



December 21, 2020
Cardno 03144702.W02

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SUBJECT **Subsequent Excavation Delineation Drilling Work Plan**
Former Mobil / ADC
2717 Federal Avenue / 2731 Federal Avenue
Everett, Washington

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Ms. Sedlachek:

At request of ExxonMobil Environmental and Property Solutions, on behalf of ExxonMobil Oil Corporation (ExxonMobil) and American Distribution Company (ADC), Cardno has prepared the enclosed *Subsequent Excavation Delineation Drilling Work Plan*, dated December 21, 2020 for the subject site.

Please contact Mr. Bobby Thompson, Cardno Project Manager for this site, at 206 510 5855, with questions.

Sincerely,

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ENCLOSURE

Cardno's *Subsequent Excavation Delineation Drilling Work Plan*, dated December 21, 2020

Subsequent Excavation Delineation Drilling Work Plan

Former Mobil / ADC
2717 Federal Avenue / 2731 Federal
Avenue

Cardno 03144702.W02



Prepared for
ExxonMobil Environmental and Property
Solutions

December 21, 2020

Subsequent Excavation Delineation Drilling Work Plan

Former Mobil / ADC
2717 Federal Avenue / 2731 Federal Avenue
Everett, Washington

Cardno 03144702.W02

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1 Introduction

At request of ExxonMobil Environmental and Property Solutions, on behalf of ExxonMobil Oil Corporation (ExxonMobil) and American Distribution Company (ADC), Cardno has prepared the following work scope to supplement the delineation of the proposed remedial excavation achieved in October of 2020 on the Port of Everett property. The scope of work was developed in collaboration with the Port of Everett and has their concurrence.

The proposed scope of work includes:

- > Advance additional exploratory soil borings and possible contingency step out borings to complete delineation of the proposed remedial excavation extents.
 - Analyze the vertical soil column in order to collect discrete samples at approximately 2.5 foot intervals and where field screening indicates the presence of residual hydrocarbons.
 - Compare soil sample analytical results to the site specific residual saturation remediation levels in order to further define excavation extents.
 - Utilize a mobile laboratory to analyze soil samples in near real time.
 - Advance step out soil borings if mobile laboratory results indicate residual concentrations of hydrocarbons are above site specific residual saturation remediation levels in order to pre-define the proposed excavation extents on Port of Everett property.
- > Evaluate soil heterogeneity as related to potential preferential pathways that might impact the lateral and vertical extents of the proposed targeted remedial excavation.
- > Pre-define the extents of the Port of Everett targeted remedial excavation such that soil sampling at the time of the excavation is not necessary.
- > Prepare a technical memo summarizing the results of the investigation.

2 Background

The ExxonMobil/ADC site is located at 2717/2731 Federal Avenue, Everett, Snohomish County, Washington, adjacent to the Port of Everett. The site consists of two tax parcels, 00437161900101 and 00437161901000. The northern parcel is owned by ADC and the southern parcel is owned by ExxonMobil Oil Corporation. The property was historically operated as a bulk petroleum storage, transfer, and distribution facility. The area of proposed excavation is located directly west of the ExxonMobil/ADC site within combined tax parcels 29051900301600, 29051900302500, 29051900302700, 29051900302800, and 29051900302900. The combined tax parcel, within the Port of Everett, is currently leased for heavy industrial use to Everett Ship Repair, LLC, a subsidiary of Ice Cap Holding, LLC. In the early 1900s, the historic shoreline was located approximately along present day Federal Avenue. As development continued, the shoreline was extended westward until it reached its current extent in 1973 (Wood, 2018). The proposed excavation will take place primarily in material used to backfill the bay and extend the shoreline.

3 Summary of October 2020 Delineation Drilling

On October 12 through October 14, 2020, Cardno observed Holocene Drilling, Inc. (Holocene), of Puyallup, Washington, advance borings EB1 through EB30 in accordance with Cardno's *Excavation Delineation Work Plan – Port of Everett Property* dated September 1, 2020. The locations of borings EB1 through EB30 are shown on Plate 1. Soil samples collected from the borings were field screened and evaluated for the presence of residual concentrations of petroleum hydrocarbons. Soil samples that indicated the presence of residual hydrocarbons were analyzed onsite by a State of Washington certified mobile laboratory for constituents of potential concern. Samples that did not indicate the presence of residual hydrocarbons were preserved for analysis at the Libby Environmental fixed base laboratory.

Per the work plan, 20 borings were advanced during the mobilization. Based on the analytical results reported by the mobile laboratory, 10 additional step out borings were advanced to further delineate the extents of the proposed remedial excavation. Delineation of the remedial excavation extents was largely achieved during the October 2020 mobilization; however, a subsequent delineation drilling event is warranted to complete delineation activities in the north/northwest and southern directions.

4 Proposed Subsequent Subsurface Investigation

Plate 1 summarizes soil analytical data from the excavation delineation drilling activities conducted in October 2020. Soil analytical data from the October 2020 event can be found in Table 1 and Appendix B. This data was used to determine the proposed extents of the targeted remedial excavation. However, additional assessment, as described below, will further refine the proposed excavation extents to the north/northwest and south.

Cardno will perform the proposed field work in accordance with this work plan, Cardno's standard field protocols (Appendix A), and under the supervision of a licensed geologist.

4.1 Pre-Field Activities

Prior to conducting field activities, Cardno will coordinate access with the Port of Everett and a state licensed driller will obtain Washington start cards from the Washington State Department of Ecology. Underground Service Alert will be notified at least 48 hours prior to the onset of field activities and the property owner will be notified in accordance with the access agreement. Cardno personnel will visit the site to check for obstructions and mark the proposed locations. Cardno will contract a private utility locating service to locate utilities on and off the site. If subsurface structures are detected during the locate, the locations of the proposed borings may be revised based on the information collected in the field.

4.2 Excavation Delineation Drilling

Cardno proposes advancing exploratory soil borings to the north and south of the current proposed excavation extents located within the Port of Everett (Plate 1). The proposed exploratory soil boring locations have been spaced at even intervals around the perimeter of the undefined northern and southern portions of the proposed excavation.

Cardno proposes the use of a state certified mobile laboratory in order to facilitate near real time data acquisition that can be used to direct the excavation delineation drilling event. This will enable the excavation extents to be defined in a single mobilization.

Cardno proposes that if mobile laboratory results indicate the presence of hydrocarbons above the site specific residual saturation remediation levels, additional step out borings will be advanced to further constrain the boundaries of the proposed excavation. The exact step out boring locations will be determined

based on field observations in alignment with the goal of pre-defining the excavation extents. Approximate proposed step out boring locations are shown on Plate 1. If mobile laboratory results indicate the presence of hydrocarbons above the aforementioned step out borings, Cardno has created a contingency step out zone depicted by the yellow polygon shown on Plate 1. This contingency step out zone represents the area in which Cardno will be prepared to further advance step out borings in order to adequately delineate the northern and southern extents of the proposed excavation.

In order to complete the delineation drilling event, Cardno proposes the use of both push probe and hollow-stem auger drill rigs to advance the borings to a depth of approximately 12.5 feet bgs. Soil samples will be continuously collected from ground surface to total depth via direct push soil cores or continuous advancement of a split spoon sampler as governed by subsurface soil properties. Direct push technology will be the preferred method; however, if the boring meets refusal, the boring will be advanced via hollow-stem auger with continuous split spoon sampling. In the southern portion of the proposed excavation, where exploratory borings B18, B22, and B29 hit refusal during previous delineation drilling activities, Cardno proposes using only a hollow-stem auger drill rig.

With the direct push sampling method, samples will be collected via a dual tube sampling technique in order to assure that samples are representative of the intended depth and not subjected to material falling from a shallower depth. Dual tube sampling uses two sets of probe rods to collect continuous soil cores. One set of rods is driven into the ground as an outer casing. These rods receive the driving force from the hammer and provide a sealed hole from which the smaller set of rods are placed in order to recover soil samples with reduced threat of cross contamination due to sloughing.

If mobile laboratory results at 12.5 feet bgs indicate the presence of hydrocarbons above the site specific residual saturation remediation levels, the boring will be advanced to 15 feet bgs with samples collected continuously in order to achieve vertical delineation at each respective boring.

4.3 Evaluation of Subsurface Soil Properties

As part of the delineation drilling event, continuous samples will be collected by the applicable drilling technology as described above. Field geologists will evaluate the continuous soil column and develop detailed boring logs to later be incorporated into subsurface cross sections in the vicinity of the proposed targeted remedial excavation. While in the field, geologists will look for soil types indicative of greater hydraulic conductivity values such as gravel, coarse sand, and areas with generally higher soil porosity as compared to the soil horizons above and below. Such a soil horizon will be compared to other borings in the vicinity to determine if preferential transport pathways might be present.

With continuous sampling and soil characterization throughout the proposed network of borings, it will be possible to evaluate and define preferential transport pathways within the vicinity of the proposed targeted excavation and ensure that sufficient data is collected to pre-define its extent while in the field.

4.4 Boring Decommissioning

Each boring will be backfilled with bentonite from total depth to approximately two feet bgs and hydrated with water. The borings will be capped with concrete from approximately two feet bgs to grade.

4.5 Laboratory Analysis

Soil samples that indicate the presence of hydrocarbons above the site specific residual saturation remediation levels will be analyzed onsite in near real time by a state-certified mobile laboratory. Samples that do not indicate the presence of hydrocarbons above the site specific residual saturation remediation levels will be preserved for analysis at a state-certified fixed based lab. Soil samples will be analyzed for:

- > TPHg in accordance with Ecology Method NWTPH-Gx.
- > TPHd and TPHmo in accordance with Ecology Method NWTPH-Dx, with silica gel cleanup.

4.6 Waste Management

The soil and decontamination water generated during drilling activities will be temporarily stored on-site in DOT-approved 55-gallon drums. Soil and decontamination water will be transported by a licensed contractor to a disposal facility for treatment or disposal following profiling and characterization. The disposal facility will be selected from ExxonMobil's Approved Waste Sites List. Waste documentation for soil and water will be included in the final report.

