ROBINSON NOBLE

December 17, 2020

Jesse Diaz
Loves Travel Stops and Country Stores
10601 North Pennsylvania Avenue
Oklahoma City, Oklahoma 73120

Subject: Love's 413 Ellensburg Spill Assessment

Dear Jesse,

Robinson Noble, Inc. is pleased to present this letter report documenting the limited subsurface investigation conducted at the subject property. Robinson Noble was contracted by Love's Travel Stops and Country Stores (Love's) to complete a limited subsurface investigation at the Love's Travel Stop #413 located at 1512 US-97 in Ellensburg, Washington. This letter report documents the limited subsurface investigation that was completed in August 2018 and a subsequent groundwater monitoring event completed in 2019.

Site Description

The subject property is comprised of one parcel identified by Kittitas County records as parcel number 376133. The address assigned to the property is 1512 US-97, Ellensburg, Washington. A general vicinity map is provided as Figure 1 in Appendix A. An aerial map of the subject site is presented as Figure 2 in Appendix A.

The site covers an area of approximately 7.67 acres. The land use of the site is commercial, and currently consists of a truck fueling station, an automobile fueling station, a convenience store, and asphalt-paved and gravel parking areas. The subject is at an elevation of approximately 1,540 feet above sea level. Reecer Creek, which is a tributary of the Yakama River, borders the site on the east. The Yakama River is located approximately 2,400 feet to the southwest of subject site.

Tabor and Others, 1982, maps the surface geology of the subject and surrounding area as alluvium from the Yakima River. These sediments are generally composed of silt, sand, gravel, and cobbles. This unit is generally very permeable.

Site Background

The subject property is an active truck stop providing vehicle fueling and services to commercial and private vehicles. The site is listed on the Washington Department of Ecology's (Ecology) Confirmed and Suspected Contaminated Sites List (CSCSL) and Leaking Underground Storage Tank (LUST) list under Cleanup Site ID #5649. These listings were originally made based on the historical release of petroleum products at the site, first reported to Ecology in 1996. The subject site is currently enrolled in Ecology's Voluntary Cleanup Program (VCP) and is identified by Facility/Site ID 18911356 and VCP Project No. CE0352.

The release that initiated this investigation occurred from a fuel dispenser at the auto fueling station. The area of the dispenser release is shown on Figure 3 in Appendix A. Robinson Noble was informed that gasoline was spilled from the southwest fuel dispenser (Dispenser 5/6) at the auto fueling island. Robinson Noble was retained to evaluate soil and groundwater contamination near the effected fuel dispenser and to install a groundwater monitoring well, which functions as an extraction well to remove free product from the surface of the groundwater as needed.

Initial Response Field Activities

Robinson Noble conducted a field investigation in July and August of 2018 that included the placement of two soil borings and the installation of the groundwater monitoring/extraction well (Figure 3). Prior to the start of drilling activities, Utilities Plus was retained to provide private utility locating services to determine the location of existing utilities on the site. Interstate Sawing and Drilling was retained to cut through concrete and asphalt at the boring and well locations. Pro-Vac was also on site with a Vactor truck to air knife the soil at the drilling locations to a depth of approximately four feet to prevent drilling through unidentified underground utilities. Hollow-stem auger drilling services were provided by Holt Services, Inc.

Soil Borings and Monitoring (Extraction) Well

The locations of the two soil borings (designated as B1 and B2) and the monitoring (extraction) well (designated as MW-17) are shown on Figure 3. During the drilling, Robinson Noble's onsite geologist prepared a log of the materials encountered. The geologic logs for B1 and B2 are presented in Figure 4 (Appendix A). A geologic log and construction diagram of MW-17 is presented in Figure 5 (Appendix A). The geology encountered at each of the borings consists of fill to a depth of approximately two feet, which is underlain by alluvial materials (silty sand with gravels and cobbles with layers of silt and sand), which is consistent with the geology mapped by Tabor and Others (1982).

During drilling soils from each boring were field-screened for signs of impact using visual, olfactory cues, and hand-held photoionization detector (PID). The PID was calibrated prior to use on the day of the field investigation. The PID detected significant organic vapors, indicative of petroleum contamination, at soil boring B2 and monitoring well MW-17. We also observed noticeable petroleum odors and soil staining at these two locations. The PID did not detect organic vapors at soil boring B1 or any notable odors or staining. Based on our field screening observations, selected soil samples were submitted to an accredited environmental laboratory for analysis.

Shallow groundwater was encountered in both soil borings (B1 and B2) and the monitoring well (MW-17) at a depth of approximately five feet below ground surface (bgs) at the time of the subsurface investigation. A groundwater sample was collected from soil boring B2 utilizing a temporary well screen. Groundwater samples were also collected from newly installed monitoring well MW-17 (Figure 5), as well as two existing wells, MW-1 and MW-11 (Figure 3). Groundwater samples from the wells and soil boring were collected using a low-flow bladder pump and disposable tubing. The groundwater sample collected from the temporary well in B2 was relatively turbid. After all sampling was completed, both of the soil borings were backfilled with hydrated bentonite chips and concrete.

Following collection, all soil and groundwater samples were placed into sterile, laboratory-supplied containers and then placed in a cooler with Blue Ice® for delivery to the analytical laboratory. The samples were delivered to the laboratory, Libby Environmental, Inc. (Libby), after the completion of field activities. Samples were submitted for the analysis of gasoline-, diesel-, and oil-range petroleum hydrocarbons, volatile-organic compounds (VOCs), and lead, using respective analytical methods NWTPH-Gx, NWTPH-Dx/Dx extended, EPA Method 8260C, and EPA 7000 Series, respectively.

The chain-of-custody form (Appendix B), provides details of the sample submittal to Libby. Each sample was tracked on the form with the details of the sample identity, identity of the handlers responsible for the samples, and analysis to be performed.

Soil Analytical Results

Gasoline-range petroleum hydrocarbons were detected above the MTCA Method A cleanup level in soil samples collected from MW-17 and from soil boring B2 at concentrations of 29,700 milligrams per kilogram (mg/kg) and 796 mg/kg respectively. Gasoline-range petroleum hydrocarbons were not detected in the soil sample from soil boring B1 above the laboratory detection limit. Diesel- and oil-range petroleum hydrocarbons were not detected above laboratory detection limits in any of the soil samples.

Benzene, toluene, ethylbenzene, and total naphthalenes were also detected in the soil sample from MW-17 and boring B2. Toluene concentrations detected in the soil sample from MW-17 (2,000 mg/kg) and soil boring B2 (60 mg/kg) are both above the MTCA Method A cleanup level of 7 mg/kg. The soil samples from MW-17 and B2 contain benzene at concentrations of 6.4 mg/kg and 4.0 mg/kg, respectively, which is above the MTCA Method A cleanup level of 0.03 mg/kg. Total naphthalenes were detected in soil samples from MW-17 and B2, but below the MTCA Method A cleanup Level of 5 mg/kg. Ethylbenzene was also detected in the samples from MW-17 (280 mg/kg) and B2 (14 mg/kg) above the MTCA cleanup level of 6 mg/kg. No VOCs were detected above laboratory detection limits in the soil sample from soil boring B1.

The detected gasoline and VOC contamination in the soil samples from MW-17 and B2 are in close proximity to the effected fuel dispenser and likely related to the reported release. Soil analytical results are summarized below in Table 1. Copies of the complete laboratory analytical reports are provided in Appendix B.

Table 1. Summary of Soil Analytical Results

Analyte	Boring (Sample Number)			MTCA
	MW-17 (MW17-4)	B2 (B2-5)	B1 (B1-4)	
Gasoline (mg/kg)	**29,700**	**796**	ND	**100**
Diesel (mg/kg)	ND	ND	ND	**2,000**
Oil (mg/kg)	ND	ND	ND	**2,000**
Benzene (mg/kg)	**6.4**	**4.0**	ND	**0.03**
Toluene (mg/kg)	**2,000**	**60**	ND	**7**
Ethylbenzene (mg/kg)	**280**	**14**	ND	**6**
Total Naphthalenes (mg/kg)	1.0	1.2	ND	**5**
Lead (mg/kg)	NT	8.6	NT	**250**

NT (not tested); ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

Groundwater Analytical Results

Groundwater samples were analyzed for VOCs, gasoline-, diesel-, and oil-range petroleum hydrocarbons, and lead. Gasoline-range petroleum hydrocarbons were detected in all the groundwater samples collected (B2, MW-17, MW-1, and MW-11) at concentrations above the MTCA Method A cleanup level. Diesel-range petroleum hydrocarbons were also detected above the MTCA Method A cleanup level in MW-17, MW-1, and B2. Heavy oil-range petroleum hydrocarbons were not detected above the laboratory detection limit in any of the groundwater samples.

Benzene, toluene, ethylbenzene, and total naphthalenes were detected in each of the groundwater samples at various concentrations above and below applicable cleanup limits. The groundwater sample from MW-17 was also analyzed for lead, which was detected at a concentration of 46 micrograms per liter (µg/L), which is above the cleanup level of 15 µg/L. Groundwater analytical results are summarized below in Table 2. Copies of the complete laboratory analytical reports are provided in Appendix B.

Table 2: Summary of Groundwater Analytical Results (2018)

Analyte	Sample Location				MTCA
	MW-17	MW-1	MW-11	B2	
Gasoline (µg/L)	**521,000**	**77,100**	**193,000**	**255,000**	**800**
Diesel (µg/L)	**20,800**	**1,850**	ND	**69,300**	**500**
Oil (µg/L)	ND	ND	ND	ND	**500**
Benzene (µg/L)	**5,600**	**2,700**	**4,450**	**5,500**	**5**
Toluene (µg/L)	**33,200**	534	**16,900**	**24,600**	**1,000**
Ethylbenzene (µg/L)	**2,500**	217	**1,400**	**1,900**	**700**
Total Xylenes	**9,310**	**6,020**	**8,800**	**11,800**	**1,000**
Total naphthalenes (µg/L)	**240**	**217**	81	**167**	**160**
MTBE	**ND**	**ND**	ND	**ND**	**20**
Lead (µg/L)	**46**	NT	NT	NT	**15**

NT (not tested); ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

Laboratory analyses revealed gasoline and VOC groundwater contamination with highest concentrations near the fuel dispenser associated with the release (MW-17, B2, and MW-11). MW-1, which is presumably upgradient of the affected fuel dispenser, was also found to contain gasoline-range and VOC groundwater contamination, but at lower concentrations than the wells closer to the affected fuel dispenser.

