C) in Water

Sample Description		MW-7	MW-7 Dup
Date Sampled		6/15/11	6/15/11
Date Analyzed		6/17/11	6/17/11
	PQL (ug/l)	(ug/l)	(ug/l)
Benzene	1.0	nd	nd
Toluene	1.0	nd	nd
Ethylbenzene	1.0	nd	nd
Total Xylenes	1.0	4.5	4.4
1,2-Dichloroethane (EDC)	1.0	nd	nd
1,2-Dibromoethane (EDB)	0.01	nd	nd
Total Naphthalenes	5.0	nd	nd
MTBE	5.0	nd	nd
Surrogate Recovery			
Dibromofluoromethane		85.0	106
1,2-Dichloroethane-d4		92.0	86.3
Toluene-d8		94.4	96.9
4-Bromofluorobenzene		93.1	100

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

LIBBY ENVIRONMENTAL CHEMISTRY LABORATORY

GENSCO-LANGSETH PROJECT
Fife, Washington
Robinson Noble, Inc.
Client Project # 2203-001B
Libby Project No. L110615-3

QA/QC Data - EPA 8260C Analyses

Sample Identification: L110616-2							
	Matrix Spike			Matrix Spike Dup			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	RPD (%)
Benzene	10	9.0	90	10	9.9	99	9.5
Toluene	10	11.7	117	10	11.2	112	4.4
Surrogate Recovery							
Dibromofluoromethane			107			106	
1,2-Dichloroethane-d4			85.6			77.3	
Toluene-d8			98.2			95.4	
4-Bromofluorobenzene			100			97.8	

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
Benzene	10	9.5	95.0
Toluene	10	10.4	104
Surrogate Recovery			
Dibromofluoromethane			101
1,2-Dichloroethane-d4			69.4
Toluene-d8			91.8
4-Bromofluorobenzene			95.3

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project:	Gensco-Langseth
Client ID:	MW-1
Sample Matrix:	Water
Date Sampled:	06/14/2011
Date Received:	06/16/2011
Spectra Project:	2011060347
Spectra Number:	1

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	62	8270D SIM
Nitrobenzene-d5--SIM	70	8270D SIM
p-Terphenyl-d14--SIM	90	8270D SIM

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a5/mlh

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project: Gensco-Langseth
Client ID: MW-3
Sample Matrix: Water
Date Sampled: 06/14/2011
Date Received: 06/16/2011
Spectra Project: 2011060347
Spectra Number: 2

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	49	8270D SIM
Nitrobenzene-d5--SIM	61	8270D SIM
p-Terphenyl-d14--SIM	85	8270D SIM

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a5/mlh

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project: Gensco-Langseth
Client ID: MW-2
Sample Matrix: Water
Date Sampled: 06/14/2011
Date Received: 06/16/2011
Spectra Project: 2011060347
Spectra Number: 3

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	58	8270D SIM
Nitrobenzene-d5--SIM	70	8270D SIM
p-Terphenyl-d14--SIM	80	8270D SIM

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06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project: Gensco-Langseth
Client ID: MW-4B
Sample Matrix: Water
Date Sampled: 06/14/2011
Date Received: 06/16/2011
Spectra Project: 2011060347
Spectra Number: 4

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	56	8270D SIM
Nitrobenzene-d5--SIM	81	8270D SIM
p-Terphenyl-d14--SIM	76	8270D SIM

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06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project: Gensco-Langseth
Client ID: MW-6
Sample Matrix: Water
Date Sampled: 06/14/2011
Date Received: 06/16/2011
Spectra Project: 2011060347
Spectra Number: 5

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	50	8270D SIM
Nitrobenzene-d5--SIM	54	8270D SIM
p-Terphenyl-d14--SIM	88	8270D SIM

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06/22/2011

Libby Environmental, Inc.
4139 Libby Rd NE
Olympia, WA 98506
Attn: Sherry Chilcutt

Project: Gensco-Langseth
Client ID: MW-7
Sample Matrix: Water
Date Sampled: 06/14/2011
Date Received: 06/16/2011
Spectra Project: 2011060347
Spectra Number: 6