4.7 Technical Memorandum

After the completion of the proposed field activities, a technical memorandum summarizing field and laboratory procedures, boring logs, laboratory analytical results, detailed subsurface cross sections of the vicinity surrounding the proposed excavation, and waste documentation will be prepared. Additionally, the memorandum will depict the final excavation extents and confirm the area has been adequately characterized such that sampling at the time of excavation is not warranted. The memorandum will be signed and stamped by a State of Washington licensed geologist.

5 Contact Information

- > The responsible party contact is Ms. Jennifer Sedlachek, ExxonMobil Environmental and Property Solutions Company, 4096 Piedmont Avenue, #194, Oakland, California, 94611.
- > The consultant contact is Mr. Bobby Thompson, Cardno, 801 Second Avenue, Suite 1150, Seattle, Washington 98104.

6 Limitations

For documents cited that were not generated by Cardno, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This report and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in Washington at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

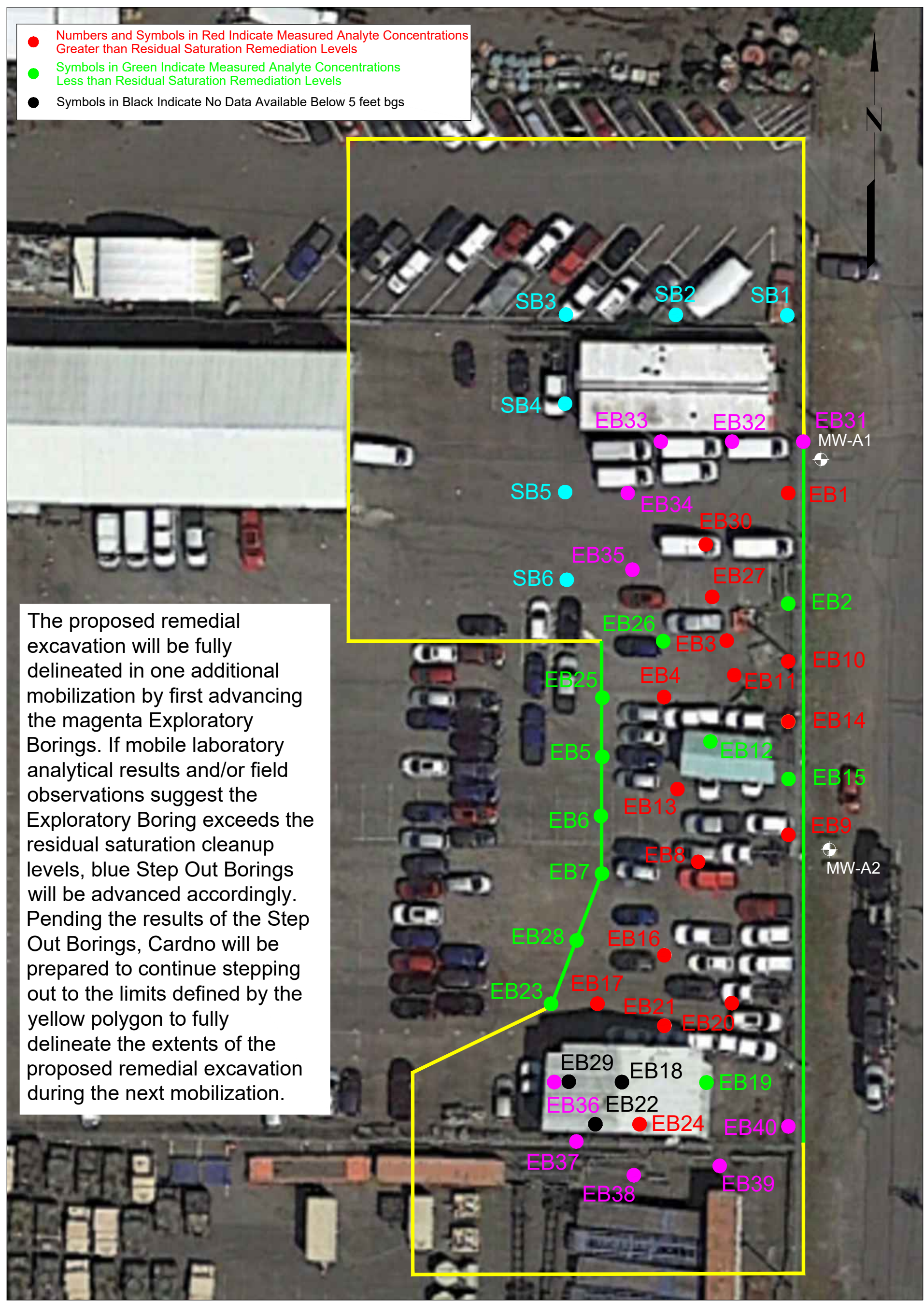
7 References

Wood Environmental & Infrastructure Solutions, Inc (Wood). October 1, 2018. *Draft Final Site Characterization and Focused Feasibility Study Report*. ExxonMobil ADC. 2717/2731 Federal Avenue, Everett, Washington.

8 Acronym List

µg/L	Micrograms per liter	NAPL	Non-aqueous phase liquid
µs	Microsiemens	NEPA	National Environmental Policy Act
1,2-DCA	1,2-dichloroethane	NGVD	National Geodetic Vertical Datum
acfm	Actual cubic feet per minute	NPDES	National Pollutant Discharge Elimination System
AS	Air sparge	O&M	Operations and Maintenance
bgs	Below ground surface	ORP	Oxidation-reduction potential
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OSHA	Occupational Safety and Health Administration
CEQA	California Environmental Quality Act	OVA	Organic vapor analyzer
cfm	Cubic feet per minute	P&ID	Process & Instrumentation Diagram
COC	Chain of Custody	PAH	Polycyclic aromatic hydrocarbon
CPT	Cone Penetration (Penetrometer) Test	PCB	Polychlorinated biphenyl
DIPE	Di-isopropyl ether	PCE	Tetrachloroethene or perchloroethylene
DO	Dissolved oxygen	PID	Photo-ionization detector
DOT	Department of Transportation	PLC	Programmable logic control
DPE	Dual-phase extraction	POTW	Publicly owned treatment works
DTW	Depth to water	ppmv	Parts per million by volume
EDB	1,2-dibromoethane	PQL	Practical quantitation limit
EDC	1,2-dichloroethane	psi	Pounds per square inch
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GWPTS	Groundwater pump and treat system	SVE	Soil vapor extraction
HVOC	Halogenated volatile organic compound	SVOC	Semivolatile organic compound
J	Estimated value between MDL and PQL (RL)	TAME	Tertiary amyl methyl ether
LEL	Lower explosive limit	TBA	Tertiary butyl alcohol
LPC	Liquid-phase carbon	TCE	Trichloroethene
LRP	Liquid-ring pump	TOC	Top of well casing elevation; datum is msl
LUFT	Leaking underground fuel tank	TOG	Total oil and grease
LUST	Leaking underground storage tank	TPHd	Total hydrocarbons as diesel
MCL	Maximum contaminant level	TPHg	Total hydrocarbons as gasoline
MDL	Method detection limit	TPHmo	Total hydrocarbons as motor oil
mg/kg	Milligrams per kilogram	TPHs	Total hydrocarbons as stoddard solvent
mg/L	Milligrams per liter	TRPH	Total recoverable hydrocarbons
mg/m ³	Milligrams per cubic meter	UCL	Upper confidence level
MPE	Multi-phase extraction	USCS	Unified Soil Classification System
MRL	Method reporting limit	USGS	United States Geologic Survey
msl	Mean sea level	UST	Underground storage tank
MTBE	Methyl tertiary butyl ether	VCP	Voluntary Cleanup Program
MTCA	Model Toxics Control Act	VOC	Volatile organic compound
NAI	Natural attenuation indicators	VPC	Vapor-phase carbon

- Numbers and Symbols in Red Indicate Measured Analyte Concentrations Greater than Residual Saturation Remediation Levels
- Symbols in Green Indicate Measured Analyte Concentrations Less than Residual Saturation Remediation Levels
- Symbols in Black Indicate No Data Available Below 5 feet bgs

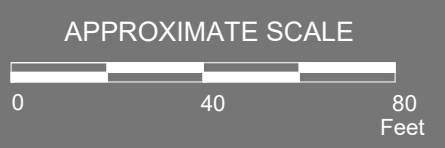


The proposed remedial excavation will be fully delineated in one additional mobilization by first advancing the magenta Exploratory Borings. If mobile laboratory analytical results and/or field observations suggest the Exploratory Boring exceeds the residual saturation cleanup levels, blue Step Out Borings will be advanced accordingly. Pending the results of the Step Out Borings, Cardno will be prepared to continue stepping out to the limits defined by the yellow polygon to fully delineate the extents of the proposed remedial excavation during the next mobilization.

