Environmental Summary Report

Handy Mart – 1410 Ocean Beach Highway, Longview, Washington HydroCon Project Number 2015-007.01 Ecology Cleanup No. 11294

Prepared for:

Wilcox & Flegel 98 Panel Way Longview, Washington 98632

December 1, 2017

Prepared by:



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1.0 INTRODUCTION

HydroCon Environmental, LLC (HydroCon) is pleased to present this summary of cleanup and assessment activities performed at the Handy Mart located in Longview Washington. The site location is shown on Figure 1. This report is intended to summarize past cleanup activities, site assessments and groundwater monitoring results for the purpose of requesting a no further action (NFA) determination for the site.

2.0 SITE BACKGROUND

2.1 Site Description

The subject property is located at 1410 Ocean Beach Highway in Longview, Washington. The Cowlitz County Assessor's Office identifies the subject site as Parcel 1029901 within Section 28 of Township 8 North and Range 2 West of the Willamette Meridian (Figure 1). The Columbia River is located approximately 2.8 mile southwest of the site. The Cowlitz River is approximately 0.8 miles east of the site.

The site is located in a mixed residential and commercial area. Residential properties are located west and southwest of the site. Commercial properties are located to the north, east and south of the site. The property located to the east and adjacent to the subject site is a former Time Oil leaking underground storage tank (LUST) cleanup site (Cleanup Site ID 10877). This site received a NFA from Ecology in August 2012.

The current site layout includes a convenience store building, carwash and underground storage tank (UST) system. The site only dispensed gasoline until 2005. In June 2005 the mid grade gasoline UST was converted to diesel fuel. The convenience store building is located in the northern portion of the site, the UST system is located on the central portion of the site and the carwash is located on the east portion of the site (Figure 2).

According to the Ecology UST Site/Tank Data Summary data base, the USTs at the site were installed in 1969 and continue to operate to date. The data base reports that the USTs are single wall steel tanks with interior linings. The current product piping is double wall, corrosion resistant flexible piping.

2.1.1 Site Geology

The soils underline the site is of Quaternary age alluvial sediments. Based on a review of the site boring logs, the soils beneath the site consist of silts and silty sand to a depth of 15 feet below ground surface (bgs). Based on the current groundwater monitoring at the site, the depth to groundwater varies seasonally between 5 and 10 feet bgs.



2.2 1991 Release

In July of 1991, soil and groundwater impacted with gasoline was discovered in borings advanced south of the USTs for an environmental site assessment conducted by Sweet Edwards/Emcon Inc. (EMCON). The EMCON soil and groundwater report was not available for review. The site assessment was conducted to facilitate the sale of the property from John Szkodyn to Wilson Oil. The source of the release was determined to be two loose bolts on the leak detector located in the unleaded turbine sump. This allowed for small releases of gasoline to occur when under pressure. The leak detector was repaired and additional soil borings were advanced to determine the extent of the release south of the USTs.

On October 18, 1991, Environmental Inspection Services (EIS) supervised the excavation of approximately 140 cubic yards of soil from the southern end of the USTs. Four soil samples and one water sample collected from the excavation were analyzed for gasoline range petroleum hydrocarbons (GRPH) and for benzene, toluene, ethylbenzene and xylenes (BTEX). The detected concentrations of GRPH in soil were all below the Model Toxics Control Act (MTCA) Method A Cleanup Level and benzene was not detected in the samples submitted. One soil sample was from the north wall of the excavation and analyzed for lead. Lead was not detected above the Method Reporting Limit (MRL) of 3 mg/kg. The water sample collected from the excavation pit had detections of GRPH and benzene with the resulting concentrations of 12,800 μ g/L and 22 μ g/L, respectively. Sample locations and analytical results are presented in a copy of the EIS report in Appendix A.

While the water sample collected from excavation pit had concentrations that exceeded the MTCA Method A Cleanup Levels for GRPH and benzene, the soil had been successfully remediated and Ecology issued a NFA determination for the site on March 19, 1992.

2.3 2005 Phase I and Phase 2

A Phase I and Limited Phase 2 Environmental Site Assessment (ESA)² was conducted by 3 Kings Environmental, Inc (3 Kings) in February 2005 to facilitate a potential property sale. Sample locations and analytical results are presented in a copy of the Phase 2 ESA report in Appendix A. Ten soil borings (B1 through B10) were advance at the site to assess soil and groundwater quality in the vicinity of the site UST system and assess the potential of offsite impacts from the former Time Oil cleanup site located east of the site. The results of the ESA indicated that heavy oil was detected in borings (B2, B4 and B5) located on the west side of the site, at concentrations below the MTCA Method A cleanup levels for unrestricted land use. The subsurface soils reportedly appeared to have a relatively high organic content, and the heavy oils could possibly be related to the organic material. GRPH was detected at the soil

¹ Analytical Test Results, November 6, 1991, Environmental Inspection Services

² Phase I-II Environmental Site Assessment Report July 26, 2005, 3 Kings Environmental Inc.



water interface in a boring (B5) located adjacent to the south side of the USTs. The GRPH concentration in soil was 90 mg/kg, and benzene was not detected. The concentration of GRPH was below the MTCA Method A cleanup level for unrestricted land use. A groundwater sample was collected from boring B5 and contained 4,410 μ g/L of GRPH, however no benzene was detected. The concentration of GRPH exceeds the MTCA Method A cleanup level for groundwater. This concentration of GRPH in the B5 sample was significantly less than the sample collected from the pit water inside the remedial excavation in 1991 (12,800 μ g/L).

Ecology was provided the results of the February 2005 ESA and the site was reopened as a new release.

In May 2005, 3 Kings installed three 1-inch diameter groundwater monitoring wells (MW1, MW2 and MW3) in the vicinity of the USTs. Soil samples were collected from soil/water interface in borings MW2 and MW3 located south of the UST basin. The soil sample collected from the soil boring for MW3 had a detection of GRPH at 90 mg/kg. It was reported that BTEX analysis was not conducted since benzene was not detected during the February 2005 Phase II. The monitoring wells were purged, sampled and analyzed for GRPH and BTEX, 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), isopropylbenzene, methyl-tertbutylether (MTBE), naphthalene, n-propylbenzene, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene. Petroleum hydrocarbons were not detected in the groundwater samples collected from MW1 and MW2. GRPH was detected in MW3 but was below the MTCA Method A cleanup level for unrestricted land use. Benzene was detected in MW3 at a concentration of 14 μ g/L, n-propylbenzene at 2 μ g/L, toluene at 3 μ g/L and total xylenes at 8 μ g/L. Only benzene exceeded the MTCA Method A cleanup level for groundwater of 5 μ g/L.

Based on the groundwater monitoring results it was concluded that the detections in the soil and groundwater were from the 1991 documented release. In addition, the contaminants of concern (COC) at the site were determined to be GRPH and BTEX.

3.0 GROUNDWATER MONITORING

Groundwater monitoring was conducted by 3 Kings on a bi-annual basis, beginning in December 2010 and ending in March 2012. HydroCon subsequently began quarterly groundwater sampling since September 2015 through June 2017. The sections below describe the sampling methods from the last five quarters of sampling by HydroCon and groundwater gradients and flow direction during the last five quarters of monitoring.

3.1 Groundwater Sampling

Prior to sample collection, the well cap on each well was removed and the water level was allowed to equilibrate prior to measuring the depth to water. The depth to water in each well was measured using a clean electronic water level indicator. Water levels were measured at the scribed reference mark (north end of the top of the PVC casing) at each well. The wells



were purged with a low flow peristaltic pump equipped with new length of LDPE tubing attached to a new length of silicone tubing. Field parameters (pH, temperature, ORP, and specific conductivity) were measured and recorded on a Groundwater Sample Collection field form along with the depth to water measurements. Purging was completed when the field parameters had stabilized. Groundwater levels and groundwater parameters were not able to be measured simultaneously, due to the well size (1" diameter).

Samples were collected immediately after purging and placed in labeled laboratory-prepared sample bottles. The samples were shipped in an iced cooler along with chain-of-custody documentation to Apex Laboratory in Tigard Oregon for analysis.

The groundwater samples were collected for laboratory analysis. Each sample was analyzed for the following set of parameters:

- GRPH by Northwest Method NWTPH-Gx; and
- BTEX by EPA Method 8021B.

3.2 Groundwater Conditions and Groundwater Flow Direction

The water produced from the wells during the last five groundwater sampling events was clear with no noticeable odor or sheen.

Static water levels in the three wells seasonally range from 5.13 to 10.67 feet below the top of the PVC well casing. The elevation of the groundwater in the wells was calculated using the elevation of the top of the casing (at the scribed reference mark) and subtracting the depth to water measurement (Table 1). HydroCon prepared a groundwater elevation contour from each data set to illustrate the direction of groundwater flow at the site on Figures 4.1 through Figure 4.5. Groundwater flowed in a northeast direction during the Aprill 2016, August 2016 and March 2017 sampling events. During the November 2016 sampling event the groundwater flowed to the east and to the west during the June 2017 sampling event. The gradient at the site ranged from 0.004 foot per foot during the November 2016 event to 0.01 foot per foot during the June 2017 sampling event.

3.3 Groundwater Analytical Results

The groundwater analytical results are reported as micrograms per liter (μ g/L) and are summarized on Table 2 and shown on Figure 3. The analytical results are summarized below.

GRPH has been historically detected in all wells but has never exceeded the MTCA Method A Cleanup Level of 800 μ g/L. The highest GRPH concentration was detected in MW3 at 499 μ g/L in 2005. GRPH has not been detected above the laboratory Method Reporting Limits (MRLs) in monitoring wells MW-1 and MW-2 for the past five quarters and below the MRLs for



the past two quarters at MW-3.

The maximum concentration of benzene detected during the past five quarterly events was 3.7 μ g/L in MW-1 during the April 2016 groundwater monitoring event. All detections of benzene during the last five quarterly monitoring events have been below the MTCA Method A Cleanup Level of 5 μ g/L.

4.0 SUMMARY AND CONCLUSIONS

HydroCon was contracted to review the historical documents for the site, complete quarterly groundwater monitoring, and to request site closure. A review of the historical documents revealed that the site had a documented release during station upgrades in 1991. Based on the report submitted to Ecology, the file was closed in 1992; however during a Phase II ESA completed in 2005, concentrations of benzene detected in the groundwater exceeded the MTCA Method A Cleanup Level of 5 μ g/L. The results of the investigation were reported to Ecology and the site was re-opened.

Since March 2015, HydroCon has completed five groundwater sampling events of the three site monitoring wells. The results of the monitoring indicated a predominately north-northeastern groundwater flow direction. Benzene has not been detected above the MTCA Method A cleanup level for the past five quarterly events.

Based on the results of the past quarterly groundwater sampling events, it appears that the remedial soil excavation efforts in 1991 and natural attenuation of dissolved petroleum in the groundwater have successfully remediated the site below the MTCA Method A Cleanup levels for the COCs at the site (GRPH and BTEX).

5.0 QUALIFICATIONS

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. Hydrocon is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, site observations, field exploration, or laboratory test data presented in this report.

Environmental assessments and evaluations are inherently limited in that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. For these types of evaluations, it is often necessary to use information prepared by others and Hydrocon cannot be responsible for the accuracy of such information. Additionally, the passage of time may result in a change in the environmental characteristics at this and any other site and surrounding properties. This report does not warrant against future



operations or conditions, nor does this report warrant against operations or conditions present of a type or at a location not investigated. This report is not a regulatory compliance audit and is not intended to satisfy the requirements of any local, state, or federal real estate transfer laws.

This report is intended for the sole use of **Wilcox & Flegel**. This report may not be used or relied upon by any other party without the written consent of Hydrocon. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

The conclusions presented in this report are, in part, based upon subsurface sampling performed at selected locations and depths. There may be conditions between borings or samples that differ significantly from those presented in this report and which cannot be predicted by this study.

