NW2538

SAIC

December 16, 2011

Mr. Dale Myers
Washington State Department of Ecology
Toxic Cleanup Program
3190 160th Avenue SE
Bellevue, Washington 98008

Subject: **Fourth Quarter 2011 Groundwater Monitoring and Sampling Report**
76 Products Facility No. 351445
159 Denny Way
Seattle, Washington
Washington State Department of Ecology Facility No. 32873776

Dear Mr. Myers:

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California (hereinafter "EMC"), SAIC Energy, Environment & Infrastructure, LLC (SAIC) submits this Groundwater Monitoring and Sampling Report for the referenced site above (Figure 1). Quarterly groundwater monitoring and sampling were conducted by Blaine Tech Services, Inc. (Blaine Tech) on October 13, 2011. The Blaine Tech groundwater monitoring and sampling package is provided as Attachment A.

FIELD ACTIVITIES

On October 13, 2011, depth to groundwater was measured in wells MW-D, MW-E, MW-F, MW-G, and MW-I. The groundwater elevation ranged from 56.73 feet (MW-I) to 89.31 feet (MW-G) based on an arbitrary benchmark elevation of 100.00 feet. Groundwater flow is to the northwest at a gradient of approximately 0.25 foot per foot (ft/ft). A Potentiometric Map is provided on Figure 1.

Groundwater samples were collected from three monitoring wells (MW-F, MW-G, and MW-I) and shipped under chain-of-custody protocol to Lancaster Laboratories, Inc. in Lancaster, Pennsylvania. Due to insufficient water, monitoring wells MW-D and MW-G were not sampled.

Groundwater samples were submitted for the following analyses:

- Total petroleum hydrocarbons (TPH) as gasoline-range organics (TPH-G) by Northwest Method NWTPH-Gx;

- TPH as diesel-range organics and TPH as heavy oil-range organics by Northwest Method NWTPH-Dx extended with 10g silica-gel cleanup with capric acid reverse surrogate; and
- Benzene, toluene, ethylbenzene, and total xylenes, and methyl tert-butyl ether by United States Environmental Protection Agency Method 8260B.

Laboratory analytical results are included as Attachment B and a site plan with groundwater analytical results is shown on Figure 2. In addition, hydrographs for wells MW-F and MW-I are provided as Attachment C.

RESULTS

The results of the fourth quarter 2011 sampling event indicate that petroleum-hydrocarbon constituent concentrations are generally consistent with respect to historical data. In addition, the groundwater elevation, flow direction, and gradient are consistent with historical measurements.

Laboratory results indicate that concentrations of TPH-G and benzene remain greater than Model Toxics Control Act (MTCA) Method A cleanup levels in monitoring wells MW-F and MW-I. Also, concentration of total xylenes in monitoring well MW-F continue to remain greater than MTCA Method A cleanup level.

Blaine Tech will continue to perform groundwater monitoring and sampling on a quarterly basis.

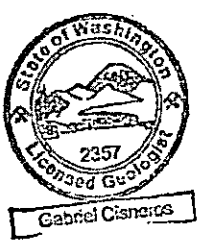
If you have any questions or comments, please contact me at (208) 429-3772 or via email at ronald.santos@saic.com.

Sincerely,

SAIC Energy, Environment & Infrastructure, LLC

Ron Santos, PE
Senior Project Engineer

Gabriel Cisneros LG #2357
Geologist



Enclosures:

Figure 1 – Potentiometric Map

Figure 2 – Site Plan with Groundwater Analytical Results

Table 1 – Groundwater Monitoring Data and Analytical Results

Attachment A – Groundwater Monitoring and Sampling Data Package

Attachment B – Laboratory Analysis Report

Attachment C – Hydrographs

cc: Mr. J. Mark Inglis – Union Oil of California
Mr. Ed Mathers, Property Manager – Morris Management
Project File