Additionally, diesel-range contamination was also detected in the groundwater samples from MW-17, MW-1, and B2. However, as noted above, soil and groundwater contamination existed at the site, prior to the dispenser release documented in this report. Groundwater samples collected from MW-1, and MW-11 were noted in a 2015 groundwater monitoring report prepared by Broadbent on behalf of Pilot Corporation (a previous site owner/operator). Groundwater contamination concentrations reported by Broadbent are summarized below in Table 3.

Table 3: Summary of 2015 Broadbent Groundwater Analytical Results

Analyte	Sample Location		MTCA
	MW-1	MW-11	
Gasoline (µg/L)	**48,000**	**1,200**	**800**
Diesel (µg/L)	**3,500**	**440**	**500**
Benzene (µg/L)	**5,300**	**580**	**5**

Bolded values indicate concentrations above the applicable cleanup limit

This indicates that contamination exists in the groundwater at the site from incidents unrelated to the fuel dispenser release.

Groundwater Extraction

The planned extraction of groundwater via macro-purging using a Vactor truck was delayed until 2019 due to waste disposal permitting and transportation issues. On July 24th groundwater from MW-17 was extracted via a Vactor truck provided by Northern Environmental. This was done in an effort to remove groundwater in the area of highest concentration of gasoline and VOC contamination and recover as much of the released product as possible. During the extraction, MW-11, which was approximately 10' to the east, had its drawdown recorded as MW-17 was pumped. Over a four-hour period approximately 880 gallons of water was extracted from MW-17. When extraction began, the well was pumped dry almost instantaneously and was recharging at a rate of approximately four gallons per minute. The drawdown in MW-11 was less than one tenth of a foot over the four hours, which indicates that Wells MW-11 and MW-17 (extraction well) have minimal hydraulic connectivity.

Waste water from the extraction process was transported by Northern Environmental to PRS Group, Inc in Tacoma, Washington for disposal. Disposal documentation is provided in Appendix C.

Post Extraction Groundwater Monitoring Event

Subsequent to the groundwater extraction, monitoring wells MW-11, and MW-17 (extraction well) were sampled. The collected samples were analyzed by Libby for gasoline- and diesel-range petroleum hydrocarbons and related VOCs using the analytical methods previously noted.

Groundwater analytical, summarized below in Table 2, indicate a marked decrease in concentrations in the extraction well (MW-17) as well as in MW-11. Copies of the complete laboratory analytical reports are provided in Appendix B.

Table 4: Summary of Post Extraction Groundwater Analytical Results

Analyte	Sample Location		MTCA
	MW-17	MW-11	
Gasoline (µg/L)	**25500**	**6020**	**800**
Diesel (µg/L)	ND	ND	**500**
Oil (µg/L)	ND	ND	**500**
Benzene (µg/L)	**776**	**776**	**5**
Toluene (µg/L)	**3320**	158	**1,000**
Ethylbenzene (µg/L)	653	112	**700**
Total Xylenes	**5,020**	**1,130**	**1,000**
Total naphthalenes (µg/L)	70	18	**160**
MTBE	ND	5.4	**20**

ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

To further evaluate the effectiveness of the purging event, we compared the pre-extraction data from MW-17 and MW-11 to the post extraction data, which is presented below in Table 5.

Table 5: Pre-Extraction vs. Post Extraction Groundwater Analytical Data **(µg/L)**

Analyte	Sample Location MW-17		Reduction (%)	Sample Location MW-11		Reduction (%)
	Pre	Post		Pre	Post	
Gasoline (µg/L)	**521,000**	**25,500**	95.1	**193,000**	**6,020**	96.9
Diesel (µg/L)	**20,800**	ND	100	ND	ND	N/A
Oil (µg/L)	ND	ND	N/A	ND	ND	N/A
Benzene (µg/L)	**5,600**	**776**	86.1	**4,450**	**776**	82.6
Toluene (µg/L)	**33,200**	**3,320**	90	**16,900**	158	99.1
Ethylbenzene (µg/L)	**2,500**	653	73.9	**1,400**	112	92
Total Xylenes	**9310**	**5,020**	46.1 0	**8,800**	**1,130**	87.3
Total naphthalenes (µg/L)	**240**	70	70.8	81	18	77.8
MTBE	NT	ND	N/A	ND	5.4	N/A

NT (not tested); ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

As shown on Table 5 above, the purging event reduced gasoline-range petroleum concentrations in the wells sampled by over 95%. Benzene contraction were reduced by over 82%. The macro purging event also reduced toluene concentrations by over 99%. Total xylenes were reduced by approximately 46% in MW-17 and over 87% in MW-11. Ethylbenzenes and total naphthalenes were reduced to below MTCA Method A Cleanup levels.

Additionally we compared the post extraction concentrations for monitoring well MW-11 to the 2015 groundwater monitoring data discussed earlier in this report. As shown on Table 6 below, gasoline-range petroleum and benzene are within the same order of magnitude.

Table 6: MW-11 Post-Extraction Compared to 2015 Sampling Data

Analyte	Sample Location		MTCA
	MW-11		
	2015	2019 Post-Extraction	
Gasoline (µg/L)	**1,200**	**6,020**	**800**
Diesel (µg/L)	440	ND	**500**
Oil (µg/L)	ND	ND	**500**
Benzene (µg/L)	**580**	**776**	**5**
Toluene (µg/L)	6.4	158	**1,000**
Ethylbenzene (µg/L)	35	112	**700**
Total Xylenes	26	**1,130**	**1,000**
Total naphthalenes (µg/L)	81	18	**160**
MTBE	NT	5.4	**20**

NT (not tested); ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

We also evaluated the historical 2015 concentrations shown in monitoring well MW-1 to the 2019 post-extraction event analytical concentrations for samples collected from MW-17 and MW-11. As noted previously, MW-1 is located up-gradient from the area of the release (MW-17) and MW-11. This data comparison, presented below in Table 7, suggests that the pre-release conditions in the area proximal to the release are very similar to the post extraction sampling data.

Table 7: MW-17 Post-Extraction vs. 2015 MW-1 Groundwater Analytical Data **(µg/L)**

Analyte	Sample Location			MTCA
	MW-1 (2015)	MW-17 (post)	MW-11 (post)	
Gasoline (µg/L)	**48,000**	**25,500**	**6,020**	**800**
Diesel (µg/L)	**3,500**	ND	ND	**500**
Oil (µg/L)	NT	ND	ND	**500**
Benzene (µg/L)	**5,300**	**776**	**776**	**5**
Toluene (µg/L)	620	**3,320**	158	**1,000**
Ethylbenzene (µg/L)	**1,400**	653	112	**700**
Total Xylenes	**8.900**	**5,020**	**1,130**	**1,000**
Total naphtha-lenes (µg/L)	NT	70	18	**160**
MTBE	NT	ND	5.4	**20**

NT (not tested); ND (not detected above the laboratory detection limit)
Bolded values indicate concentrations above the applicable cleanup limit

Copies of the laboratory analytical data reports are located in Appendix B. As noted on these reports, surrogate recovery values and method standards were within acceptable ranges. Also, the relative percent difference (RPD) was within acceptable limits for QA/QC. Some sample

analyses did receive notations of sample matrix interference due to the elevated concentrations. These do not impact the validity of the reported data.

Conclusions

A release of gasoline from dispenser 5/6 on the automotive fuel island at the subject site has impacted soil and groundwater in the vicinity of the dispenser. Macro-purging of the an extraction well installed at the site has removed a substantial amount of the contamination, reducing groundwater concentrations of gasoline-range petroleum hydrocarbons and related VOCs to near or below pre-release levels. It is likely that some impacted soils remain below the islands and adjacent to product and vapor recovery piping. Based on the unremediated presence of historical contamination in the area of the release, it is likely that remaining impacts from the release have co-mingled with the historical contamination.

Recommendations

Monitoring wells MW-1, MW-11 and MW-17 (extraction well) should be periodically assessed for the need for another macro-purge extraction event or other free-product recovery efforts. This should be done by assessing the presence or absence of free product in each of the wells, along with the collection and analysis of groundwater samples from each well. If another groundwater extraction event is warranted, monitoring wells MW-1, MW-11 and MW-17 should be sampled for at least two consecutive quarters following the macro-purge extraction event to evaluate the rate of free-product recovery (if any).

This concludes our Release Response Letter Report. The statements, conclusions, and recommendations provided in this report are to be exclusively used within the context of this document. They are based upon generally accepted hydrogeologic and environmental practices and are the result of analysis by Robinson Noble, Inc. staff. This report, and any attachments to it, is for the exclusive use of Love's Travel Stops and Country Stores. Unless specifically stated in the document, no warranty, expressed or implied, is made.

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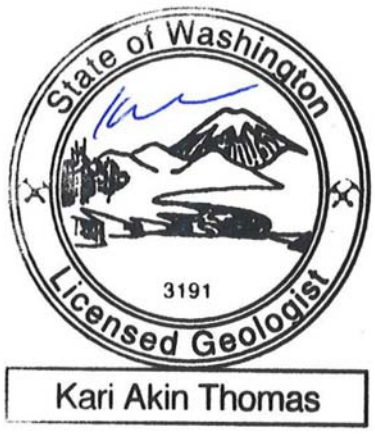
Thank you for the opportunity to provide you with service on this project. If you have any questions or concerns about the contents of this letter report or its attachments, please do not hesitate to contact us at (253) 475-7711. You may also email kthomas@robinson-noble.com or jhildenbrand@robinson-noble.com via email.

Respectfully submitted,
Robinson Noble, Inc.

