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FEBRUARY 2015 PROGRESS REPORT

WHIDBEY MARINE & AUTO SUPPLY SITE FREELAND, WASHINGTON

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ACRONYMS AND ABBREVIATIONS

BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, L.L.C.
GRO	total petroleum hydrocarbons as gasoline-range organics
LNAPL	light nonaqueous-phase liquid
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
ORO	total petroleum hydrocarbons as oil-range organics
Site	the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed MTCA cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility



EXECUTIVE SUMMARY

Farallon Consulting, L.L.C. (Farallon) has prepared this progress report to document the results of groundwater monitoring and sampling activities conducted in February 2015 at the Whidbey Marine & Auto Supply Site in Freeland, Washington. Periodic monitoring activities conducted from August 2014 through March 25, 2015 also are discussed, including measurement of depth to groundwater in selected monitoring wells, and measurement of the thickness of light nonaqueous-phase liquid in monitoring well MW-9, and light nonaqueous-phase liquid removal activities.

The Site is defined as the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility. Groundwater monitoring has been ongoing since December 2005 to assess the nature and extent of a release of unleaded gasoline at the Site.

Two groundwater zones are present at the Site: the Perched Groundwater Zone at approximately 55 feet below ground surface; and the Sea Level Aquifer at approximately 100 to 105 feet below ground surface. The groundwater monitoring conducted at the Site on February 10, 2015 included measuring the depth to groundwater and collecting groundwater samples from six Sea Level Aquifer monitoring wells. The groundwater flow direction in the Sea Level Aquifer determined from the February 2015 water level measurements was southeast, consistent with previous sampling events.

None of the constituents analyzed for were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected from monitoring wells MW-11, MW-14, MW-15, or MW-16.

Total petroleum hydrocarbons as gasoline-range organics (GRO) and as diesel-range organics, and toluene, ethylbenzene, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from Sea Level Aquifer monitoring wells MW-12 and MW-13. Benzene was detected at a concentration exceeding the MTCA Method A cleanup level in the sample collected from monitoring well MW-13. Total petroleum hydrocarbons as oil-range organics (ORO) was detected at a concentration exceeding the MTCA Method A cleanup level in the sample collected from monitoring well MW-13.

The highest concentrations of GRO, benzene, toluene, ethylbenzene, and xylenes over the past year have been detected in groundwater samples collected from Sea Level Aquifer monitoring well MW-13. None of the constituents analyzed for in the groundwater sample collected from monitoring well MW-11 was detected at concentrations exceeding the laboratory reporting limits for the first time since the well was installed in April 2009. In four rounds of sampling conducted since December 2013, none of constituents analyzed for has been detected in groundwater samples collected from monitoring wells MW-15 or MW16, the two monitoring



wells farthest down-gradient in the Sea Level Aquifer. During the July 2014 monitoring event, GRO and toluene were detected in the samples collected from MW-14, but at concentrations well below MTCA cleanup levels. The only constituent detected in the groundwater samples collected from monitoring well MW-14 during the February 2015 monitoring event was toluene, which was detected at a concentration only slightly exceeding the laboratory reporting limit in the duplicate quality assurance/quality control sample.

Continued periodic monitoring of groundwater conditions is recommended to assess the distribution of contaminants of concern. Additional details of the recent groundwater monitoring and sampling activities at the Site are provided herein.

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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this progress report to document the status of the cleanup action for the release of gasoline from the underground storage tank system at the former Whidbey Marine & Auto Supply facility at 1689 Main Street in Freeland, Washington (Figure 1). The Site is defined as the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility. The cleanup action at the Site is being conducted under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program and in accordance with the provisions of MTCA, as established in Chapter 173-340 of the Washington Administrative Code. The Site has been assigned Toxics Cleanup Program Identification No. NW1529 by Ecology.

This progress report presents the results of Site-wide groundwater monitoring and sampling activities conducted in February 2015. The work was conducted in accordance with the technical memorandum regarding Scope of Work for 2015 Cleanup Action Activities, Whidbey Marine & Auto Supply Site, Freeland Washington dated January 14, 2015, prepared by Farallon. Periodic monitoring activities conducted from August 2014 through March 25, 2015 also are discussed, including measurement of depth to groundwater in selected monitoring wells, measurement of the thickness of light nonaqueous-phase liquid (LNAPL) in monitoring well MW-9, and LNAPL-removal activities.

The report is organized as follows:

- Section 2 describes the February 2015 groundwater monitoring and sampling activities and results, and periodic LNAPL monitoring and removal activities conducted since the previous sampling event in July 2014; and
- Section 3 presents a summary and discussion of the groundwater monitoring activities, and recommendations for additional work.

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2.0 GROUNDWATER MONITORING AND SAMPLING

The groundwater monitoring conducted at the Site on February 10, 2015 included measuring the depth to groundwater and collecting groundwater samples from Sea Level Aquifer monitoring wells MW-9 through MW-16 (Figure 2). Monitoring well MW-9 was not sampled during the February 2015 monitoring event due to the presence of LNAPL in the well.

The work was conducted in accordance with the technical memorandum regarding Scope of Work for 2015 Cleanup Action Activities, Whidbey Marine & Auto Supply Site, Freeland Washington dated January 14, 2015, prepared by Farallon. Details of the field activities and the results for the February 2015 monitoring and sampling event are presented below.

2.1 FIELD METHODS

Prior to sampling, Farallon measured the depth to groundwater in each Sea Level Aquifer monitoring well using an electronic water-level indicator. The monitoring wells were opened, and the water levels were allowed to equilibrate before measurement. The groundwater level in each monitoring well was measured to the surveyed reference point on the top of the well casing to derive the groundwater elevation at each location. An oil-water interface probe was used to measure the depth to water and the potential thickness of LNAPL in monitoring wells MW-9, MW-12, and MW-13. The oil-water interface probe was not used in the other monitoring wells at the Site, to minimize the potential for cross-contamination of groundwater.

During groundwater purging, field measurements were collected for pH, temperature, specific conductivity, dissolved oxygen, and oxidation-reduction potential using a Horriba YSI Model MPS 556 water-quality analyzer equipped with a flow-through cell. Groundwater was purged at a flow rate of approximately 200 milliliters per minute, where feasible. Groundwater samples were collected after the pH, temperature, and specific conductivity parameters stabilized. Stabilization was defined for pH as a change of ± 0.1 pH unit between readings for three consecutive measurements, and for temperature and specific conductivity as a relative percent difference of less than 3 percent. The groundwater samples were collected by pumping groundwater directly from each well through dedicated polyethylene tubing into laboratory-prepared containers. The groundwater samples were labeled, placed on ice, and transported in accordance with chain-of-custody protocols to ALS Environmental laboratories in Everett, Washington for analysis.

2.2 ANALYTICAL METHODS

The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline-range organics (GRO) by Northwest Method NWTPH-Gx, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency Method 8021B. The groundwater samples collected from monitoring wells MW-12 and MW-13 were analyzed also for total petroleum hydrocarbons as diesel-range organics (DRO) and as oil-range organics (ORO) by Northwest Method NWTPH-Dx.

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2.3 GROUNDWATER MONITORING RESULTS

Table 1 presents a summary of the groundwater elevation data for the Site. Table 2 presents groundwater analytical results for DRO, ORO, GRO, and BTEX for the February 2015 and previous monitoring events, along with a comparison to corresponding MTCA Method A cleanup levels. A copy of the laboratory analytical report for the February 2015 groundwater monitoring event is provided in Appendix A.