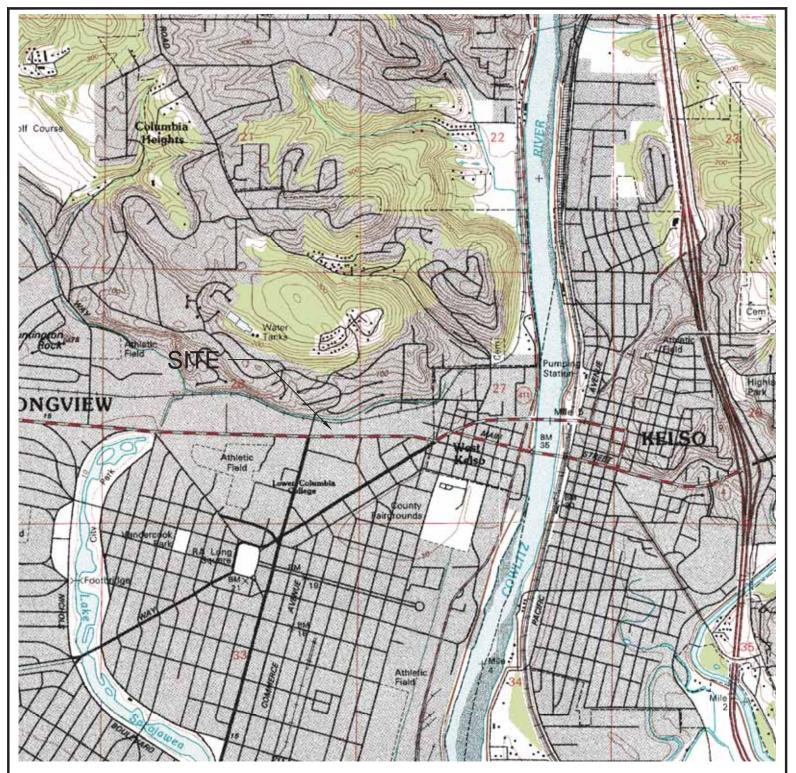
Signature:

Report Prepared By:

Brian J Pletcher Project Manager Report Reviewed By:

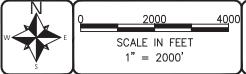
Craig Hultgren, LHG Principal Geologist





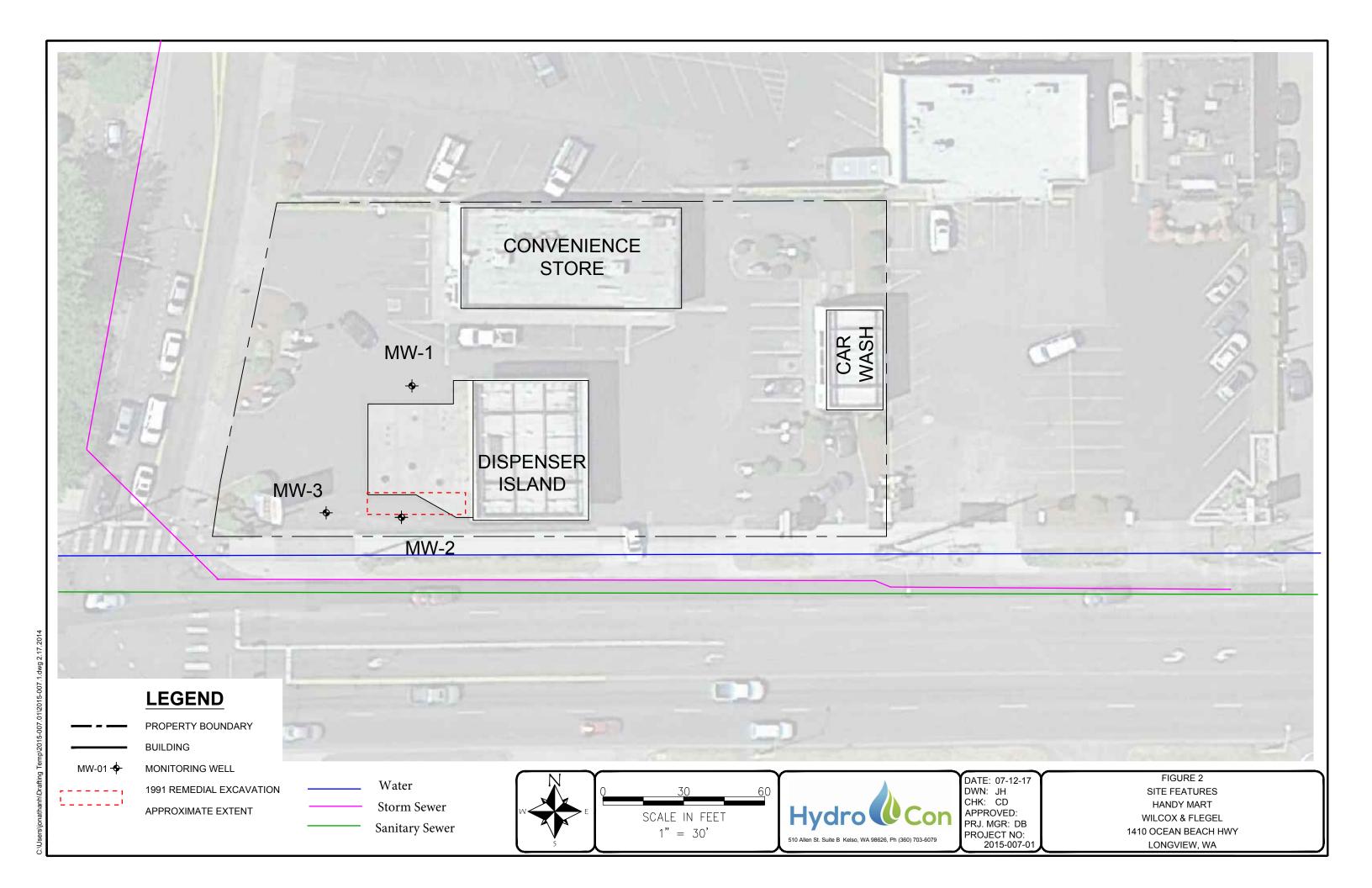
NOTE(S):

1. USGS, KELSO QUADRANGLE
WASHINGTON
7.5 MINUTE SERIES (TOPOGRAPHIC)





DATE:03-20-17 DWN: JH CHK: JH APPROVED: PRJ. MGR: DB PROJECT NO: 2015-007-01 FIGURE 1
SITE LOCATION
HANDY MART
WILCOX & FLEGEL
1410 OCEAN BEACH HWY
LONGVIEW, WA





Parameter		GRPH [1]	Benzene [2]	Toluene [2]	Ethylbenzene [2]	Total Xylenes [2]
Cleanup Lev	/el*	800	5	1,000	700	1,000
Monitoring Well ID	Date Sampled	300	ů	1,000	700	1,000
	3/16/15	<100	1.6	<1	<1	<3
	9/24/15	<100	6.1	<1	<1	<3
	2/2/16	<100	6.6	<1	<1	<3
MVV-1	4/14/16	<100	3.7	<1	<0.5	<1.5
10100-1	8/10/16	<100	2.2	<1	<0.5	<1.5
	11/17/16	<100	0.314	<1	<0.5	<1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
	6/30/17	<100	<0.2	<1	<0.5	<1.5
	3/16/15	<100	15	1.3	<1	<3
	9/24/15	460	<1	4.4	<1	3.5
	2/2/16	<100	2.7	<1	<1	<3
MW-2	4/14/16	<100	1.41	<1	<0.5	<1.5
17177 2	8/10/16	<100	<0.2	<1	<0.5	<1.5
	11/17/16	<100	<0.2	<1	<0.5	<1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
	6/30/17	<100	<0.2	<1	<0.5	<1.5
	3/16/15	310	7.0	3.5	3.3	25
	9/24/15	<100	<1	<1	<1	<3
	2/2/16	210	<1	3.7	<1	<3
MVV-3	4/14/16	310	<0.2	<1	<0.5	<1.5
14144-2	8/10/16	326	<0.2	<1	<0.5	<1.5
	11/17/16	329	<0.2	<1	<0.5	<1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
-	6/30/17	<100	<0.2	<1	<0.5	<1.5