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EXPLANATION

- ⊕ Groundwater Monitoring Well
- Soil Boring
- Additional Exploratory Borings
- Step Out Boring (As Needed)
- Defined Excavation Extents
- Contingency Step Out Zone



ADDITIONAL DELINEATION LOCATION AND CONTINGENCY AREA MAP
 FORMER MOBIL / ADC
 2717 Federal Avenue - 2731 Federal Avenue
 Everett, Washington

PROJECT NO.
031447
 PLATE
1
 RRT: 12/15/2020

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 1 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-2.5-EB1	EB1	10/13/20	2.5	<10	<50	<250
S-5-EB1	EB1	10/13/20	5	<10	<50	<250
S-10-EB1	EB1	10/13/20	10	<100	16,000E	<250
S-10-EB1 Dup	EB1	10/13/20	10	<100	--	--
S-12.5-EB1	EB1	10/13/20	12.5	<50	3,500	<250
S-15-EB1	EB1	10/13/20	15	<10	<50	<250
S-2.5-EB2	EB2	10/13/20	2.5	<10	<50	<250
S-5-EB2	EB2	10/13/20	5	<10	<50	<250
S-10-EB2	EB2	10/13/20	10	<10	<50	<250
S-2.5-EB3	EB3	10/12/20	2.5	<10	<50	<250
S-2.5-EB3 Dup	EB3	10/12/20	2.5	<10	--	--
S-5-EB3	EB3	10/12/20	5	<10	<50	<250
S-7.5-EB3	EB3	10/12/20	7.5	<100	43,000	<250
S-10-EB3	EB3	10/12/20	10	<50	15,000	<250
S-12.5-EB3	EB3	10/12/20	12.5	<50	188	<250
S-15-EB3	EB3	10/12/20	15	<10	<50	<250
S-2.5-EB4	EB4	10/12/20	2.5	<10	<50	<250
S-5-EB4	EB4	10/12/20	5	18	4,700	<250
S-7.5-EB4	EB4	10/12/20	7.5	<100	36,000	<250
S-10-EB4	EB4	10/12/20	10	<100	5,500E	<250
S-12.5-EB4	EB4	10/12/20	12.5	<50	4,400	<250
S-12.5-EB4 Dup	EB4	10/12/20	12.5	--	3,300	<250
S-15-EB4	EB4	10/12/20	15	<10	<50	<250
S-15-EB4 Dup	EB4	10/12/20	15	<10	--	--
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 2

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 2 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-2.5-EB5	EB5	10/12/20	2.5	<10	<50	<250
S-5-EB5	EB5	10/12/20	5	<10	<50	<250
S-7.5-EB5	EB5	10/12/20	7.5	<10	<50	<250
S-10-EB5	EB5	10/12/20	10	<10	51	<250
S-2.5-EB6	EB6	10/12/20	2.5	<10	<50	<250
S-5-EB6	EB6	10/12/20	5	<10	<50	<250
S-5-EB6 Dup	EB6	10/12/20	5	--	<50	<250
S-7.5-EB6	EB6	10/12/20	7.5	<10	<50	<250
S-10-EB6	EB6	10/12/20	10	<10	<50	<250
S-10-EB6 Dup	EB6	10/12/20	10	<10	--	--
S-5-EB7	EB7	10/12/20	5	<10	<50	<250
S-7.5-EB7	EB7	10/12/20	7.5	<10	74	<250
S-7.5-EB7 Dup	EB7	10/12/20	7.5	<10	--	--
S-10-EB7	EB7	10/12/20	10	<10	<50	<250
S-2.5-EB8	EB8	10/14/20	2.5	<10	<50	<250
S-5-EB8	EB8	10/14/20	5	<10	2,600	4,300
S-7.5-EB8	EB8	10/14/20	7.5	<10	7,400	13,000
S-10-EB8	EB8	10/14/20	10	<20	1,800	1,300
S-12.5-EB8	EB8	10/14/20	12.5	<10	<50	<250
S-2.5-EB9	EB9	10/14/20	2.5	<10	<50	<250
S-5-EB9	EB9	10/14/20	5	<50	2,700	11,000E
S-7.5-EB9	EB9	10/14/20	7.5	<10	<50	<250
S-7.5-EB9 Dup	EB9	10/14/20	7.5	--	<50	<250
S-10-EB9	EB9	10/14/20	10	<10	<50	<250
S-2.5-EB10	EB10	10/14/20	2.5	<10	<50	<250
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 3

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 3 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-5-EB10	EB10	10/14/20	5	<10	<50	<250
S-5-EB10 Dup	EB10	10/14/20	5	<10	<50	<250
S-7.5-EB10	EB10	10/14/20	7.5	<10	12,000	<250
S-7.5-EB10 Dup	EB10	10/14/20	7.5	<50	--	--
S-10-EB10	EB10	10/14/20	10	<10	4,300	<250
S-12.5-EB10	EB10	10/14/20	12.5	<10	<50	<250
S-15-EB10	EB10	10/14/20	15	<10	<50	<250
S-2.5-EB11	EB11	10/12/20	2.5	<10	<50	550
S-5-EB11	EB11	10/12/20	5	<100	2,400	<250
S-7.5-EB11	EB11	10/12/20	7.5	<100	44,000	2,700
S-10-EB11	EB11	10/12/20	10	<100	11,000	1,300
S-12.5-EB11	EB11	10/12/20	12.5	<10	370	<250
S-12.5-EB11 Dup	EB11	10/12/20	12.5	--	480	<250
S-15-EB11	EB11	10/12/20	15	<10	<50	<250
S-2.5-EB12	EB12	10/12/20	2.5	<10	<50	<250
S-5-EB12	EB12	10/12/20	5	<10	160	<250
S-7.5-EB12	EB12	10/12/20	7.5	<10	3,600	<250
S-10-EB12	EB12	10/12/20	10	<100	3,000	<250
S-12.5-EB12	EB12	10/12/20	12.5	<100	2,000	<250
S-15-EB12	EB12	10/12/20	15	<10	460	<250
S-15-EB12 Dup	EB12	10/12/20	15	<10	410	<250
S-2.5-EB13	EB13	10/14/20	2.5	<10	<50	<250
S-5-EB13	EB13	10/14/20	5	<50	1,400	1,800
S-7.5-EB13	EB13	10/14/20	7.5	190	11,000	1,800
S-7.5-EB13 Dup	EB13	10/14/20	7.5	230	--	--
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 4

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 4 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-10-EB13	EB13	10/14/20	10	<10	320	<250
S-12.5-EB13	EB13	10/14/20	12.5	<10	<50	<250
S-15-EB13	EB13	10/14/20	15	<10	<50	<250
S-2.5-EB14	EB14	10/14/20	2.5	<10	<50	<250
S-2.5-EB14 Dup	EB14	10/14/20	2.5	--	<50	<250
S-7.5-EB14	EB14	10/14/20	7.5	<10	5,000	6,900
S-10-EB14	EB14	10/14/20	10	<10	4,100	1,500
S-12.5-EB14	EB14	10/14/20	12.5	<10	<50	<250
S-2.5-EB15	EB15	10/14/20	2.5	<10	<50	<250
S-5-EB15	EB15	10/14/20	5	<10	1,100	2,000
S-7.5-EB15	EB15	10/14/20	7.5	19	2,200	260
S-10-EB15	EB15	10/14/20	10	<10	<50	<250
S-12.5-EB15	EB15	10/14/20	12.5	<10	<50	<250
S-2.5-EB16	EB16	10/13/20	2.5	<10	<50	<250
S-5-EB16	EB16	10/13/20	5	<100	4,800	1,100
S-7.5-EB16	EB16	10/13/20	7.5	<100	9,700	3,900
S-10-EB16	EB16	10/13/20	10	<10	170	<250
S-12.5-EB16	EB16	10/13/20	12.5	<10	<50	<250
S-12.5-EB16 Dup	EB16	10/13/20	12.5	--	<50	<250
S-2.5-EB17	EB17	10/13/20	2.5	<10	<50	<250
S-5-EB17	EB17	10/13/20	5	<10	<50	<250
S-5-EB17 Dup	EB17	10/13/20	5	<10	--	--
S-7.5-EB17	EB17	10/13/20	7.5	11	33,000	<250
S-10-EB17	EB17	10/13/20	10	<50	2,600	<250
S-12.5-EB17	EB17	10/13/20	12.5	<10	<50	<250
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 5

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 5 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-15-EB17	EB17	10/13/20	15	<10	<50	<250
S-15-EB17 Dup	EB17	10/13/20	15	<10	--	--
S-5-EB18	EB18	10/13/20	5	<10	450	210J
S-5-EB18 Dup	EB18	10/13/20	5	--	440	290
S-2.5-EB19	EB19	10/13/20	2.5	<10	<50	<250
S-2.5-EB19 Dup	EB19	10/13/20	2.5	--	<50	<250
S-5-EB19	EB19	10/13/20	5	<50	1,900	360
S-7.5-EB19	EB19	10/13/20	7.5	<50	4,500	760
S-10-EB19	EB19	10/13/20	10	<10	<50	<250
S-12.5-EB19	EB19	10/13/20	12.5	<10	<50	<250
S-15-EB19	EB19	10/13/20	15	<10	<50	<250
S-2.5-EB20	EB20	10/13/20	2.5	<10	170	<250
S-2.5-EB20 Dup	EB20	10/13/20	2.5	<10	--	--
S-5-EB20	EB20	10/13/20	5	<10	8,400	2,200
S-7.5-EB20	EB20	10/13/20	7.5	<10	180	<250
S-10-EB20	EB20	10/13/20	10	<10	<50	<250
S-2.5-EB21	EB21	10/13/20	2.5	<10	<50	<250
S-5-EB21	EB21	10/13/20	5	<10	8,100	12,000
S-7.5-EB21	EB21	10/13/20	7.5	<50	3,700	640
S-10-EB21	EB21	10/13/20	10	<10	<50	<250
S-10-EB21 Dup	EB21	10/13/20	10	--	<50	<250
S-12.5-EB21	EB21	10/13/20	12.5	<10	<50	<250
S-15-EB21	EB21	10/13/20	15	<10	<50	<250
S-5-EB22	EB22	10/13/20	5	<10	<50	<250
S-2.5-EB23	EB23	10/13/20	2.5	<10	<50	<250
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 6

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
 2717/2731 Federal Avenue
 Everett, Washington
 Page 6 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-5-EB23	EB23	10/13/20	5	<10	<50	<250
S-7.5-EB23	EB23	10/13/20	7.5	<10	<50	<250
S-7.5-EB23 Dup	EB23	10/13/20	7.5	--	<50	<250
S-10-EB23	EB23	10/13/20	10	<10	4,100	<250
S-12.5-EB23	EB23	10/13/20	12.5	<10	62	<250
S-2.5-EB24	EB24	10/13/20	2.5	<10	<50	<250
S-5-EB24	EB24	10/13/20	5	<50	<50	6,300
S-7.5-EB24	EB24	10/13/20	7.5	<10	8,100	1,200
S-7.5-EB24 Dup	EB24	10/13/20	7.5	<10	--	--
S-10-EB24	EB24	10/13/20	10	<10	2,300	<250
S-12.5-EB24	EB24	10/13/20	12.5	<10	<50	<250
S-2.5-EB25	EB25	10/13/20	2.5	<10	<50	<250
S-2.5-EB25 Dup	EB25	10/13/20	2.5	--	<50	<250
S-5-EB25	EB25	10/13/20	5	<10	<50	<250
S-7.5-EB25	EB25	10/13/20	7.5	<10	<50	<250
S-10-EB25	EB25	10/13/20	10	<10	2,400	860
S-12.5-EB25	EB25	10/13/20	12.5	<10	<50	<250
S-12.5-EB25 Dup	EB25	10/13/20	12.5	<10	--	--
S-15-EB25	EB25	10/13/20	15	--	<50	<250
S-2.5-EB26	EB26	10/14/20	2.5	<10	<50	<250
S-2.5-EB26 Dup	EB26	10/14/20	2.5	<10	--	--
S-5-EB26	EB26	10/14/20	5	<10	76	<250
S-10-EB26	EB26	10/14/20	10	<20	1,600	<250
S-12.5-EB26	EB26	10/14/20	12.5	<10	<50	<250
S-2.5-EB27	EB27	10/14/20	2.5	<10	<50	<250
Site Specific Cleanup Levels				2,470	4,800	5,810