Kari Thomas, LG, RG
Senior Project Geologist



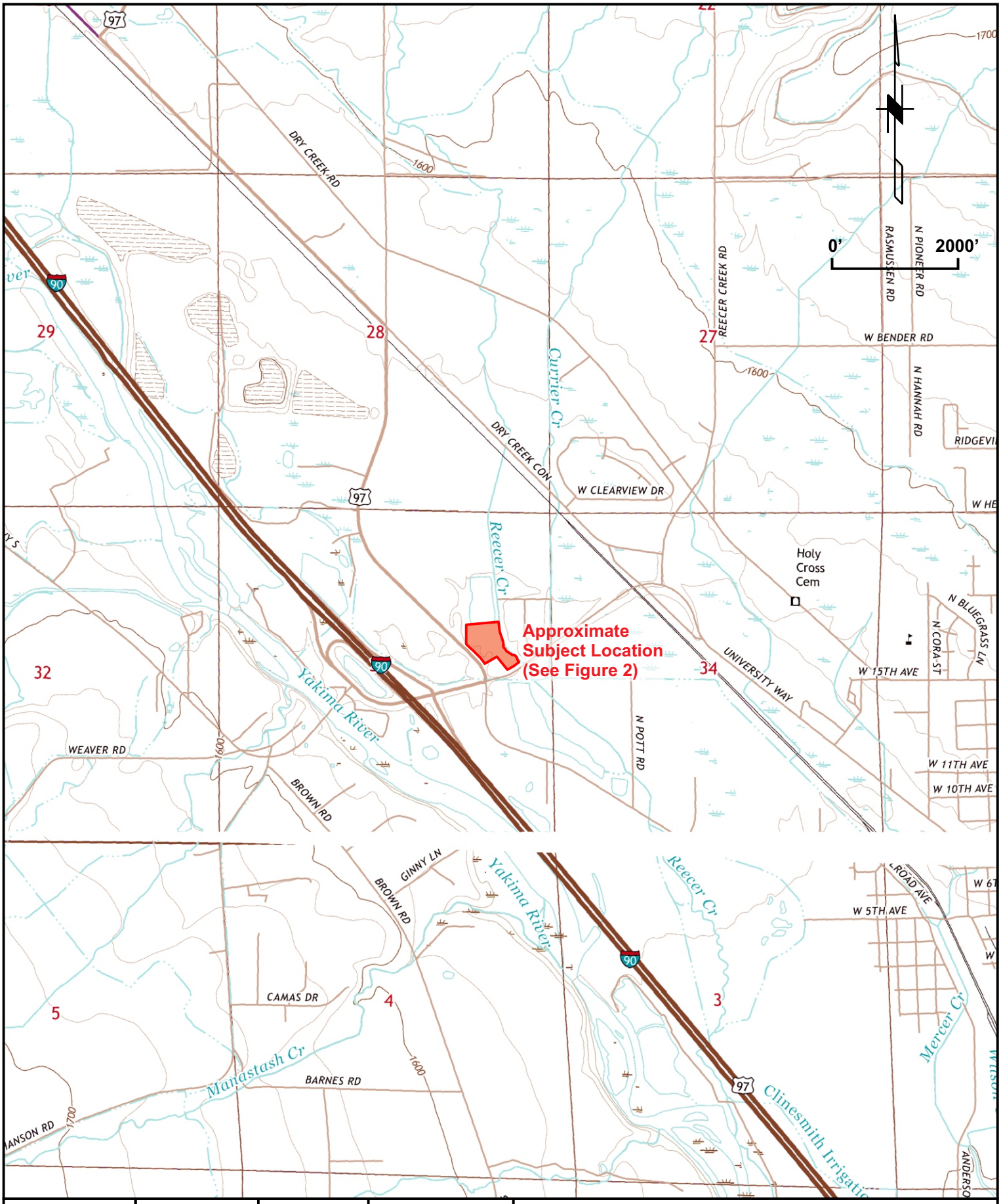
John Hildenbrand
Principal Environmental Scientist
Environmental Division Manager

Appendices:

Appendix A – Figure 1 Vicinity Map
Figure 2 Aerial Map of Site
Figure 3 Boring and Monitoring Well Location Map
Figure 4 Boring Geologic Logs
Figure 5 Construction Detail for Monitoring Well
Appendix B – Laboratory Analytical Reports
Appendix C – Disposal Receipts

Appendix A

Figures



ROBINSON NOBLE	Note: Basemap taken from USGS Ellensburg North and South	PM: JFH December 2019 3182-002A	Kittitas County T 18 N/R 18 E - 33 Scale 1” = 2000’

Figure 1
Vicinity Map
Love’s Travel Stops and Country Stores: Ellensberg Gasoline Spill

ROBINSON NOBLE

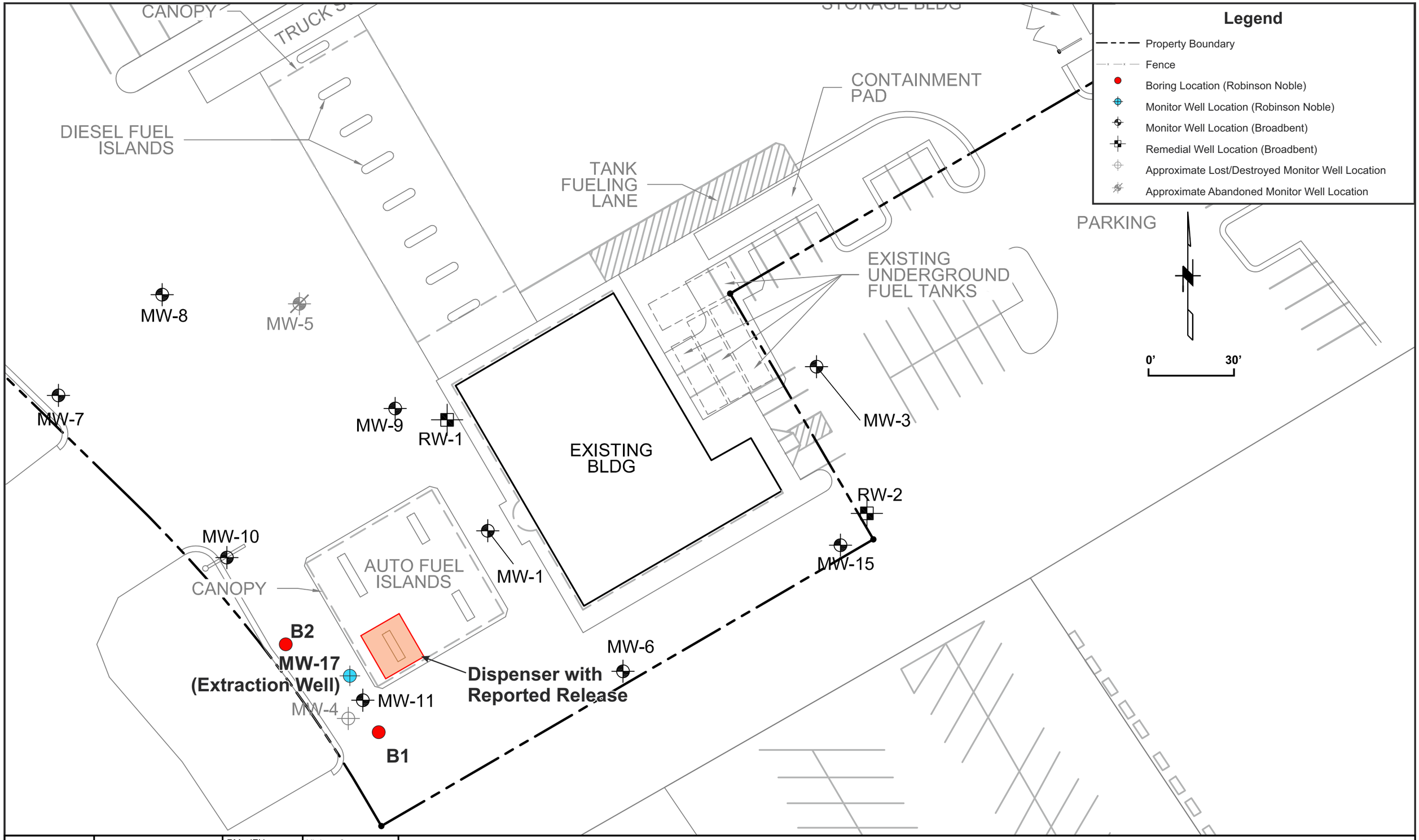
Note:
Image from
ESRI ArcGIS
2015 Aerials

PM: JFH
December 2019
3182-002A

Kittitas County
T 18 N/R 18 E - 33
Scale 1" = 120'

Figure 2
Aerial Map of Site

Love's Travel Stops and Country Stores: Ellensberg Gasoline Spill



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Note: Basemap from Broadbent Third Quarter Groundwater Monitoring Report - Site Map Drawing #2

PM: JFH
December 2020
3182-002A

Kittitas County
T 18 N/R 18 E - 33
Scale 1” = 30’