Analyte	Result	Units	Method
Benzo(a)Anthracene--SIM	<0.100	µg/L	8270D SIM
Benzo(a)Pyrene--SIM	<0.100	µg/L	8270D SIM
Benzo(b)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Benzo(k)Fluoranthene--SIM	<0.100	µg/L	8270D SIM
Chrysene--SIM	<0.100	µg/L	8270D SIM
Dibenz(a,h)Anthracene--SIM	<0.100	µg/L	8270D SIM
Indeno(1,2,3-cd)Pyrene--SIM	<0.100	µg/L	8270D SIM

Surrogate	% Recovery	Method
2-Fluorobiphenyl--SIM	54	8270D SIM
Nitrobenzene-d5--SIM	53	8270D SIM
p-Terphenyl-d14--SIM	78	8270D SIM

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a5/mlh

20110603417

Libby Environmental, Inc.

Chain of Custody Record

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 6-15-11 Page: 1 of 1

Client: Libby Environmental, Inc
Address: (see above)
Phone: Fax:
Client Project # 2203-001B

Project Manager: Jamie Hart
Project Name: Gensco - Langseth
Location: City: Fife, WA
Collector: AY Date of Collection: 6-14-11

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-Dx Ext.	~~PAH~~ 8270 c-PAH	PCB's 8082	MTCA 5 Metals			Field Notes
1 MW-1		10:14	H2O	Amber								X						
2 MW-3		11:20	H2O	Amber								X						
3 MW-2		12:38	H2O	Amber								X						
4 MW-4B		13:30	H2O	Amber								X						
5 MW-6		14:45	H2O	Amber								X						
6 MW-7		15:50	H2O	Amber								X						
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		

Relinquished by:	Date / Time	Received by:	Date / Time
Eg 24	6-15-11		
Relinquished by:	Date / Time	Received by:	Date / Time
			6/16/11 @1020
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt:

Good Condition?	
Cold?	
Seals Intact?	
Total Number of Containers	

Remarks: Standard turn due by 6-23-11

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

Chain of Custody Record

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 6-14-2011 Page: 1 of 1

Client: Robinson Noble
Project Manager: JFH
Address: 3011 South Huson Street Suite A Tac WA
Project Name: Genco-Longmont 20th ST
Phone: 253-475-7711 Fax:
Location: Fife WA
Client Project # 2203-001B
Collector: ACY Date of Collection: 6-14-2011

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	NWTPH-Dx Ext.	PAH 8270 cPAH	PCB's 8082	MTCA 5 Metals	MTCA VOC		Field Note/# Containers
1 MW-1		10:14	H2O	3 VOA & 2 Amber	X				X		X	X			X			5
2 MW-3		11:20			X				X		X	X			X			
3 MW-2		12:33			X				X		X	X			X			
4 MW-4B		13:30			X				X		X	X			X			
5 MW-6		14:45			X				X		X	X			X			
6 MW-7		15:50			X				X		X	X			X			
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		

Relinquished by:	Date / Time	Received by	Date / Time
[signature]	6/14/11	[signature]	6-15-11 9:25
Relinquished by:	Date / Time	Received by	Date / Time
Relinquished by:	Date / Time	Received by	Date / Time

Sample Receipt:

Good Condition?	✓
Cold? 7°C	✓
Seals Intact?	✓
Total Number of Containers	30

Remarks: MTCA VOC added 6-21-11 SLC

TAT 24HR 48HR 5-Day

Distribution White - Lab, Yellow - File, Pink - Originator

APPENDIX C

scale: 1 square=____

Tuesday June 14th 2011 Gensco - Langseth MW-1

Total well depth 9.61
DTW 4.28
water column 5.33
X 0.163 = 0.86
3 well volumes 2.60
Screen interval 5-10
Purging method: peristaltic pump
Purging measurement method: grad beaker
Sample collected at 10:14
Sample depth 8.5
Appearance/odor water turbid at start & cleared after a couple of min
Containers 3-40ml voa & 2 Amber
Preserved:
Cooled by blue ice in cooler

9:36 pump on
water turbid at start
9:46 pumping air lowered tube 2' (tube depth now 8')
9:56 pumping air lowered tube 1'
9:59 pumping air lowered tube
10:36 secured well head