Continued on Page 7

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 7 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
S-5-EB27	EB27	10/14/20	5	<10	<50	<250
S-7.5-EB27	EB27	10/14/20	7.5	<100	10,000	11,000
S-10-EB27	EB27	10/14/20	10	<100	9,100E	<250
S-10-EB27 Dup	EB27	10/14/20	10	<100	--	--
S-12.5-EB27	EB27	10/14/20	12.5	<10	<50	<250
S-12.5-EB27 Dup	EB27	10/14/20	12.5	<10	--	--
S-2.5-EB28	EB28	10/14/20	2.5	<10	<50	<250
S-5-EB28	EB28	10/14/20	5	<10	<50	<250
S-7.5-EB28	EB28	10/14/20	7.5	<10	<50	<250
S-7.5-EB28 Dup	EB28	10/14/20	7.5	--	<50	<250
S-10-EB28	EB28	10/14/20	10	<50	<50	<250
S-2.5-EB29	EB29	10/14/20	2.5	<10	<50	<250
S-5-EB29	EB29	10/14/20	5	<10	<50	<250
S-2.5-EB30	EB30	10/14/20	2.5	<10	<50	<250
S-5-EB30	EB30	10/14/20	5	<10	<50	560
S-10-EB30	EB30	10/14/20	10	<100	39,000	<250
S-12.5-EB30	EB30	10/14/20	12.5	<10	<50	<250
S-12.5-EB30 Dup	EB30	10/14/20	12.5	<10	<50	<250

Site Specific Cleanup Levels	2,470	4,800	5,810
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Continued on Page 8

TABLE 1
EXCAVATION DELINEATION SOIL ANALYTICAL RESULTS

ExxonMobil ADC
2717/2731 Federal Avenue
Everett, Washington
Page 8 of 8

Sample Name	Well ID / Location	Date	Sample Depth (feet bgs)	TPHg (mg/kg)	TPHd (mg/kg)	TPHmo (mg/kg)
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EXPLANATION:

feet bgs = Feet below ground surface

mg/kg = Milligrams per kilogram

TPHg = Total Petroleum Hydrocarbons as Gasoline in accordance with Ecology Method NWTPH-Gx

TPHd, TPHmo = Total Petroleum Hydrocarbons as Diesel and as Oil, respectively, in accordance with Ecology Method NWTPH-Dx

J = Indicates analyte was positively identified. Reported result is an estimate.

E = Reported result is an estimate because it exceeds the calibration range.

Former Mobil / ADC
Cardno 03144702.W02

APPENDIX A
FIELD PROTOCOLS

Soil Boring and Well Installation Field Protocol

Preliminary Activities

Prior to the onset of field activities at the site, Cardno obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

Drilling and Soil Sampling Procedures

Cardno contracts a licensed driller to advance the boring and collect soil samples. The specific drilling method (e.g., hollow-stem auger, direct push method, or sonic drilling), sampling method [e.g., core barrel or California-modified split spoon sampler (CMSSS)] and sampling depths are documented on the boring log and may be specified in a work plan. Soil samples are typically collected at the capillary fringe and at 5-foot intervals to the total depth of the boring. To determine the depth of the capillary fringe prior to drilling, the static groundwater level is measured with a water level indicator in the closest monitoring well to the boring location, if available.

The borehole is advanced to just above the desired sampling depth. For CMSSSs, the sampler is placed inside the auger and driven to a depth of 18 inches past the bit of the auger. The sampler is driven into the soil with a standard 140-pound hammer repeatedly dropped from a height of 30 inches onto the sampler. The number of blows required to drive the sampler each 6-inch increment is recorded on the boring log. For core samplers (e.g., direct push), the core is driven 18 inches using the rig apparatus.

Soil samples are preserved in the metal or plastic sleeve used with the CMSSS or core sampler, in glass jars or other manner required by the local regulatory agency (e.g., Environmental Protection Agency Method 5035). Sleeves are removed from the sample barrel, and the lowermost sample sleeve is immediately sealed with Teflon™ tape, capped and labeled. Samples are placed in a cooler chilled to 4° Celsius and transported to a state-certified laboratory. The samples are transferred under chain-of-custody (COC) protocol.

Field Screening Procedures

Cardno places the soil from the middle of the sampling interval into a plastic re-sealable bag. The bag is placed away from direct sunlight for approximately 20 minutes, after which the tip of a photo-ionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The PID measurement is recorded on the boring log. At a minimum, the PID or other device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Cardno trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, which is included in the final report.

Air Monitoring Procedures

Cardno performs a field evaluation for volatile hydrocarbon concentrations in the breathing zone using a calibrated PID or lower explosive level meter.

Backfilling of Soil Boring

If a well is not installed, the boring is backfilled from total depth to approximately 5 feet below ground surface (bgs) with either neat cement or bentonite grout using a tremie pipe. The boring is backfilled from 5 feet bgs to approximately 1 foot bgs with hydrated bentonite chips. The borehole is completed from 1 foot bgs to surface grade with material that best matches existing surface conditions and meets local agency requirements. Site-specific backfilling details are shown on the respective boring log.

Well Construction

A well (if constructed) is completed using materials documented on the boring log or specified in a work plan. The well is constructed with slotted casing across the desired groundwater sampling depth(s) and completed with blank casing to within 6 inches of surface grade. No further construction is conducted on temporary wells. For permanent wells, the annular space of the well is backfilled with Monterey sand from the total depth to approximately 2 feet above the top of the screened casing. A hydrated granular bentonite seal is placed on top of the sand filter pack. Grout may be placed on top of the bentonite seal to the desired depth using a tremie pipe. The well may be completed to surface grade with a 1-foot thick concrete pad. A traffic-rated well vault and locking cap for the well casing may be installed to protect against surface-water infiltration and unauthorized entry. Site-specific well construction details including type of well, well depth, casing diameter, slot size, length of screen interval and sand size are documented on the boring log or specified in the work plan.

Well Development and Sampling

If a permanent groundwater monitoring well is installed, the grout is allowed to cure a minimum of 48 hours before development. Cardno personnel or a contracted driller use a submersible pump or surge block to develop the newly installed well. Prior to development, the pump is decontaminated by allowing it to run and re-circulate while immersed in a non-phosphate solution followed by successive immersions in potable water and de-ionized water baths. The well is developed until sufficient well casing volumes are removed so that turbidity is within allowable limits and pH, conductivity and temperature levels stabilize in the purge water. The volume of groundwater extracted is recorded on a log.

Surveying

If required, wells are surveyed by a licensed land surveyor relative to an established benchmark of known elevation above mean sea level to an accuracy of +/- 0.01 foot. The casing is notched or marked on one side to identify a consistent surveying and measuring point.

Decontamination Procedures

Cardno or the contracted driller decontaminates soil and water sampling equipment between each sampling event with a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned prior to drilling the borehole and at completion of the borehole.

Waste Treatment and Soil Disposal

Soil cuttings generated from the drilling or sampling are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination fluids and purge water from well development and sampling activities, if conducted, are stored on site in labeled, regulatory-approved storage containers. Fluids are subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

Former Mobil / ADC
Cardno 03144702.W02

APPENDIX B
LABORATORY ANALYTICAL
RESULTS



Libby Environmental, Inc.

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

October 19, 2020

Robert Thompson
Cardno
801 Second Ave, Suite 700
Seattle, Washington 98104

Dear Mr. Thompson:

Please find enclosed the analytical data report for the Port of Everett Project located in Everett, 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.

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

mobile Lab

Date: *10/12/20*

Page: *1* of *2*

Client: *Cardno - Seattle*

Project Manager:

Address:

Project Name: *Agrib Air Port of Everett*

City: State: Zip:

Location: *Everett* City, State: *WA*

Phone: Fax:

Collector: *Paul Prevoo* Date of Collection: *10/12/20*

Client Project # *031447*

Email: *paul.prevoo@cardno.com; robert.thompson@cardno.com*

Sample Number	Depth	Time	Sample Type	Container Type	Analytes										Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals		RCRA 8 Metals		
1 S-2.5-EB5	2.5	0935	Soil		X				X									Silic gel cleanup
2 S-5-EB5	5	0940	Soil		X				X									
3 S-7.5-EB5	7.5	0945	Soil		X				X									
4 S-10-EB5	10	1000	Soil		X				X									
5 S-2.5-EB4	2.5	1020	S		X				X									
6 S-5-EB4	5	1025	S		X				X									
7 S-7.5-EB4	7.5	1030	S		X				X									
8 S-10-EB4	10	1035	S		X				X									
9 S-5-EB7	5	1105	S		X				X									
10 S-7.5-EB7	7.5	1110	S		X				X									
11 S-10-EB7	10	1115	S		X				X									
12 S-5-EB4	5	1230	S		X				X									
13 S-7.5-EB4	7.5	1235	S		X				X									
14 S-10-EB4	10	1240	S		X				X									
15 S-12.5-EB4	12.5	1250	S		X				X									
16 S-15-EB4	15	1255	S		X				X									
17 S-5-EB3	5	1310	S		X				X									

Relinquished by: *[Signature]* Date / Time: *10/12/2020 1540*

Relinquished by: _____ Date / Time: _____

Relinquished by: _____ Date / Time: _____

Received by: *[Signature]* Date / Time: *10/12/20 1540*

Received by: _____ Date / Time: _____

Received by: _____ Date / Time: _____

Sample Receipt

Good Condition? Y N

Cooler Temp. °C

Sample Temp. °C

Total Number of Containers

Remarks: *Silic gel cleanup on all samples*

TAT: 24HR 48HR 5-DAY *ML*

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

mobile Lab

Date: *10/12/20*

Page: *2* of *2*

Client: *Cardno - Seattle*

Project Manager:

Address:

Project Name: *port of Everett*

City: State: Zip:

Location: City, State: *Everett WA*

Phone: Fax:

Collector: *Paul Prevoa* Date of Collection: *10/12/20*

Client Project #

Email:



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Field Notes
1 S-7.5-EB3	7.5	1315	S						X							No Gx
2 S-10-EB3	10	1320	S		X	X			X							
3 S-12.5-EB3	12.5	1325	S		X	X			X							
4 S-15-EB3	15	1330	S		X	X			X							
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																

Relinquished by: <i>Paul Prevoa</i>	Date / Time <i>10/12/20 1540</i>	Received by: <i>Paul Prevoa</i>	Date / Time <i>10/12/20 1540</i>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers	Remarks: <i>ML</i> TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time	Received by:	Date / Time		
Relinquished by:	Date / Time	Received by:	Date / Time		

Libby Environmental, Inc.