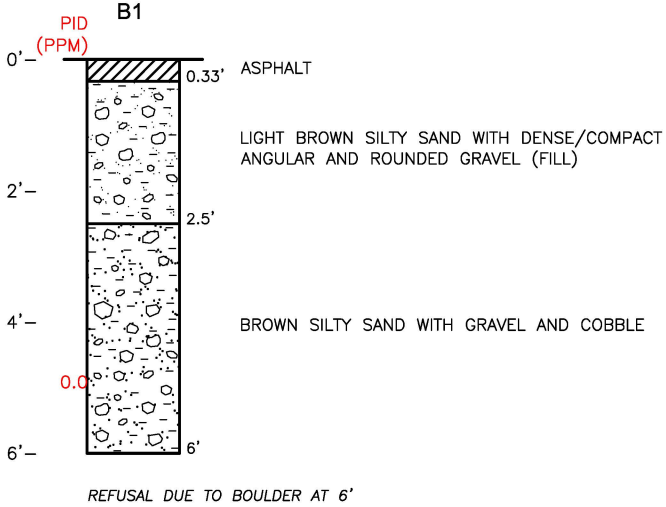
Figure 3

Boring and Monitoring Well Location Map

Love’s Travel Stops and Country Stores: Ellensberg Gasoline Spill

GEOLOGIC LOG

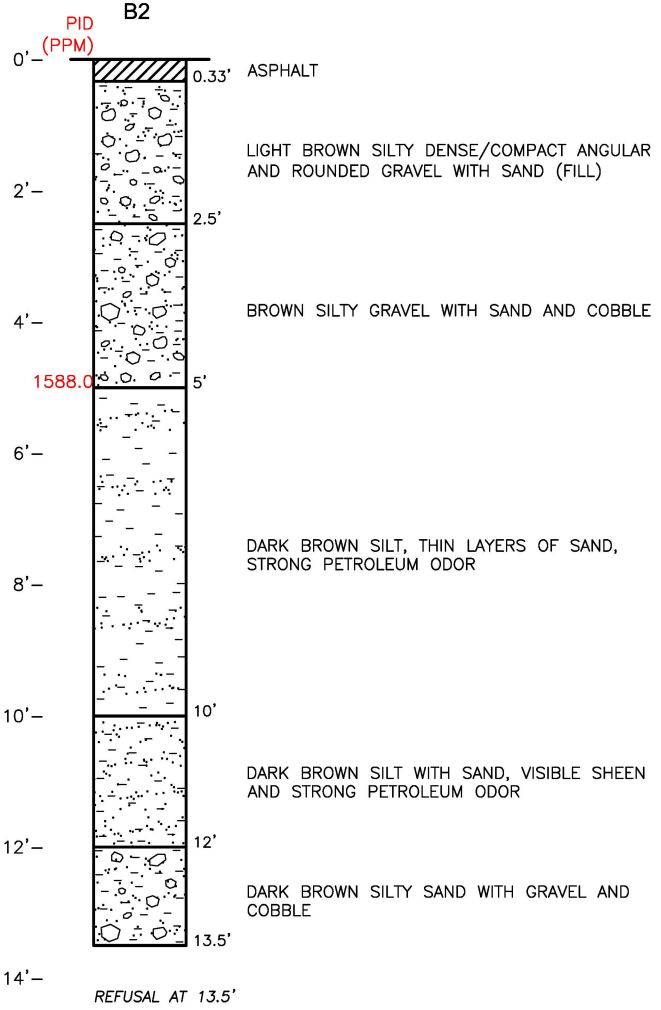
B1



REFUSAL DUE TO BOULDER AT 6'

GEOLOGIC LOG

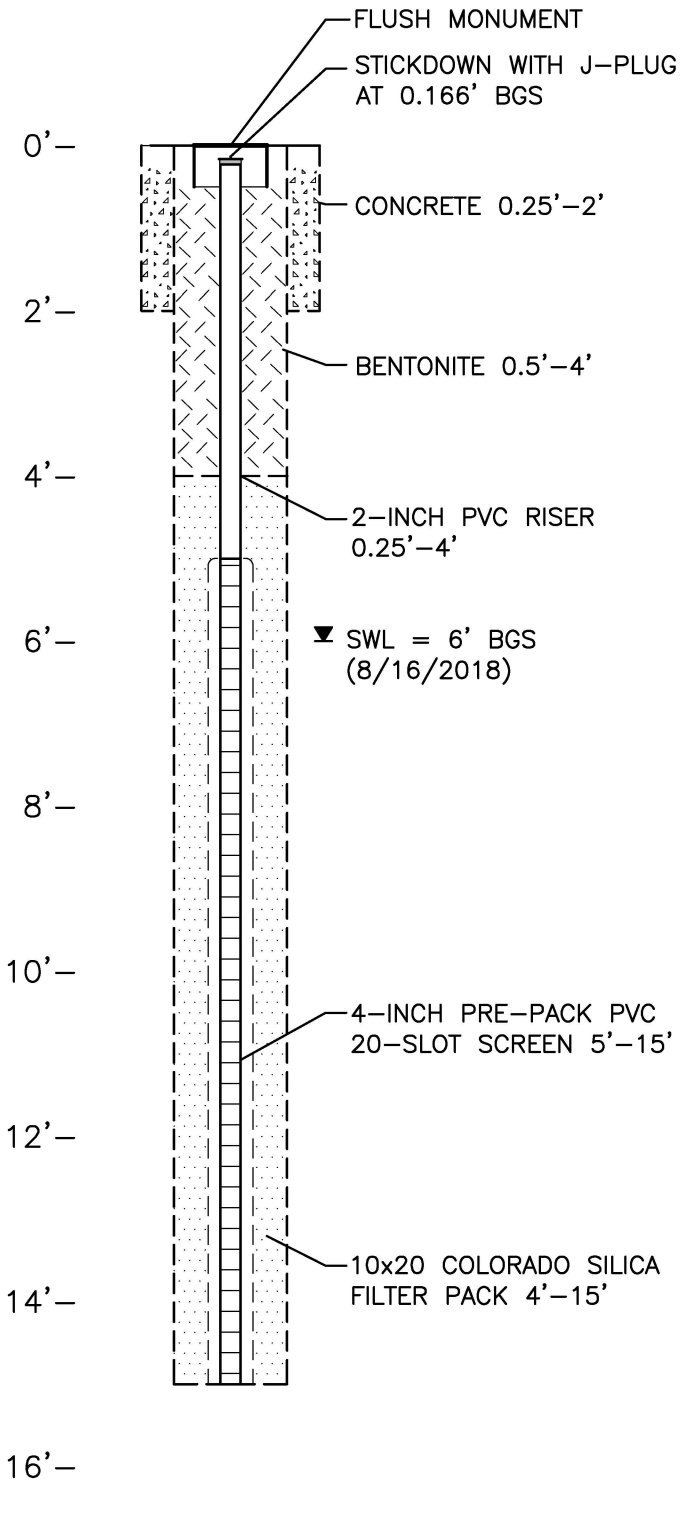
B2



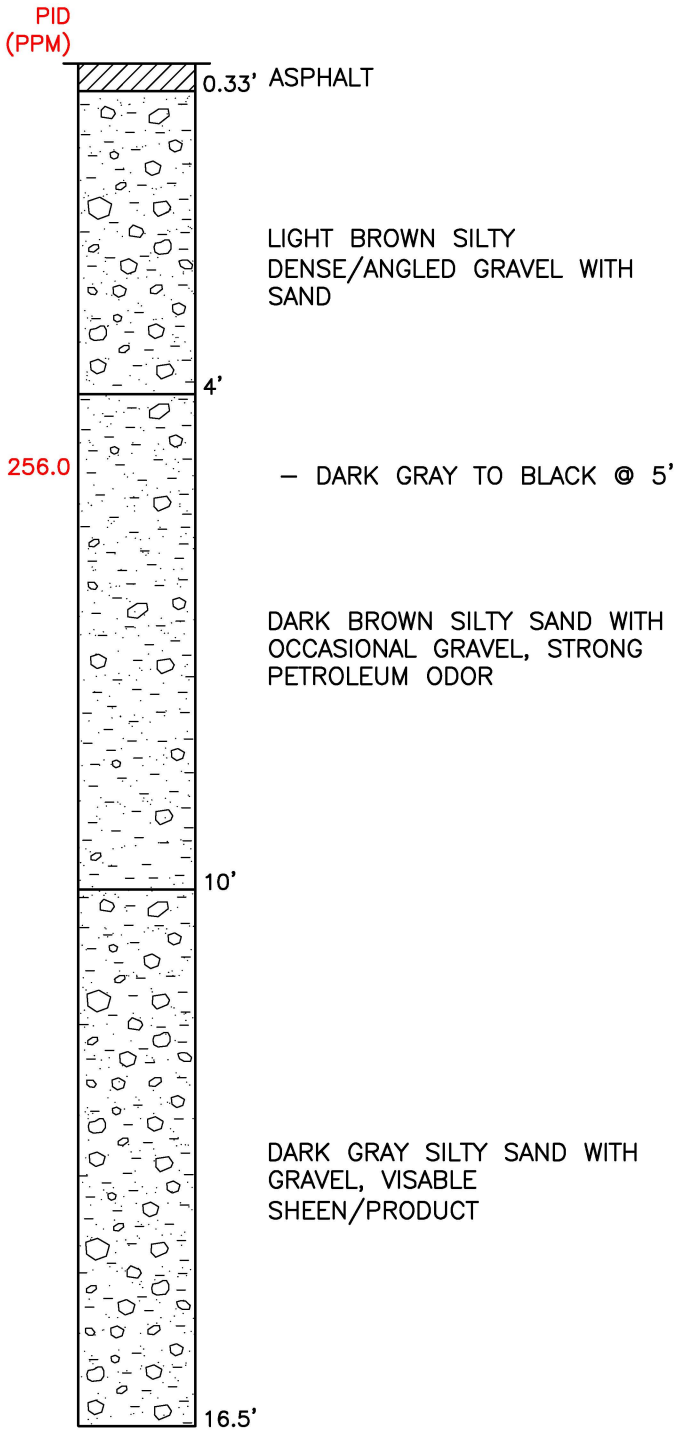
REFUSAL AT 13.5'

ROBINSON NOBLE	PM: JFH December 2020 3182-002A	Kittitas County T 18 N/R 18 E - 33	Figure 4 Geologic Log Boreholes B1 and B2 Love's Travel Stops and Country Stores: Ellensberg Gasoline Spill

Construction Detail



Geologic Log



ROBINSON NOBLE	PM: JFH December 2020 3182-002A	Kittitas County T 18 N/R 18 E - 33 Well ID: BKL-234	Figure 5 Construction Detail and Geologic Log for Monitor Well 17 Love's Travel Stops and Country Stores: Ellensberg Gasoline Spill

Appendix B

Laboratory Analytical Reports

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

August 28, 2018

John Hildenbrand
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Mr. Hildenbrand:

Please find enclosed the analytical data report for the Loves Ellensburg Project located in Ellensburg, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

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
Senior Chemist
Libby Environmental, Inc.

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

Libby Environmental, Inc.