LEGEND

PROPERTY BOUNDARY

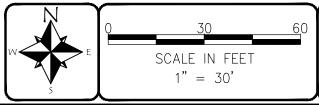
BUILDING MONITORING

WELL

MW-01 💠

1991 Remedial Excavation

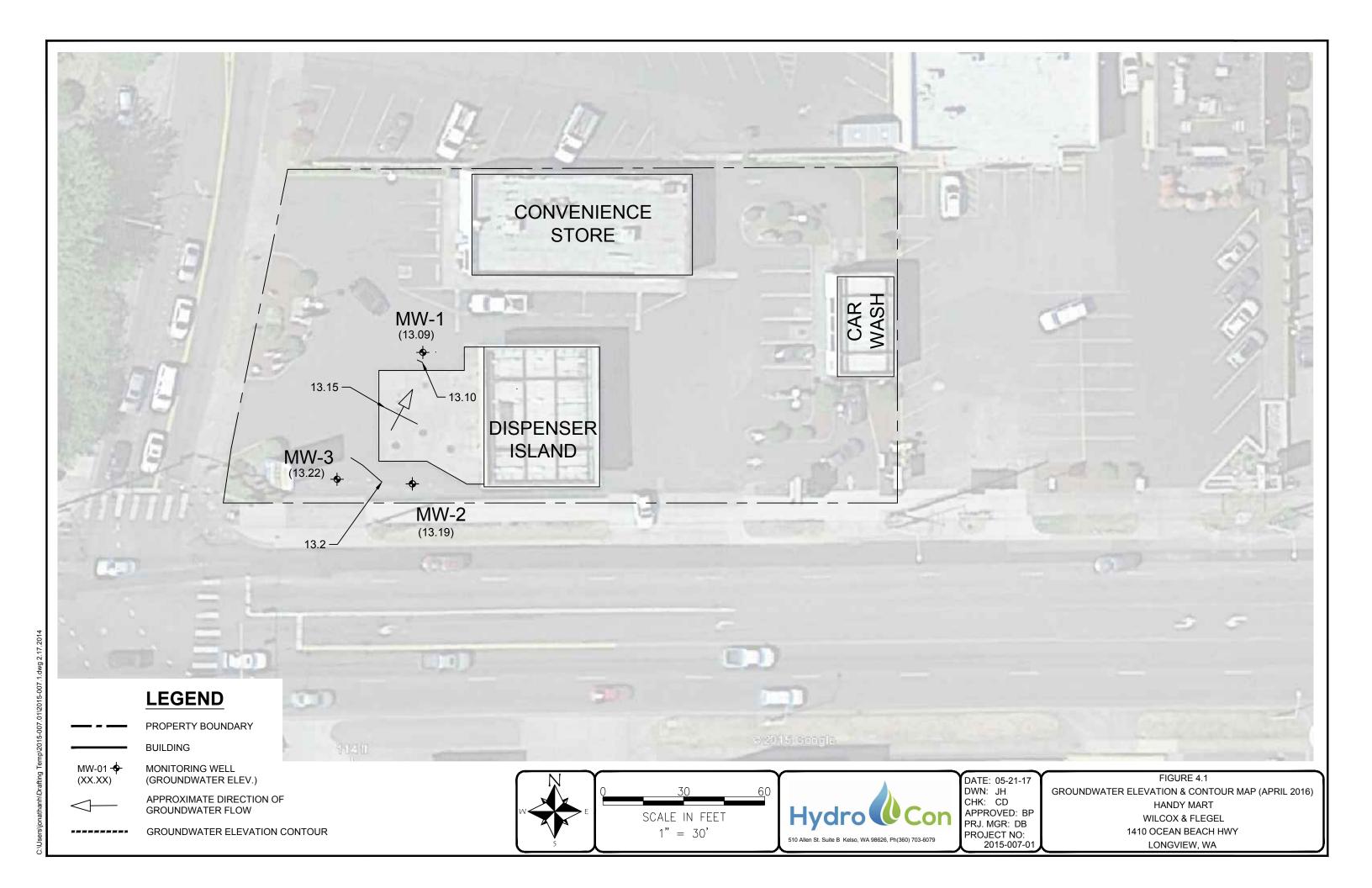
Approximate Extent

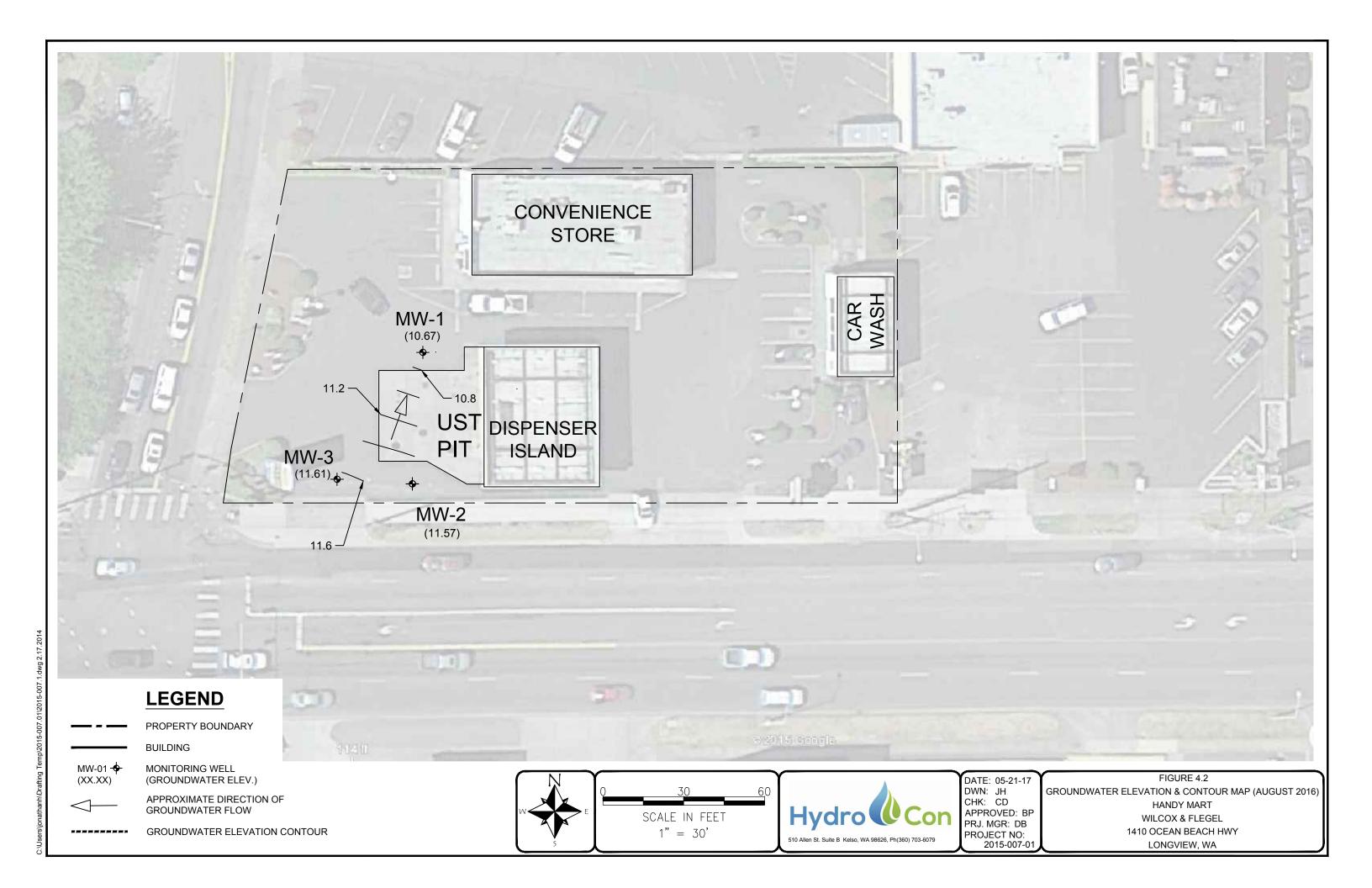


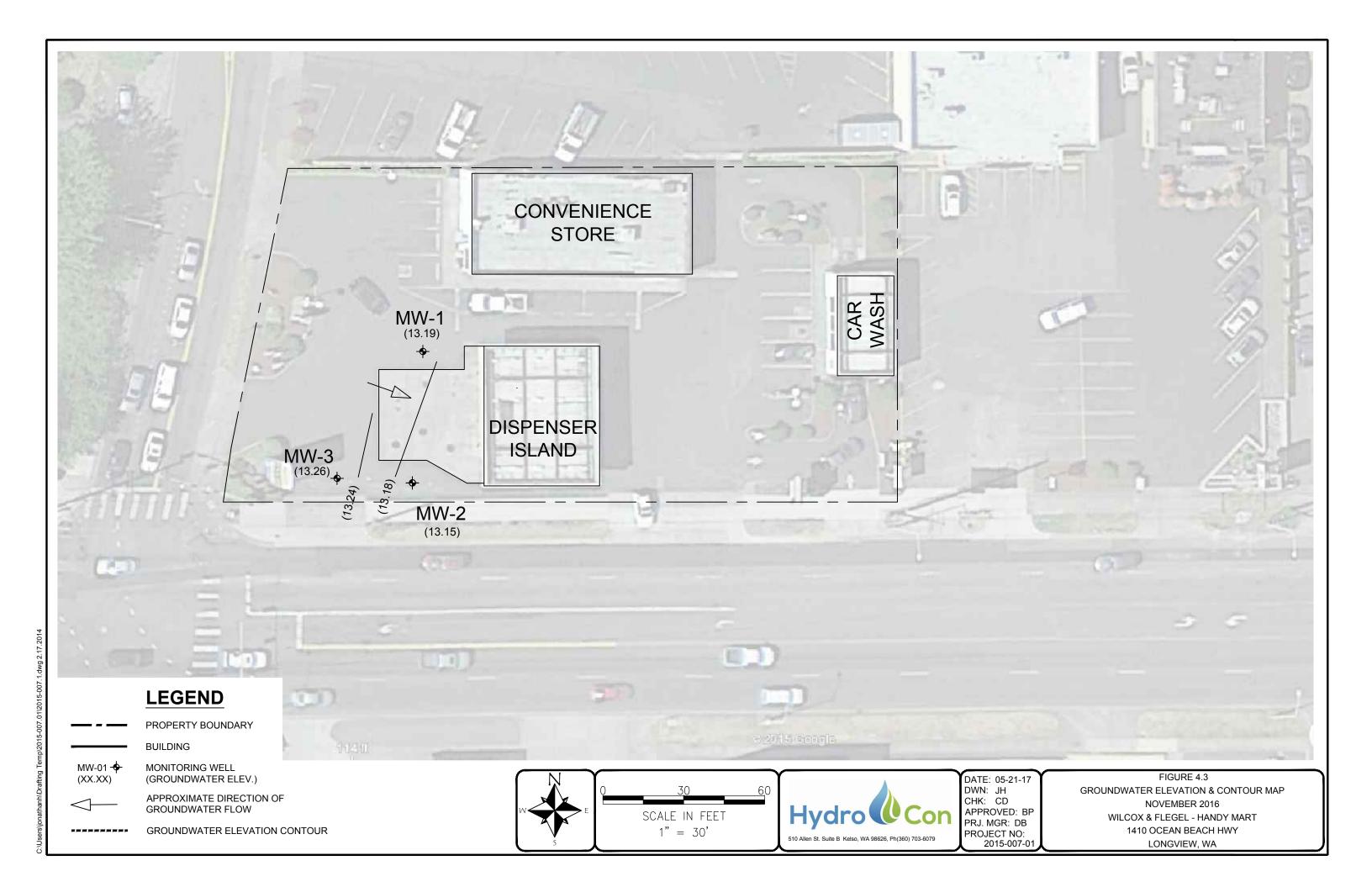


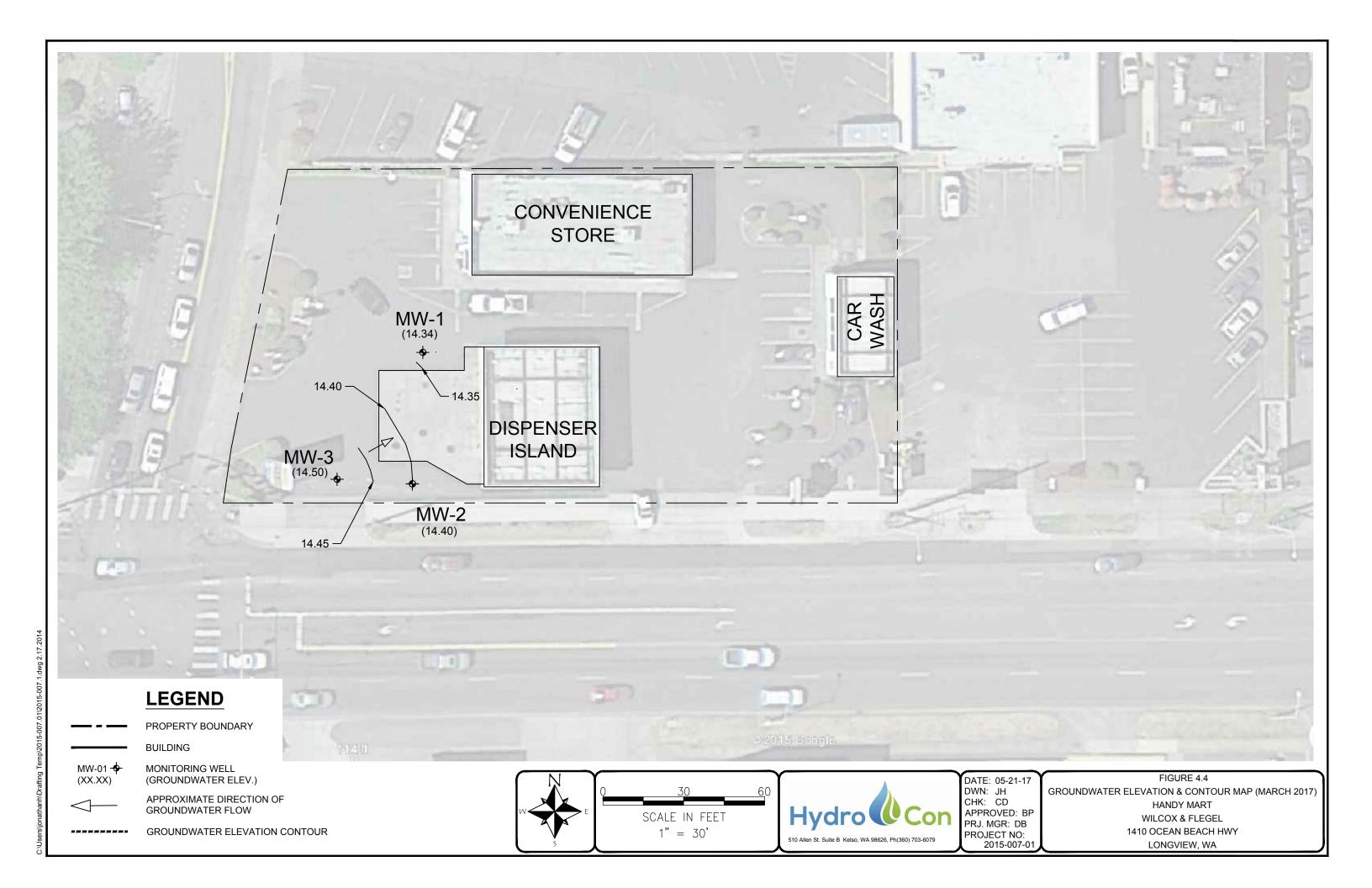
DATE: 07-12-17 DWN: JH CHK: CD APPROVED: BP PRJ. MGR: DB PROJECT NO: 2015-007-01

FIGURE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
JUNE 2017
WILCOX & FLEGEL - HANDY MART
1410 OCEAN BEACH HWY
LONGVIEW, WA









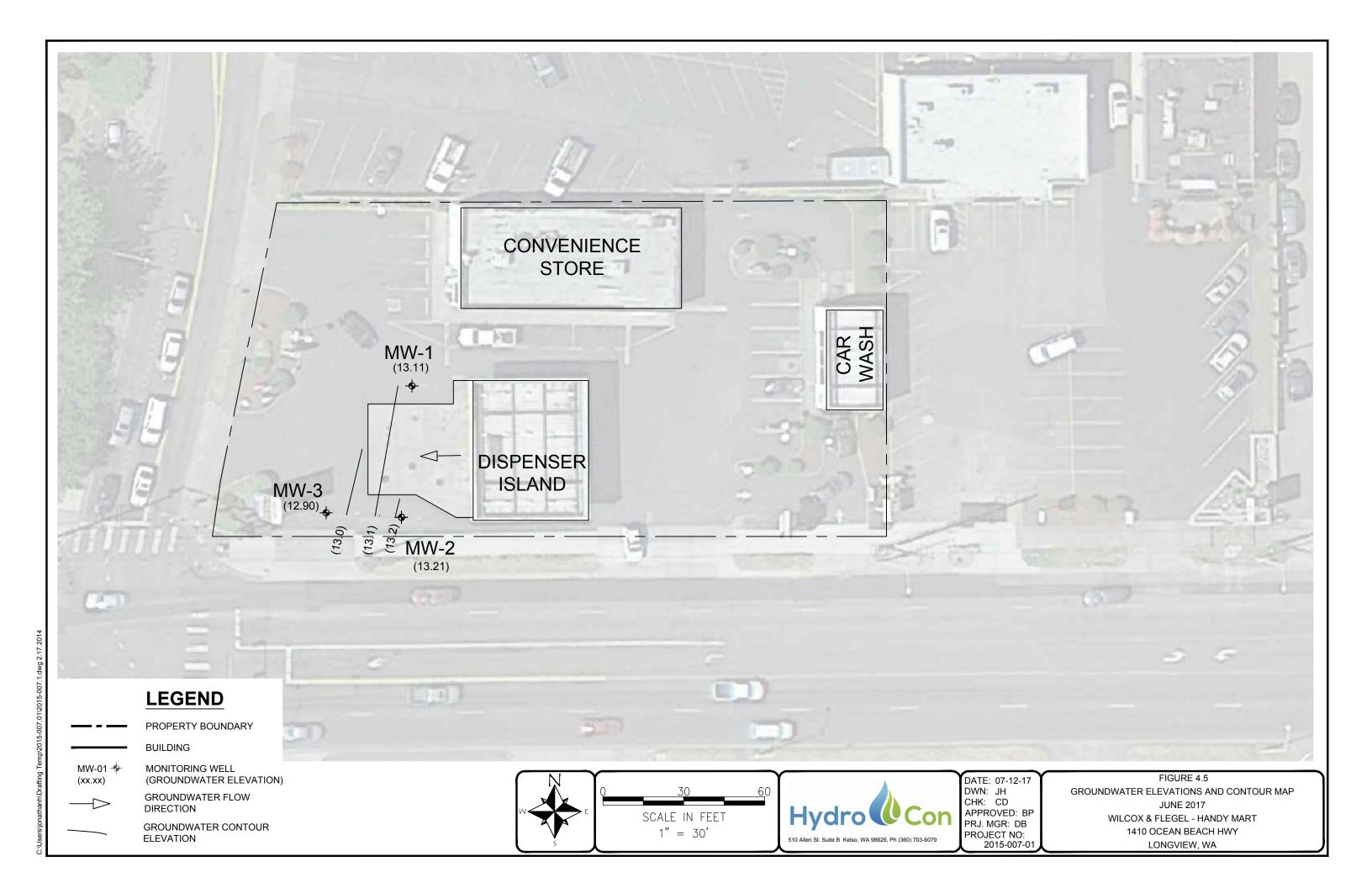


Table 1 **Summary of Historical Groundwater Elevations Handy Mart** Longview, Washington HydroCon Project Number 2015-007.1

Monitoring Well ID	Date	TOC Elevation	Depth to Water	Groundwater Elevation
	4/14/16		8.03	13.09
	8/10/16		10.45	10.67
MVV-1	11/17/16	21.12	7.93	13.19
	3/15/17	1	6.78	14.34
	6/30/17		8.01	13.11
	4/14/16		6.79	13.19
	8/10/16	19.98	8.41	11.57
MW-2	11/17/16		6.83	13.15
	3/15/17		5.58	14.40
	6/30/17		6.77	13.21
	4/14/16		6.41	13.22
	8/10/16	1	8.02	11.61
MW-3	11/17/16	19.63	6.37	13.26
	3/15/17]	5.13	14.50
	6/30/17		6.73	12.90

Notes:
TOC = Top of well casing

Table 2
Summary of Groundwater Analytical Results
Handy Mart, Longview, Washington
HydroCon Project Number 2014-007.01