2.3.1 Groundwater Elevation

Groundwater elevations measured in the Sea Level Aquifer at the Site on February 10, 2015 ranged from 12.32 feet above mean sea level in monitoring well MW-10 to 11.84 feet above mean sea level in monitoring well MW-16 (Table 1). The corresponding depths to groundwater measured below the top of the well casings were 101.13 and 105.08 feet for monitoring wells MW-10 and MW-16, respectively. Groundwater elevation contours for the Sea Level Aquifer based on the water levels measured on February 10, 2015 are shown on Figure 3. The general groundwater flow direction in the Sea Level Aquifer at the Site was southeast based on the February 10, 2015 measurements, with a gradient of 0.001 foot per foot (Figure 3).

The groundwater elevation measured for monitoring well MW-13 during the February 2015 monitoring event appeared anomalously low compared to adjacent monitoring wells. As part of an LNAPL monitoring event conducted on March 25, 2015, Farallon measured water levels in the Sea Level Aquifer monitoring wells to reassess the groundwater contours determined from the February 2015 water level data. The resulting groundwater elevation contour map for March 25, 2015 provided on Figure 4 did not show the same anomalously low water level observed in monitoring well MW-13 during the February 2015 monitoring event.

2.3.2 Analytical Results

The groundwater analytical results for the Sea Level Aquifer for the February 2015 monitoring event are presented in Table 2 and on Figure 3. The results are summarized below.

- **Monitoring wells MW-11, MW-15, and MW-16**: None of the constituents analyzed for were detected at concentrations exceeding laboratory reporting limits in the groundwater samples collected.
- Monitoring well MW-12: DRO, ORO, GRO, toluene, ethylbenzene, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. The laboratory reporting limit for benzene exceeded the MTCA Method A cleanup level. The laboratory report for the February 2015 monitoring event noted that the chromatogram indicated that the sample likely contained lightly weathered gasoline, weathered diesel, and lube oil. The laboratory report also noted that the diesel-range result was biased high due to overlap from the gasoline range, and the oil-range result was biased high due to overlap from the diesel range.



- **Monitoring well MW-13**: DRO, GRO, and all of the BTEX constituents were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. The laboratory report for the February 2015 monitoring event noted that the chromatogram indicated that the sample likely contained lightly weathered gasoline and weathered diesel, and that the diesel-range result was biased high due to overlap from the gasoline range.
- Monitoring well MW-14: None of the constituents analyzed for were detected at concentrations exceeding the laboratory reporting limit in the groundwater samples collected. A duplicate quality assurance/quality control sample was collected from monitoring well MW-14; toluene was detected at a concentration only slightly exceeding the laboratory reporting limit.

2.3.3 LNAPL Monitoring

Farallon initiated LNAPL monitoring and removal activities following the discovery of LNAPL in monitoring well MW-9 in September 2013. LNAPL removal and monitoring was conducted at monitoring well MW-9 on October 24, 2014. LNAPL removal was accomplished by evacuating LNAPL by bailing, followed by placing hydrophobic petroleum-sorbent socks in the well. LNAPL thickness in monitoring well MW-9 was measured at 0.25 foot during the October 2014 monitoring event. After approximately 2 gallons of water and LNAPL was bailed, approximately 0.03 foot of LNAPL was measured in the monitoring well.

An oil-water interface probe was used to monitor for the presence of LNAPL in monitoring wells MW-9, MW-12, and MW-13 during the February 2015 monitoring event. LNAPL was not detected in the selected wells, with the exception of monitoring well MW-9.

LNAPL thickness in monitoring well MW-9 was measured at 0.01 foot during the February 2015 monitoring event. Several bailers full of water was removed from monitoring well MW-9 during the February 2015 monitoring event, but no visible LNAPL was observed. New hydrophobic petroleum-sorbent socks were placed into the monitoring wells after completion of the bailing and monitoring activities. The socks typically are changed at the next monitoring event. The removed water was placed into a drum in the fenced and locked remediation compound area behind the former Whidbey Marine & Auto Supply facility.

Monitoring wells MW-9, MW-12, and MW-13 were gauged for the presence of LNAPL on March 25, 2015. LNAPL was not detected at these wells, with the exception of monitoring well MW-9. LNAPL thickness in monitoring well MW-9 was measured at 0.02 foot during the March 25, 2015 monitoring event.



3.0 SUMMARY AND DISCUSSION

This section presents a summary of analytical results and a general discussion of comparative trends in contaminant concentrations for monitoring wells sampled during the February 2015 monitoring event. Also included are recommendations for additional work at the Site.

3.1 GROUNDWATER CONCENTRATION TRENDS—SEA LEVEL AQUIFER MONITORING WELLS

3.1.1 Monitoring Well MW-9

Monitoring well MW-9 was not sampled during the February 2015 monitoring event due to the presence of LNAPL. LNAPL thickness has varied from 0.98 foot in September 2012 to less than 0.01 foot in June and July 2013. LNAPL thickness measured during the February 2015 monitoring event was 0.01 foot. The measured LNAPL thickness likely does not represent true LNAPL thickness in the aquifer due to the use of sorbent socks in the monitoring well and the tendency of LNAPL to preferentially accumulate in monitoring wells as a result of groundwater level fluctuations and the higher permeability in the well sand pack relative to aquifer materials.

3.1.2 Monitoring Well MW-10

None of the constituents analyzed for has been detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-10 since the well was installed in 2009.

3.1.3 Monitoring Well MW-11

The maximum concentrations of GRO and BTEX constituents in monitoring well MW-11 were detected in May 2011 following a steady rise in concentrations since the well was installed in early 2009. GRO and BTEX constituent concentrations detected in groundwater samples collected from this well during the December 2013 monitoring event were greatly reduced relative to those from previous events. Concentrations of each of these constituents declined to less than the laboratory reporting limits during the February 2015 monitoring event.

3.1.4 Monitoring Well MW-12

DRO, ORO, GRO, toluene, ethylbenzene, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels during the February 2015 monitoring event. In addition, the detection limit for benzene exceeded the MTCA Method A cleanup level during this monitoring event. DRO, ORO, GRO, and BTEX constituent concentrations detected in groundwater samples collected from monitoring well MW-12 during the February 2015 monitoring event increased relative to those from the past several years. Both DRO and ORO were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring the February 2015 monitoring event increased relative to those from the past several years. Both DRO and ORO were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-12 during the February 2015 monitoring event.



3.1.5 Monitoring Well MW-13

DRO, GRO, and all of the BTEX constituents were detected at concentrations exceeding MTCA Method A cleanup levels during the February 2015 monitoring event. DRO, GRO, toluene, ethylbenzene, and xylenes concentrations detected in groundwater samples collected from monitoring well MW-13 during the February 2015 monitoring event increased relative to those detected since the well was installed in December 2013.

3.1.6 Monitoring Well MW-14

GRO and toluene were detected at concentrations exceeding the laboratory reporting limits, but less than MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-14 during the July 2014 monitoring event. None of the constituents analyzed for was detected at concentrations exceeding the laboratory reporting limit in the groundwater samples collected during the February 2015 monitoring event. A duplicate quality assurance/quality control sample was collected from monitoring well MW-14; toluene was detected at a concentration only slightly exceeding the laboratory reporting limit, but nearly three orders of magnitude less than the MTCA Method A cleanup level.

3.1.7 Monitoring Wells MW-15 and MW-16

None of the constituents analyzed for has been detected at concentrations exceeding the laboratory reporting limits in groundwater samples collected from monitoring wells MW-15 or MW-16 since the wells were installed in December 2013.