3322 South Bay Road NE

Olympia, WA 98506

Phone: (360) 352-2110

FAX: (360) 352-4154

Email: libbyenv@gmail.com

PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201012-10

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/12/2020	96%	nd
S-2.5-EB5	10/12/2020	96%	nd
S-5-EB5	10/12/2020	95%	nd
S-7.5-EB5	10/12/2020	96%	nd
S-10-EB5	10/12/2020	97%	nd
S-5-EB6	10/12/2020	97%	nd
S-10-EB6	10/12/2020	95%	nd
S-10-EB6 Dup	10/12/2020	95%	nd
S-5-EB4	10/12/2020	103%	18
S-7.5-EB4	10/12/2020	93%	<100
S-10-EB4	10/12/2020	97%	<100
S-12.5-EB4	10/12/2020	100%	<50
S-15-EB4	10/12/2020	96%	nd
S-15-EB4 Dup	10/12/2020	95%	nd
S-5-EB3	10/12/2020	95%	nd
S-10-EB3	10/12/2020	98%	<50
S-12.5-EB3	10/12/2020	97%	<50
S-15-EB3	10/12/2020	95%	nd
Practical Quantitation Limit			10

"<" Indicates elevated PQL due to dilution.

"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

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Email: libbyenv@gmail.com

PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201012-10

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/12/2020	107	nd	nd
S-2.5-EB5	10/12/2020	108	nd	nd
S-5-EB5	10/12/2020	104	nd	nd
S-7.5-EB5	10/12/2020	108	nd	nd
S-10-EB5	10/12/2020	113	51	nd
S-2.5-EB6	10/12/2020	104	nd	nd
S-5-EB6	10/12/2020	110	nd	nd
S-5-EB6 Dup	10/12/2020	110	nd	nd
S-7.5-EB6	10/12/2020	83	nd	nd
S-10-EB6	10/12/2020	80	nd	nd
S-5-EB4	10/12/2020	int	4700	nd
S-7.5-EB4	10/13/2020	int	36000	nd
S-10-EB4	10/12/2020	int	5500 E	nd
S-12.5-EB4	10/12/2020	int	4400	nd
S-12.5-EB4 Dup	10/12/2020	int	3300	nd
S-15-EB4	10/12/2020	80	nd	nd
S-5-EB3	10/12/2020	90	nd	nd
S-7.5-EB3	10/12/2020	int	43000	nd
S-10-EB3	10/12/2020	int	15000	nd
S-12.5-EB3	10/12/2020	113	188	nd
S-15-EB3	10/12/2020	79	nd	nd
Practical Quantitation Limit			50	250

"E" Indicates 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 (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201012-3

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/15/2020	89%	nd
Method Blank	10/14/2020	89%	nd
S-5-EB7	10/15/2020	92%	nd
S-7.5-EB7	10/15/2020	86%	nd
S-7.5-EB7 Dup	10/15/2020	83%	nd
S-10-EB7	10/14/2020	105%	nd
S-2.5-EB6	10/15/2020	98%	nd
S-7.5-EB6	10/15/2020	100%	nd
S-2.5-EB4	10/14/2020	105%	nd
S-2.5-EB3	10/14/2020	93%	nd
S-2.5-EB3 Dup	10/14/2020	98%	nd
S-7.5-EB3	10/15/2020	95%	<100
S-2.5-EB11	10/14/2020	134%	nd
S-5-EB11	10/15/2020	82%	<100
S-7.5-EB11	10/15/2020	75%	<100
S-10-EB11	10/15/2020	84%	<100
S-12.5-EB11	10/15/2020	95%	nd
S-15-EB11	10/15/2020	88%	nd
Practical Quantitation Limit			10

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

"int" Indicates that interference prevents determination.

"<" Indicates elevated PQL due to dilution.

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

ANALYSES PERFORMED BY: Melissa Harrington

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201012-3

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/13/2020	107	nd	nd
Method Blank	10/15/2020	125	nd	nd
Method Blank	10/16/2020	103	nd	nd
S-5-EB7	10/13/2020	127	nd	nd
S-7.5-EB7	10/13/2020	100	74	nd
S-10-EB7	10/13/2020	134	nd	nd
S-2.5-EB4	10/13/2020	121	nd	nd
S-2.5-EB3	10/13/2020	94	nd	nd
S-2.5-EB11	10/13/2020	135	nd	550
S-5-EB11	10/15/2020	108	2400	nd
S-7.5-EB11	10/16/2020	119	44000	2700
S-10-EB11	10/16/2020	114	11000	1300
S-12.5-EB11	10/15/2020	122	370	nd
S-12.5-EB11 Dup	10/15/2020	123	480	nd
S-15-EB11	10/15/2020	125	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: Kory Dixon and Jenny Anderson

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

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Mobile Lab
10/13/20

Date: *10/13/20*

Page: *1* of *1*

Client:

Project Manager: *Bob Thompson*

Address:

Project Name: *Port of Everett*

City: State: Zip:

Location: City, State: *Everett, WA*

Phone: Fax:

Collector: *paul Prevora* Date of Collection: *10/12 & 10/13*

Client Project # *031447*

Email: *robert.thompson@cardno.com, paul.prevora@cardno.com*



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals				
1 S-5-EB12	5	1440	S		X				X										Collected 10/12
2 S-7.5-EB12	7.5	1445	S						X										Dx/Dx only 10/12
3 S-10-EB12	10	1450	S		X				X										
4 S-12.5-EB12 12.5	12.5	1455	S		X				X										
5 S-15-EB12	15	1500	S		X				X										
6 S-10-EB1 ✓	10	0855	S						X										Collected 10/13 Dx/Dx only
7 S-5-EB1 ✓	5	0845	S						X										Dx/Dx only
8 S-12.5-EB1 ✓	12.5	0900	S						X										Dx/Dx only
9 S-15-EB1 ✓	15	0905	S						X										Dx/Dx only
10 S-7.5-EB17	7.5	0935	S		X				X										
11 S-10-EB17	10	0940	S		X				X										
12 S-5-EB18	5	1020	S		X				X										
13 S-2.5-EB19	2.5	1040	S																
14 S-7.5-EB16	7.5	1255	S						X										Dx/Dx only
15 S-10-EB25	10	1515	S						X										Dx/Dx only
16 S-7.5-EB23	7.5	1335	S						X										Dx/Dx only
17																			

Relinquished by: <i>Paul Prevora</i>	Date / Time <i>10/13/2020 1600</i>	Received by: <i>Paul Prevora</i>	Date / Time <i>10/13/20 1600</i>	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers	Remarks: <div style="text-align: right; color: green; font-weight: bold;">ML</div> TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time	Received by:	Date / Time		
Relinquished by:	Date / Time	Received by:	Date / Time		
Relinquished by:	Date / Time	Received by:	Date / Time		

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201013-10

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/13/2020	99%	nd
S-5-EB12	10/13/2020	100%	nd
S-10-EB12	10/13/2020	99%	<100
S-12.5-EB12	10/13/2020	99%	<100
S-15-EB12	10/13/2020	99%	nd
S-15-EB12 Dup	10/13/2020	97%	nd
S-7.5-EB17	10/13/2020	99%	11
S-10-EB17	10/13/2020	97%	<50
S-5-EB18	10/13/2020	96%	nd
Practical Quantitation Limit			10

"<" Indicates elevated PQL due to dilution.

"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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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201013-10

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/13/2020	81	nd	nd
S-5-EB12	10/13/2020	int	160	nd
S-7.5-EB12	10/13/2020	135	3600	nd
S-10-EB12	10/13/2020	int	3000	nd
S-12.5-EB12	10/13/2020	int	2000	nd
S-15-EB12	10/13/2020	int	460	nd
S-15-EB12 Dup	10/13/2020	int	410	nd
S-10-EB1	10/13/2020	int	16000 E	nd
S-5-EB1	10/13/2020	100	nd	nd
S-12.5-EB1	10/13/2020	int	3500	nd
S-15-EB1	10/13/2020	95	nd	nd
S-7.5-EB17	10/13/2020	int	33000	nd
S-10-EB17	10/13/2020	int	2600	nd
S-5-EB18	10/13/2020	120	450	210 J
S-5-EB18 Dup	10/13/2020	int	440	290
S-7.5-EB16	10/13/2020	int	9700	3900
S-10-EB25	10/13/2020	int	2400	860
Practical Quantitation Limit			50	250

"E" Indicates reported result is an estimate because it exceeds the calibration range.

"J" Indicates analyte was positively identified. Reported result is an estimate.