REPORT LIMITATIONS

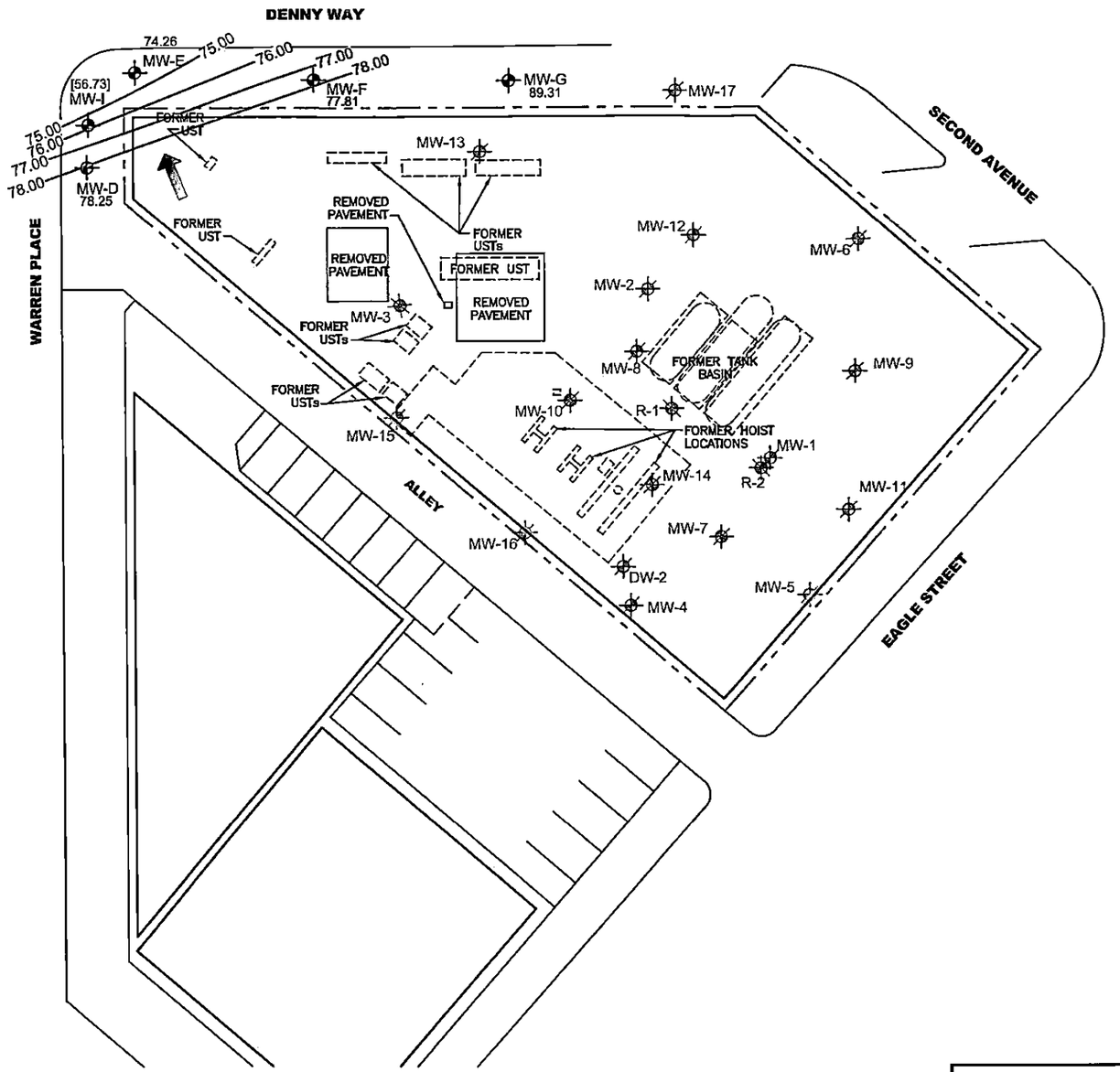
This technical document was prepared on behalf of Chevron and is intended for its sole use and for use by the local, state or federal regulatory agency that the technical document was sent to by SAIC. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and that SAIC shall have no responsibility or liability for the consequences thereof.

Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from CEMC and others. SAIC has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of SAIC's site visits or site work and cannot be applied to conditions and features of which SAIC is unaware and has not had the opportunity to evaluate.

All sources of information on which SAIC has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied upon by SAIC in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.



N

0 30'

Feet

LEGEND

	Site Boundary
	Existing Building
	Former Site Features
MW-D	Monitoring Well Location
MW-1	Abandoned or destroyed Monitoring Well Location
76.50	Groundwater Elevation in Feet
76.00	Groundwater Elevation Contour at a 1.00 Foot Interval (Dashed Where Inferred)
	Approximate Groundwater Flow Direction at a Gradient of 0.25 Feet per Foot
[56.73]	Groundwater Elevation Not Used in Contour Map

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NOTE: Features were adapted from an Stantec Corporation figure, *Site Plan with Analytical Results (April 12, 2010)*, dated April 23, 2010.