3.2 LNAPL MONITORING

The LNAPL thickness measured in monitoring well MW-9 in February and March 2015 was 0.01 and 0.02 foot, respectively. Farallon previously recommended installation of a 2-inchdiameter passive LNAPL skimmer pump for more-efficient recovery of LNAPL from monitoring well MW-9. However, the thickness of LNAPL measured in monitoring well MW-9 in February and March 2015 is at or below the minimum initial LNAPL thickness of 0.25 inch recommended for installation of the skimmer pumps researched.

3.3 RECOMMENDATIONS

Monitoring and sampling of select Perched Groundwater Zone and Sea Level Aquifer monitoring wells is recommended for July 2015. The monitoring wells from which groundwater samples will be collected for chemical analyses during the July 2015 monitoring event include Sea Level Aquifer monitoring wells MW-11 through MW-16 and Perched Groundwater Zone monitoring wells MW-2 (if feasible), MW-4, MW-6, and MW-8. Farallon recommends attempting to sample Perched Groundwater Zone monitoring well MW-2 with a small-diameter (0.75-inch) bailer during the July 2015 monitoring event to attempt to pass by the tubing blockage in the well. None of the constituents analyzed for has been detected at concentrations exceeding laboratory reporting limits in groundwater samples collected from monitoring well MW-1 since September 2008, and none has ever been detected in groundwater samples collected



from monitoring well MW-3 since its installation in December 2005. Monitoring well MW-7 has rarely had a sufficient volume of water for collection of samples. Therefore, monitoring wells MW-1, MW-3, and MW-7 will be monitored for water level measurement only during the July 2015 monitoring event. Monitoring well MW-5 has been dry since installation.

Farallon recommends continued monitoring of LNAPL thickness in monitoring well MW-9, and removal if a sufficient thickness is encountered. If a sustained thickness of LNAPL greater than the minimum initial LNAPL thickness of 0.25 inch recommended for installation of a skimmer pump is encountered for several consecutive monitoring events, a passive skimmer pump will be installed as previously recommended for more-efficient recovery of LNAPL from monitoring well MW-9.

FIGURES

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Farallon PN: 454-001





LEGEND

- PERCHED ZONE MONITORING WELL
- SEA LEVEL AQUIFER MONITORING WELL



Washington Issaquah Bellingham Seattle	FIGURE 2
Oregon Portland Bend FARALLON CONSULTING Oakland Sacramento Irvine	AERIAL PHOTOGRAPH SHOWING MONITORING WELL LOCATIONS WHIDBEY MARINE & AUTO SUPPLY SITE FREELAND, WASHINGTON
Quality Service for Environmental Solutions farallonconsulting.com	FARALLON PN: 454-001
Drawn By: DEW Checked By: PG	Date: 11/7/2014 Disk Reference: AERIAL







TABLES

FEBRUARY 2015 PROGRESS REPORT Whidbey Marine & Auto Supply Site Freeland, Washington

Farallon PN: 454-001

			Top of Well			
			Casing	Depth to		Groundwater
Well	Groundwater		Elevation	LNAPL	Depth to	Elevation
Identification	Zone	Date	(feet) ¹	$(\mathbf{feet})^2$	Water (feet) ²	(feet) ^{1,3}
		12/5/05	, , , , , , , , , , , , , , , , , , ,	NM	52.54	64.10
		6/7/06		NM	52.67	63.97
		10/9/06		NM	51.93	64.71
		1/9/07		NM	51.80	64.84
		3/27/07		NM	51.50	65.14
		6/19/07		NM	51.66	64.98
		12/7/07		NM	51.98	64.66
		4/17/08		NM	51.10	65.54
		6/30/08		NM	51.24	65.40
		8/14/08		NM	51.36	65.28
	Danahad	9/9/08		NM	51.45	65.19
MW-1 ⁴	Zama	10/21/08	116.64	NM	51.63	65.01
	Zone	1/15/09		NM	51.63	65.01
		5/12/09		NM	51.29	65.35
		8/5/09		NM	51.46	65.18
		2/10/10		NM	51.13	65.51
		10/21/10		NM	51.28	65.36
		5/18/11		NM	50.20	66.44
		11/17/11		NM	49.98	66.66
		5/15/12		NM	51.05	65.59
		12/18/13		NM	51.16	65.48
		3/27/14		NM	50.88	65.76
		7/28/14		NM	50.85	65.79
		12/5/05		NM	55.06	62.43
		6/7/06		NM	55.56	61.93
		10/9/06		NM	54.69	62.80
		1/9/07		NM	54.60	62.89
		3/27/07		NM	54.44	63.05
		6/19/07		NM	54.50	62.99
		12/7/07		NM	54.81	62.68
		4/17/08		NM	54.06	63.43
		6/30/08		NM	54.12	63.37
		8/14/08		NM	54.21	63.28
		9/9/08		NM	54.26	63.23
MW-2	Perched	10/21/08	117 49	NM	54.44	63.05
10100 2	Zone	1/15/09	11/.12	NM	54.40	63.09
		5/12/09		NM	54.08	63.41
		8/5/09		NM	54.19	63.30
		2/10/10		NM	53.92	63.57
		10/21/10		NM	54.11	63.38
		5/18/11		NM	53.22	64.27
		11/17/11		NM	53.80	63.69
		5/15/12		NM	53.75	63.74
		7/22/13		ND	53.64	63.85
		12/18/13		NM	53.69	63.80
		3/27/14		NM	53.68	63.81
		7/28/14		NM	53.53	63.96

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
		12/5/05	()	NM	53.48	63.99
		6/7/06		NM	53.96	63.51
		10/9/06		NM	53.26	64.21
		1/9/07		NM	53.02	64.45
		3/27/07		NM	52.82	64.65
		6/19/07		NM	52.70	64.77
		12/7/07		NM	53.33	64.14
		4/17/08		NM	52.50	64.97
		6/30/08		NM	52.66	64.81
		8/14/08		NM	52.76	64.71
	Dorohod	9/9/08		NM	52.84	64.63
MW-3	Zono	10/21/08	117.47	NM	52.99	64.48
	Zone	1/15/09		NM	53.01	64.46
		5/12/09		NM	52.64	64.83
		8/5/09		NM	52.79	64.68
		2/10/10		NM	52.50	64.97
		10/21/10		NM	52.63	64.84
		5/18/11		NM	51.63	65.84
		11/17/11		NM	52.28	65.19
		5/15/12		NM	52.31	65.16
		12/18/13		NM	52.49	64.98
		3/27/14		NM	52.22	65.25
		7/28/14		NM	52.22	65.25
		3/27/07		NM	53.94	63.33
		6/19/07		NM	54.02	63.25
		12/7/07		NM	54.28	62.99
		4/17/08		NM	53.58	63.69
		6/30/08		NM	53.64	63.63
		8/14/08		NM	53.71	63.56
		9/9/08		NM	53.76	63.51
		10/21/08		NM	53.89	63.38
	Danahad	1/15/09		INM	53.88	63.39
MW-4	Zama	5/12/09	117.27	INM	53.50	63.77
	Zone	8/5/09			53.05	63.62
		2/10/10			53.44	63.60
		5/19/11			52.30	64.51
		<i>J</i> /10/11 11/17/11			53.78	63 00
		5/15/12			53 31	63.96
		7/22/13			53.14	64.13
		12/18/13		NM	53 39	63.88
		3/27/14		NM	53.10	64 17
		7/28/14		NM	53.11	64.16