Parameter		GRPH [1]	Benzene [2]	Toluene [2]	Ethylbenzene [2]	Total Xylenes [2]
Cleanup Lev	Cleanup Level*		5	1,000	700	1,000
Monitoring Well ID	Date Sampled			·		,
	5/6/05	<250	<0.5	<2	<2	<2
	12/10/10	<50	<5.0	<5.0	<5.0	<10.0
	3/25/11	<50	<5.0	<5.0	<5.0	<10.0
	9/22/11	92.8	<5.0	<5.0	<5.0	16.8
	3/9/12	104	<5.0	<5.0	<5.0	<10.0
MW-1	9/24/15	<100	6.1	<1	<1	<3
10100-1	2/2/16	<100	6.6	<1	<1	<3
	4/14/16	<100	3.7	<1	<0.5	<1.5
	8/10/16	<100	2.2	<1	<0.5	<1.5
	11/17/16	<100	0.314	<1	<0.5	<1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
	6/30/17	<100	<0.2	<1	<0.5	<1.5
	5/6/05	<250	<0.5	<2	<2	<2
	12/10/10	<50	<5.0	<5.0	<5.0	<10.0
	3/25/11	73	<5.0	<5.0	<5.0	<10.0
	9/22/11	76.5	<5.0	5.7	<5.0	<10.0
	3/9/12	513	15.5	26.0	5.13	7.6
MW-2	9/24/15	460	<1	4.4	<1	3.5
IVIVV-Z	2/2/16	<100	2.7	<1	<1	<3
	4/14/16	<100	1.41	<1	<0.5	<1.5
	8/10/16	<100	<0.2	<1	<0.5	<1.5
	11/17/16	<100	<0.2	<1	<0.5	<1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
	6/30/17	<100	<0.2	<1	<0.5	<1.5
	5/6/05	499	14	3.0	<2	8
	12/10/10	230	<5.0	<5.0	<5.0	<10.0
	3/25/11	180	<5.0	<5.0	<5.0	<10.0
	9/22/11	242	<5.0	<5.0	<5.0	<10.0
	3/9/12	95.8	<5.0	<5.0	<5.0	<10.0
MW-3	9/24/15	<100	<1	<1	<1	<3
	2/2/16	210	<1	3.7	<1	<3
	4/14/16	310	<0.2	<1	<0.5	<1.5
	8/10/16	326	<0.2	<1	<0.5	
	11/17/16	326	<0.2	<1	<0.5 <0.5	<1.5 <1.5
	3/15/17	<100	<0.2	<1	<0.5	<1.5
					1	
Mara -	6/30/17	<100	<0.2	<1	<0.5	<1.5

Notes:

- * = Washington State Model Toxics Control Act (MTCA) Method A Cleanup Level for Groundwater (rev. October 12, 2007)
- [1] = Gasoline Range Petroleum Hydrocarbons (GRPH) by Northwest Method NWTPH-Gx
- [2] = Volatile Organic Compounds (VOCs) by EPA Methods 8021B or 8260B
- = Indicates compound not detected above the laboratory Method Reporting Limit (MRL) shown.

All values shown are in micrograms per liter (µg/L) (parts per billion).

Highlighted cell indicates compound detected above cited MTCA Method A Cleanup Level.

ATTACHMENT A HISTORIC REPORTS

Page 1 of 3

November 6, 1991

Steve Wilcox, President Wilcox & Flegel Oil Company 110 Panel Way Longview, WA 98632

Reference:

Analytical test results from samples taken from an excavation at the site of "Johns Shell Service Station located at 1410 Ocean Beach Highway in Longview, Washington

Dear Steve,

A field representative from Environmental Inspection Services, Charles Spear, supervised limited excavation activities performed by Jay Brookhart Excavating. The representative also collected four representative soil samples and one water sample (sample No.s 1 thru 5) from the excavation at the aforementioned property on Friday, October 18, 1991. The four soil samples were collected from representative cavity areas as depicted on the Generalized Site Plan Plate P-1. The soil samples were collected in a manner consistent with proper sampling procedures, presentation, and chain of custody documentation as stated in a prepared sampling plan.

The sampling plan was developed to ensure that sample collection, sample location, sample handling, and data analysis were sufficient to evaluate the effectiveness of limited excavations performed onsite. The four soil samples and one water sample were subsequently analyzed by Columbia Analytical Services, Inc. a Longview based certified laboratory, in a manner consistent with the analytical procedures outlined in the EPA test methods document SW-846. Each of the soil samples and the water sample were analyzed for the presence of Total Petroleum Hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylene (BTEX) in manner consistent with Test Methods 5030/8020 and Modified 8015.

Based on the analytical test results from samples taken at representative locations in the subject excavation, the excavation episode was successful with regards to removing contaminated petroleum-contaminated soils within the subject excavation.

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT and GROUNDWATER INVESTIGATION REPORT

For: 76 Gasoline Station 1410 Ocean Beach Highway Longview, Washington 98632

July 26, 2005

Prepared for:

Wilson Oil Company Attn: Gary Mellema PO Box 69 Longview, Washington 98632

Prepared By:

William R. CullochDasson Environmental Specialist

3 Kings Environmental, Inc. 1311 SE Grace Avenue Battleground, Washington 98604 (360) 666-5464 On February 11, 2005, ten (10) soil borings were established by push probe on the site (see Figure 1). The borings were advanced to a depth of 15 feet below ground surface (bgs). Soil was inspected continuously in each boring for evidence of petroleum contamination and groundwater. Apparent groundwater was detected in each boring at 9.5 to 10 feet bgs, and soil samples were collected at the apparent soil/water interface.

No petroleum odor was detected in soil or water in the borings with the exception of Boring 5, which was apparently located in the former contaminated soil excavation on the south side of the UST nest. Petroleum odor was detected in this boring at the apparent soil/water interface, at 10 feet bgs.

All soil samples were placed into 4-ounce glass jars with tight-fitting Teflon-lined lids and stored in a cooler with ice for transport to Wy'East Environmental Services, Inc. (Wy'East) of Portland for analysis. Soil samples were analyzed for Total Petroleum Hydrocarbon Identification (TPH-HCID). Results indicated that heavy oil and gasoline were detected as summarized in Table 6.3.1.

	Table 1 Soil Sample Results						
Sample	Location	Depth (ft bgs)	NWTPH-HCID; NWTPH-GX; NWTPH-Dx (ppm)				
			Gasoline	Diesel	Heavy Oil		
B1-10'	NW Area	10	ND	ND	ND		
B2-9.5'	NW Area	9.5	ND	ND	143		
B3-9.5'	N Side USTs	9.5	ND	ND	ND		
B4-10'	W Side USTs	10	ND	ND	367		
B5-10'	S Side USTs	10	90	ND	145		
B6-10'	SW Dispenser	10	ND	ND	ND		
B7-10'	SE Dispenser	10	ND	ND	ND		
B8-10'	NE Dispenser	10	ND	ND	ND		
B9-10'	NW Dispenser	10	ND	ND	ND		
B10-10'	East Side	10	ND	ND	ND		

NWTPH-HCID = Northwest Total Petroleum Hydrocarbon – Hydrocarbon Identification

NWTPH-Gx = Quantification Method for Gasoline Range TPH

NWTPH-Dx = Quantification Method for Diesel Range TPH

bgs = below ground surface

ND = Below Method Reporting Limit

As indicated in the table, gasoline was detected at the apparent soil/water interface in Boring 5. Heavy oil was detected in Boring 2, Boring 4, and Boring 5 at the apparent soil/water interface. Although a waste oil tank was reported to have been removed from the site in the past, the location of heavy oil detected in the borings is in the southwestern portion of the site, not in the area suspected of containing the former tank. Samples from other borings on the site did not contain heavy oil. The laboratory report indicates that the oil resembles weathered (old) motor oil.

The soil sample collected from Boring 5 was also analyzed for BTEX by Method 8021B. No benzene was detected in the sample. Thus, the gasoline cleanup level under the Model Toxics Cleanup Act (MTCA) Method A for unrestricted land use is 100 ppm. Since the sample also contained heavy oil, the analytical results also indicate a heavy oil cleanup level of 2,000 ppm. The concentrations of gasoline and heavy oil detected on the site are below the MTCA Method A cleanup levels for unrestricted land use.

Groundwater samples were collected from Boring 5 and Boring 10 on the subject site. Water was collected from the probe casing in each boring with a peristaltic pump. The water was pumped out until it ran relatively clear of fines, then a sample was collected in appropriate containers, placed in a cooler with ice and transported to Wy'East for analysis by Method NWTPH-HCID for hydrocarbon identification. No petroleum hydrocarbons were detected in Boring 10, on the east side of the site. Gasoline was detected in Boring B5, and the sample was analyzed for gasoline quantification by Method NWTPH-Gx, and BTEX

by EPA Method 8021B. No heavy oil was detected in the sample. Gasoline was detected at a concentration of 4,410 parts per billion (ppb), and benzene was not detected.

The concentration of gasoline in the groundwater sample is above the MTCA Method A cleanup level for unrestricted land use of 1,000 ppb.

On May 6, 2005, three monitoring wells were installed on the subject site (see Figure 2). MW 1 was installed in the suspected upgradient direction from the location of contaminated groundwater identified during the Phase II ESA. MW2 was installed in the approximate location of Boring 5, south of the tank nest and area of contaminated groundwater. MW3 was installed southwest of the tank nest. Soil samples were collected from the soil/water interface in MW2 and MW3. A soil sample was not collected from the MW1 boring since it was located adjacent to Boring 3. The soil samples were analyzed by Method NWTPH-Gx. Since no benzene was detected in earlier soil samples collected for the Phase II ESA on the site, these samples were not analyzed for BTEX. Analytical results are summarized in Table 2 and shown on Figure 2.

		Table 2 Soil Sample R	esults	· · · · · · · · · · · · · · · · · · ·	
Sample	Location	Depth (ft bgs)	TPH (ppm)		
			Gasoline	Diesel	Heavy Oil
MW2-10.5'	MW2	10.5	ND	NA	NA
MW3-10.5'	MW3	10.5	90	NA	NA

bgs = below ground surface

ND = Below Method Reporting Limit

As indicated in Table 1, gasoline contamination was not detected in soil collected from the boring for MW2. Gasoline contamination was detected in soil collected at the apparent soil/water interface in the boring for MW3. The concentration of gasoline in the sample is below the MTCA Method A cleanup level for unrestricted land use for soil without detected benzene.

Pre-packed 1-inch monitoring wells were installed in the borings to a depth of 20 feet bgs. The wells were constructed of 15 feet of 0.010 screen and 5 feet of blank with locking caps. The wells were developed and allowed to recharge. Casing elevations were determined with a laser level. Groundwater elevations were determined and the gradient was calculated by the EPA "On-Line Tools for Site Assessment Calculation: Gradient and Direction from Three Points." The gradient was calculated to be 0.003 with a direction of flow S2.7W (177.3 degrees from north).

Each well was purged with a peristaltic sampling pump of approximately 2.5 gallons, or over 10 volumes of water in each well. Water samples were collected with disposable tubing by the peristaltic pump and placed into 40 ml glass vials with no headspace. The samples were transported to Wy'East for analysis by Method NWTPH-Gx and EPA Method 8021B for BTEX. Analytical results are summarized in Table 3 and shown on Figure 2.

Table 3							
Sample	Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes		
MW1-0505.1	ND	ND	ND	ND	ND		
MW2-0505.2	ND	ND	ND	ND	ND		
MW3-0505.3	499	14	3	ND	8		

As indicated in Table 3, gasoline and volatile organic compounds were detected in groundwater in Monitoring Well MW3, but not in MW1 or MW2. The concentration of gasoline in the well is below the MTCA Method A cleanup concentration for unrestricted land use. However, benzene is above the Method A cleanup concentration of 8 ppb.

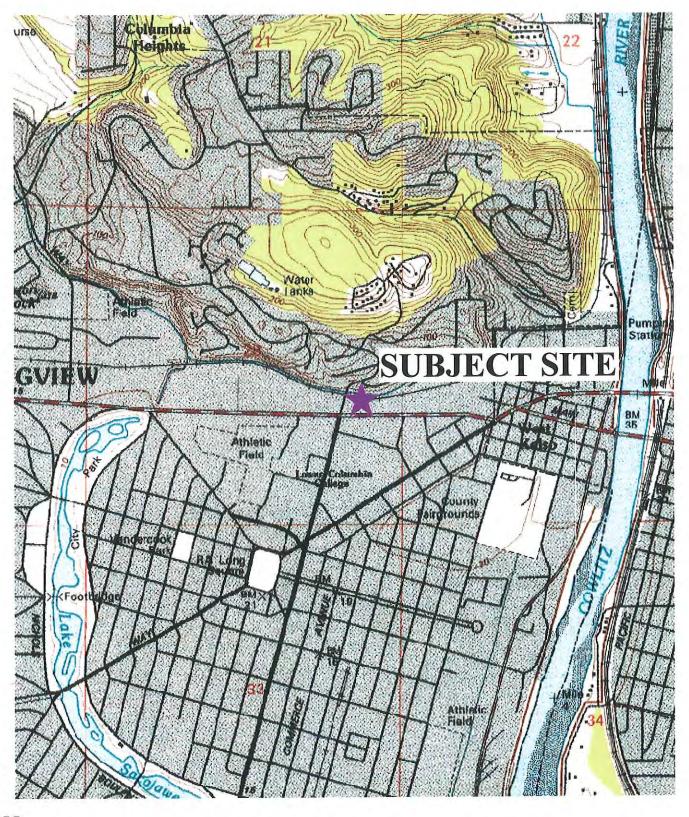
If you have any questions, please call me at 360-666-5464.