Chain of Custody Record

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

Date: 8/17/18 Page: 1 of 1

Client: ROBINSON Noble
Address: 2105 S C St
Phone: 253-475-7711 Fax: 253-472-5846
Client Project # 3182-002B

Project Manager: John Hildenbrand
Project Name: Loves Ellensburg
Location: Loves #413
Collector: KAT Date of Collection: 8/16/18

	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	PCB's 8082	MTCA 5 Metals	MTCA VOC Lead total		Field Note/# Containers
1	MW-7	—	1605	H2O	VOA/poly/amber						X		X				X	X	
2	MW-1	—	1430	"	"						X		X				X		
3	MW-11	—	1415	"	"						X		X				X		
4	B2-W	—	1545	"	"						X		X				X		
5	MW17-4'	4'	1230	Soil	jar/VOA						X		X				X		
6	B1-4'	4'	1445	Soil	"						X		X				X		
7	B2-5'	5'	1521	Soil	"						X		X				X	X	
8																			
9																			
10																			
11																			
12																			
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15																			
16																			
17																			
18																			

Relinquished by:	Date / Time	Received by	Date / Time
[signature]	8/21/18 9:34	[signature]	8/21/18 9:34
Relinquished by:	Date / Time	Received by	Date / Time
Relinquished by:	Date / Time	Received by	Date / Time

Sample Receipt:

Good Condition?	✓
Cold?	11°C
Seals Intact?	
Total Number of Containers	

Remarks:

17°C cooler

TAT 24HR 48HR ~~5-Day~~

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

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	8/23/18	101	nd
MW17-4'	8/23/18	98	29700
B1-4'	8/23/18	96	nd
B1-4' Dup	8/23/18	96	nd
B2-5'	8/23/18	98	796

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

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Specific Halogenated and Aromatic Hydrocarbons by EPA 8260C in Soil

Sample Description		Method Blank	MW17-4'	B1-4'	B1-4' Dup	B2-5'
Date Sampled		N/A	8/16/18	8/16/18	8/16/18	8/16/18
Date Analyzed	PQL (mg/kg)	8/23/18 (mg/kg)	8/23/18 (mg/kg)	8/23/18 (mg/kg)	8/23/18 (mg/kg)	8/23/18 (mg/kg)
Benzene	0.02	nd	6.4	nd	nd	4.0
Toluene	0.10	nd	2000	nd	nd	60
Ethylbenzene	0.05	nd	280	nd	nd	14
Total Xylenes	0.15	nd	2480	nd	nd	104
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd	nd	nd
Total Naphthalenes	0.10	nd	1.0	nd	nd	1.2
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd	nd	nd
Surrogate Recovery						
Dibromofluoromethane		98	94	80	94	93
1,2-Dichloroethane-d4		85	79	86	84	78
Toluene-d8		101	98	96	96	98
4-Bromofluorobenzene		105	101	105	104	99

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

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

QA/QC Data - EPA 8260C Analyses

Sample Identification: B1-4'							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Benzene	0.5	0.42	84	0.5	0.43	86	2.4
Toluene	0.5	0.45	91	0.5	0.47	95	4.5
Surrogate Recovery							
Dibromofluoromethane			68			88	
1,2-Dichloroethane-d4			74			71	
Toluene-d8			91			96	
4-Bromofluorobenzene			89			100	

	Laboratory Control Sample		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Benzene	0.5	0.47	95
Toluene	0.5	0.52	105
Surrogate Recovery			
Dibromofluoromethane			102
1,2-Dichloroethane-d4			89
Toluene-d8			98
4-Bromofluorobenzene			107

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

ANALYSES PERFORMED BY: Kodey Eley

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

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

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	8/22/18	101	nd	nd
Method Blank	8/23/18	107	nd	nd
MW17-4'	8/23/18	109	nd	nd
B1-4'	8/23/18	101	nd	nd
B2-5'	8/22/18	103	nd	nd
B2-5' Dup	8/22/18	101	nd	nd
Practical Quantitation Limit			50	250

"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: Melissa Harrington

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Analyses of Total Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)
Method Blank	8/25/18	nd
B2-5'	8/25/18	8.6
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

QA/QC for Total Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	8/25/18	103%
L180822-6 MS	8/25/18	88%
L180822-6 MSD	8/25/18	91%
RPD	8/25/18	3%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	8/22/18	101	nd
MW-17	8/22/18	90	521000
MW-1	8/22/18	91	77100
MW-11	8/22/18	97	193000
MW-11 Dup	8/22/18	96	192000
B2-W	8/22/18	96	255000
Practical Quantitation Limit			100

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

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Specific Halogenated and Aromatic Hydrocarbons by EPA 8260C in Water

Sample Description		Method Blank	MW-17	MW-1	MW-11	MW-11 Dup	B2-W
Date Sampled		N/A	8/16/18	8/16/18	8/16/18	8/16/18	8/16/18
Date Analyzed	PQL (µg/L)	8/22/18 (µg/L)	8/22/18 (µg/L)	8/22/18 (µg/L)	8/22/18 (µg/L)	8/22/18 (µg/L)	8/22/18 (µg/L)
Benzene	1.0	nd	5600	2700	4450	4300	5500
Toluene	2.0	nd	33200	534	16900	16900	24600
Ethylbenzene	1.0	nd	2500	217	1400	1300	1900
Total Xylenes	2.0	nd	9310	6020	8800	8400	11800
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	240	217	81	95	167
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		116	114	106	115	115	109
1,2-Dichloroethane-d4		112	117	131	117	128	133
Toluene-d8		90	90	91	94	96	96
4-Bromofluorobenzene		87	91	90	89	89	88

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

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

QA/QC Data - EPA 8260C Analyses

Sample Identification: MW-11							
	Matrix Spike			Matrix Spike Dup			RPD
	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)	
Benzene	10	10.0	100	10	8.6	86	15.1
Toluene	10	13.0	130	10	11.0	110	16.7
Surrogate Recovery							
Dibromofluoromethane			112			106	
1,2-Dichloroethane-d4			110			125	
Toluene-d8			74			90	
4-Bromofluorobenzene			92			92	

	Laboratory Control Sample		
	Spiked Conc. (µg/L)	Measured Conc. (µg/L)	Spike Recovery (%)
Benzene	10	10.2	102
Toluene	10	9.1	91
Surrogate Recovery			
Dibromofluoromethane			116
1,2-Dichloroethane-d4			106
Toluene-d8			90
4-Bromofluorobenzene			86

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

ANALYSES PERFORMED BY: Kodey Eley

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

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

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	8/22/18	101	nd	nd
MW-17	8/22/18	int	20800	nd
MW-1	8/22/18	110	1850	nd
MW-11	8/22/18	98	nd	nd
B2-W	8/22/18	int	69300	nd
B2-W Dup	8/22/18	int	58800	nd
Practical Quantitation Limit			200	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: Melissa Harrington

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

Analyses of Total Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (µg/L)
Method Blank	8/25/18	nd
MW-17	8/25/18	46
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L180821-1
Client Project # 3182-002B

QA/QC for Total Lead in Water by EPA 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	8/25/18	103%
L180823-2 MS	8/25/18	112%
L180823-2 MSD	8/25/18	113%
RPD	8/25/18	1%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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LOVES ELENSBURG PROJECT
Robinson Noble, Inc.
Libby Project # L180821-1
Date Received 8/21/2018
Time Received 9:34 AM

Received By LC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	17.0 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	11.0 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☑	Yes	☐	No		
14. Is there sufficient sample volume for indicated analysis?	☑	Yes	☑	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☑	Yes	☐	No	☐	N/A
17. Were all holding times able to be met?	☐	Yes	☑	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☑	Yes	☐	No	☐	N/A

Person Notified: Kari Thomas — Date: 8/20/2018
By Whom: Emily Bushlen — Via: phone
Regarding: Holding times.

19. Comments. Soil Gx, MTCA VOC received out of hold.

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

June 5, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Loves Ellensburg Project located in Ellensburg, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

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
Senior Chemist
Libby Environmental, Inc.

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

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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

Date: 5/30/19 Page: 1 of 1

Client: RW
Project Manager: Kari Thomas
Address: 2105 S C St
Project Name: Loves Ellensburg
City: Tacoma State: WA Zip: 98402
Location: Loves City, State: Ellensburg, WA
Phone: 253-475-7711 Fax:
Collector: Matthew Lutz Date of Collection: 5/30/19
Client Project # 3182-002A
Email: KThomas@robinson-noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC ~~8260~~ MTCA	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	D1	-	11:35	Soil	jar + 2 VOA	X	X				X									
2	D2	-	11:45	Soil	jar + 2 VOA	X	X				X									
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Matthew Lutz	5/30 3:00	KTD	5/30/19 ~~15~~ 1500
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.	18.7	°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: EIM

TAT: 24HR 48HR 5-DAY

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

Libby Environmental, Inc.

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LOVES ELLENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L190530-4
Client Project # 3182-002A

Specific Halogenated and Aromatic Hydrocarbons by EPA 8260C in Soil

Sample Description		Method Blank	D1	D2
Date Sampled		N/A	5/30/19	5/30/19
Date Analyzed	PQL (mg/kg)	5/31/19 (mg/kg)	5/31/19 (mg/kg)	5/31/19 (mg/kg)
Benzene	0.02	nd	nd	nd
Toluene	0.10	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd
Total Xylenes	0.15	nd	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd	nd
Total Naphthalenes	0.10	nd	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd	nd
Surrogate Recovery				
Dibromofluoromethane		98	105	101
1,2-Dichloroethane-d4		88	110	97
Toluene-d8		102	100	102
4-Bromofluorobenzene		107	118	104

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

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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LOVES ELLENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L190530-4
Client Project # 3182-002A

QA/QC Data - EPA 8260C Analyses

Sample Identification: L190530-3							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Benzene	0.5	0.64	128	0.5	0.62	124	3.2
Toluene	0.5	0.67	134	0.5	0.59	118	12.7
Surrogate Recovery							
Dibromofluoromethane			98			103	
1,2-Dichloroethane-d4			84			95	
Toluene-d8			104			107	
4-Bromofluorobenzene			106			121	

	Laboratory Control Sample		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Benzene	0.5	0.63	126
Toluene	0.5	0.62	124
Surrogate Recovery			
Dibromofluoromethane			96
1,2-Dichloroethane-d4			90
Toluene-d8			103
4-Bromofluorobenzene			114

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

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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LOVES ELLENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L190530-4
Client Project # 3182-002A

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	5/31/19	102%	nd
D1	5/31/19	100%	nd
D2	5/31/19	102%	nd
Practical Quantitation Limit			10

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

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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LOVES ELLENSBURG PROJECT
Robinson Noble, Inc.
Ellensburg, Washington
Libby Project # L190530-4
Client Project # 3182-002A

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

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	5/31/19	100%	nd	nd
D1	5/31/19	100%	nd	nd
D2	5/31/19	100%	nd	nd
D2 Dup	5/31/19	113%	nd	nd
Practical Quantitation Limit			50	250

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

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

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG PROJECT
Robinson Noble, Inc.
Libby Project # L190530-4
Date Received 5/30/2019
Time Received 3:00 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	1.5 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	6.4 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☑	Yes	☐	No		
14. Is there sufficient sample volume for indicated analysis?	☑	Yes	☐	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☑	Yes	☐	No	☐	N/A
17. Were all holding times able to be met?	☑	Yes	☐	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐	Yes	☐	No	☑	N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

June 26, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Loves Ellensburg Water Sampling Project located in Ellensburg, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

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
Senior Chemist
Libby Environmental, Inc.