Mall	Crossedantes		Top of Well Casing Elevation	Depth to	Depth to	Groundwater
vven Identification	Groundwater	Data	(feet) ¹	(feet) ²	Water $(feet)^2$	(foot) ^{1,3}
Identification	Zone	1/17/08	(leet)	(Ieet) NM	59.84	(leet) 56.72
		6/30/08		NM	60.07	56.12
		8/14/08		NM	60.26	56.30
		9/9/08		NM	60.35	56.21
		10/21/08		NM	60.47	56.09
		1/15/09		NM	60.50	56.05
		5/12/09		NM	60.34	56.22
	Perched	8/5/09		NM	60.49	56.07
MW-6	Zone	10/21/10	116.56	NM	59.45	57.11
		5/18/11		NM	57.76	58.80
		11/17/11		NM	57.75	58.81
		5/15/12		NM	57.10	59.46
		7/22/13		ND	57.68	58.88
		12/18/13		ND	57.90	58.66
		3/27/14		ND	57.86	58.70
		7/28/14		ND	57.74	58.82
		4/17/08		NM	56.98	59.84
		6/30/08		NM	57.42	59.40
		8/14/08		NM	57.87	58.95
		9/9/08		NM	58.25	58.57
		10/21/08		NM	58.34	58.48
		1/15/09		NM	DRY	DRY
		5/12/09		NM	57.43	59.39
	Perched	8/5/09		NM	58.32	58.50
MW-7	Zone	2/10/10	116.82	NM	58.24	58.58
	Zone	10/21/10		NM	58.30	58.52
		5/18/11		NM	58.05	58.77
		11/17/11		NM	58.72	58.10
		5/15/12		NM	58.73	58.09
		7/22/13		ND	58.24	58.58
		12/18/13		ND	58.22	58.60
		3/27/14		ND	58.25	58.57
		7/28/14		ND	57.59	59.23

Well	Groundwater	Data	Top of Well Casing Elevation	Depth to LNAPL	Depth to	Groundwater Elevation
Identification	Zone	Date 7/28/2014	(leet)	(leet)	valer (leet)	(leet)
		6/30/08		NM	55.23	61.89
		8/1//08		NM	55 33	61.09
		9/9/08	-	NM	55.36	61.87
		10/21/08		NM	55.30	61.76
		1/15/09		NM	55 37	61.86
		5/12/09		NM	55.09	62.14
	Perched	8/5/09		NM	55.21	62.02
MW-8	Zone	2/10/10	117.23	NM	54.93	62.30
		10/21/10		NM	55.08	62.15
		5/18/21		NM	54.47	62.76
		11/17/11	-	NM	54.83	62.40
		5/15/12		NM	54.83	62.40
		12/18/13		ND	54.87	62.36
		3/27/14		ND	54.78	62.45
		7/28/14		ND	54.64	62.59
		5/12/09		NM	103.54	11.25
		8/5/09		NM	103.85	10.94
		2/10/10		NM	103.79	11.00
		10/21/10		NM	103.77	11.02
		5/18/11		NM	103.12	11.67
		11/17/11		NM	NM	NM
		5/15/12		NM	103.05	11.74
		9/5/12		102.03	103.01	12.50
		11/8/12		102.15	102.97	12.43
		2/8/13		102.13	103.05	12.42
MW-9	Sea-Level	5/10/13	114 79	101.77	101.78	13.02
	Aquifer	6/11/13	111.72	101.67	101.67	13.12
		7/22/13		ND	101.76	13.03
		10/16/13		101.88	102.18	12.83
		11/20/13	-	101.74	102.23	12.92
		12/18/13	-	101.85	102.36	12.81
		2/20/14		102.10	103.02	12.45
		3/27/14		102.05	102.43	12.64
		7/28/14		102.15	102.50	12.55
		10/24/14		102.50	102.75	12.23
		2/10/15		102.70	102.71	12.09
		3/25/15		102.35	102.37	12.43

			Top of Well			
			Casing	Depth to		Groundwater
Well	Groundwater		Elevation	LNAPL	Depth to	Elevation
Identification	Zone	Date	(feet) ¹	$(\mathbf{feet})^2$	Water (feet) ²	(feet) ^{1,3}
Identification	Lonc	5/12/09	(itet)	NM	102.02	11.43
		8/5/09		NM	102.02	11.45
		2/10/10		NM	102.25	11.10
		10/21/10		NM	102.25	11.20
		5/18/11		NM	101.55	11.98
		11/17/11		NM	100.30	13.15
		5/15/12		NM	100.83	12.62
		9/5/12		ND	100.70	12.75
		11/8/12		ND	100.82	12.63
	a	2/8/13		ND	100.82	12.63
MW-10	Sea-Level	5/10/13	113.45	ND	100.29	13.16
IVI W -10	Aquifer	6/11/13		ND	100.21	13.24
		7/22/13		ND	100.30	13.15
		10/16/13		ND	100.48	12.97
		11/20/13		ND	100.36	13.09
		12/18/13		ND	100.56	12.89
		2/20/14		NM	100.74	12.71
		3/27/14		ND	100.67	12.78
		7/28/14		ND	100.75	12.70
		2/10/15		NM	101.13	12.32
		3/25/15		NM	100.89	12.56
		5/12/09		NM	102.82	11.42
		8/5/09		NM	103.09	11.15
		2/10/10		NM	103.09	11.15
		10/21/10		NM	102.82	11.42
		5/18/11		NM	102.31	11.93
		11/17/11		NM	NM	NM
		5/15/12		NM	101.64	12.60
		9/5/12		ND	101.54	12.70
		11/8/12		ND	101.66	12.58
	Sea-Level	2/8/13		ND	101.65	12.59
MW-11	Aquifer	5/10/13	114.24	ND	101.14	13.10
	riquitor	6/11/13		ND	101.06	13.18
		7/22/13		ND	101.41	12.83
		10/16/13		ND	101.31	12.93
		11/20/13		ND	101.20	13.04
		12/18/13		ND	101.31	12.93
		2/20/14		ND	101.62	12.62
		3/27/14		ND	101.50	12.74
		7/28/14		ND	101.59	12.65
		2/10/15		NM	101.99	12.25
		3/25/15		NM	101.70	12.54

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			Top of Well			
			Casing	Depth to		Groundwater
Well	Groundwater		Elevation	LNAPL	Depth to	Elevation
Identification	Zone	Date	(feet) ¹	$(\mathbf{feet})^2$	Water (feet) ²	(feet) ^{1,3}
		5/12/09		NM	103.96	10.27
		8/5/09		NM	103.24	10.99
		2/10/10		NM	103.36	10.87
		10/21/10		NM	102.90	11.33
		5/18/11		NM	103.37	10.86
		11/17/11		NM	NM	NM
		5/15/12		NM	101.69	12.54
		9/5/12		ND	101.60	12.63
		11/8/12		ND	101.72	12.51
	Sea-Level	2/8/13		ND	101.72	12.51
MW-12	Aquifer	5/10/13	114.23	ND	101.21	13.02
	Aquiter	6/11/13		ND	101.11	13.12
		7/22/13		ND	100.21	14.02
		10/16/13		ND	101.39	12.84
		11/20/13		ND	101.27	12.96
		12/18/13		ND	101.4	12.83
		2/20/14		ND	101.70	12.53
		3/27/14		ND	101.55	12.68
		7/28/14		ND	101.67	12.56
		2/10/15		ND	102.10	12.13
		3/25/15		ND	101.78	12.45
		12/18/13		ND	103.56	12.78
		2/20/14		ND	103.90	12.44
MW-13	Sea-Level	3/27/14	116.34	ND	103.75	12.59
	Aquifer	7/28/14		ND	103.84	12.50
		2/10/15		ND	104.35	11.99
		3/25/15		ND	103.97	12.37
		12/18/13		NM	103.61	12.61
		2/20/14		NM	103.73	12.49
MW-14	Sea-Level	3/27/14	116.22	NM	103.54	12.68
	Aquifer	7/28/14		NM	103.80	12.42
		2/10/15		NM	104.05	12.17
		3/25/15		NM	103.90	12.32
		12/18/13		NM	104.23	12.50
	G I 1	2/20/14		NM	104.45	12.28
MW-15	Sea-Level	3/2//14	116.73	NM	104.21	12.52
	Aquifer	2/10/15	-	NM	104.45	12.28
		2/10/15			104.91	11.82
1		3/25/15		NM	104.60	12.13