Sincerely,

3 KINGS ENVIRONMENTAL, INC

William R. CullochDasson, RG

Environmental Specialist





3 Kings Environmental, Inc.

P.O. Box 280 Battle Ground, Washington 98604

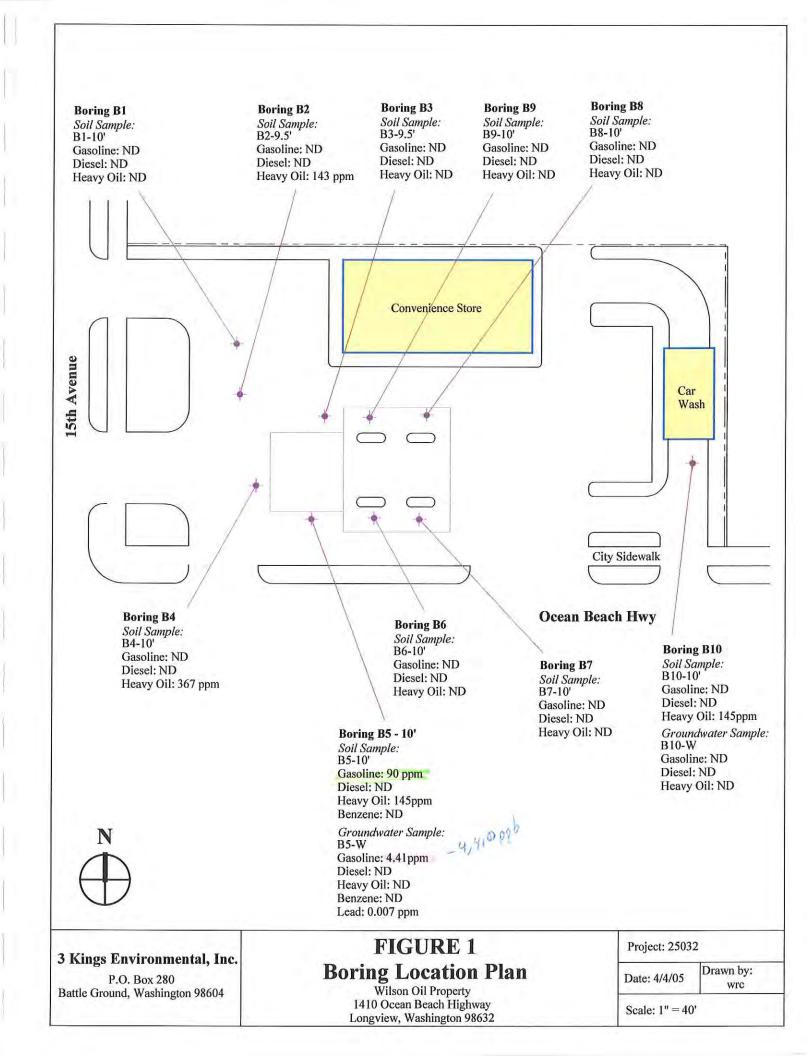
Site Location Map

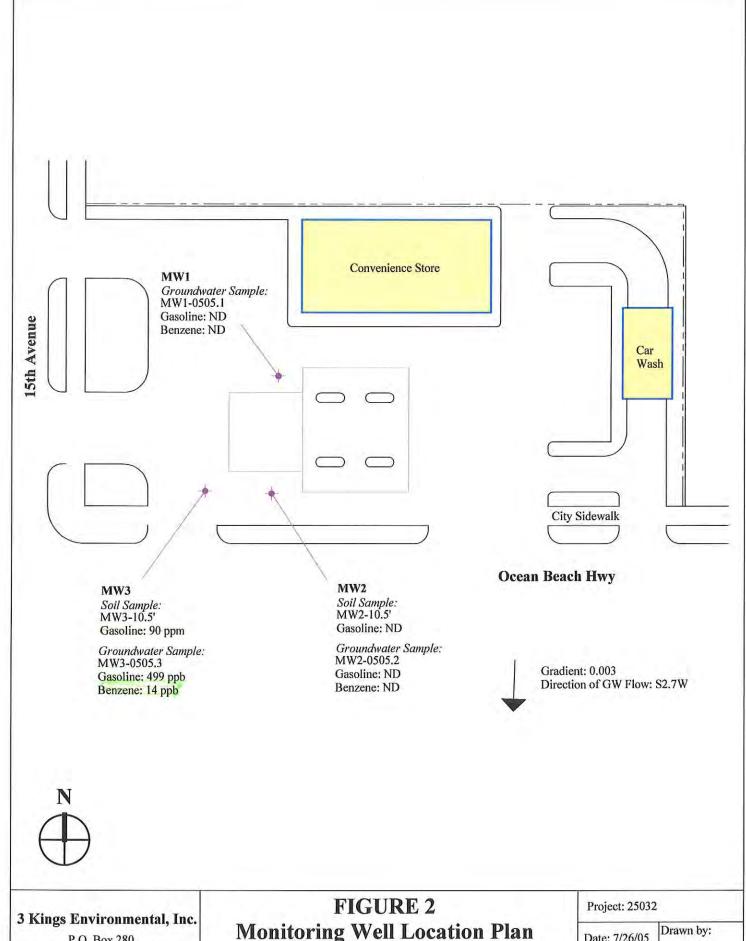
1410 Ocean Beach Highway Longview, Washington

D		25	022
Proj	ect:	23	ひろと

Date: 4/28/05

Drawn by: wrc





P.O. Box 280 Battle Ground, Washington 98604 **Monitoring Well Location Plan**

Wilson Oil Property 1410 Ocean Beach Highway Longview, Washington 98632 Date: 7/26/05

wrc

Scale: 1" = 40'



LABORATORY REPORT

FEB 2 4 2005

3 Kings Environmental Attn: Bill CullochDasson

P.O. Box 280

Battle Ground, WA 98604

PROJECT NAME/SITE:

1410 Ocean Beach Hwy

REPORT NUMBER:

54813

PROJECT NUMBER:

25032

REPORT DATE:

2-18-05

EXTRACTION DATE:

2-11-05 to 2-14-05

PAGE:

1 of 2

NW TPH-HCID

Analyte: Petroleum Hydrocarbon Identification (Gasoline, Petroleum, Heavy Oil) for soil (dry weight basis)

Field ID	Lab ID	Identification		Surrogate Recovery (%)	
		Gasoline	Diesel	Heavy Oil	,
B1-10'	N1107	ND	ND	ND	97
B2-9.5'	N1108	ND	ND	Detected ‡	106
B3-9.5'	N1109	ND	ND	ND	96
B4-10'	N1110	ND	ND	Detected ‡	106
B5-10'	N1111	Detected †	ND	Detected ‡	110
B6-10'	N1112	ND	ND	ND	90
B7-10'	N1113	ND	ND	ND	94
B8-10'	N1114	ND	ND	ND	95
B9-10'	N1115	ND	ND	ND	92
B10-10'	N1116	ND	ND	ND	95
BLANK	-	ND	ND	ND	_
Reporting Limits (mg/Kg)	-	20	50	100	-

Surrogate is Chlorooctane

ND = Not Detected (below reporting limit or detection limit)