Time	Time min	flow Rate	cum volume	Temp	cond	spec cond	TDS	D.O. oxygen	PH	Eh ORP
939	3	0.01	0.05	14.49	0.316	0.253	0.206	1.04	6.65	248.2
942	6	0.2	0.65	14.18	0.327	0.259	0.213	0.34	6.0	255.2
945	9	0.15	1.1	13.89	0.354	0.279	0.231	0.28	5.75	257.8
948	12	0.08	1.35	13.45	0.423	0.330	0.275	0.59	5.69	258
951	15	0.18	1.9	13.48	0.434	0.339	0.283	0.24	5.70	258
954	18	0.11	2.25	13.37	0.448	0.349	0.292	0.23	5.74	257.6
957	21	0.16	2.75	13.26	0.482	0.373	0.313	1.15	5.78	256.4
959	pumping air - well dry - will let recover									
10:10	DTW	7.64	collected samples from 8.5 at 10:14							

scale: 1 square=____

scale: 1 square=____

Tuesday June 14th 2011 Gensco-Longseth MW-3

Total well depth 9.85
DTW 1.11
water column 8.74
X 0.163 = 1.42
3 well volumes 4.27
Screen Interval 5-10
Purging method: peristaltic pump
Purging measurement method
Sample collected 11:14 reduced flow and sampled at 11:20
Sample depth 6'
Appearance/odor water yellow no odor with a sheen
Containers 3 40ml voa and 2- Amber
Preserved:
Cooled by Blue ice in cooler

10:50 start pump
11:48 secured well head

scale: 1 square=____

Time	Time min	flow Rate	cum volume	Temp	cond	spec cond	TDS	Dis oxygen	pH	Eh ORP
10:53	3	0.33	0.15	13.09	0.521	0.402	0.339	0.67	6.15	152.5
10 56	6	0.03	0.25	12.79	0.498	0.381	0.323	0.34	6.15	146.0
1059	9	0.08	0.5	12.76	0.479	0.367	0.311	0.29	6.18	138.4
11 02	12	0.08	0.75	12.84	0.475	0.364	0.309	0.30	6.22	128.9
11 05	15	0.08	1.0	12.90	0.475	0.365	0.308	0.29	6.25	115.8
11 08	18	0.06	1.20	12.92	0.473	0.364	0.307	0.29	6.27	101.2
11 01	21	0.03	1.3	12.88	0.469	0.361	0.305	0.29	6.30	81.7
1114	24	0.03	1.4	12.87	0.468	0.359	0.304	0.28	6.31	68.3

scale: 1 square=

Tuesday June 14th 2011 Gensco-Langseth MW-2

Total well depth 19.87
DTW 8.17 1202 start pump
water column 11.7
X 0.163 1.90
3 well volumes 5.72
screen Interval 9-19
Purging method: perastaltic pump
Purging measurement method: grad bucket
Sample collected aft reduced flow at 12:32 & sampled at 12:38
sample depth 10'
Appearance/odor water slight yellow no odor
Containers 3 40 mL voa & 2 Amber
Preserved
Cooled by blue ice in cooler

Time	Time min	flow Rate	cum volume	Temp	cond	spec cond	TDS	Dis oxygen	PH	Eh ORP
1205	3	0.03	0.1	14.57	1.890	1.512	1.230	0.77	6.10	-17.1
1208	6	0.03	0.2	14.30	1.917	1.526	1.247	0.40	6.14	-18.7
1211	9	0.1	0.5	14.15	1.934	1.536	1.260	0.33	6.18	-20.6
1214	12	0.13	0.9	14.12	1.947	1.543	1.266	0.31	6.21	-22.5
1217	15	0.1	1.2	14.09	1.950	1.545	1.267	0.30	6.23	-24.2
1220	18	0.1	1.5	14.26	1.956	1.555	1.271	0.29	6.25	-26.0
1223	21	0.1	1.8	14.20	1.953	1.550	1.270	0.30	6.26	-27.8
1226	24	0.06	2.0	14.24	1.951	1.550	1.268	0.30	6.28	-29.5
1229	27	0.06	2.2	14.26	1.948	1.549	1.266	0.31	6.29	-30.6
1232	30	0.1	2.5	14.29	1.948	1.549	1.266	0.31	6.30	-31.8

scale: 1 square=

scale: 1 square=

Tuesday June 14th 2011 Gensco-Langseth MW-4B

Total well depth 10.05'
DTW 3.49
Water column 6.56
X 0.163 1.06
3 well volumes 3.20
Screen Interval 5-10
Purging method: peristaltic pump
Purging measurement method: grad bucket
Sample collected 13:30
Sample depth 7.5'
Appearance/odor water yellow with a sheen and a slight petroleum odor
Containers 3-40mL vom & 2 Amber
Preserved by
cooled by blue ice in cooler