"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

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-10

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/14/2020	85	nd	nd
S-7.5-EB23	10/14/2020	83	nd	nd
S-7.5-EB23 Dup	10/14/2020	85	nd	nd
S-10-EB8	10/14/2020	int	1800	1300
S-5-EB9	10/14/2020	int	2700	11000 E
S-10-EB26	10/14/2020	int	1600	nd
S-10-EB23	10/14/2020	int	4100	nd
S-7.5-EB27	10/14/2020	int	10000	11000
S-10-EB27	10/14/2020	int	9100 E	nd
Practical Quantitation Limit			50	250

"E" Indicates 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 (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

Chain of Custody Record

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Olympia Lab

Date: *10/13/20*

Page: *1* of *4*

Client: *Cardno*

Project Manager: *Bob Thompson*

Address:

Project Name: *Port of Everett*

City: State: Zip:

Location: City, State: *Everett WA*

Phone: Fax:

Collector: *Paul Prevora* Date of Collection: *10/12 ; 10/13*

Client Project # *031441*

Email:



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH-Dx/Dx	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals				
<i>1 S-7.5-EB12</i>	<i>7.5</i>	<i>1445</i>	<i>S</i>		<i>X</i>														<i>Gx only collected 10/12</i>
<i>2 S-2.5-EB12</i>	<i>2.5</i>	<i>1435</i>	<i>S</i>		<i>X</i>				<i>X</i>										<i>" 10/12</i>
<i>3 S-2.5-EB2</i>	<i>2.5</i>	<i>0815</i>	<i>S</i>		<i>X</i>				<i>X</i>										<i>collected 10/13</i>
<i>4 S-5-EB2</i>	<i>5</i>	<i>0820</i>	<i>S</i>		<i>X</i>				<i>X</i>										
<i>5 S-10-EB2</i>	<i>10</i>	<i>0830</i>	<i>S</i>		<i>X</i>				<i>X</i>										
<i>6 S-2.5-EB1</i>	<i>2.5</i>	<i>0840</i>	<i>S</i>		<i>X</i>				<i>X</i>										
<i>7 S-5-EB1</i>	<i>5</i>	<i>0845</i>	<i>S</i>		<i>X</i>														<i>Gx only</i>
<i>8 S-10-EB1</i>	<i>10</i>	<i>0855</i>	<i>S</i>		<i>X</i>														<i>Gx only</i>
<i>9 S-12.5-EB1</i>	<i>12.5</i>	<i>0900</i>	<i>S</i>		<i>X</i>														<i>Gx only</i>
<i>10 S-15-EB1</i>	<i>15</i>	<i>0905</i>	<i>S</i>		<i>X</i>														<i>Gx only</i>
<i>11 S-2.5-EB17</i>	<i>2.5</i>	<i>0925</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>12 S-5-EB17</i>	<i>5</i>	<i>0930</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>13 S-12.5-EB17</i>	<i>12.5</i>	<i>0945</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>14 S-15-EB17</i>	<i>15</i>	<i>0950</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>15 S-2.5-EB19</i>	<i>2.5</i>	<i>1040</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>16 S-5-EB19</i>	<i>5</i>	<i>1045</i>	<i>S</i>		<i>X</i>					<i>X</i>									
<i>17 S-7.5-EB19</i>	<i>7.5</i>	<i>1050</i>	<i>S</i>		<i>X</i>					<i>X</i>									

Relinquished by: <i>Paul Prevora</i>	Date / Time: <i>10/13/2020 1600</i>	Received By: <i>Paul Prevora</i>	Date / Time: <i>10/13/20 1600</i>	Sample Receipt Good Condition? <i>Y</i> <i>N</i> Cooler Temp: <i>3.7</i> °C Sample Temp: <i>18.3</i> °C Total Number of Containers:	Remarks: TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

Libby Environmental, Inc.

Chain of Custody Record

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OLYMPIA LAB

Date: 10/13/20

Page: 2 of 4

Client: Cardno

Project Manager: Bob Thompson

Address:

Project Name: Port of Everett

City: State: Zip:

Location: Port of Everett City, State: Everett, WA

Phone: Fax:

Collector: Paul Prevoo Date of Collection: 10/13/20

Client Project # 031447

Email:

Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-IDx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals		RCRA 8 Metals		
1 S-10-EB19	10	1055	S		X				X										Collected 10/13
2 S-12.5-EB19	12.5	1100	S		X				X										
3 S-15-EB19	15	1105	S		X				X										
4 S-2.5-EB19 EB21	2.5	1110	S		X				X										
5 S-5-EB21	5	1115	S		X				X										
6 S-7.5-EB21	7.5	1120	S		X				X										
7 S-10-EB21	10	1125	S		X				X										
8 S-12.5-EB21	12.5	1130	S		X				X										
9 S-15-EB21	15	1135	S		X				X										
10 S-2.5-EB16	2.5	1245	S		X				X										
11 S-5-EB16	5	1250	S		X				X										
12 S-7.5-EB16	7.5	1255	S		X														Ex only
13 S-10-EB16	10	1300	S		X				X										
14 S-2.5-EB20	2.5	1220	S		X				X										
15 S-5-EB20	5	1225	S		X				X										
16 S-7.5-EB20	7.5	1230	S		X				X										
17 S-10-EB20	10	1235	S		X				X										

Relinquished by: <u>Paul Prevoo</u>	Date / Time: <u>10/13/2020 1600</u>	Received by: <u>Paul Prevoo</u>	Date / Time: <u>10/13/20 1600</u>	Sample Receipt Good Condition? Y N Temp. <u>3.7</u> °C Seals Intact? Y N N/A Total Number of Containers: _____ TAT: 24HR 48HR 5-DAY	Remarks:
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

Libby Environmental, Inc.

Chain of Custody Record

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OLYMPIA LAB

Date: 10/13/20

Page: 3 of 4

Client: *Cardno*

Project Manager: *Bob Thompson*

Address:

Project Name: *Port of Everett*

City: State: Zip:

Location: *Port of Everett* City, State: *Everett, WA*

Phone: Fax:

Collector: *Paul Prevoa* Date of Collection: *10/13/20*

Client Project # *031447*

Email:

Sample Number	Depth	Time	Sample Type	Container Type	ANALYTES											Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-DX	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MICA 5 Metals		RCRA 8 Metals		
1 S-12.5-EB16	12.5	1305	S		X				X										Collected 10/13/2020
2 S-2.5-EB23	2.5	1325	S		X				X										Gx only Gx only ↓
3 S-5-EB23	5	1330	S		X				X										
4 S-7.5-EB23	7.5	1335	S		X				X										
5 S-10-EB23	10	1340	S		X				X										
6 S-12.5-EB23	12.5	1345	S		X				X										
7 S-5-EB22	5	1030	S		X				X										
8 S-2.5-EB24	2.5	1355	S		X				X										
9 S-5-EB24	5	1400	S		X				X										
10 S-7.5-EB24	7.5	1405	S		X				X										
11 S-10-EB24	10	1410	S		X				X										
12 S-12.5-EB24	12.5	1415	S		X				X										
13 S-2.5-EB25	2.5	1500	S		X				X										
14 S-5-EB25	5 7.5	1505	S		X				X										
15 S-7.5-EB25	7.5	1510	S		X				X										
16 S-10-EB25	10	1515	S		X				X									Gx only	
17 S-12.5-EB25	12.5	1520	S		X				X										

Relinquished by: *Paul Prevoa* Date / Time: *10/13/2020 1600*

Relinquished by: _____ Date / Time: _____

Relinquished by: _____ Date / Time: _____

Received by: *Paul Prevoa* Date / Time: *10/13/20 1600*

Received by: *Janette Arden* Date / Time: *10-14-20 1648*

Received by: _____ Date / Time: _____

Sample Receipt

Good Condition? Y N

Temp. *3.7 16.5* °C

Seals Intact? Y N N/A

Total Number of Containers

Remarks:

TAT: 24HR 48HR 5-DAY

Libby Environmental, Inc.

Chain of Custody Record

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OLYMPIA LAB

Date: _____ Page: 4 of 4

Client: _____

Project Manager: _____

Address: _____

Project Name: _____

City: _____ State: _____ Zip: _____

Location: _____ City, State: _____

Phone: _____ Fax: _____

Collector: _____ Date of Collection: _____

Client Project # _____

Email: _____



Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Field Notes
1-15-EB25	15	1525	S		X				X							No Gx, Ddx only ↑ collected 10/13/2020
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																

Relinquished by: <i>Paul</i>	Date / Time: 10/13/2020 1600	Received by: <i>Paul</i>	Date / Time: 10/13/20 1600	Sample Receipt Good Condition? Y N Temp. 3.7 W.T °C Seals Intact? Y N N/A Total Number of Containers: _____	Remarks:
Relinquished by:	Date / Time:	Received by: <i>Smith</i>	Date / Time: 10-14-20 1648		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/16/2020	100%	nd
Method Blank	10/17/2020	107%	nd
S-7.5-EB12	10/17/2020	77%	nd
S-2.5-EB12	10/17/2020	101%	nd
S-2.5-EB2	10/17/2020	100%	nd
S-5-EB2	10/16/2020	86%	nd
S-10-EB2	10/16/2020	85%	nd
S-2.5-EB1	10/16/2020	81%	nd
S-5-EB1	10/17/2020	106%	nd
S-10-EB1	10/17/2020	112%	<100
S-10-EB1 Dup	10/17/2020	112%	<100
S-12.5-EB1	10/17/2020	107%	<50
S-15-EB1	10/17/2020	115%	nd
S-2.5-EB17	10/16/2020	89%	nd
S-5-EB17	10/16/2020	80%	nd
S-5-EB17 Dup	10/16/2020	87%	nd
S-12.5-EB17	10/16/2020	87%	nd
S-15-EB17	10/16/2020	93%	nd
S-15-EB17 Dup	10/16/2020	80%	nd
S-2.5-EB19	10/16/2020	80%	nd
S-5-EB19	10/16/2020	96%	<50
S-7.5-EB19	10/16/2020	91%	<50

Practical Quantitation Limit

10

"<" PQL elevated due to dilution.