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

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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

Date: 6/13/19 Page: 1 of 1

Client: RN

Project Manager: Kari Thomas

Address: 2105 S C St.

Project Name: Loves Ellensburg water sampling

City: Tacoma State: WA Zip: 98402

Location: Ellensburg Loves City, State: WA

Phone: 253-475-7711 Fax:

Collector: Matthew Lutz Date of Collection: 6/13/19

Client Project # 3182-002A

Email: KThomas@robinson-noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Flash Point Method WDOE 88-17	bioassay	Field Notes
1	MW-17	—	12:00	water	2×250mL												+	+		
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	6/17/19 231	[signature]	6-13-19 1431
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition? Y N

Temp. °C

Seals Intact? Y N N/A

Total Number of Containers

Remarks: 3 weeks

EZM

TAT: 24HR 48HR 5-DAY

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

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG WATER SAMPLING PROJECT
Robinson Noble
Libby Project # L190617-5
Date Received 6/13/2019
Time Received 2:31 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	3.8 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	8.1 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☑	Yes	☐	No		
14. Is there sufficient sample volume for indicated analysis?	☑	Yes	☐	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☐	Yes	☐	No	☑	N/A
17. Were all holding times able to be met?	☑	Yes	☐	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐	Yes	☐	No	☑	N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

SPECTRA Laboratories ...*Where experience matters*

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

06/25/2019

Libby Environmental, Inc.
3322 South Bay Road NE
Olympia, WA 98506

Project:	Loves Ellensburg Water
Client ID:	MW-17
Sample Matrix:	Water
Date Sampled:	06/13/2019
Date Received:	06/18/2019
Spectra Project:	2019060482
Spectra Number:	1

Analyte	Result	Units	Method
Flashpoint (PMCC)	>210	°F	ASTM D-93

SPECTRA LABORATORIES

Jeffrey Cooper, Laboratory Manager

a6/cmk

Spectra

Libby Environmental, Inc.

Chain of Custody Record 201902 0482

www.LibbyEnvironmental.com

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

Client: Libby ENV
Address:
City: State: Zip:
Phone: Fax:
Client Project #

Date: 6-17-19 Page: 1 of 1
Project Manager: Sherry Chilcutt
Project Name: Loves Ellensburg WA water sampling
Location: City, State: Ellensburg, WA
Collector: Date of Collection: 6-13-19
Email:

	Sample Number	Depth	Time	Sample Type	Container Type	pH	Turbidity	Oil & Grease	Zinc, Copper	Zinc, Copper, Lead	TSS	BOD 5	Nitrate/Nitrite	Total Phosphorus	COD	TPH	Flashpoint			Field Notes
1	MW-17		1200	water	Poly												X			
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by:	Date / Time	Received by:	Date / Time
KJD	6/17/19 1625	JWS	
Relinquished by:	Date / Time	Received by:	Date / Time
			6/18/19 @ 1105
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:
Record pH here:
Std

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

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

Rainier ENVIRONMENTAL

Dangerous Waste Characterization

Sample ID: MW-17

Report date: June 26, 2019

Submitted to:

Libby Environmental
4139 Libby Road NE
Olympia, WA 98506

Rainier Environmental
5013 Pacific Hwy East
Suite 20
Tacoma, WA 98424

1.0 INTRODUCTION

A dangerous waste characterization using the test organism *Oncorhynchus mykiss* (rainbow trout) was conducted on one sample submitted by Libby Environmental to Rainier Environmental. Testing was conducted following the Washington State Department of Ecology Publication 80-12.

2.0 METHODS

The sample, identified as MW-17 was received in the laboratory on June 17, 2019. Upon arrival at the laboratory the sample was inspected and contents verified against information provided on the chain-of-custody form. The sample was stored at 4°C in the dark until use. The test procedure is outlined in Table 1.

Table 1. Summary of Dangerous Waste Characterization Test Conditions

Parameter	Standard Fish Toxicity Test
Test number	1906-049
Sample ID	MW-17
Test initiation date; time	6/21/2019; 0950h
Test termination date; time	6/25/2019; 0940h
Endpoint	Mortality at 96-hours
Test chamber	7.5 L Plastic tank
Test temperature	12 ± 1°C
Dilution water	Moderately hard synthetic water
Test solution volume	6 L
Test concentrations (mg/L)	100, 10, 0
Number of organisms/ chamber	10
Number of replicates	3
Test organism	*Oncorhynchus mykiss* (rainbow trout)
Feeding	No feeding during test
Photoperiod	16 hours light/ 8 hours dark
Extraction	Rotary agitation (30 +/- 2 rpm) for 18 hours
Reference Toxicant	Copper sulfate
Deviations	None

The test organisms used in the test are outlined in Table 2. The sample was tested using fish received on May 15, 2019.

Table 2. Test organisms (*Oncorhynchus mykiss*)

Test organism age	60 days post swim-up (hatch date 3/31/2019)
Mean weight	0.35 g
Mean length	35 mm
Ratio of longest to shortest	1.2
Loading	0.59 g/L
Test organism source	Trout Lodge; Sumner, WA

3.0 RESULTS

A summary of results for the dangerous waste characterization conducted on sample MW-17 is contained in Table 3. There was no mortality during the test. Based on these results, the sample does not designate as either a dangerous or extremely hazardous waste. Copies of the laboratory bench sheets, statistical summaries of reference toxicant tests, and chain-of-custody form are provided in Appendices A through C.

Table 3. Summary of Results

Sample ID	Concentration (mg/L)	Survival (# fish, N=30)	Percent Mortality	Dangerous Waste Designation
Control	0	30	0	NA
MW-17	10	30	0	None
	100	30	0	

4.0 QUALITY ASSURANCE

The most recently completed reference toxicant test was initiated May 21, 2019. The LC_{50} of 115 µg/L copper fell within the acceptable range of mean ± two standard deviations of historical test results indicating that the test organisms were of an appropriate degree of sensitivity. The coefficient of variation (CV) for the last 21 tests was 21.4 percent, which is considered excellent by the Biomonitoring Science Advisory Board.

5.0 REFERENCES

WDOE. 2008. Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. Washington State Department of Ecology. Water Quality Program. Publication number: WQ-R-95-80, Revised December 2008.

WDOE. 2009. Biological Testing Methods 80-12 for the Designation of Dangerous Waste. Washington State Department of Ecology. Hazardous Waste and Toxics Reduction Program. Publication number: 80-12, Revised June 2009.

Appendix A
Oncorhynchus mykiss Dangerous Waste Toxicity Test
Raw Bench Sheets

Dangerous Waste Toxicity Test

Client: Libby Environmental, Inc.
Sample ID: MW-17
Test #: 1906-049
Log In #: T19-161

Start Date & Time: 6/21/19 0950
End Date & Time: 6/25/19 0940
Test Organism: *Oncorhynchus mykiss*
Test Protocol: **Washington State Department of Ecology Publ. 80-12**

Rep	Conc.	Cont #	Number of Live Organisms					Dissolved Oxygen (mg/L)					pH (units)					Conductivity (umhos/cm)					Temperature (°C)					Percent Survival
			0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	
1	CON	10	10	10	10	10	10	8.9	8.5	8.1	7.8	7.3	7.77	7.61	7.42	7.35	7.22	278				272	11.7	12.1	11.5	12.6	12.2	
2		21	10	10	10	10	10	8.6	8.3	8.0	7.7	7.1	7.79	7.57	7.49	7.41	7.19	278				274						
3		3	10	10	10	10	10	8.8	8.5	7.8	7.5	6.9	7.76	7.55	7.45	7.38	7.20	281				275						
1	10 PPM	25	10	10	10	10	10	9.1	8.8	8.1	7.7	7.2	7.89	7.60	7.52	7.29	7.12	261				258	11.5	11.8	12.1	12.4	12.1	
2		7	10	10	10	10	10	8.7	8.4	8.5	8.0	7.4	7.91	7.55	7.47	7.25	7.15	258				257						
3		17	10	10	10	10	10	8.8	8.5	8.2	7.9	7.4	7.87	7.52	7.46	7.24	7.11	261				259						
1	100PPM	23	10	10	10	10	10	9.0	8.5	8.3	7.5	7.0	7.87	7.54	7.42	7.15	7.08	267				264	11.5	11.9	11.9	12.5	12.1	
2		2	10	10	10	10	10	8.9	8.7	8.4	7.7	7.1	7.88	7.54	7.45	7.18	7.09	265				263						
3		11	10	10	10	10	10	8.7	8.3	8.1	7.4	6.8	7.85	7.58	7.45	7.19	7.11	266				265						
1																												
2																												
3																												
1																												
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3																												
1																												
2																												
3																												
Technician Initials			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]																

Sample	Alk. (init.)	Hard. (init.)	Alk. (fin.)	Hard. (fin.)	Chlorine
	(mg/L as CaCO3)				(mg/L Cl2)
Control	64	92	64	92	<0.03
100PPM	64	92	64	92	

Animal Source: Troutlodge
Date Received: 5/15/19
Test Volume: 6.0L
Date of Hatch: 3/31/19
Date of Swim up: 4/22/19