76 Products Facility No. 351445
159 Denny Way
Seattle, Washington

FIGURE 1
Potentiometric Map
(October 13, 2011)

DATE: 12/16/2011 | DRAWING: 351445 Site Map.dwg

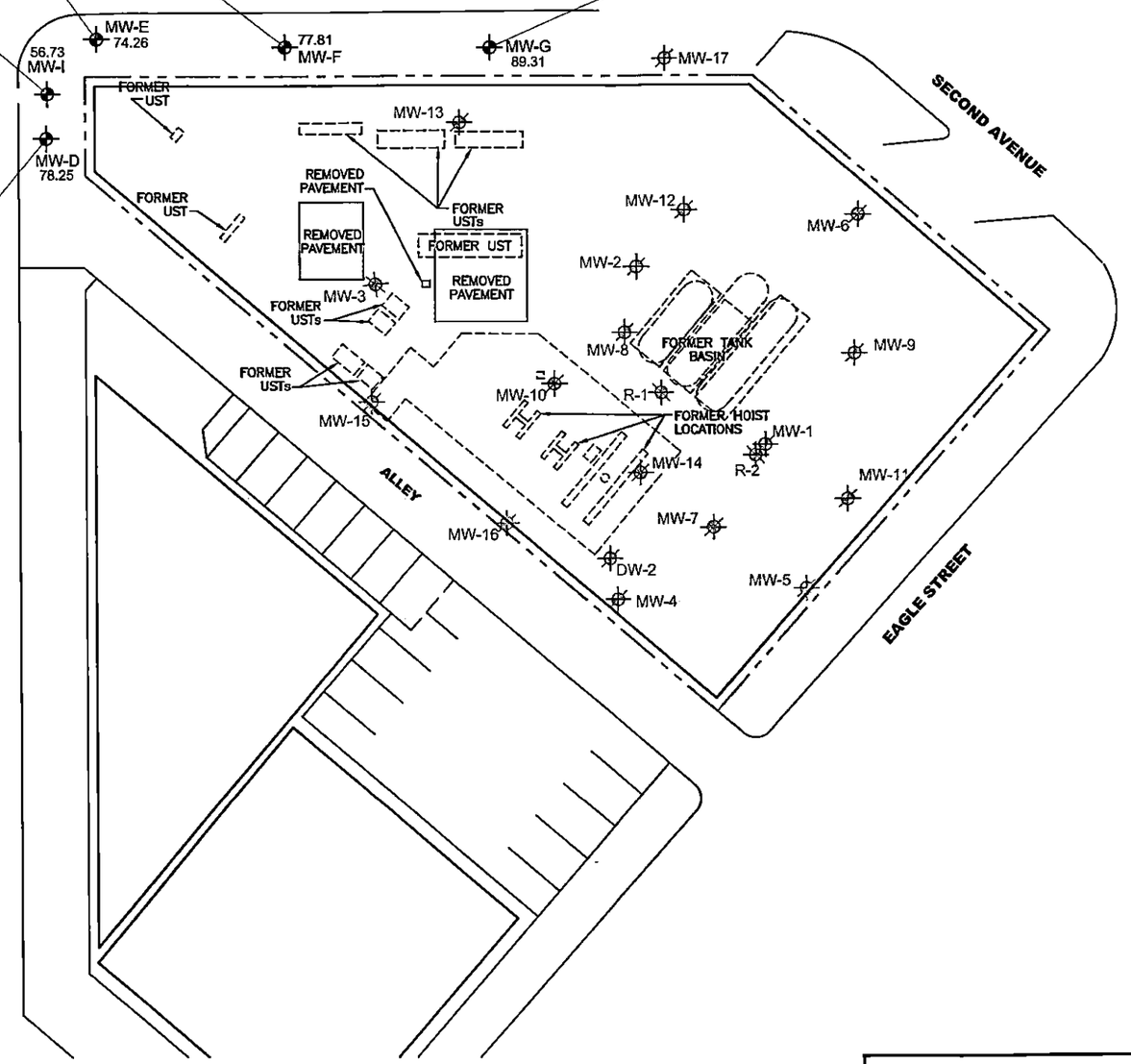
MW-E	1/7/11	5/3/11	8/12/11	10/13/11
TPH-G	<50.0	**	**	**
TPH-D	<77.7	**	**	**
TPH-O	<388	**	**	**
B	<1.0	**	**	**
T	<1.0	**	**	**
E	<1.0	**	**	**
X	<3.0	**	**	**
MTBE	<1.0	**	**	**