NW TPH-HCID

Analyte: Petroleum Hydrocarbon Identification (Gasoline, Petroleum, Heavy Oil) for water

		~~~~		3	
Field ID	Lab ID	Identification			Surrogate Recovery (%)
		Gasoline	Diesel	Heavy Oil	
B5-W	N1117	Detected **	ND	ND	*
B10-W	N1118	ND	ND	ND	*
BLANK	-	ND	ND	ND	••
Reporting Limits (mg/L)	-	0.25	0.63	0.63	-
Surrogate is Chlorooctane					

ND = Not Detected (below reporting limit or detection limit)

[‡] Weathered motor oil

[†] Weathered gas or mineral spirits

^{*} Surrogate peak is not discernible on chromatogram from analyte peak.

^{**} Weathered gas



# LABORATORY REPORT

3 Kings Environmental Attn: Bill CullochDasson FEB 2 / 2005

P.O. Box 280

Battle Ground, WA 98604

PROJECT NAME/SITE:

1410 Ocean Beach Hwy

REPORT NUMBER:

54813

PROJECT NUMBER:

25032

REPORT DATE:

2-18-05

**EXTRACTION DATE:** 

2-11-05 to 2-14-05

PAGE:

2 of 2

# NWTPH-Dx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Diesel mg/Kg (ppm)	Heavy Oil mg/Kg (ppm)	Surrogate Recovery (%)
B2-9.5'	N1108	ND	143	106
B4-10'	N1110	ND	367	119
B5-10'	N1111	ND	145	118
BLANK	=	ND	ND	<u>-</u>
Reporting Limit		25	100	ne .
C				

Surrogate is o-Terphenyl

ND = Not Detected (below reporting limit or detection limit)

# NWTPH-Gx

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
B5-10'	N1111	SOIL	90	79
BLANK	-	***	ND	-
Reporting Limit	-	-	20	<del>-</del>

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)

# **NWTPH-Gx**

Analyte: Total Petroleum Hydrocarbon Quantification for water

		(	
Field ID	Lab ID	μg/L (ppb)	Surrogate Recovery (%)
B5-W	N1117	4,410	119
BLANK	-	ND	-
Reporting Limit	-	250	-

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)



Wy'East Environmental Sciences, Inc.

# LABORATORY REPORT

3 Kings Environmental Attn: Bill CullochDasson P.O. Box 280

Battle Ground, WA 98604

PROJECT NAME/SITE:

1410 Ocean Beach Hwy

REPORT NUMBER:

54813A

PROJECT NUMBER:

25032

REPORT DATE:

2-24-05

**EXTRACTION DATE:** 

2-14-05 to 2-24-05

PAGE:

1 of 1

# EPA 8021B

Analyte: BTEX for soil (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identifica	tion & Quan	tification mş	g/Kg (ppm)	Surrogate
		Benzene	Toluene	Ethyl-	Xylenes	Recovery (%)
				Benzene		· , ,
B5-10'	N1111	ND	ND	0.10	0.48	79
BLANK	-	ND	ИD	ND	ND	-
Quantitation Limits	~	0.04	0.04	0.04	0.04	-

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)

# **EPA 8021B**

Analyte: BTEX for water (Benzene, Toluene, Ethylbenzene, Xylenes)

Field ID	Lab ID	Identific	Identification & Quantification µg/L (ppb) Surrogate			Surrogate
		Вепzепе	Toluene	Ethyl-	Xylenes	Recovery (%)
				Benzene	•	-,
B5-W	N1117	ND	ND	23	ND	119 -
BLANK	_	ND	ND	ND	ND	44
Quantitation Limits	_	1	1	1	1	-

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)

# EPA 3020/7421

Analyte: Total Lead (Pb) in water Ouantification

2 Mary co. 20 car 130 do \1	Of hi water Que	TTLATION CANAL
Field ID	Lab ID	Quantification
		μg/L (ppb)
B5-W	N1117	7
BLANK	-	ND
Detection Limit	-	5

ND = Not Detected (below reporting limit or detection limit)

Walkan

Environmental Sciences, Inc.

# CHAIN OF CUSTODY

Research & Laboratory Services 2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

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NIIIW		<	<u></u>		816-10
SI 110/					B9-10
WIII					58 10 °
N1113					B7-10
W    1   Z					B6-10
					135-10
W1110					B4-101
NII 09					N3 9.5
80110X					132-35
N/107	NWTPH-HCID+	405	47	ζ. ()	B1-101
ED LABID	ANALYSIS REQUIRED	VOLUME ETC	CONTAINER	MEDIA	FIELD ID
Regular 🔼 3-5 Days 🛭		in Soil; HCI in 40ml Water Vials	401 PM 400	Seit; 1	<b>? (HCI, etc.)</b> Доне
SAMPLES CHILLED TO 4° C? $\gamma_{e,>}$	TIME(S) COLLECTED S:	TIA	DATE(S) COLLECTED	DATE(S)	SAMPLES COLLECTED BY
FAX NUMBER			REPORT ATTENTION BILL COLLECTION	REPORT	COMPANY 3 King 3
PURCHASE ORDER # _3886	STATE WA		PROJECT NAME / SITE	PROJECT	PROJECT# 25032

Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

Wilson Oil



# LABORATORY REPORT

3 Kings Environmental Attn: Bill CullochDasson P.O. Box 280 Battle Ground, WA 98604

PROJECT NUMBER.

Wilson Oil 25032 REPORT NUMBER: REPORT DATE:

56026 5-12-05

PROJECT NUMBER: EXTRACTION DATE:

5-9-05

PAGE:

1 of 1

# **NWTPH-Gx**

Analyte: Total Petroleum Hydrocarbon Quantification for soil (dry weight basis)

Field ID	Lab ID	Matrix	mg/Kg (ppm)	Surrogate Recovery (%)
MW2-10.5'	N4588	SOIL	ND	104
MW3-10.5'	N4589	SOIL	<b>∞90</b> :	90
BLANK	-	_	ND	_
Reporting Limit	-	-	20	-

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)

# **NWTPH-Gx**

Analyte: Total Petroleum Hydrocarbon Quantification for water

Field ID	Lab ID	μg/L (ppb)	Surrogate Recovery (%)
MW1-0505.1	N4585	ND	99
MW2-0505.2	N4586	ND	97
MW3-0505.3	N4587	499	85
BLANK	-	ND	<u></u>
Reporting Limit	***	250	-

Surrogate is p-Bromofluorobenzene

ND = Not Detected (below reporting limit or detection limit)

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MAY 1 7 2005



# Wy'East Environmental Sciences, Inc.

EPA Method 8260

Analyte: Volatile Organics in water

Field ID: MW1-0505.1 Site Name: Wilson Oil
Lab ID: N4585.D Site Number: 25032
Analysis date: 5-9-05 Report Number: 56026

		Sample	Blank	Quantitation
CAS#	Compound	$(\mu g/L)$	$(\mu g/L)$	Limit
71-43-2	Benzene	ND	ND	0.50
106-93-4	1,2-Dibromoethane	ND	ND	2
107-06-2	1,2-Dichloroethane	ND	ND	2
100-41-4	Ethylbenzene	ND	ND	2
98-82-8	Isopropylbenzene	ND	ND	2
1634-04-4	Methyl-tertbutylether (MTBE)	) ND	ND	5
91-20-3	Naphthalene	ND	ND	2
103-65-1	n-Propylbenzene	ND	ND	2
108-88-3	Toluene	ND	ND	2
95-63-6	1,2,4-Trimethylbenzene	ND	ND	2
108-67-8	1,3,5-Trimethylbenzene	ND.	ND	2
1330-20-7	Total Xylenes	ND	ND	2
	Surrogates:	Percent Recovery:		
160 00 1		0.0		

Surrogates: Percent Recover 460-00-4 4-Bromofluorobenzene 98 107-06-2 1,2-Dichloroethane-d4 93 108-88-3 Toluene-d8 97

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# EPA Method 8260

108-88-3

Analyte: Volatile Organics in water

Field ID: MW2-0505.2 Lab ID: N4586.D Analysis date: 5-9-05

Site Name:

Wilson Oil

Wy'East Environmental Sciences, Inc.

Site Number:

99

25032

Report Number: 56026

,		Sample	Blank	Quantitation
CAS#	Compound	(μg/L)	(μg/L)	Limit
71-43-2	Benzene	ND	ND	0.50
106-93-4	1,2-Dibromoethane	ND	ND	2
107-06-2	1,2-Dichloroethane	ND	ND	2
100-41-4	Ethylbenzene	ND	ND	2
98-82-8	Isopropylbenzene	ND	ND	2
1634-04-4	Methyl-tertbutylether (MTBE)	ND	ND	5
91-20-3	Naphthalene	ND	ND	2
103-65-1	n-Propylbenzene	ND	ND	2
108-88-3	Toluene	ND	ND	2
95-63-6	1,2,4-Trimethylbenzene	ND	ND	2
108-67-8	1,3,5-Trimethylbenzene	ND	ND	2
1330-20-7	Total Xylenes	ND	ND	2
	Surrogates:	Percent Recovery:		
460-00-4	4-Bromofluorobenzene	-98		
107-06-2	1,2-Dichloroethane-d4	92		

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Toluene-d8

Wy'East Environmental Sciences, Inc.



# EPA Method 8260

Analyte: Volatile Organics in water

Field ID:	MW3-0505.3	Site Name:	Wilson Oil
Lab ID:	N4587.D	Site Number:	25032
Analysis date	; 5-9-05	Report Number:	56026

		Sample	Blank	Quantitation
CAS#	Compound	(µg/L)	(μg/L)	Limit
71-43-2	Benzene	14	ND	0.50
106-93-4	1,2-Dibromoethane	ND	ND	2
107-06-2	1,2-Dichloroethane	ND	ND	2
100-41-4	Ethylbenzene	ND	ND	2
98-82-8	Isopropylbenzene	ND	ND	2
1634-04-4	Methyl-tertbutylether (MTBE)	ND	ND	. 5
91-20-3	Naphthalene	ND	ND	2 -
103-65-1	n-Propylbenzene	2	ND	2
108-88-3	Toluene	3	ND	2
95-63-6	1,2,4-Trimethylbenzene	ND	ND	2
108-67-8	1,3,5-Trimethylbenzene	ND	ND	2
1330-20-7	Total Xylenes	8	ND	2
	Surrogates: F	Percent Recovery:		
460-00-4	4-Bromofluorobenzene	96		
107-06-2	1,2-Dichloroethane-d4	87		

	Surrogates:	Percent Reco
460-00-4	4-Bromofluorobenzene	96
107-06-2	1,2-Dichloroethane-d4	87
108-88-3	Toluene-d8	101

RECEIVED

MAY 1 7 2005

Report Number:

Environmental Sciences, Inc.

CHAIN OF CUSTODY

Research & Laboratory Services

2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

PROJECT# 25032	PROJEC Wiles	PROJECT NAME / SITE		STATE WA	PURCHASE ORDER #	#
COMPANY 3 KINGS	REPORT Bull	REPORT ATTENTION Bill Culloch Dasson		PHONE NUMBER	FAX NUMBER	
SAMPLES COLLECTED BY Cullech Dasson	DATE(S)	DATE(S) COLLECTED 5/6/05 \$5/9/05		TIME(S) COLLECTED 5/9/05 5/6/05:11:35/12:37; (0:45-11:30	SAMPLES CHILLED TO 4° C?	TO 4° C?
PRESERVATIVE USED? (HC), etc.) Nove for Soil; HC; for water	HC.	fer water		The second secon	Regular 🖾	3-5 Days □
FIELD ID	MEDIA	CONTAINER	VOLUME ETC	ANALYSIS REOUIRED	URED	LABID
MW1-0505,1	Water	Vials	(3) 40mil	NWTPH-GX: EPA 8260 GC BTEX, EDG.	JACBTEX, EDG	NR 50.5
MW2-0505.2	,		) december of		EDB 4 MTBE	285HN
MW3-0505, 3	<b>&gt;</b>	>	>	>	The state of the s	CBSH N
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MW2-10.51	Solr	JAR	403	NWTPH -Gx	CALALANA TO THE PROPERTY OF TH	3854 N
MW3-10,5'	<b>&gt;</b>	<b> </b>	<b>→</b>	1		NWSan
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Submission of samples with testing requirements to WyEast Environmental Sciences will be understood to be an agreement for services in accordance with the conditions listed on the back of the client copy

Boring #:	1			BORIN	G LOC	)		Date	: 2/11/05	)	
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Project #:				ient:		Lo	gge	ed By	/;	· · · · · · · · · · · · · · · · · · ·	
	25032			Wilson Oil			-		William R	l.Culloch	Dasson
Driller:										R: 2W	
	<u>GeoTe</u>	ch Exp	olora	ations					: 1.5	Depth	
Drilling Me		_ a la _				Su	<u>irfa</u>	ce El	ev: Approx	c: 20 ft a	amsl
	Push P							Elev:			
Sampling	Macro S		\r					Card		·····	Data: 2/44/05
Sample	B.C.	Dept		Sample	GW	Stra		1(	) ft bgs	Litholo	Date: 2/11/05
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B1-10'					- <del></del>	ر أسما	_	test	ing.		
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			3000	ch Hwy		Boun	g Locat	iion: rthwest Po	otion
	ongvie						INO	IIIIWESTEC	) (IO)
Project #:		,		lient:	·····	Loggi	ed By:		
	25032			Wilson Oil		99		Villiam R.C	CullochDasson
Driller:	****					Sect:	28 T	:8N F	R: 2W Q: NE/SE
	GeoTe	ch Ex	plor	ations		Borin	g Dia: 1	.5	Depth: 15 ft
Drilling Me								: Approx:	20 ft amsl
	Push P					TOC			
Sampling							Card #:		
Sample	Иасго € В.С.			Commis	GW	SWL:	9.5	ft bgs	Date: 2/11/05
Sample	D.C.	Dep	ER	Sample Interval	Level	Strata		L	ithology
				medi vai	LCYCI	<del>******</del>	Asnh	alt surface	with 4" gravel base
						E C + W-	Dark	areenish b	prown silty to sandy
									organic odor, grades
						<u></u>			grayish brown clayey
						**************************************			mes moist at 7.5 ft,
		5'					wet a	t 9.5 ft, sc	il/water interface.
						٠,	Dark :	gray claye	y silt to 15 ft,
							_		
									dor throughout. No
									cted by odor or sheen
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B2-9.5'		10'			<u>¥.</u> ⊘.⊍ʻ				
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Boring #:	3			BORIN	G LO	}	Date:	2/11/05	
MW #:							Start:	1000	Finish: 1012
Project: 7	6 Statio	on				Borin	g Locati		1 1110117 1012
. 1	410 Oc	ean Be						th side of ⁻	Tank Nest
	ongvie	w, Was				<u> </u>			
Project #:	25032		Clie	ent: Vilson Oil		Logg	ed By:	/illiam D C	ullochDasson
•	23032		V	WISON OII			V	miam R.C	unochDasson
Driller:				<del></del>		Sect:	28 T:	8N R	: 2W   Q: NE/SE
	GeoTe	ch Exp	lorat	ions			g Dia: 1		Depth: 15 ft
Drilling Me								: Approx: :	20 ft amsi
	Push P						Elev:	***************************************	
Sampling	Method Macro S		r			Start	Card #:	t has	Doto: 2/44/05
Sample	B.C.	Dept		Sample	GW	Strata	: 9.5 f		Date: 2/11/05 thology
oumpio	<b>D.O.</b>	Бор.	'	Interval	Level	Julia		B.u. 5	
***************************************		***************************************				<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	Aspha	alt surface	with 4" gravel base
				***************************************		, , ,			h some pebbles to 7ft;
							piece	of wood at	t 7ft;
			-			, ,			•
		5'	<u> </u>						
**************************************				,					y silt with some
			-						7ft to 11ft, wet at 9.5
							π, soii	/water inte	тасе.
			-	······································		, ,	Some	organic od	dor 7ft to 11ft. No
B3-9.5'			-		$\frac{\nabla}{\omega}$	* ,,,,,,,,,			ted by odor or sheen
		10'	-		GW		testing	<b>j</b> .	