"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: Melissa Harrington & Sherry Chilcutt

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Olympia, WA 98506

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FAX: (360) 352-4154

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/16/2020	96%	nd
Method Blank	10/17/2020	96%	nd
S-10-EB19	10/16/2020	89%	nd
S-12.5-EB19	10/16/2020	91%	nd
S-15-EB19	10/16/2020	86%	nd
S-2.5-EB21	10/16/2020	78%	nd
S-5-EB21	10/16/2020	82%	nd
S-7.5-EB21	10/16/2020	72%	<50
S-10-EB21	10/16/2020	72%	nd
S-12.5-EB21	10/16/2020	94%	nd
S-15-EB21	10/16/2020	95%	nd
S-2.5-EB16	10/16/2020	93%	nd
S-5-EB16	10/16/2020	95%	<100
S-7.5-EB16	10/17/2020	115%	<100
S-10-EB16	10/16/2020	95%	nd
S-2.5-EB20	10/16/2020	96%	nd
S-2.5-EB20 Dup	10/16/2020	97%	nd
S-5-EB20	10/17/2020	119%	nd
S-7.5-EB20	10/16/2020	97%	nd
S-10-EB20	10/16/2020	96%	nd
Practical Quantitation Limit			10

"<" PQL elevated due to dilution.

"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 & Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/16/2020	96%	nd
Method Blank	10/17/2020	96%	nd
S-12.5-EB16	10/16/2020	96%	nd
S-2.5-EB23	10/16/2020	97%	nd
S-5-EB23	10/16/2020	97%	nd
S-7.5-EB23	10/17/2020	110%	nd
S-10-EB23	10/17/2020	112%	nd
S-12.5-EB23	10/16/2020	97%	nd
S-5-EB22	10/17/2020	103%	nd
S-2.5-EB24	10/17/2020	107%	nd
S-5-EB24	10/17/2020	114%	<50
S-7.5-EB24	10/17/2020	82%	nd
S-7.5-EB24 Dup	10/17/2020	113%	nd
S-10-EB24	10/17/2020	92%	nd
S-12.5-EB24	10/16/2020	96%	nd
S-2.5-EB25	10/16/2020	94%	nd
S-5-EB25	10/16/2020	92%	nd
S-7.5-EB25	10/16/2020	95%	nd
S-10-EB25	10/17/2020	102%	nd
S-12.5-EB25	10/16/2020	94%	nd
S-12.5-EB25 Dup	10/16/2020	94%	nd
Practical Quantitation Limit			10

"<" PQL elevated due to dilution.

"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 & Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/15/2020	103	nd	nd
S-2.5-EB12	10/15/2020	71	nd	nd
S-2.5-EB2	10/15/2020	102	nd	nd
S-5-EB2	10/15/2020	97	nd	nd
S-10-EB2	10/15/2020	72	nd	nd
S-2.5-EB1	10/15/2020	84	nd	nd
S-2.5-EB17	10/15/2020	106	nd	nd
S-5-EB17	10/15/2020	73	nd	nd
S-12.5-EB17	10/15/2020	111	nd	nd
S-15-EB17	10/15/2020	107	nd	nd
S-2.5-EB19	10/15/2020	75	nd	nd
S-2.5-EB19 Dup	10/15/2020	115	nd	nd
S-5-EB19	10/15/2020	int	1900	360
S-7.5-EB19	10/15/2020	int	4500	760
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: Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/15/2020	103	nd	nd
Method Blank	10/16/2020	103	nd	nd
Method Blank	10/17/2020	107	nd	nd
S-10-EB19	10/15/2020	116	nd	nd
S-12.5-EB19	10/15/2020	106	nd	nd
S-15-EB19	10/15/2020	76	nd	nd
S-2.5-EB21	10/15/2020	111	nd	nd
S-5-EB21	10/15/2020	int	8100	12000
S-7.5-EB21	10/15/2020	int	3700	640
S-10-EB21	10/15/2020	112	nd	nd
S-10-EB21 Dup	10/15/2020	84	nd	nd
S-12.5-EB21	10/16/2020	99	nd	nd
S-15-EB21	10/16/2020	100	nd	nd
S-2.5-EB16	10/16/2020	112	nd	nd
S-5-EB16	10/16/2020	117	4800	1100
S-10-EB16	10/16/2020	97	170	nd
S-2.5-EB20	10/16/2020	112	170	nd
S-5-EB20	10/17/2020	111	8400	2200
S-7.5-EB20	10/17/2020	107	180	nd
S-10-EB20	10/17/2020	103	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: Sherry Chilcutt & Jenny Anderson

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201014-5

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/16/2020	85	nd	nd
S-12.5-EB16	10/17/2020	104	nd	nd
S-12.5-EB16 Dup	10/17/2020	103	nd	nd
S-2.5-EB23	10/17/2020	97	nd	nd
S-5-EB23	10/17/2020	100	nd	nd
S-12.5-EB23	10/17/2020	101	62	nd
S-5-EB22	10/17/2020	101	nd	nd
S-2.5-EB24	10/17/2020	101	nd	nd
S-5-EB24	10/17/2020	100	nd	6300
S-7.5-EB24	10/17/2020	116	8100	1200
S-10-EB24	10/17/2020	109	2300	nd
S-12.5-EB24	10/17/2020	100	nd	nd
S-2.5-EB25	10/17/2020	117	nd	nd
S-2.5-EB25 Dup	10/17/2020	100	nd	nd
S-5-EB25	10/16/2020	113	nd	nd
S-7.5-EB25	10/16/2020	100	nd	nd
S-12.5-EB25	10/16/2020	109	nd	nd
S-15-EB25	10/16/2020	97	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: Paul Burke & Jenny Anderson

Libby Environmental, Inc.

Chain of Custody Record

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Olympia Lab

Date: *10/14/20*

Page: *1* of *3*

Client: *Cardno*

Project Manager: *Bob Thompson*

Address:

Project Name: *Port of Everett*

City: State: Zip:

Location: *Port of Everett* City, State: *Everett, WA*

Phone: Fax:

Collector: *Paul Prevou* Date of Collection: *10/14/20*

Client Project # *031447*

Email:



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes				
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-DX	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals					
1 <i>S-2.5-EB8</i>	<i>2.5</i>	<i>0755</i>	<i>S</i>		X				X											<i>Collected 10/14/2020</i>
2 <i>S-5-EB8</i>	<i>5</i>	<i>0800</i>	<i>S</i>		X				X											
3 <i>S-7.5-EB8</i>	<i>7.5</i>	<i>0805</i>	<i>S</i>		X				X											
4 <i>S-10-EB8</i>	<i>10</i>	<i>0810</i>	<i>S</i>		X															<i>Gx only</i>
5 <i>S-12.5-EB8</i>	<i>12.5</i>	<i>0815</i>	<i>S</i>		X				X											
6 <i>S-2.5-EB9</i>	<i>2.5</i>	<i>0830</i>	<i>S</i>		X				X											
7 <i>S-5-EB9</i>	<i>5</i>	<i>0835</i>	<i>S</i>		X				X											<i>Gx only</i>
8 <i>S-7.5-EB9</i>	<i>7.5</i>	<i>0840</i>	<i>S</i>		X				X											
9 <i>S-10-EB9</i>	<i>10</i>	<i>0845</i>	<i>S</i>		X				X											
10 <i>S-2.5-EB26</i>	<i>2.5</i>	<i>0850</i>	<i>S</i>		X				X											
11 <i>S-5-EB26</i>	<i>5</i>	<i>0855</i>	<i>S</i>		X				X											
12 <i>S-10-EB26</i>	<i>10</i>	<i>0905</i>	<i>S</i>		X															<i>Gx only</i>
13 <i>S-12.5-EB26</i>	<i>12.5</i>	<i>0910</i>	<i>S</i>		X				X											
14 <i>S-2.5-EB27</i>	<i>2.5</i>	<i>0925</i>	<i>S</i>		X				X											
15 <i>S-5-EB27</i>	<i>5</i>	<i>0930</i>	<i>S</i>		X				X											
16 <i>S-7.5-EB27</i>	<i>7.5</i>	<i>0935</i>	<i>S</i>		X															<i>Gx only</i>
17 <i>S-10-EB27</i>	<i>10</i>	<i>0940</i>	<i>S</i>		X															<i>Gx only</i>

Relinquished by: *Paul Prevou* Date / Time: *10/14/2020 1500*

Relinquished by: _____ Date / Time: _____

Relinquished by: _____ Date / Time: _____

Received by: *Paul Prevou* Date / Time: *10/14/20 1500*

Received by: _____ Date / Time: _____

Received by: _____ Date / Time: _____

Sample Receipt

Good Condition? Y N

Cooler Temp. _____ °C

Sample Temp. _____ °C

Total Number of Containers _____

Remarks:

TAT: 24HR 48HR 5-DAY

Libby Environmental, Inc.

Chain of Custody Record

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OLYMPIA LAB

Date: 10/14/20

Page: 2 of 3

Client: CARDNO

Project Manager: Bob Thompson

Address:

Project Name: Port of Everett

City: State: Zip:

Location: City, State: Everett, WA

Phone: Fax:

Collector: Paul / PreVoa Date of Collection: 10/14/20

Client Project # 031447

Email:



Sample Number	Depth	Time	Sample Type	Container Type	Analytes											Field Notes			
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HC1D	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals				
1 S-12.5-EB27	12.5	0945	S		X				X										Collected 10/14
2 S-2.5-EB28	2.5	1010	S		X				X										
3 S-5-EB28	5	1015	S		X				X										
4 S-7.5-EB28	7.5	1020	S		X				X										
5 S-10-EB28	10	1025	S		X				X										
6 S-2.5-EB29	2.5	1035	S		X				X										
7 S-5-EB29	5	1040	S		X				X										
8 S-2.5-EB13	2.5	1125	S		X				X										
9 S-5-EB13	5	1130	S		X				X										
10 S-7.5-EB13	7.5	1135	S		X				X										
11 S-10-EB13	10	1140	S		X				X										
12 S-12.5-EB13	12.5	1145	S		X				X										
13 S-15-EB13	15	1150	S		X				X										
14 S-11 S-2.5-EB14	2.5	1310	S		X				X										
15 S-7.5-EB14	7.5	1320	S		X				X										
16 S-10-EB14	10	1325	S		X				X										
17 S-12.5-EB14	12.5	1330	S		X				X										

Relinquished by: *Paul PreVoa* Date / Time: 10/14/2020 1500

Relinquished by: _____ Date / Time: _____

Relinquished by: _____ Date / Time: _____

Received by: *Paul PreVoa* Date / Time: 10/14/20 1510

Received by: _____ Date / Time: _____

Received by: _____ Date / Time: _____

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

Remarks:

TAT: 24HR 48HR 5-DAY

Libby Environmental, Inc.