MW-F	1/7/11	5/3/11	8/12/11	10/13/11
TPH-G	**15,900**	**8,800**	**11,000**	**11,000**
TPH-D	**694**	**1,100**	**1,400**	270
TPH-O	<388	<68	<340	<67
B	**374**	**210**	**240**	**260**
T	53.2	5	8	16
E	105	42	68	53
X	**3,740**	**1,300**	**1,900**	**1,500**
MTBE	<1.0	<1	<1	<3

MW-G	1/7/11	5/3/11	8/12/11	10/13/11
TPH-G	<50.0	<50	<50	<50
TPH-D	<76.9	<30	<29	<29
TPH-O	<385	<71	<67	<67
B	<1.0	<0.5	<0.5	<0.5
T	<1.0	<0.5	<0.5	<0.5
E	<1.0	<0.5	<0.5	<0.5
X	<3.0	<0.5	<0.5	<0.5
MTBE	<1.0	<0.5	<0.5	<0.5

MW-I	1/7/11	5/3/11	8/12/11	10/13/11
TPH-G	**2,190**	**850**	**1,600**	**2,300**
TPH-D	79.7	120	150	29
TPH-O	<388	<72	<67	<67
B	**611**	**230**	**220**	**630**
T	12.2	4	6	13
E	116	40	58	90
X	95.9	35	80	84
MTBE	1.3	<0.5	<1	1

MW-D	1/7/11	5/3/11	8/12/11	10/13/11
TPH-G	**	**	**	**
TPH-D	**	**	**	**
TPH-O	**	**	**	**
B	**	**	**	**
T	**	**	**	**
E	**	**	**	**
X	**	**	**	**
MTBE	**	**	**	**



N

0 30'

Feet

LEGEND

— — —	Site Boundary
▭	Existing Building
▭	Former Site Features
MW-D ⊕	Monitoring Well Location
MW-1 ⊕	Abandoned or destroyed Monitoring Well Location
76.50	Groundwater Elevation in Feet

ANALYTES

WELL ID	DATE
TPH-G	GASOLINE-RANGE HYDROCARBONS
TPH-D	DIESEL-RANGE HYDROCARBONS
TPH-O	HEAVY OIL-RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERTIARY BUTYL ETHER

Units in Micrograms per Liter (µg/L)

**	Insufficient Water to Sample
<	Less Than Laboratory Reporting Limit
UST	Underground Storage Tank
BOLD	Analyte Detected Above the MTCA Method A Cleanup Level

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NOTE: Features were adapted from an Stantec Corporation figure, *Site Plan with Analytical Results (April 12, 2010)*, dated April 23, 2010.

76 Products Facility No. 351445
159 Denny Way
Seattle, Washington

FIGURE 2
Site Plan with Groundwater Analytical Results
(October 13, 2011)

DATE: 12/16/2011 | DRAWING: 351445 Site Map.dwg

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
76 PRODUCTS FACILITY NO. 351445
159 Denny Way, Seattle, Washington
Concentrations reported in µg/L

Well ID/ TOC Elevation (ft)	Sample Date	Depth to Water (ft)	GW Elevation (ft)	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	Total Lead	Dissolved Lead	Ethanol
MW-D	08/09/06	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
NE	12/04/06	16.60	NE	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	02/02/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
97.76	05/02/07	19.5	78.26	Insufficient water to collect sample												
	08/08/07	19.52	78.24	Insufficient water to collect sample												
	11/08/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	02/07/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	10/30/08	19.55	78.21	Insufficient water to collect sample												
	01/19/09	19.65	78.11	Insufficient water to collect sample												
	04/20/09	19.57	78.19	Insufficient water to collect sample												
	07/23/09	19.57	78.19	Insufficient water to collect sample												
	10/14/09	19.80	77.96	Insufficient water to collect sample												
	01/13/10	17.08	80.68	<50 2n	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	04/12/10	19.55	78.21	Insufficient water to collect sample												
	07/12/10	19.57	78.19	Insufficient water to collect sample												
	10/11/10	DRY	NE	Insufficient water to collect sample												
	01/07/11	19.55	78.21	Insufficient water to collect sample												
	05/03/11	DRY	NE	Insufficient water to collect sample												
	08/12/11	DRY	NE	Insufficient water to collect sample												
	10/13/11	19.51	78.25	Insufficient water to collect sample												
MW-E	08/09/06	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
NE	12/04/06	21.26	NE	<48	<75	<94	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	02/02/07	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
99.18	05/02/07	24.59	74.59	Insufficient water to collect sample												
	08/08/07	24.09	75.09	<50	120	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	11/08/07	23.69	75.49	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	02/07/08	24.90	74.28	Insufficient water to collect sample												
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	22.21	76.97	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	10/30/08	20.50	78.68	<50	<78	<97	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	01/19/09	25.00	74.18	Insufficient water to collect sample												
	04/20/09	24.94	74.24	Insufficient water to collect sample												
	07/23/09	20.52	78.66	<50	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	10/14/09	20.30	78.88	16.3 J, Z2	<77	<380	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	01/13/10	19.00	80.18	<50 2n	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	04/12/10	24.98	72.78	Insufficient water to collect sample												
	07/12/10	21.65	76.11	<50	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	10/11/10	20.30	78.88	<50.0	<77.7	<388	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	01/07/11	23.55	75.63	<50.0	<77.7	<388	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	05/03/11	DRY	NE	Insufficient water to collect sample												
	08/12/11	DRY	NE	Insufficient water to collect sample												
	10/13/11	24.92	74.26	Insufficient water to collect sample												