			-				•		
			-			No.			
			-			Recovery			
			-						
,		15'	-			Boffee	-		
			-			17 Caller			
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Boring #:	4			BORIN	G LO	3	Date: 2/11/0	)5
MW #:							Ctort 404	F Fi-:
Project: 7	'6 Statio	on L				Borin	Start: 101 g Location:	5 Finish: 1030
	410 Oc		eacl	h Hwv		Dom	West side	of Tank Nest
L_	.ongvie		shin	gton				
Project #:	0.5000		1	ient:		Logg	ed By:	
	25032			Wilson Oil			William	R.CullochDasson
Driller:	CooTo	ob Evr	Joro	ations.		Sect:		R: 2W Q: NE/SE
Drilling Me	GeoTe	CII EXP	71012	ALIONS			g Dia: 1.5 ice Elev: Appr	Depth: 15 ft
	Push P	Probe				TOC	Elev:	5X, 20 K aill51
Sampling						~~~~	Card #:	
	Macro S	·				SWL	: 10 ft bgs	Date: 2/11/05
Sample	B.C.	Dept	th	Sample	.GW	Strata		Lithology
		<u> </u>		Interval	Level	~~^~	Asshalt auef	ace with 4" gravel base
			-					with some pebbles to 4ft;
			-				)	, with bottle pubblics to 41t,
		-	-			·		sh gray clayey sand
		5'	-			مين سن	grading to cl	ay at 5 ft
~ <del>~</del>		ر	-				Brownish ar	ay clayey silt, grades to
			-					silt with some organic
		1					odor at 7.5 f	t, moist at 8'; wet at 10 ft,
	····	]	-			• • • • • • • • • • • • • • • • • • • •	soil/water in	terface.
D 4 4 0 ?			-				Some organ	ic odor 7.5 ft to 12ft. No
B4-10'	······································	10'	_					etected by odor or sheen
		, ,	-				testing.	
	***************************************		-			 با ستم		
			-			٠		
			-					
		15'						
			-			Buttowy		
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Boring #:	5		BORIN	G LO	3	Date: 2/11/05	
MW #:					-	Stort: 1035 Einigh: 1105	
Project: 7	'6 Stati	OD			Borin	Start: 1035 Finish: 1105 g Location:	
			ach Hwy		DOM	South side of Tank Nest	
L		w, Wash	nington				
Project #:	. .		Client:		Logg	ed By:	
	25032		Wilson Oil			William R.CullochDasson	
Driller:	<u> </u>	1 1	,.		Sect:		
Drilling Me		ch Expl	prations			g Dia: 1.5 Depth: 15 ft	****
	Push P	robe			TOC	ce Elev: Approx: 20 ft amsl Elev:	
Sampling						Card #:	
		Sampler			SWL		
Sample	B.C.	Depth		GW	Strata	Lithology	
-1			Interval	Level	AUT - 7		
					4 5 × 54 ×	Asphalt surface with 4" gravel base	£L.
						Brown sand, with some pebbles to 4	П,
				ļ	Ç	Brown silty clay 4 ft to 9.5 ft	
	-						
		5'					
		-			سر سیر شیر سیر		
]			,		
B5-10'				V		Gray clayey silt at 9.5 with some	
		10'		<u>6</u> ω		organic odor at 7.5 ft, moist;	
						wet at 10 ft, soil/water interface, with organic odor and minor petroleum	1
					:	odor. Some sheen observed on	
					· '	water.	
					٠, -		
·		15'			Betrau	Groundwater sample collected from	
						probe casing.	

						es de la constanta de la const	
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	······						
			'				

Boring #:	6		BORIN	G LO	3	Date: 2/11/05	
MW #:		77				Start: 1110	Finish: 1130
Project: 7	'6 Stati	on		***************************************	Borin	g Location:	FIRSH, 1130
			ach Hwy			SW Dispenser	
	ongvie [,]	w, Was	hington				
Project #:	25032		Client: Wilson Oil		Logg	ed By:	1.5
	23032		vviison Oii			William R.Culic	
Driller:	Caata	ah Éwa	lanations		Sect:		
Drilling Me		cri Exp	lorations			g Dia: 1.5 De ce Elev: Approx: 20	oth: 15 ft
	Push P	robe			TOC		it anisi
Sampling							**************************************
	Macro S	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			SWL:	10 ft bgs	Date: 2/11/05
Sample	B.C.	Depti	n Sample Interval	GW Level	Strata	Litho	ology
					1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Concrete surface w	rith 4" gravel base
					,	Dark greenish brow	
***************************************						4.5ft	
						Brown to gray claye	av cilt at 1 5 ft
		5'				becomes moist at 8	
					· -		· - ,
					·		
	······		***************************************		<u> </u>		
			<u></u>		,		
B6-10'	,			∇		Gray clayey silt at 1	0'; wet at 10 ft,
		10'		Gai		soil/water interface.	
	*****			_		to 15 ft.	
						Some organic odor	throughout No
						petroleum detected	
						testing.	Í
		15'			Bottow		

Ł							
				Array of the second			
110750							

Boring #:	7			BORIN	IG LO	3	Dat	e: 2/11/08	5	
MW #:							Sta	rt: 1135		Finish: 1150
Project: 7	76 Stati	on .				Borin		cation:		7 (1)(5(), 1 (50)
	410 O		eacl	n Hwy		2011		SE Dispen	ser	
L	ongvie									,
Project #:				ient:		Logg	jed B			
	25032			Wilson Oil				William F	R.Culloc	hDasson
Driller:						Sect		T: 8N	R: 2W	
D. 182 A.A	GeoTe	ch Exp	olora	itions				a: 1.5		h: 15 ft
Drilling M	etnoa: Push F)robo						lev: Appro	x: 20 ft	amsi
Sampling					***************************************	TOC Start				***************************************
	Macro S		∍r			SWL		0 ft bgs	····	Date: 2/11/05
Sample	B.C.	Dep	····	Sample	GW	Strata		o it bgs	Lithole	
				interval	Level					~97
						3 4.2	E Co	ncrete sur	face wit	h 4" gravel base
			l				Da	irk greenisl	า brown	to gray clay to 4
· · · · · · · · · · · · · · · · · · ·			F	· · · · · · · · · · · · · · · · · · ·				with gray la		
	 	1	<u> </u>				– Bro	own clayey	silt to 5	5 ft
		5'	-				D=-	6	. =1=	
		J.	-			- Com	ם ו	own to gray	y ciayey	siit at 5 π
			-							
			-	·····				,		
	 		ļ	~						moist; wet at 10
B7-10'			F		وسر	- "		to 15 ft.	пенасе	e. Gray clayey
B/ 10		10'	F		<u> </u>		l			
										roughout. No by odor or sheen
						-,-		ting.	iecieu L	y odor or sneen
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			-	· · · · · · · · · · · · · · · · · · ·		= .				
***************************************		15'	-			Bottow	-			
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-	Boring #:	8			BORIN	IG LO	3		Date: 2/11/05	5	
***************************************	MW #:								Start: 1245	E	inish: 1255
	Project: 7	'6 Stati	on				Bo	orin	g Location:		111511. 1200
				eac	ch Hwy				NE Dispen	ser	
		ongvie	w, Wa						,		
-	Project #:			C	lient:		Lo	gge	ed By:		-
-		25032			Wilson Oil					R.CullochI	Dasson
-	Driller:	Casta	ah E.a	م مام			· · · · · · · · · · · · · · · · · · ·	ect:	·	R: 2W	Q: NE/SE
	Drilling Me	GeoTe	CU EX	OIOF	ations				g Dia: 1.5	Depth:	
		Push F	robe						ce Elev: Appro: Elev:	x. ZUILA	IIISI
	Sampling								Card #:		
		Macro S		er			}	VL.	·····		Date: 2/11/05
ĺ	Sample	B.C.	Dept	th	Sample	GW	Stra	ta		Litholog	
	·				interval	Level				·	-
L			_				is among	€ 0°04			4" gravel base
L							79 15		Brown to gray	/ silty san	d to 5 ft,
							1				
				Ī			1	. `			
			5'				~~ <u>`</u> ~	~ ~	Brown silty sa	and to 8.5	ff
١			1					**	,	_	
ŀ			1	ŀ]]	1.5		**************************************		
,											
_								٠.			
_	DO 401		-				3, 3, .	\``	Gray modium	oooreo e	and layer at 8.5
	B8-10'		10'	-			ر المسي		to 9 ft, becom		
			. 10								clayey silt, wet
_								,	at 10 ft, soil/w		
_							`		clayey silt to	15 ft.	
							· ,-	~ ,'		1 11	
			15'				·		Minor organic		
			13	ſ			Botto	N	testing.	ected by	odor or sheen
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Boring #:	9		BORIN	IG LO	3	Date: 2/11/05	
MW #:					•	Start: 1300 Finish: 1315	
Project: 7	6 Stati	on			Borin	ng Location:	
1	410 Oc	cean B	each Hwy			NW Dispenser	
	ongvie	w, Was	shington				
Project #:			Client:		Logg	jed By:	
-	25032		Wilson Oil			William R.CullochDasson	
Driller:					Sect:		
		ch Exp	olorations			ng Dia: 1.5 Depth: 15 ft	
Drilling Me		_				ace Elev: Approx: 20 ft amsl	
	Push F					Elev:	
Sampling						Card #:	
	Macro S		**************************************		SWL		
Sample	B.C.	Dept	th Sample Interval	GW Level	Strata	Lithology	
			Jillei vai	LEVEL	8 50 0 ml 10 15	Concrete ourface with 4" croyed have	
	ļ	-		-	EURA CAN	Concrete surface with 4" gravel base Brown fine sand with some clay,	
						grades to brown silty sand to 5 ft,	
					.~	grades to brown sitty sailu to 5 ft,	
		1		1			
	 	5'		1			
		1			- , "	Brown to gray silty sand to 7.5 ft,	
]				Brown to gray sally sally to 7.5 ft,	
						Crow players ailt maint at 7 5 ft	L
				1		Gray clayey silt, moist at 7.5 ft, wet a	
DO 401					,	10 ft, soil/water interface. Gray clayer silt to 15 ft.	зy
B9-10'		10'	****	Δ		Sile to 15 it.	
		10		GW		Minor proprie adea the such aut. No.	
		1		1		Minor organic odor throughout. No petroleum detected by odor or sheen	
					2 -	testing.	I
				-		testing.	
,]	·		
		15'			Time.		
		13]	Bothow	•	
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Boring #: '	10			BORIN	G LO	3		Date: 2/11/05
   MW #:								Ctort 1990 Finish 1440
Project: 76	Statio	<u> </u>				Ro	rin	Start: 1320 Finish: 1410 g Location:
	110 Oc		eacl	n Hwv		00	/I II I	East side of site
Lc Lc	ongview		shin	gton				
Project #:	5000		1	ient:		Lo	gge	ed By:
	5032	•		Wilson Oil				William R.CullochDasson
Driller:	· ooToo	. F						28 T: 8N R: 2W Q: NE/SE
Drilling Mei	GeoTec	ııı ⊏xþ	1013	ILIONS				g Dia: 1.5 Depth: 15 ft
	ush Pr	obe						ce Elev: Approx: 20 ft amsl Elev:
Sampling N								Card #:
	lacro S					***************************************	VL:	
Sample	B.C.	Dep	th	Sample	GW	Strat	ta	Lithology
		ļ		Interval	Level	2 80 mass	47.	
						- W W WA	**	Concrete surface with 4" gravel base Brown silty sand to 5 ft,
····						,		Brown sity saile to 5 it,
		-				1	•	
·····		<b>-</b> ;				,	·	
		5'					-	Brown clayey silt to 9 ft,
							_	
		]				-		1
						,	~	
					CW	٠, .	<	
B10-10'					SW.	,		Gray clayey silt, moist at 9 ft, wet at
		10'		***************************************	*	*****	٠	10 ft, soil/water interface. Gray clayey
		1				, <u></u>		silt to 15 ft.
	***************************************					-	,	Minor organic odor throughout. No
			Ì					petroleum detected by odor or sheen
***************************************		<b> </b>				~	٠,	testing.
		15'	ļ				_	Groundwater sample collected.
			-			We !		Required boring to 20 feet to collect
				***************************************		Samp	ع	sample.
			ĺ			- 1		
	***************************************		}			,		
						2.4		
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The excavation project was briefly described as follows:

Soil was excavated from the 9 foot wide by 28 foot long by 15 foot deep excavation by an excavation contractor and it was loaded and transported to an off-site Wilcox & Flegel location for either thermal treatment or temporary storage. Representative and confirmation soil samples were subsequently collected from locations at the bottom and sides of the excavation. Four soil samples and one water sample were collected by Charles A. Spear by taking representative soil samples from the backhoe bucket. The soil samples were immediately transferred to a clean 8-ounce glass sample jar by using a clean sampling trowel, packed into the sample container until no headspace was present, and a teflon-lined lid was applied to the sample container. The container was labeled and placed into a plastic vapor-tight bag and preserved on ice until the soil and water samples were analyzed by the laboratory.

The soil sample test results for volatile gasoline constituents (BTEX) and total petroleum hydrocarbons, sample No.s 1 thru 4, were reported in parts per million (ppm). The results are outlined below:

SAMPLE #	SAMPLE LOCATION	BTEX	GAS TPH
1.0	Riser-1 Bottom	ND	10 ppm
2.0	Riser-2 Bottom	Benzene - ND Toluene - ND Ethylbenzene - 0.3 Total xylenes- 0.1	14 ppm
3.0	Riser -2 northwall	BTEX - ND	22 ppm
4.0	Riser - 2 southwall	BTEX - ND	43 ppm
5.0	Water	Benzene022 Toluene - ND Ethylbenzene211 Total xylenes10	

A single soil sample, sample No. 3, was also analyzed for the presence of total lead and the analytical test result was negative for lead. This soil sample was taken from an area of soil where leaded gasoline may have been present. Since the total lead contaminant level was determined to be less than 100 parts per million it was not necessary to analyze the soil sample for extractable lead by Total Characteristic Leaching procedure (TCLP).

### Page 3 of 3

Based on the analytical test results the analytical findings indicate that the most-contaminated soil has been removed from the subject excavation. Soil samples collected from the bottom and sides of the subject excavation indicate that both the vertical and horizontal extents of the contamination have been delineated according to established acceptable clean-up levels for TPH.