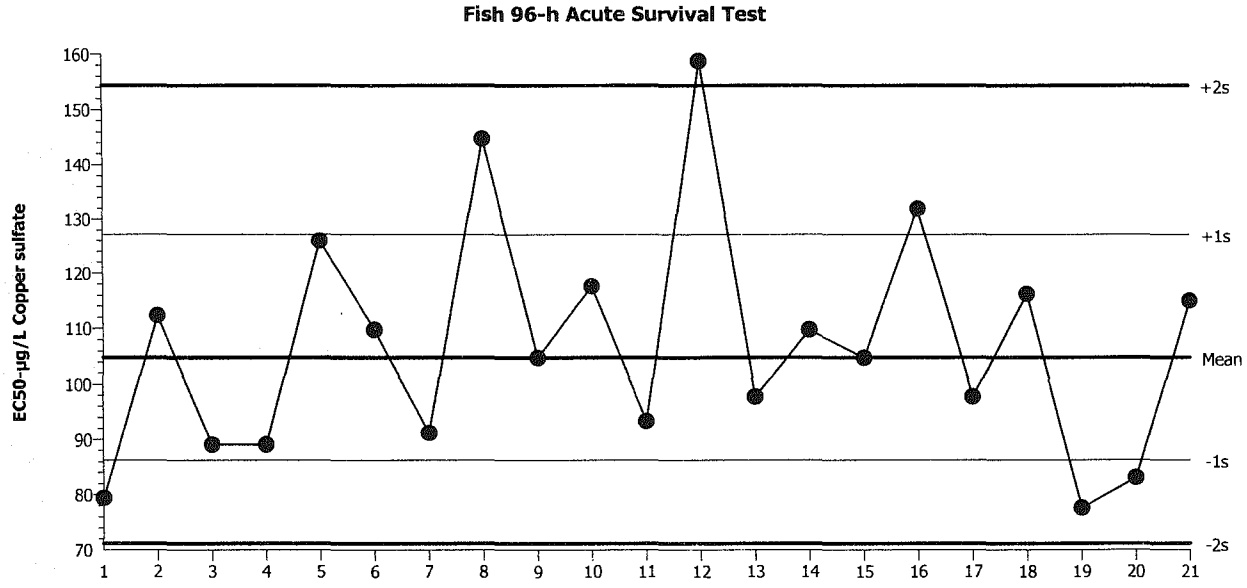
Weights (g): .37 .35 .35 .40 .32 .34 .33 .37 .35 .36 μ = .35
Lengths(mm): 35 35 36 41 33 33 33 35 36 36 μ = 35
Length max/min: 41/33 1.2
Loading: 0.59g/L

Rainier Environmental
Washington Laboratory
5013 Pacific HWY E Suite 20
Tacoma, WA 98424

Dilution Water Source: MHSW 050
QA Check [illegible]

Appendix B
Reference Toxicant Test
Control Chart and Statistical Summary

Fish 96-h Acute Survival Test		Rainier Environmental Laboratory
Test Type: Survival (96h)	**Organism:** Oncorhynchus mykiss (Rainbow Tro	**Material:** Copper sulfate
Protocol: Not Applicable	**Endpoint:** 96h Survival Rate	**Source:** Reference Toxicant-REF



Mean:	104.8	**Count:**	20	**-1s Warning Limit:**	86.34	**-2s Action Limit:**	71.14
Sigma:	NA	**CV:**	21.40%	**+1s Warning Limit:**	127.2	**+2s Action Limit:**	154.4

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2017	Aug	9	79.37	-25.42	-1.435	(-)		14-0940-5366	14-5578-7811
2		Sep	6	112.2	7.452	0.3546			20-3302-1945	19-8536-6321
3		Oct	10	89.09	-15.7	-0.8382			16-6680-8798	20-0898-2992
4		Nov	14	89.09	-15.7	-0.8382			03-8806-4974	08-0487-5780
5		Dec	17	126	21.2	0.9511			21-2907-2796	14-7957-6406
6	2018	Jan	16	109.7	4.888	0.2354			07-7088-1157	16-4889-5798
7		Feb	15	91.17	-13.62	-0.7189			06-6357-5370	00-6522-6981
8		Mar	17	144.7	39.93	1.667	(+)		00-4331-1834	10-4388-1035
9		Apr	21	104.7	-0.06496	-0.00320			00-5606-6972	09-2556-2363
10		May	23	117.6	12.76	0.5932			20-2785-4749	16-3316-3415
11		Jun	20	93.3	-11.49	-0.5996			05-6858-8909	21-3433-5668
12		Jul	25	158.7	53.95	2.144	(+)	(+)	03-7661-5860	05-4916-3169
13		Aug	30	97.72	-7.078	-0.361			01-6631-0399	00-2872-0274
14		Oct	5	109.7	4.888	0.2354			09-8718-1650	14-5303-2875
15		Nov	6	104.7	-0.06496	-0.00320			20-5282-8357	01-3690-0719
16		Dec	5	132	27.16	1.19	(+)		01-4499-1094	07-5652-1457
17	2019	Jan	7	97.72	-7.078	-0.361			03-9395-5944	09-6087-0434
18		Feb	9	116.1	11.35	0.5309			13-6349-4914	05-5573-8325
19		Mar	12	77.56	-27.24	-1.554	(-)		03-9582-1391	08-0363-8342
20		Apr	19	83.12	-21.67	-1.196	(-)		16-0727-4914	09-8538-6220
21		May	21	114.9	10.08	0.4739			13-0213-5670	12-8044-7071

CETIS Summary Report

Fish 96-h Acute Survival Test — **Rainier Environmental Laboratory**

Batch ID:	12-8931-7657	**Test Type:**	Survival (96h)	**Analyst:**	Eric Tollefson
Start Date:	21 May-19 15:15	**Protocol:**	Not Applicable	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	25 May-19 14:30	**Species:**	Oncorhynchus mykiss	**Brine:**	
Duration:	95h	**Source:**	Trout Lodge Fish Farm	**Age:**	30d

Sample ID:	07-9489-2163	**Code:**	RA052119OM	**Client:**	Internal Lab
Sample Date:	21 May-19	**Material:**	Copper sulfate	**Project:**	
Receive Date:	21 May-19	**Source:**	Reference Toxicant		
Sample Age:	15h	**Station:**	In House		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-8715-4676	96h Survival Rate	50	100	70.71	16.7%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
12-8044-7071	96h Survival Rate	LC50	114.9	96.73	136.4		Spearman-Kärber

96h Survival Rate Summary

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	3	1	1	1	1	1	0	0	0.0%	0.0%
25		3	1	1	1	1	1	0	0	0.0%	0.0%
50		3	0.9	0.8627	0.9373	0.8	1	0.05774	0.1	11.11%	10.0%
100		3	0.6333	0.5902	0.6765	0.5	0.7	0.06667	0.1155	18.23%	36.67%
200		3	0.1667	0.1096	0.2237	0	0.3	0.08819	0.1528	91.65%	83.33%
400		3	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	1	1	1
25		1	1	1
50		0.9	1	0.8
100		0.5	0.7	0.7
200		0.3	0.2	0
400		0	0	0

96h Survival Rate Binomials

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	10/10	10/10	10/10
25		10/10	10/10	10/10
50		9/10	10/10	8/10
100		5/10	7/10	7/10
200		3/10	2/10	0/10
400		0/10	0/10	0/10

Appendix C
Chain-of-Custody Form

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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

Date: 6-17-19 Page: 1 of 1

Client: Libby Env

Project Manager: Sherry Chilcutt

Address:

Project Name: Loves Ellensburg water Sampling

City: State: Zip:

Location: Ellensburg WA City, State:

Phone: Fax:

Collector: Date of Collection: 6-13-19

Client Project #

Email:

Sample Number	Depth	Time	Sample Type	Container Type	pH	Turbidity	Oil & Grease	Zinc, Copper	Zinc, Copper, Lead	TSS	BOD 5	Nitrate/Nitrite	Total Phosphorus	COD	TPH	Method WDOE 8021			Field Notes
1 MW-17		1200	water	poly												X			Login: T19-161
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by:	Date / Time	Received by:	Date / Time
Sherry Chilcutt	6-17-19 1630	Jennifer Lee	6/18/19 1215
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:
Record pH here:
Stel

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

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

August 28, 2019

Kari Thomas
Robinson Noble
2105 South C Street
Tacoma, WA 98402

Dear Ms. Thomas:

Please find enclosed the analytical data report for the Loves Ellensburg Project located in Ellensburg, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

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
Senior Chemist
Libby Environmental, Inc.

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

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

3322 South Bay Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 8/22/19 Page: 1 of 1

Client: RN
Address: 2105 S C St
City: Tacoma State: WA Zip: 98402
Phone: 253-475-7711 Fax:
Client Project # 3182-002A

Project Manager: Kari Thomas
Project Name: Loves Ellensburg
Location: Ellensburg, Loves City, State: WA
Collector: Matthew Lutz Date of Collection: 8/22
Email: Kthomas@robinson-noble.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260 MTCA5	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	MW-11	—	11:45	3 VOA	Water	X	X				X									
2	MW-17	—	12:35	3 VOA	Water	X	X				X									
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	8/23/19 235	[signature]	8/23/19 1435
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N
Cooler Temp.		°C
Sample Temp.		°C
Total Number of Containers		

Remarks: Sorry, guess we didn't get a number. Dx EIM may not be possible. Let me know.