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GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
76 PRODUCTS FACILITY NO. 351445
159 Denny Way, Seattle, Washington
Concentrations reported in µg/L

Well ID/ TOC Elevation (ft)	Sample Date	Depth to Water (ft)	GW Elevation (ft)	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	Total Lead	Dissolved Lead	Ethanol
MW-F	08/09/06	23.65	NE	**29,000**	2.1	<0.19	**1,500**	**1,400**	61	**5,600**	**87**	--	--	--	--	--
NE	12/04/06	22.84	NE	**94,000**	**1,200**	<190	**2,800**	**9,700**	**1,600**	**8,800**	<5	--	--	--	--	--
	02/02/07	24.41	NE	**35,000**	**3,100**	<950	**1,000**	**1,300**	300	**4,100**	4	--	--	--	--	--
101.28	05/02/07	24.90	76.38	**15,000**	**1,900**	**670**	**940**	540	110	**1,200**	2	--	--	--	--	--
	08/08/07	23.94	77.34	**14,000**	**1,500**	<190	**1,300**	**1,100**	210	**1,200**	2	--	--	--	--	--
	11/08/07	18.00	83.28	**16,000**	**1,600**	<96	**890**	570	150	**2,300**	1	--	--	--	--	--
	02/07/08	24.70	76.58	**14,000**	**2,000**	<190	**820**	230	140	**2,600**	3	--	--	--	--	--
	05/21/08	DRY	NE	--	--	--	--	--	--	--	--	--	--	--	--	--
	07/24/08	22.65	78.63	**22,000**	**1,100**	<94	**1,100**	**2,300**	330	**4,800**	<1	--	--	--	--	--
	10/30/08	18.55	82.73	**23,000**	**760**	<96	**740**	680	91	**4,100**	<3	--	--	--	--	--
	01/19/09	24.33	76.95	**14,200**	**990**	<64	**710**	45	77	**2,600**	<1	--	--	--	--	--
	04/20/09	27.00	74.28	Insufficient water to collect sample												
	07/23/09	22.16	79.12	**24,900**	**610**	<390	**683**	543	261	**5,530**	<1.0	--	--	--	--	--
	10/14/09	21.30	79.98	**20,700**	**800**	<380	**540**	73.4	216	**3,480**	<5.0	--	--	--	--	--
	01/13/10	22.37	78.91	**15,000**	**843**	<388	**505**	50.1	52.2	**2,900**	<1.0	--	--	--	--	--
	04/12/10	24.65	76.63	**12,800**	**2,040**	**861**	**599**	11.8	50.9	**2,470**	<1.0	--	--	--	--	--
	07/12/10	21.88	79.40	**13,100**	**666**	<388	**425**	172	83.0	**4,240**	<1.0	--	--	--	--	--
	10/11/10	20.84	80.44	**23,900**	**596**	<388	**451**	557	**892**	**4,710**	<1.0	--	--	--	--	--
	01/07/11	22.54	78.74	**15,900**	**694**	<388	**374**	53.2	105	**3,740**	<1.0	--	--	--	--	--
	05/03/11	24.78	76.50	**8,800**	**1,100**	<68	**210**	5	42	**1,300**	<1	--	--	--	--	<100
	08/12/11	23.41	77.87	**11,000**	**1,400**[2]	<340[2]	**240**	8	68	**1,900**	<1	--	--	--	--	<100
	10/13/11	23.47	77.81	**11,000**	270	<67	**260**	16	53	**1,500**	<3	--	--	--	--	--
MW-G	08/09/06	20.32	NE	<48	<0.076	<0.095	0.2	0.3	<0.2	2.9	2.2	--	--	--	--	--
NE	12/04/06	20.31	NE	<48	<75	<94	4	<0.7	<0.8	<0.8	2	--	--	--	--	--
	02/02/07	22.90	NE	<48	<76	<95	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--	--
102.90	05/02/07	22.75	80.15	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--	--
	08/08/07	23.08	79.82	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	2	--	--	--	--	--
	11/08/07	21.60	81.30	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	1	--	--	--	--	--
	02/07/08	19.00	83.90	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	0.7	--	--	--	--	--
	05/21/08	22.40	80.50	<50	<76	<95	<0.5	<0.7	<0.8	<0.8	1	--	--	--	--	--
	07/24/08	13.84	89.06	<50	<75	<94	**13**	<0.7	<0.8	<0.8	0.6	--	--	--	--	--
	10/30/08	11.75	91.15	<50	<77	<96	<0.5	<0.7	<0.8	<0.8	<0.5	--	--	--	--	--
	01/19/09	17.85	85.05	<25	<39	<64	<1	<1	<1	<3	<1	--	--	--	--	--
	04/20/09	20.28	82.62	<50.0	<83	<420	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<0.010	<1.00	<1.00	--
	07/23/09	11.59	91.31	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	10/14/09	10.85	92.05	<50.0	<78	<390	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	01/13/10	11.01	91.89	91.5	<76.9	<385	<1.0 M0	<1.0 M0	<1.0 M0	1.3 J, M0	<1.0 M0	--	--	--	--	--
	04/12/10	17.39	85.51	<50.0	<77.7	<388	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	07/12/10	12.10	90.80	<50.0	<78.4	<392	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	10/11/10	10.41	92.49	<50.0	<77.7	<388	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	01/07/11	13.12	89.78	<50.0	<76.9	<385	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--	--
	05/03/11	18.24	84.66	<50	<30	<71	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
	08/12/11	17.81	85.09	<50	<29	<67	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	<50
	10/13/11	13.59	89.31	<50	<29	<67	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--