The elevated TPH test results from water collected in the bottom of the excavation indicated a collection of contaminants that have leached from adjoining soils into the water that was present in small quantities at the bottom of the excavation. This water sample, sample No. 5, was not a representative sample of groundwater in the excavation.

In our opinion, based on the analytical test results, the limited excavation episode was effective and soils contaminated with TPH or BTEX in levels exceeding clean-up levels were removed from the excavation. If there are any questions feel free to call me at 1-503-644-8526.

Respectfully,

Charles Arthur Specer

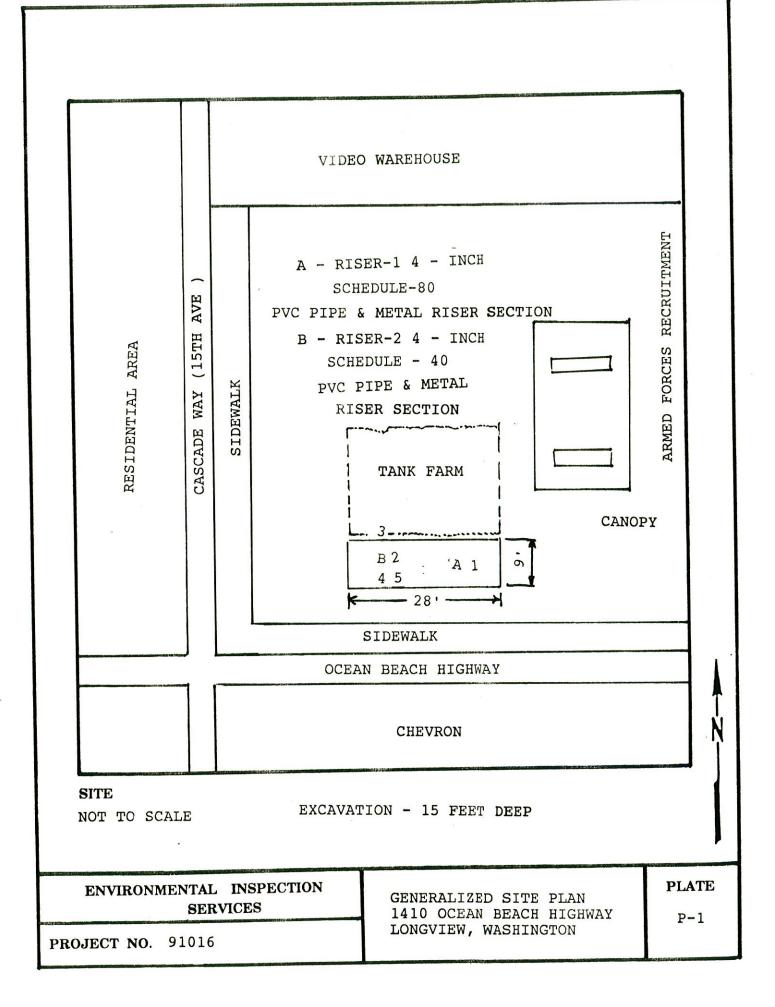
Director of Professional Services

Environmental Inspection Services



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

RELINQUISHED BY: RECEIVED BY: SPECIAL INSTRUCTIONS/COMMENTS:	91 — 11:50 /2   Cincludes All Rav	15/17 5:00 CWT/ENC 1	South 15 Sing South	- Both with 10/18 31.00 \\ 1 1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- Roser & protein 10/8 213cm Soic 1	- Keer 1 Bollow 1918 120 64 Silc 1	Services - (206) 577-7222, FAX (206) 636-1068  DATE 10 2 7 1 PAGE OF DATE 10 2 7 1 PAGE	PAGE  PAGE  REI  PAGE  REI  REI  REI  REI  REI  REI  REI  R		1   3   1   3   1   3   3   3   3   3	CC R Cyanide Cyanide DATE		TOTAL HCD Scan D	Page Dup Ms S Dup Ms Dup Ms Dup Ms S Du	as Report as AIR	PORTT I PORTT	NICO TO THE POST OF THE POST O	NSCON Results Full State	D REQUIR  A8 hr  A8 hr  A7 10-15 word  CAS 625	AL Report FA POUNI	WANTE THAT I SEE THE SECOND SE	CST   CST	Time RECI		CONTROL OF THE CONTRO	[호텔   그는 전   스틸	PROJECT COMPANY COMPANY SAMPLER COMPANY COMPAN
Date/Time Requested Report Date	2/1/5/ - 11:50/2 (includes All Rew Data)	Signature  RECEIVED BY:  TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  Signature  Signature  Signature  Signature  Printed Name  Provide Verbal Preliminary Results  Provide Verbal Preliminary Results  Condition	Signature  RECEIVED BY:  TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  Signature  Signature  Signature  Signature  Printed Name  Provide Verbal Preliminary Results  RECEIVED BY:  TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS  INVOICE INFORMATION:  Shipping VI  Shipping 8:  Condition  Co	RELINQUISHED BY:  RECEIVED BY:  RECEIVED BY:  RECEIVED BY:  RECEIVED BY:  RECEIVED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS:  REPORT REQUIREMENTS  INVOICE INFORMATION:  Signature  Signature  Signature  Signature  Printed Name  Printed Name  Printed Name  Condition— Conditi	- Beth Cart 10/8 3:00 5010 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- Relinquished By:  RECINQUISHED BY:  RECEIVED BY:  REPORT RECOURSEMENTS:  RECEIVED AND AND AND AND AND AND AND AND AND AN	CHON PLANE STATE TIME LAB SAMPLE STATE TIME LAB SAMPLE STATE TO SAMPLE STATE SAMPLE SAMPLE STATE SAMPLE SAM						П	Report w Data)	/alidation les All Ra	III. Data \ (includ	T	uy Results	X Prelimina	rovide FA				1	130/4		(F)
51 — 11:30:19  Provide FAX Preliminary Results — III. Data Validation Report (includes All Raw Data)  Data/Time Requested Report Date — IV CI P Data/Analy Report Lab	Firm Double EAV Deliminary Delimi	RELINQUISHED BY: TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  Signature Shipping #: Shapping #: Shipping	RECEIVED BY:  REPORT REQUIREMENTS:  REPORT REQUIREMENTS  REPORT REQUIREMENTS  II. Report (includes DUPMS, Bill to:  Shipping #:  Shippin	TURNAROUNSHED BY:  RECEIVED BY	- Rethriciant 10/8 3:00 SCIC I V SCIC I STANDOUSHED BY:  RELINQUISHED BY:  RECEIVED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS:  REPORT REQUIREMENTS INVOICE INFORMATION:  Singular Scicolog V Sci	- Received by: - Rece	CONDUCTOR CONTROLLED BY:  TURNACOUND RECOUREMENTS:  RECEIVED BY:  TURNACOUND RECOUREMENTS:  RECEIVED BY:  TURNACOUND RECOUREMENTS:  TURNACOUND RECOU	notion:	C _y					ned, may to pies)	as requi	MSD.	द्ध	nary Resu	rbal Prelimi	rovide Ve	7		d Name	1	De Broke	- 1	Pinned N
Printed Name   Provide Verbal Preliminary Results   MSD, as required, may be charged as samples)   Control of the provide Verbal Preliminary Results   MSD, as required, may be charged as samples)   Control of the provide Verbal Preliminary Results   MSD, as required, may be charged as samples)   Control of the preliminary Results   MSD, as required, may be charged as samples)   Control of the preliminary Results	Printed Name  Printed Name  Provide Verbal Preliminary Results	ELINQUISHED BY: RECEIVED BY: TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:	ELINQUISHED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS:  REPORT REQUIREMENTS  INVOICE INFORMATION:  P.O. #  Shipping VI	TOWNS LIFE 10/19 5:00 CUATERS I UNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  SHOWING VI	RELINQUISHED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  SHOON VI	- Result Control (1) 1	CONTRACTOR SUCCESSION	pping #:	Ship			e.		, DUP,MS	t (include:	II. Repor		king days)	-10-15 wor	andard (	<u>\</u>	3	tiure	Signa	sec.	15. V Sol	Signatur
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Signature  Signature  Signature  Signature  Signature  A br 5 day	Signature		19(7) 2:00 CW1/EKC 1	- Crandwish 10/19 5:00 Lu4764 1	- Perthinate 10/8 300 Sov 1 0 0	- Rest 2 porten jols 212cm Scic 1 U U - Land Company 10/8 3100 Scic 1 U U U - Switch War 10/9 5:00 Scic 1 U U U U U U U U U U U U U U U U U U	CHONGE CONTROL SACRES  SOUTH CONTROL SACRES  THE STATE TIME ID SAMPLE ID SACRES TO SAC	SAMPLE RECEIPT:	est alound	DRMATION:	CE NE	INVO		EMENTS	REQUIR	PORT		EMENT	REQUIR	ROUN	TURN	IVED BY:	REC	-	ED BY:	RELINQUISHE	5
RELINQUISHED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS: REPORT REQUIREMENTS INVOICE INFORMATION:  Signature  Signature  Signature  Signature  Signature  Printed Name  Provide FAX Preliminary Results  Firm  Provide FAX Preliminary Results  Provide FAX Preliminary Results  Provide SAX Preliminary Results  Requested Report Date  Provide FAX Preliminary Results  Requested Report Date  Provide FAX Preliminary Results  Requested Report Date  Requested Report D	RELINQUISHED BY:  RECEIVED BY:  TURNAROUND REQUIREMENTS:  REPORT R		19(7) 2:00 CWH/ERC 1	- Grandush 10/19 500 LUATER 1	- Rephrent 10/18 3100 Serv 1 V	- Roser 2 profess 10/8 213cm Sc1C 1 U  - Roser 2 profess 10/8 213cm Sc1C 1 U  - Roser 2 profess 10/8 213cm Sc1C 1 U  - South War 10/8 5:00 Sc1C 1 U  - Coamdwish 10/9 5:00 CUATESC 1 U	CHARLES AND STATE TIME LAB MATTER HOUSE BE SHOWN IN THE STATE OF CONTAINERS AND STATE STATE OF STATE S																				
FRESH   Septem   C	- RELINQUISHED BY:  RECEIVED B	- Posser 1 Bollow 1918 100 PM Seric 1  - Roser 2 per ten 1918 21300 Seric 1  - Roser 2 per ten 1918 21300 Seric 1  - South with 1918 5:00 Seric 1  - South with 1918 5:00 Seric 1	- Posser 1 Bollow 1978 100 PM Seric 1  - Posser 2 porter 1978 213000 Seric 1  - Posth Count 10/18 31000 Seric 1  V	- Reser 3 portem 10/3 213cm Soic 1	- Keer 1 Bollow 10/18 120 64 Seil 11		Charles Social this form whome entresses to the social to	NO PORT		AND MOS CO.	Cyanide	7743121	Tap	TANOSO DIA	TPHGas/87	Total Petrols	Perbox	GCANS G24	Base/Nou/Ac	NUMBER (	SAMPLE MATRIX	LAB I	-15	110	10	RSSIGNATURE SAMPLE I.D.	SAMPLE
PREDISSENATURE WOLLEY A SAMPLE  SAMPLE  INME  I.B.  SAMPLE  I.D.  I.M.  I.D.  I.M.  I.D.	PREDISSEMILIPE CHICAGO THE TIME LAB SAMPLE SAMPLE SAMPLE THE LAB SAMPLE THE TIME LAB SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE THE SAMPLE SAMP	PREBSSIGNATURE CHECKELL CL. Spending Sample SAMPLE LAB	PLERS SIGNATURE WELLEL LAB SAMPLE I.D. MATRIX NO BELLEVILLE DI SAMPLE II.D. MATRIX NO BELLEVILLE DI SAMPLE III.D. MATRIX NO BELLEVILLE DI SAMPLE III.D. MATRIX NO BELLEVILLE DI SAMPLE III.D. MATRIX NO BELLEVILLE DI SAMPLE III.D. SAMPLE III.	PLERS SIGNATURE WILLELL (F. Sp. ).  SAMPLE LAB SAMPLE NO SERVICE STATE OF SERVICE SAMPLE NO SERVICE SE	MPLERSSIGNATURE CHICLEL CL. See I.D. SAMPLE SAMPLE I.D. MATRIX BERGERS SECTION OF SECTIO	DATE TIME LAB MATRIX  DATE TIME I.D. MATRIX	Charles Specy # ANALYSIS REQUESTED	i cox		SOL POL F. B	dissolved)		ocarbon scan	X 5008015/80	Oregon A	86 0000	Somatic Vol.	8270 1Cs	d Organ	OF CONTAINE	526	HONE 6.47-8			nounted Speri	ENVIVO	C/C.
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### Analytical Report

- Clent	Date Received:	Date Received: / /		
Project:		Date Analyzed:	10 1251 9	
Sample Matrix:SC	1/6	Work Order #:	916104	
	TOTAL	LeAD		
	(Meth	od Title)	180	
	EPA MET	140D 7420	29	
	(Meth	od Na,)		
	ms	Kg		
	ט	nits)		
	DRY	nt Basis		
			19	
		8		
0	1-1-0-1-		_	
Sample Name	Lab Code	MRL	Result	
#3 RISER 2 WESH WHI	6104-3	3	40	
		1/2	<u>ND</u>	
METHOD BLANK	mo	<u></u>	ND -	
		All And Andrews		
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-	-	************	-	
And the second s		Name and Administration of the Control of the Contr		
	in this was a six or other than	Management of the State of the	***************************************	

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit

Approved by 2 2 Date 10/25/91 Filename: GEN1.8/05-10-91

Analytical Report

Alaska: Use VPH Others: Use TPH

Client:
Project:
Sample Matrix: Soil

Data Received:

Date Extracted:

10/22/91

Work Order #:

K91-6104

# PRELIMINARY

BTEX and TPH/VPH as Gasoline

These results have not gone
EPA Methods 5030/8020/Modified 8015through final Q A review.

mg/Kg (ppm)

Dry Wt. Basis

Sample Name:	#1-Riser 1 Battom	其2-lixx2Botton	#3 Riser 2	northwell.
Lab Code:	K 6104-1	->2	<u>&gt;3</u>	· 7
Date Analyzed:	10-13-91	10-23-91	10-23-91	
Analyte MRL				
Benzene 0.05	ND	ND .	ND	, , ³ - e
Toluene 0.05	מא	ND .	ND	
Ethylbenzene 0.05	ND	NB0.32	ND	
Total Xylenes 0.05	ND	11.084	ND	
TPH/VPH as Gasoline 1	N8 10	AHD 14.	NDLE	

TPH Total Petroleum Hydrocarbons
VPH Volatile Petroleum Hydrocarbons
MRI. Method Reporting Limit

ND None Detected at or above the method reporting limit

pls.

Amment and bee	D-	Gianamar.	8020A.S/08-16-91
Approved by	Da	fa Lucitatila:	0070W-2/00-10-31
		The state of the s	

### Analytical Report

Alaska: Use VPH Others: Use TPH

29.3	22.22			//////////////////////////////////////	\$0\$6.5000 p.m. 100\$
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		10.00			5.
	**************************************	***	**************************************	****	\$200 PS TENED TO PS 100 PS
PROJECT			William Com		Contract of the
Marie Marie	~	***************************************	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER, THE OW	-	***********
	100 750 100	3.11	The state of the s		

Date Extracted:

10/22/91

Sample Matrix: Soil

Work Order #:

K91-6104

# PRELIMINARY

These results have not gone through final QA review.

BTEX and TPH/VPH as Gasoline EPA Methods 5030/8020/Me<del>dified 8015</del> 6-kmg/Kg (ppm)

Dry W+ Basis

Sample Name:		#4 Riser 2 Southinds	MetholBlank	
Lab Code:		K6104-4	· >MB	
Date Analyzed:		10-23-91	10-22-91	1 1 1
Analyte Benzene	MRL 0.05	ND	ND	ND
Toluene	0.05	ND	ND	ND
Ethylbenzene	0.05	ND	ND	ND
Total Xylenes	0.05	ND	ND	ND
TPH/VPH as Gasoline	1	NP 43	ND	ND

TPH Total Petroleum Hydrocarbons

VPH Volatile Petroleum Hydrocarbons

MRL Method Reporting Limit

ND None Detected at or above the method reporting limit

Ms

Approved by	Date	Filename:	8020A.S/08-16-91

Analytical Report

Alaska: Use VPH Others: Use TPH

Client:	24.
Project:	3

Sample Matrix: Water

# PRELIMINARY

There results have not gone to ough timal QA review.

BTEX and TPH/VPH as Gasoline
EPA Methods 5030/8020/Modified 8015/California-BHS-UUFT Method

pg/L (ppb)

Sample Name: Lab Code: Date Analyzed:		# 56c-roundwated K 6104-5 10-23-91	Method Blanks MB 10-13-91		
Analyte	MRL				
Benzene	0.5	NO 22	ND	ND	
Toluene	1	מא	NO	ND	
Ethylbenzene	1	NET 211	NO	ND	
Total Xylenes	1	NO 108	ND	ND	
TPH/VPH as Gasoline	50	NB 12.800	ND	ND	

TPH Total Petroleum Hydrocarbons

VPH Voistle Petroleum Hydrocarbons

MRL Method Reporting Limit

NO None Detected at or above the method

None Detected at or above the method reporting limit

Approved by _____Date ____Filename: 8020D.W/08-16-91