TAT: 24HR 48HR 5-DAY

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

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG PROJECT
Robinson Noble
Ellensburg, Washington
Libby Project # L190823-5
Client Project # 3182-002A

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	MW-11	MW-11 Dup	MW-17
Date Sampled		N/A	8/22/19	8/22/19	8/22/19
Date Analyzed	PQL	8/26/19	8/26/19	8/26/19	8/26/19
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Benzene	1.0	nd	776	590 E	776
Toluene	1.0	nd	158	152	3320 E
Ethylbenzene	1.0	nd	112	104	653
Total Xylenes	2.0	nd	1130	726 E	5020
1,2-Dichloroethane (EDC)	1.0	nd	nd	nd	nd
1,2-Dibromoethane (EDB) *	0.01	nd	nd	nd	nd
Total Naphthalenes	5.0	nd	18	14	70
Methyl *tert*- Butyl Ether (MTBE)	5.0	nd	5.4	5.0	nd
Surrogate Recovery					
Dibromofluoromethane		95	93	95	93
1,2-Dichloroethane-d4		101	101	92	101
Toluene-d8		95	95	98	94
4-Bromofluorobenzene		102	101	101	100

"E" Reported result is an estimate because it exceeds the calibration range.
"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG PROJECT
Robinson Noble
Ellensburg, Washington
Libby Project # L190823-5
Client Project # 3182-002A

QA/QC Data - EPA 8260D Analyses

Matrix Spike Sample Identification: MW-11

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)
Methyl *tert*- Butyl Ether (MT	5.0	5.5	5.2	110	104	5.8	65-137
Benzene	5.0	6.1	4.6	122	91	29.2	65-140
1,2-Dichloroethane (EDC)	5.0	5.5	6.4	109	128	16.2	65-141
Toluene	5.0	5.2	5.8	103	117	12.4	65-143
1,2-Dibromoethane (EDB)	5.0	6.3	5.9	127	118	7.0	65-145
Ethylbenzene	5.0	5.6	6.1	113	122	7.7	65-147
Total Xylenes	15.0	10.7	11.8	72	79	9.2	65-148
Naphthalene	5.0	5.9	5.5	117	109	7.3	65-135

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	97	97	65-135
1,2-Dichloroethane-d4	101	102	65-135
Toluene-d8	96	96	65-135
4-Bromofluorobenzene	99	101	65-135

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

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LOVES ELLENSBURG PROJECT
Robinson Noble
Ellensburg, Washington
Libby Project # L190823-5
Client Project # 3182-002A

Laboratory Control Sample

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)
Methyl *tert*- Butyl Ether (MT	5.0	5.05	101	80-120
Benzene	5.0	5.12	102	80-120
1,2-Dichloroethane (EDC)	5.0	5.33	107	80-120
Toluene	5.0	4.70	94	80-120
1,2-Dibromoethane (EDB)	5.0	4.23	85	80-120
Ethylbenzene	5.0	5.34	107	80-120
Total Xylenes	15.0	15.70	105	80-120
Naphthalene	5.0	5.11	102	80-120

Surrogate Recovery			
Dibromofluoromethane		96	65-135
1,2-Dichloroethane-d4		104	65-135
Toluene-d8		93	65-135
4-Bromofluorobenzene		102	65-135

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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LOVES ELLENSBURG PROJECT
Robinson Noble
Ellensburg, Washington
Libby Project # L190823-5
Client Project # 3182-002A

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (µg/L)
Method Blank	8/26/19	95%	nd
MW-11	8/26/19	95%	6020
MW-11 Dup	8/26/19	98%	5140 E
MW-17	8/26/19	94%	25500
Practical Quantitation Limit			100

"E" Reported result is an estimate because it exceeds the calibration range.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG PROJECT
Robinson Noble
Ellensburg, Washington
Libby Project # L190823-5
Client Project # 3182-002A

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

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	8/26/19	112	nd	nd
MW-11	8/26/19	134	nd	nd
MW-17	8/26/19	93	nd	nd
MW-17 Dup	8/26/19	116	nd	nd
Practical Quantitation Limit			200	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: Evan Neims

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

LOVES ELLENSBURG PROJECT
Robinson Noble
Libby Project # L190823-5
Date Received 8/23/2019
Time Received 2:35 PM

Received By KD

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑	Yes	☐	No		
2. How was the sample delivered?	☐	Hand Delivered	☑	Picked Up	☐	Shipped

Log In

3. Cooler or Shipping Container is present.	☑	Yes	☐	No	☐	N/A
4. Cooler or Shipping Container is in good condition.	☑	Yes	☐	No	☐	N/A
5. Cooler or Shipping Container has Custody Seals present.	☐	Yes	☑	No	☐	N/A
6. Was an attempt made to cool the samples?	☑	Yes	☐	No	☐	N/A
7. Temperature of cooler (0°C to 8°C recommended)	10.0 °C					
8. Temperature of sample(s) (0°C to 8°C recommended)	15.3 °C					
9. Did all containers arrive in good condition (unbroken)?	☑	Yes	☐	No		
10. Is it clear what analyses were requested?	☑	Yes	☐	No		
11. Did container labels match Chain of Custody?	☑	Yes	☐	No		
12. Are matrices correctly identified on Chain of Custody?	☑	Yes	☐	No		
13. Are correct containers used for the analysis indicated?	☐	Yes	☑	No		
14. Is there sufficient sample volume for indicated analysis?	☑	Yes	☐	No		
15. Were all containers properly preserved per each analysis?	☑	Yes	☐	No		
16. Were VOA vials collected correctly (no headspace)?	☑	Yes	☐	No	☐	N/A
17. Were all holding times able to be met?	☑	Yes	☐	No		

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐	Yes	☐	No	☑	N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Appendix C

Disposal Receipts

Northern ENVIRONMENTAL

2661 North Pearl St. #145
Tacoma, WA 98407
253.503.3096

DATE	WORK ORDER #	TICKET #
7/24/19	54754	28959

OPERATOR	LABORER
Dave	—

Customer Robinson Noble Job Phone

Job Address 1517 US 97 (Love's truck stop #413) C, S, Z Ellensburg, WA 98926

TRAVEL TO SITE		ON SITE		DUMP OUT COMPLETED	RETURN TO SHOP	TRUCK #
START	STOP	IN	OUT			
0800	1100	1100	1800		2030	119/229

QUANTITY	JOB DESCRIPTION	RATE	TOTAL
925 gal	Pump water from monitoring well		
	Breakdown from 1115-1330		
	Vac truck w/operator		
	15% Compline + energy surcharge		

DISPOSAL:	☐ ON SITE ☒ OFF SITE	SUBTOTAL	
LOCATION:	PCS profile 7581-B	TAX	
		TOTAL	

SIGNATURE BELOW ACKNOWLEDGES PAYMENT TERMS ON REVERSE:

CUSTOMER NAME: Matthew Lutz SIGNATURE: Matthew Lutz

Northern ENVIRONMENTAL

2661 North Pearl St. #145
Tacoma, WA 98407
253.503.3096

DATE	WORK ORDER #	TICKET #
7/15/19	59754	28961

OPERATOR	LABORER
Dave	—

Customer Robinson Noble Job Phone

Job Address 1512 US 97 (Lucas Rd) C, S, Z Ellensburg, WA

TRAVEL TO SITE		ON SITE		DUMP OUT COMPLETED	RETURN TO SHOP	TRUCK #
START	STOP	IN	OUT			
0700	0745	0745	0830		0900	119/284

QUANTITY	JOB DESCRIPTION	RATE	TOTAL
975 gal	offload + washout		

DISPOSAL: ☐ ON SITE ☐ OFF SITE

LOCATION: profile 7581-B

SUBTOTAL	
TAX	
TOTAL	

SIGNATURE BELOW ACKNOWLEDGES PAYMENT TERMS ON REVERSE:

CUSTOMER NAME: N/A SIGNATURE: N/A

87541

PRS Group, Inc.

ENTRY LOG FOR NON-HAZARDOUS ITEMS

3003 Taylor Way
Tacoma, WA 98421
Phone: (253)383-4175 Fax: (253)383-4531
prs@prsplant.net

Date:	7/25/2019	**Carrier:**	northern	**Vehicle #:**	119
Drivers Signature:		**Plant Employee:**	kenny	**Time:**	8:19 AM

% Water:	% Oil / Fuel:	pH:	Flash >140:	x
100%	0%	7.2	Other Flash:	
% Solids:	% Other:	Tank # / Area:	Chlor Test NA:	x
0%	0%	5b	Chlor <1000:	

Generator	Profile #	Work Order, BOL, Manifest	Used Oil	"A" & "C" Category Waste	Used Oil Filters	Off Spec Fuel	Oil / Water Mix	Oily Solids / Sludge	PCS	Absorbent	Empty Drums	Other
robinson noble/joves truck stop	7581-b	59754					925g					oc

Notes:

* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.

Northern ENVIRONMENTAL
EPAID# WAH000039211
USDOT# 2133996
253.212.5446

B.O.L. # 6229

SHIPPING PAPER

DELIVERY DATE: 7/24/19	WO #: 59754
SHIPPER / CUSTOMER: Robinson Noble / Love's Truck Stop #413	CONTACT NAME: Matthew Lutz
ADDRESS: 1517 US 97	PHONE #: 360-509-7078
CITY, STATE, ZIP: Ellensburg, Wa 98926	
CONSIGNEE / FACILITY: HS Group	CONTACT NAME: Tom Smith
ADDRESS: 3003 Taylor Way	PHONE #: 253-383-4175
CITY, STATE, ZIP: Tacoma, Wa 98421	

HM	US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	Containers No.	Containers Type	Total Quantity	UOM	CHLOR	pH
A	**MATERIAL NOT REGULATED BY DOT (USED OIL AND WATER)**	01	TT	925	gal		
B	**MATERIAL NOT REGULATED BY DOT (SPENT ANTIFREEZE)**						
C	**MATERIAL NOT REGULATED BY DOT (SPENT OIL ABSORBENTS AND DEBRIS)**						
D	**COMBUSTIBLE LIQUID N.O.S., 3, NA1993, PGIII, RQ (100) (CONTAINS DIESEL & GASOLINE) ERG 128**						
E							
F							

Special Handling Instruction and Additional Information:

A. PROFILE # 7581-B

D. PROFILE #

B. PROFILE #

E. PROFILE #

C. PROFILE #

F. PROFILE #

SHIPPER'S CERTIFICATION: "I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations." I also certify that all times listed above are true and correct.

		MONTH	DAY	YEAR
(SHIPPER) PRINT OR TYPE NAME: X Matthew Lutz	SIGNATURE: X Matthew Lutz	7	24	19
(CARRIER/TRANSPORTER) PRINT OR TYPE NAME: X Dave Johnson	SIGNATURE: X	07	24	19
(CONSIGNEE/FACILITY) PRINT OR TYPE NAME: X HS	SIGNATURE: X	7	25	19