Chain of Custody Record

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Olympia, WA 98506

Ph: 360-352-2110
Fax: 360-352-4154

OLYMPIA LABS

Date:

Page: 3

of 3

Client: _____

Project Manager: _____

Address: _____

Project Name: _____

City: _____ State: _____ Zip: _____

Location: _____ City, State: _____

Phone: _____ Fax: _____

Collector: _____ Date of Collection: _____

Client Project # _____

Email: _____

Sample Number	Depth	Time	Sample Type	Container Type									Field Notes				
					VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	c PAH 8270	PAH 8270	Semi Vol 8270		PCB 8082	MTCA 5 Metals	RCRA 8 Metals	
1 J-2.5-EB15	2.5	1220	S		X				X								Collected 10/14
2 J-5-EB15	5	1225	S		X				X								↓
3 J-7.5-EB15	7.5	1230	S		X				X								
4 J-10-EB15	10	1240	S		X				X								
5 J-12.5-EB15	12.5	1245	S		X				X								
6 J-2.5-EB10	2.5	1335	S		X				X								
7 J-5-EB10	5	1340	S		X				X								
8 J-7.5-EB10	7.5	1345	S		X				X								
9 J-10-EB10	10	1350	S		X				X								
10 J-12.5-EB10	12.5	1355	S		X				X								
11 J-15-EB10	15	1400	S		X				X								
12 J-2.5-EB30	2.5	1405	S		X				X								
13 J-5-EB30	5	1410	S		X				X								
14 J-10-EB30	10	1420	S		X				X								
15 J-12.5-EB30	12.5	1425	S		X				X								
16																	
17																	

Relinquished by: <i>Paul R</i>	Date / Time: 10/14/2010 1500	Received by: <i>Paul R</i>	Date / Time: 10/14/20 1506	Sample Receipt Good Condition? Y N Cooler Temp. °C Sample Temp. °C Total Number of Containers	Remarks: TAT: 24HR 48HR 5-DAY
Relinquished by:	Date / Time:	Received by:	Date / Time:		
Relinquished by:	Date / Time:	Received by:	Date / Time:		

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201015-3

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/14/2020	97%	nd
Method Blank	10/15/2020	95%	nd
Method Blank	10/16/2020	110%	nd
S-2.5-EB8	10/14/2020	98%	nd
S-5-EB8	10/14/2020	106%	nd
S-7.5-EB8	10/16/2020	90%	nd
S-10-EB8	10/14/2020	95%	<20
S-12.5-EB8	10/14/2020	95%	nd
S-2.5-EB9	10/14/2020	98%	nd
S-5-EB9	10/14/2020	98%	<50
S-7.5-EB9	10/15/2020	94%	nd
S-10-EB9	10/15/2020	95%	nd
S-2.5-EB26	10/14/2020	97%	nd
S-2.5-EB26 Dup	10/14/2020	96%	nd
S-5-EB26	10/16/2020	102%	nd
S-10-EB26	10/14/2020	98%	<20
S-12.5-EB26	10/14/2020	93%	nd
S-2.5-EB27	10/14/2020	97%	nd
S-5-EB27	10/16/2020	100%	nd
S-7.5-EB27	10/14/2020	97%	<100
S-10-EB27	10/14/2020	95%	<100
S-10-EB27 Dup	10/14/2020	97%	<100

Practical Quantitation Limit

10

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

"<" PQL elevated due to dilution.

"int" Indicates that interference prevents determination.

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

ANALYSES PERFORMED BY: Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201015-3

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/14/2020	97%	nd
Method Blank	10/15/2020	95%	nd
Method Blank	10/16/2020	110%	nd
S-12.5-EB27	10/14/2020	95%	nd
S-12.5-EB27 Dup	10/14/2020	95%	nd
S-2.5-EB28	10/14/2020	96%	nd
S-5-EB28	10/15/2020	93%	nd
S-7.5-EB28	10/15/2020	94%	nd
S-10-EB28	10/16/2020	98%	<50
S-2.5-EB29	10/14/2020	95%	nd
S-5-EB29	10/16/2020	66%	nd
S-2.5-EB13	10/14/2020	96%	nd
S-5-EB13	10/16/2020	105%	<50
S-7.5-EB13	10/16/2020	85%	190
S-7.5-EB13 Dup	10/16/2020	112%	230
S-10-EB13	10/16/2020	116%	nd
S-12.5-EB13	10/14/2020	95%	nd
S-15-EB13	10/16/2020	114%	nd
S-2.5-EB14	10/14/2020	96%	nd
S-7.5-EB-14	10/16/2020	116%	nd
S-10-EB14	10/16/2020	90%	nd
S-12.5-EB14	10/14/2020	96%	nd
Practical Quantitation Limit			10

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

"<" PQL elevated due to dilution.

"int" Indicates that interference prevents determination.

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

ANALYSES PERFORMED BY: Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201015-3

Client Project # 031447

Analyses of Gasoline (NWTPH-Gx) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)
Method Blank	10/14/2020	95%	nd
Method Blank	10/15/2020	95%	nd
Method Blank	10/16/2020	110%	nd
S-2.5-EB15	10/16/2020	96%	nd
S-5-EB15	10/16/2020	104%	nd
S-7.5-EB15	10/14/2020	101%	19
S-10-EB15	10/14/2020	107%	nd
S-12.5-EB15	10/14/2020	95%	nd
S-2.5-EB10	10/14/2020	96%	nd
S-5-EB10	10/14/2020	95%	nd
S-5-EB10 Dup	10/14/2020	97%	nd
S-7.5-EB10	10/16/2020	97%	nd
S-7.5-EB10 Dup	10/16/2020	103%	<50
S-10-EB10	10/16/2020	103%	nd
S-12.5-EB10	10/15/2020	95%	nd
S-15-EB10	10/16/2020	113%	nd
S-2.5-EB30	10/15/2020	96%	nd
S-5-EB30	10/15/2020	97%	nd
S-10-EB30	10/17/2020	113%	<100
S-12.5-EB30	10/15/2020	96%	nd
S-12.5-EB30 Dup	10/15/2020	97%	nd
Practical Quantitation Limit			10

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

"<" PQL elevated due to dilution.

"int" Indicates that interference prevents determination.

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

ANALYSES PERFORMED BY: Paul Burke & Sherry Chilcutt

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201015-3

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/16/2020	82	nd	nd
Method Blank	10/18/2020	95	nd	nd
S-2.5-EB8	10/16/2020	79	nd	nd
S-5-EB8	10/16/2020	int	2600	4300
S-7.5-EB8	10/16/2020	int	7400	13000
S-12.5-EB8	10/16/2020	117	nd	nd
S-2.5-EB-9	10/18/2020	109	nd	nd
S-7.5-EB9	10/16/2020	107	nd	nd
S-7.5-EB9 Dup	10/16/2020	97	nd	nd
S-10-EB9	10/16/2020	110	nd	nd
S-2.5-EB26	10/16/2020	99	nd	nd
S-5-EB26	10/16/2020	105	76	nd
S-12.5-EB26	10/16/2020	100	nd	nd
S-2.5-EB27	10/16/2020	108	nd	nd
S-5-EB27	10/16/2020	103	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: Paul Burke

Libby Environmental, Inc.

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PORT OF EVERETT PROJECT

Cardno

Everett, Washington

Libby Project # L201015-3

Client Project # 031447

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/16/2020	103	nd	nd
Method Blank	10/17/2020	105	nd	nd
S-12.5-EB27	10/17/2020	102	nd	nd
S-2.5-EB28	10/17/2020	110	nd	nd
S-5-EB28	10/17/2020	100	nd	nd
S-7.5-EB28	10/16/2020	105	nd	nd
S-7.5-EB28 Dup	10/16/2020	98	nd	nd
S-10-EB28	10/16/2020	83	nd	nd
S-2.5-EB29	10/16/2020	123	nd	nd
S-5-EB29	10/16/2020	116	nd	nd
S-2.5-EB13	10/16/2020	88	nd	nd
S-5-EB13	10/16/2020	int	1400	1800
S-7.5-EB13	10/16/2020	int	11000	1800
S-10-EB13	10/16/2020	int	320	nd
S-12.5-EB13	10/16/2020	116	nd	nd
S-15-EB13	10/16/2020	124	nd	nd
S-2.5-EB14	10/16/2020	85	nd	nd
S-2.5-EB14 Dup	10/16/2020	83	nd	nd
S-7.5-EB-14	10/16/2020	int	5000	6900
S-10-EB14	10/16/2020	int	4100	1500
S-12.5-EB14	10/16/2020	114	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: Jenny Anderson

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PORT OF EVERETT PROJECT

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Libby Project # L201015-3

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Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil with Silica Gel Clean-up

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	10/16/2020	76	nd	nd
S-2.5-EB15	10/16/2020	82	nd	nd
S-5-EB15	10/16/2020	127	1100	2000
S-7.5-EB15	10/16/2020	85	2200	260
S-10-EB15	10/16/2020	117	nd	nd
S-12.5-EB15	10/16/2020	83	nd	nd
S-2.5-EB10	10/18/2020	104	nd	nd
S-5-EB10	10/16/2020	117	nd	nd
S-5-EB10 Dup	10/16/2020	118	nd	nd
S-7.5-EB10	10/16/2020	int	12000	nd
S-10-EB10	10/16/2020	int	4300	nd
S-12.5-EB10	10/16/2020	117	nd	nd
S-15-EB10	10/16/2020	123	nd	nd
S-2.5-EB30	10/16/2020	78	nd	nd
S-5-EB30	10/16/2020	107	nd	560
S-10-EB30	10/16/2020	int	39000	nd
S-12.5-EB30	10/16/2020	75	nd	nd
S-12.5-EB30 Dup	10/16/2020	69	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: Kodey Eley & Jenny Anderson

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno
ZERO
HARM
EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field.

Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.