1303 start pump
1311 pumping air lowered tube 2'

Time	Time min	flow Rate	cum volume	Temp	Cond	spec Cond	TDS	Dis oxygen	pH	Eh ORP
1306	3	0.01	0.05	14.04	0.800	0.630	0.516	0.66	7.05	-39.7
1309	6	0.05	0.2	13.86	0.726	0.571	0.471	1.70	6.77	-28.5
1312	9	0.1	0.5	13.63	0.764	0.599	0.499	2.41	6.61	-27.8
1315	12	0.13	0.9	13.19	0.808	0.626	0.525	0.35	6.51	-32.5
1318	15	0.1	1.2	13.21	0.786	0.609	0.510	0.37	6.48	-37.5
1321	18	0.1	1.5	13.21	0.773	0.599	0.502	0.50	6.45	-41.4
1324	21	0.1	1.8	13.22	0.773	0.599	0.503	1.06	6.44	-46.3
1327	24	0.1	2.1	13.22	0.773	0.599	0.503	1.56	6.44	-50.4
1327	pumping air Reduced flow and sampled									
1332	DTW 6.8									

scale: 1 square=

Tuesday June 14th 2011 Gensco-Langseth MW-6

Total well depth 19.0
DTW 6.45
water column 12.55
X 0.163 = 2.04
3 well volumes 6.13
Screened Interval 9-19
Purging method: peristaltic pump
Purging measurement method: grad bucket
Sample collected at reduced flow at 1439 & sampled at 14:45
Sample depth: 11'
Appearance/odor water yellow no odor with a sheen
Containers 3 40mL VOA and 2 Amber
Preserved by
Cooled by blue ice in Cooler

1403 steam pump
1413 pumping air lowered tube 2' (tube now at 12'6mp)
1421 reduced flow
1424 DTW 10.41 (tube 11.5) bmp
1429 DTW 10.3 bmp mp = TOC

Time	Time min	flow Rate	cum volume	Temp	cond	spec cond	TDS	Dis oxygen	pH	Eh ORP
1406	3	—	0.1	14.27	0.748	0.593	0.486	0.52	6.39	-41.4
1409	6	0.1	0.4	13.86	0.747	0.588	0.486	0.36	6.35	-39.0
1412	9	0.13	0.8	13.74	0.748	0.587	0.486	0.42	6.34	-38.8
1415	12	0.1	1.1	13.65	0.749	0.587	0.487	1.22	6.34	-39.5
1418	15	0.1	1.4	13.52	0.755	0.590	0.491	0.32	6.34	-40.4
1421	18	0.1	1.7	13.58	0.761	0.595	0.495	0.29	0.34	-41.8
1424	21	0.1	2.0	13.84	0.769	0.606	0.500	0.73	6.35	-43.8
1427	24	0.03	2.1	13.89	0.775	0.611	0.504	0.54	6.36	-45.5
1430	27	0.06	2.3	13.86	0.780	0.614	0.507	0.39	6.36	-47.2
1433	30	0.06	2.5	13.87	0.788	0.621	0.513	0.38	6.36	-48.5
1436	33	0.10	2.8	13.92	0.798	0.630	0.519	0.35	6.36	-50.0
1439	36	0.06	3.0	13.92	0.805	0.635	0.524	0.37	6.36	-50.8
1441	DTW 10.05									

scale: 1 square=____

Tuesday June 14th 2011 Gensco-Langseth MW-7

Total well depth 19.01
DTW 7.40
water column 11.61
x 0.163 1.89
3 well volumes 5.67
screened Interval 9-19
Purging method: peristaltic pump
Purging measurement method: grad bucket
Sample collected at 1544 reduced flow & sampled at 15:50
Sample depth
Appearance/odor
Containers
Preserved
cooled by blue ice in Cooler