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
		12/18/13		NM	104.46	12.46
		2/20/14	116.02	NM	104.68	12.24
MW 16	Sea-Level	3/27/14		NM	104.40	12.52
IVI VV -10	Aquifer	7/28/14	110.92	NM	104.71	12.21
		2/10/15		NM	105.08	11.84
		3/25/15		NM	104.80	12.12

NOTES:

¹Feet above mean sea level, based on May 2008 survey data.

²Feet below top of well casing.

ND = not detectedNM = not measuredI NAPL = light populations to the second sec

³ Groundwater elevation at monitoring well MW-9 corrected as follows: (Casing Elevation - Depth to Water) + (LNAPL Thickness x LNAPL Specific Gravity) = Corrected Groundwater Elevation using a specific gravity for gasoline of 0.74.

⁴Top of well casing elevation adjusted using change in total depth measurements before and after change in well casing length following soil vapor extraction system installation.

LNAPL = light nonaqueous-phase liquid

Table 2 Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater Whidbey Marine & Auto Supply Site Freeland, Washington Farallon PN: 454-001

					Α	nalytical Res	ults (microg	rams per li	ter)	
Sample	Groundwater	Sample	Sample						Ethyl-	
Location	Zone	Identification	Date	DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	benzene ³	Xylenes ³
		MW1-120505	12/5/05	-	-	4,200	480	770	65	318
		MW1-060706	6/7/06	-	-	5,800	500	1,000	70	780
		MW-1-100906	10/9/06	-	-	17,000	2,400	3,800	270	2,200
		MW1-010907	1/9/07	-	-	1,500	14	6	11	120
		QA/QC-010907	1/9/07	-	-	1,500	11	6	10	110
Sample Location		MW1-032707	3/27/07	-	-	290	1	1	<1	17
		QA/QC-032707	3/27/07	-	-	320	1	<1	<1	19
		MW1-061907	6/19/07	-	-	73	<1	<1	<1	<3
	Darahad	MW1-120707	12/7/07	-	-	110	<1	<1	<1	<3
MW-1	Zone	MW1-041808	4/18/08	-	-	74	<1	<1	<1	<3
	Zone	MW1-090908	9/9/08	-	-	68	<1	<1	<1	<3
		MW1-051409	5/14/09	-	-	<50	<1	<1	<1	<3
		MW1-021110	2/11/10	-	-	<50	<1	<1	<1	<3
		MW1-102110	10/21/10	-	-	<50	<1	<1	<1	<3
		MW1-051811	5/18/11	-	-	<50	<1	<1	<1	<3
		MW-1-111711	11/17/11	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-051512	5/15/12	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW2-120505	12/5/05	-	-	570	110	110	2.8	50
		MW2-060706	6/7/06	-	-	2,800	440	540	15	430
		MW2-100906	10/9/06	-	-	370	20	44	1	77
		MW2-010907	1/9/07	-	-	730	35	69	11	150
		MW2-032707	3/27/07	-	-	610	6	9	<1	150
		MW2-061907	6/19/07	-	-	1,000	17	52	22	200
		MW2-120707	12/7/07	-	-	2,300	7	310	36	270
	Darahad	MW2-041808	4/18/08	-	-	3,700	<1	57	33	890
MW-2	Zone	MW2-090908	9/9/08	-	-	20,000	<50	3,100	470	4,200
	Zone	MW2-051309	5/13/09	-	-	4,300	<5	380	130	1,100
		MW2-021110	2/11/10	-	-	15,000	<10	160	590	3,800
		MW2-102210	10/22/10	-	-	12,000	50	15	420	2,400
		MW2-032111	3/21/11	-	-	7,000	<10	1.9	31	1,400
		MW-2-111711	11/17/11	-	-	130	<1.0	1.5	1.3	10
		MW-2-051512	5/15/12	-	-	210	1.9	<1.0	1.1	13
		MW-2-121913	12/19/13	5,400	11,000	82	<1.0	<1.0	<1.0	<3.0
		MW-2-032814	3/28/14	<650	12,000	-	-	-	-	-
		MW3-120505	12/5/05	-	-	<100	<1.0	<1.0	<1.0	<2.0
	Donet - 1	FD-120505	12/5/05	-	_	<100	<1.0	<1.0	<1.0	<2.0
MW-3	Zone	MW3-060706	6/7/06	-	-	<50	<1	<1	<1	<3
	ZOIIC	MW3-100906	10/9/06	-	-	<50	<1	<1	<1	<3
		MW3-010907	1/9/07	-	_	<50	<1	<1	<1	<3
MTCA M	ethod A Cleanu	p Levels for Gro	undwater ⁶	500	500	800	5	1,000	700	1,000

Table 2 Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater Whidbey Marine & Auto Supply Site Freeland, Washington Farallon PN: 454-001

					Α	nalytical Res	ults (microg	grams per li	ter)	
Sample	Groundwater	Sample	Sample						Ethyl-	
Location	Zone	Identification	Date	DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	benzene ³	Xylenes ³
		MW3-032707	3/27/07	-	-	<50	<1	<1	<1	<3
		MW3-061907	6/19/07	-	-	<50	<1	<1	<1	<3
Sample Location MW-3 MW-4		QA/QC-061907	6/19/07	-	-	<50	<1	<1	<1	<3
		MW3-120707	12/7/07	-	-	<50	<1	<1	<1	<3
		MW3-041808	4/18/08	-	-	<50	<1	<1	<1	<3
		MW3-090908	9/9/08	-	-	<50	<1	<1	<1	<3
MW-3	Perched	MW3-051409	5/14/09	-	-	<50	<1	<1	<1	<3
	Zone	MW3-021110	2/11/10	-	-	<50	<1	<1	<1	<3
		MW3-102110	10/21/10	-	-	<50	<1	<1	<1	<3
		MW3-051811	5/18/11	-	-	<50	<1	1.1	<1	<3
		MW-3-111711	11/17/11	-	-	<50	<1.0	<1	<1.0	<3.0
		MW-3-051512	5/15/12	-	-	<50	<1.0	<1	<1.0	<3.0
		MW-3-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-3-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW4-032707	3/27/07	-	-	99,000	31,000	32,000	970	6,000
		MW4-061907	6/19/07	-	-	110,000	22,000	36,000	1,600	8,200
		MW4-120707	12/7/07	-	-	39,000	7,600	12,000	300	2,400
		QA/QC-120707	12/7/07	-	-	60,000	9,500	18,000	710	4,700
	Perched	MW4-041808	4/18/08	-	-	140,000	530	42,000	1,600	9,400
		MW4-090908	9/9/08	-	-	120,000	150	40,000	2,000	11,000
		QA/QC-1-090908	9/9/08	-	-	120,000	150	43,000	1,900	11,000
MW-4		MW4-051409	5/14/09	680 ⁴	<250	83,000	<50	30,000	1,100	6,600
	Zone	MW4-021110	2/11/10	-	-	71,000	<50	20,000	940	5,900
		MW4-102110	10/21/10	-	-	32,000	<10	4,200	1,100	6,600
		MW4-032111	3/21/11	-	-	32,000	<10	160	870	6,900
		MW4-051811	5/18/11	-	-	33,000	<10	550	840	6,700
		MW-4-111811	11/18/11	-	-	2,300	<5.0	20	110	610
		MW-4-051612	5/16/12	-	-	5,200	<10	12	77	1,500
		MW-4-121913	12/19/13	<630 ⁵	<250	41,000	<25	<25	280	11,000
		MW-4-072914	7/29/14	-	-	37,000	<50	<50	63	9,200
		MW6-041708	4/18/08	-	-	23,000	260	1,500	530	3,600
		MW6-090908	9/9/08	-	-	42,000	450	8,500	1,300	7,800
		MW6-051409	5/14/09	-	-	17,000	29	3,200	250	3,100
		MW6-021110	2/11/10	-	-	89,000	<100	16,000	1,800	14,000
	Parahad	MW6-102210	10/22/10	-	-	39,000	<10	1,800	1,200	7,800
MW-6	Zone	MW6-032111	3/21/11	-	-	37,000	<20	350	650	9,200
	20110	MW6-051811	5/18/11	-	-	49,000	<25	270	690	11,000
		MW-6-111711	11/17/11	-	-	22,000	<20	1,200	520	5,400
		MW-6-051512	5/15/12	-	-	17,000	<20	220	210	3,700
		MW-6-121913	12/19/13	<250 ⁵	<250	8,900	<5.0	<5.0	120	1,700
		MW-6-073014	7/30/14	-	-	9,700	<10	<10	290	1,800
MW-7	Perched	MW7-041808	4/18/08	-	-	54,000	13,000	17,000	420	3,700
	Zone	MW7-051409	5/14/09	-	-	13,000	2,500	3,700	180	1,700
MTCA M	ethod A Cleanu	p Levels for Gro	undwater ⁶	500	500	800	5	1,000	700	1,000

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Table 2 Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater Whidbey Marine & Auto Supply Site Freeland, Washington Farallon PN: 454-001

				Analytical Results (micrograms per liter)						
Sample	Groundwater	Sample	Sample						Ethyl-	
Location	Zone	Identification	Date	DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	benzene ³	Xylenes ³
		MW8-041808	4/18/08	-	-	5,400	<1	57	57	890
		QA/QC-1-041808	4/18/08	-	-	5,600	<1	42	55	930
		MW8-090908	9/9/08	-	-	34,000	<50	3,500	670	6,700
		MW8-051309	5/13/09	-	-	60,000	<50	9,000	1,800	9,500
		QA/QC-051309	5/13/09	-	-	57,000	<50	8,900	1,700	9,400
		MW8-021110	2/11/10	-	-	54,000	<50	3,900	2,000	12,000
	Danahad	MW8-102210	10/22/10	-	-	58,000	<10	770	2,200	15,000
MW-8	Zone	MW8-032111	3/21/11	-	-	17,000	<10	<10	600	2,900
	Zone	MW8-051811	5/18/11	-	-	2,900	<1	2.3	23	320
		MW-8-111711	11/17/11	-	-	47,000	<50	<50	1,200	12,000
		DUP-1-111711	11/17/11	-	-	47,000	<50	<50	1,200	12,000
		MW-8-051512	5/15/12	-	-	46,000	<50	<50	930	10,000
		DUP-1-051512	5/15/12	-	-	42,000	<50	<50	900	9,700
		MW-8-121913	12/19/13	<630 ⁵	<250	24,000	<25	<25	150	4,200
		MW-8-073014	7/30/14	-	-	10,000	<10	<10	13	1,300
		MW9-051309	5/13/09	800 ⁴	<250	94,000	18,000	32,000	1,500	7,600
		MW9-021010	2/10/10	-	-	32,000	10,000	9,800	390	1,800
	See Level	MW9-102210	10/22/10	-	-	160,000	15,000	42,000	2,700	14,000
MW-9	Aquifer	MW9-032111	3/21/11	-	-	260,000	13,000	55,000	5,300	27,000
	riquiter	MW9-051811	5/18/11	-	-	230,000	18,000	55,000	4,000	21,000
		MW-9-111811	11/18/11	-	-	240,000	19,000	68,000	4,400	23,000
		MW-9-051612	5/16/12	-	-	280,000	13,000	59,000	4,700	25,000
		MW10-051309	5/13/09	<130	<250	<50	<1	2	<1	<3
		MW10-021010	2/10/10	-	-	140	<1	3.3	1.5	7.3
		MW10-102210	10/22/10	-	-	<50	<1	4.0	<1	3.2
	See Level	MW10-051811	5/18/11	-	-	69	<1	2.6	<1	<3
MW-10	Aquifer	MW-10-111711	11/17/11	-	-	<50	<1.0	<1.0	<1.0	<3.0
	inquirer	MW-10-051512	5/15/12	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW11-051309	5/13/09	<130	<250	2,300	500	530	19	230
		MW11-021010	2/10/10	-	-	23,000	4,000	7,000	340	1,600
		MW11-102210	10/22/10	-	-	29,000	2,400	7,400	790	2,800
		MW11-051811	5/18/11	-	-	70,000	3,100	15,000	1,500	7,200
MW-11	Sea Level	MW-11-111811	11/18/11	-	-	24,000	670	3,700	820	3,000
	Aquifer	MW-11-051612	5/16/12	-	-	19,000	700	2,200	700	2,700
		MW-11-122013	12/20/13	<130	<250	2,800	8	64	26	440
		MW-11-032814	3/28/14	-	-	1,200	4.7	13	3	150
		MW-11-073014	7/30/14	-	-	540	3.1	1.1	1.1	32
		MW-11-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
MTCA Method A Cleanup Levels for Groundwater ⁶			500	500	800	5	1,000	700	1,000	

3 of 4

Table 2 Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater Whidbey Marine & Auto Supply Site Freeland, Washington Farallon PN: 454-001