15:15 start pump
15:37 reduced flow slightly
water slight yellow at start & cleared after 4 minutes slight petroleum odor and sheen

Time	Time min	flow Rate	cum volume	Temp	cond	spec cond	TDS	Dis oxygen	PH	Eh ORP
1518	3	0.03	0.1	13.80	0.620	0.486	0.403	0.71	6.55	-30.5
1521	6	0.1	0.4	12.98	0.616	0.474	0.400	0.33	6.36	-28.7
1524	9	0.11	0.75	13.13	0.614	0.474	0.399	0.28	6.28	-38.0
1527	12	0.08	1.0	13.10	0.615	0.475	0.400	0.27	6.25	-47.4
1530	15	0.08	1.25	13.31	0.618	0.480	0.402	0.25	6.22	-57.2
1533	18	0.08	1.5	13.26	0.683	0.531	0.446	0.24	6.21	-66.5
1536	21	0.08	1.75	13.40	0.753	0.587	0.490	0.24	6.20	-73.1
1539	24	0.08	2.0	13.58	0.777	0.608	0.506	0.25	6.21	-79.8
1541	27	0.06	2.2	13.58	0.789	0.617	0.513	0.25	6.23	-84.8
1544	30	0.06	2.4	13.51	0.788	0.615	0.512	0.26	6.23	-88.5

scale: 1 square=____

APPENDIX D

Gensco/Mizukami Historical Groundwater Quality Data Summary

Well ID and Date	Gasoline	Diesel	Mineral Oil	Oil	Benzene	Toluene	Ethyl benzene	Xylenes	EDB*	EDC*	Napthalene	MTBE	Benz(a) anthra-cene	Chrysene	Benzo(b) fluoran-thene	Benzo(K) fluoran-thene	Benzo(a) pyrene	Ideno(1,2,3-cd) pyrene	Dibenz(a,h) anthracene	Benzo(ghi) perylene
MW1																				
11/16/05	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/12/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/30/11	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW2																				
11/16/05	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/12/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/30/11	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW3																				
11/16/05	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	**2µg/L**	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/12/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/30/11	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW4/MW4B (MW-4) was damaged and replaced by MW-4B in March 2011																				
11/16/05	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08 6/12/08	Well MW-4 was dry in March, 2008. During the June 2008 monitoring event -- it was discovered that the well was broken and it was not sampled.																			
3/30/11	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW5/6 (MW-5 was relocated and replaced by MW-6 in April 2007)																				
11/16/05	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/12/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/30/11	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW7																				
11/14/07	nd	nd	nd	nd	nd	nd	nd	nd	--	--	**3µg/L**	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/6/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/12/08	nd	nd	nd	nd	nd	nd	nd	nd	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3/30/11	**550µg/L**	nd	nd	nd	nd	nd	nd	**9.1µg/L**	--	--	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
6/14/11	**170µg/L**	nd	nd	nd	nd	nd	nd	**4.5µg/L**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MTCA Method A CUL	1000†	500	500	500	5	1000	700	1600	0.01	5	160	20	0.1 -TEF relative to benzo (a) pyrene sum of all cPAH concentrations							

Additional Notes: * EDB and EDC were added to the target compound list in June 2011 at the request of Ecology.
† Denotes value for TPH-G with an absence of Benzene

ROBINSON NOBLE

APPENDIX E

Washington State Department of Ecology
Toxics Cleanup Program

Terrestrial Ecological Evaluation Process - Primary Exclusions

Documentation Form

Exclusion #	Exclusion Detail	Yes or No?	Are Institutional Controls Required If The Exclusion Applies?
1	Will soil contamination be located at least 6 feet beneath the ground surface and less than 15 feet?	Yes / No	Yes
	Will soil contamination located at least 15 feet beneath the ground surface?	Yes / No	No
	Will soil contamination located below the conditional point of compliance?	Yes / No	Yes
2	Will soil contamination be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed?	(Yes) / No	(Yes)
3	Is there less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by hazardous substances **other than** those listed in the table of Hazardous Substances of Concern? And Is there less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site affected by hazardous substances **listed in** the table of Hazardous Substances of Concern?	Yes / No Yes / No	Other factors determine
4	Are concentrations of hazardous substances in the soil less than or equal to natural background concentrations of those substances at the point of compliance	Yes / No	No

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]