				Analytical Results (micrograms per liter)						
Sample	Groundwater	Sample	Sample						Ethyl-	
Location	Zone	Identification	Date	DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	benzene ³	Xylenes ³
		MW12-051309	5/13/09	<1,300 ⁵	<250	55,000	200	8,900	1,700	9,700
		MW12-021010	2/10/10	2,600 ⁴	310	52,000	92	3,900	1,300	8,400
		MW12-102210	10/22/10	-	-	81,000	120	5,300	2,100	14,000
		MW12-051811	5/18/11	-	-	69,000	83	4,400	1,700	11,000
MW-12	Sea Level	MW-12-111711	11/17/11	-	-	68,000	82	4,700	1,500	11,000
101 00 -12	Aquifer	MW-12-051512	5/15/12	-	-	77,000	<100	5,100	1,700	13,000
		MW-12-122013	12/20/13	2,500 ⁴	790	78,000	38	3,300	1,200	11,000
		MW-12-032814	3/28/14	2,500 ⁴	<250	75,000	29	4,200	1,500	10,000
		MW-12-073014	7/30/14	2,200 ⁴	<250	75,000	<50	4,500	1,800	11,000
		MW-12-021015	2/10/15	10,000 ⁴	1,100 ⁶	94,000	<100	5,600	2,500	15,000
		MW-13-121913	12/19/13	1,000 ⁴	<250	120,000	2,500	30,000	1,100	5,700
		QAQC-1-121913	12/19/13	820 ⁴	290	110,000	2,500	28,000	1,100	5,600
	C I1	MW-13-032814	3/28/14	780 ⁴	<250	140,000	1,600	33,000	2,000	9,900
MW-13	Aquifer	QA/QC-032814	3/28/14	830 ⁴	<250	140,000	1,600	31,000	1,900	9,600
	. iquiter	MW-13-073014	7/30/14	1,300 ⁴	<250	150,000	1,400	37,000	2,300	11,000
		QA/QC-1-072914	7/30/14	1,400⁴	<250	160,000	1,400	37,000	2,200	11,000
		MW-13-021015	2/10/15	4,800⁴	<500	190,000	980	45,000	3,400	17,000
		MW-14-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
	See Level	MW-14-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-14	Aquifer	MW-14-072914	7/29/14	-	-	62	<1.0	17	<1.0	<3.0
	riquiter	MW-14-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		DUP1-021015	2/10/15	-	-	<50	<1.0	1.2	<1.0	<3.0
		MW-15-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
MW 15	Sea Level	MW-15-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
101 00 -15	Aquifer	MW-15-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
MW 16	Sea Level	MW-16-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-16	Aquifer	MW-16-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
MTCA M	ethod A Clean	ip Levels for Gro	undwater ⁷	500	500	800	5	1,000	700	1,000

NOTES:

Results in **bold** denote concentration or laboratory reporting limit exceeds applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

- denotes sample not analyzed

¹Analyzed by Northwest Method NWTPH-Dx

²Analyzed by Northwest Method NWTPH-Gx.

³Analyzed by U.S. Environmental Protection Agency Method 8021B.

⁴Laboratory report narrative indicates DRO result is biased high due to GRO overlap.

⁵Laboratory report narrative indicates reporting limit for DRO is elevated due to GRO overlap.

⁶Laboratory report narrative indicates ORO result is biased high due to DRO overlap.

⁷Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table

720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

 $BTEX = benzene, \ toluene, \ ethylbenzene, \ and \ xylenes$

DRO = TPH as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics TPH = total petroleum hydrocarbons

APPENDIX A LABORATORY ANALYTICAL REPORT

FEBRUARY 2015 PROGRESS REPORT Whidbey Marine & Auto Supply Site Freeland, Washington

Farallon PN: 454-001



February 17, 2015

Mr. Paul Grabau Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027

Dear Mr. Grabau,

On February 10th, 8 samples were received by our laboratory and assigned our laboratory project number EV15020050. The project was identified as your Whidbey Marine & Auto. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan Laboratory Director

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CERTIFICATE OF ANALYSIS

CLIENT: CLIENT CONTACT: CLIENT PROJECT: CLIENT SAMPLE ID	Farallon Consulting 975 Fifth Ave. NW Issaquah, WA 980 Paul Grabau Whidbey Marine & MW-16-021015	g , Suite 100 27 Auto	D/ COLI WDOE AC	DATE: ALS JOB#: ALS SAMPLE#: DATE RECEIVED: COLLECTION DATE: WDOE ACCREDITATION:			00 AM
		SAMPLE	DATA RESULTS				
ΔΝΔΙ ΥΤΕ	METHOD	BESULTS	REPORTING LIMITS	DILUTION FACTOR		ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/11/2015	PAB
Benzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Toluene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Xylenes	EPA-8021	U	3.0	1	ug/L	02/11/2015	PAB
SURROGATE	METHOD	%REC				ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	83.6				02/11/2015	PAB
TFT	EPA-8021	92.6				02/11/2015	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

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		CERTIFIC	ATE OF ANALYSIS						
CLIENT:	Farallon Consulting 975 Fifth Ave. NW Issaquah, WA 980	9 , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:			2/17/2015 EV15020050 EV15020050-02		
CLIENT CONTACT: CLIENT PROJECT: CLIENT SAMPLE ID	Paul Grabau Whidbey Marine & MW-15-021015	Auto	D/ COLI WDOE AC	DATE RECEIVED: COLLECTION DATE: WDOE ACCREDITATION:		02/10/2015 2/10/2015 12:25:00 PM C601			
		SAMPLE	DATA RESULTS						
ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS / DATE	ANALYSIS BY		
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/11/2015	PAB		
Benzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Toluene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Xylenes	EPA-8021	U	3.0	1	ug/L	02/11/2015	PAB		
SURROGATE	METHOD	%REC				ANALYSIS / DATE	ANALYSIS BY		
TFT	NWTPH-GX	85.9				02/11/2015	PAB		
TFT	EPA-8021	96.8				02/11/2015	PAB		

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		CERTIFIC	ATE OF ANALYSIS						
CLIENT:	Farallon Consulting 975 Fifth Ave. NW Issaquah, WA 980	g , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:			2/17/2015 EV15020050 EV15020050-03		
CLIENT CONTACT: CLIENT PROJECT: CLIENT SAMPLE ID	Paul Grabau Whidbey Marine & MW-14-021015	Auto	D/ COLI WDOE AC	DATE RECEIVED: COLLECTION DATE: WDOE ACCREDITATION:			PM		
		SAMPLE	DATA RESULTS						
ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS / DATE	ANALYSIS By		
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/11/2015	PAB		
Toluene	EPA-8021 EPA-8021	U	1.0	1	ug/L ug/L	02/11/2015 02/11/2015	PAB PAB		
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Xylenes	EPA-8021	U	3.0	1	ug/L	02/11/2015	PAB		
SURROGATE	METHOD	%REC				ANALYSIS / DATE	ANALYSIS BY		
TFT	NWTPH-GX	82.7				02/11/2015	PAB		
TFT	EPA-8021	97.6				02/11/2015	PAB		

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		CERTIFIC	ATE OF ANALYSIS						
CLIENT:	Farallon Consulting 975 Fifth Ave. NW Issaquah, WA 980	g , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:			2/17/2015 EV15020050 EV15020050-04		
CLIENT CONTACT: CLIENT PROJECT: CLIENT SAMPLE ID	Paul Grabau Whidbey Marine & DUP1-021015	Auto	D/ COLI WDOE AC	DATE RECEIVED: COLLECTION DATE: WDOE ACCREDITATION:		02/10/2015 2/10/2015 1:15:00 PM C601			
		SAMPLE	DATA RESULTS						
ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS / DATE	ANALYSIS BY		
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/12/2015	PAB		
Benzene	EPA-8021	U	1.0	1	ug/L	02/12/2015	PAB		
Toluene	EPA-8021	1.2	1.0	1	ug/L	02/12/2015	PAB		
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/12/2015	PAB		
Xylenes	EPA-8021	U	3.0	1	ug/L	02/12/2015	PAB		
SURROGATE	METHOD	%REC				ANALYSIS / DATE	ANALYSIS BY		
TFT	NWTPH-GX	107				02/12/2015	PAB		
TFT	EPA-8021	103				02/12/2015	PAB		

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		CERTIFIC	ATE OF ANALYSIS						
CLIENT:	Farallon Consulting 975 Fifth Ave. NW Issaquah, WA 980	g , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:			2/17/2015 EV15020050 EV15020050-05		
CLIENT CONTACT: CLIENT PROJECT: CLIENT SAMPLE ID	Paul Grabau Whidbey Marine & MW-11-021015	Auto	D, COLI WDOE AC	DATE RECEIVED: COLLECTION DATE: WDOE ACCREDITATION:		02/10/2015 2/10/2015 2:00:00 PM C601			
		SAMPLE	DATA RESULTS						
ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS / DATE	ANALYSIS BY		
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/11/2015	PAB		
Benzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Toluene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB		
Xylenes	EPA-8021	U	3.0	1	ug/L	02/11/2015	PAB		
SURROGATE	METHOD	%REC				ANALYSIS / DATE	ANALYSIS By		
TFT	NWTPH-GX	79.6				02/11/2015	PAB		
TFT	EPA-8021	97.3				02/11/2015	PAB		

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		CERTIFIC	ATE OF ANALYSIS				
CLIENT:	Farallon Consultin 975 Fifth Ave. NW Issaquah, WA 980	g , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:			
CLIENT CONTACT:	Paul Grabau		DA	DATE RECEIVED:			
CLIENT PROJECT:	Whidbey Marine &	Whidbey Marine & Auto		LECTION DATE:	2/10/20	015 2:40:00	PM
CLIENT SAMPLE ID	MW-12-021015		WDOE AC	CCREDITATION:	C601		
		SAMPLE	DATA RESULTS				
ΔΝΔΙ ΥΤΕ	METHOD	BESULTS	REPORTING LIMITS	DILUTION FACTOR		ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	94000	5000	100	ug/L	02/12/2015	PAB
Benzene	EPA-8021	U	100	100	ug/L	02/12/2015	PAB
Toluene	EPA-8021	5600	100	100	ug/L	02/12/2015	PAB
Ethylbenzene	EPA-8021	2500	100	100	ug/L	02/12/2015	PAB
Xylenes	EPA-8021	15000	300	100	ug/L	02/12/2015	PAB
TPH-Diesel Range	NWTPH-DX	10000	260	2	ug/L	02/11/2015	EBS
TPH-Oil Range	NWTPH-DX	1100	500	2	ug/L	02/11/2015	EBS
SUBBOGATE	METHOD	%BEC				ANALYSIS DATE	ANALYSIS BY
TET 100X Dilution	NWTPH-GX	111				02/12/2015	PAR
TFT 100X Dilution	EPA-8021	106				02/12/2015	PAB
C25 2X Dilution	NWTPH-DX	104				02/11/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit. Chromatogram indicates that it is likely that sample contains lightly weathered gasoline, weathered diesel and lube oil. Diesel range product results biased high due to gasoline range product overlap.

Oil range product results biased high due to diesel range product overlap.

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		CERTIFIC	ATE OF ANALYSIS					
CLIENT:	Farallon Consultin 975 Fifth Ave. NW Issaquah, WA 980	g , Suite 100 27		DATE: ALS JOB#: ALS SAMPLE#:				
CLIENT CONTACT:	Paul Grabau		D/	DATE RECEIVED:		02/10/2015		
CLIENT PROJECT:	Whidbey Marine & Auto		COLI	LECTION DATE:	2/10/20)15 3:25:00) PM	
CLIENT SAMPLE ID	MW-13-021015		WDOE AC	CREDITATION:	C601			
		SAMPLE	DATA RESULTS					
	METHOD	DECIII TO	REPORTING LIMITS	DILUTION FACTOR		ANALYSIS DATE	ANALYSIS BY	
TPH-Volatile Range	NWTPH-GX	190000	5000	100	ug/L	02/12/2015	PAB	
Benzene	EPA-8021	980	100	100	ug/L	02/12/2015	PAB	
Toluene	EPA-8021	45000	500	500	ug/L	02/13/2015	PAB	
Ethylbenzene	EPA-8021	3400	100	100	ug/L	02/12/2015	PAB	
Xylenes	EPA-8021	17000	300	100	ug/L	02/12/2015	PAB	
TPH-Diesel Range	NWTPH-DX	4800	260	2	ug/L	02/11/2015	EBS	
TPH-Oil Range	NWTPH-DX	U	500	2	ug/L	02/11/2015	EBS	
SURROGATE	METHOD	%REC				ANALYSIS DATE	ANALYSIS BY	
TFT 100X Dilution	NWTPH-GX	114				02/12/2015	PAB	
TFT 100X Dilution	EPA-8021	108				02/12/2015	PAB	
TFT 500X Dilution	EPA-8021	95.5				02/13/2015	PAB	
C25 2X Dilution	NWTPH-DX	102				02/11/2015	EBS	

U - Analyte analyzed for but not detected at level above reporting limit. Chromatogram indicates that it is likely that sample contains lightly weathered gasoline and weathered diesel. Diesel range product results biased high due to gasoline range product overlap.

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	CERTIFICATE OF ANALYSIS								
CLIENT: CLIENT CONTACT: CLIENT PROJECT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027 Paul Grabau Whidbey Marine & Auto	DATE: ALS SDG#: WDOE ACCREDITATION:	2/17/2015 EV15020050 C601						

LABORATORY BLANK RESULTS

MBG-021115W - Batch 90462 - Water by NWTPH-GX

			REPORTING	DILUTION		ANALYSIS /	ANALYSIS
ANALYTE	METHOD	RESULTS	LIMITS	FACTOR	UNITS	DATE	BY
TPH-Volatile Range	NWTPH-GX	U	50	1	ug/L	02/11/2015	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021115W - Batch 90462 - Water by EPA-8021

			REPORTING	DILUTION		ANALYSIS /	ANALYSIS
ANALYTE	METHOD	RESULTS	LIMITS	FACTOR	UNITS	DATE	BY
Benzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Toluene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Ethylbenzene	EPA-8021	U	1.0	1	ug/L	02/11/2015	PAB
Xylenes	EPA-8021	U	3.0	1	ug/L	02/11/2015	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021115W - Batch 90463 - Water by NWTPH-DX

			REPORTING	DILUTION		ANALYSIS A	ANALYSIS
ANALYTE	METHOD	RESULTS	LIMITS	FACTOR	UNITS	DATE	BY
TPH-Diesel Range	NWTPH-DX	U	130	1	ug/L	02/11/2015	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	ug/L	02/11/2015	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting	DATE:
	975 Fifth Ave. NW, Suite 100	ALS SDG#:
	Issaquah, WA 98027	WDOE ACCREDITATION:
CLIENT CONTACT:	Paul Grabau	
CLIENT PROJECT:	Whidbey Marine & Auto	

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 90462 - Water by NWTPH-GX

					ANALYSIS	ANALYSIS
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	DATE	Вү
TPH-Volatile Range - BS	NWTPH-GX	100			02/11/2015	PAB
TPH-Volatile Range - BSD	NWTPH-GX	99.1	1		02/11/2015	PAB

ALS Test Batch ID: 90462 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	104			02/11/2015	PAB
Benzene - BSD	EPA-8021	105	1		02/11/2015	PAB
Toluene - BS	EPA-8021	101			02/11/2015	PAB
Toluene - BSD	EPA-8021	101	0		02/11/2015	PAB
Ethylbenzene - BS	EPA-8021	102			02/11/2015	PAB
Ethylbenzene - BSD	EPA-8021	102	0		02/11/2015	PAB
Xylenes - BS	EPA-8021	102			02/11/2015	PAB
Xylenes - BSD	EPA-8021	102	0		02/11/2015	PAB

ALS Test Batch ID: 90463 - Water by NWTPH-DX

					ANALYSIS	ANALYSIS
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	DATE	BY
TPH-Diesel Range - BS	NWTPH-DX	97.1			02/11/2015	EBS
TPH-Diesel Range - BSD	NWTPH-DX	108	11		02/11/2015	EBS

APPROVED BY

2/17/2015

C601

EV15020050

Laboratory Director

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R St Containers