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TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
76 PRODUCTS FACILITY NO. 351445
159 Denny Way, Seattle, Washington
Concentrations reported in µg/L

Well ID/ TOC Elevation (ft)	Sample Date	Depth to Water (ft)	GW Elevation (ft)	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	Total Lead	Dissolved Lead	Ethanol
MW-I	08/09/06	45.15	NE	**2,900**	<0.32	<0.40	**600**	22	89	190	15	--	--	--	--	--
NE	12/04/06	45.51	NE	**3,600**	200	190	**840**	18	130	230	2	--	--	--	--	--
	02/02/07	44.83	NE	**3,600**	280	<95	**660**	13	120	180	2	--	--	--	--	--
98.44	05/02/07	44.15	54.29	**2,200**	210	230	**570**	7	110	100	1	--	--	--	--	--
	08/08/07	43.39	55.05	**2,200**	190	<96	**380**	5	61	58	0.7	--	--	--	--	--
	11/08/07	49.70	48.74	**1,600**	<800	<1,000	**840**	13	110	110	2	--	--	--	--	--
	02/07/08	44.90	53.54	**1,700**	320	<95	**520**	8	84	79	1	--	--	--	--	--
	05/21/08	44.85	53.59	**2,000**	450	370	**860**	15	140	130	<0.5	--	--	--	--	--
	07/24/08	45.21	53.23	**1,900**	260	<94	**1,200**	41	170	180	3	--	--	--	--	--
	10/30/08	44.50	53.94	**1,800**	260	<100	**870**	11	110	67	2	--	--	--	--	--
	01/19/09	45.40	53.04	**1,680**	160	<63	**1,000**	20	170	110	<1	--	--	--	--	--
	04/20/09	45.55	52.89	**2,850**	88	<420	**970**	20	160	92	3.5	<1.0	<0.010	8.13	<1.00	--
	07/23/09	44.93	53.51	**2,140**	110	<390	**1,830**	17.7	159	81.4	2.7	--	--	--	--	--
	10/14/09	44.33	54.11	**2,200**	93	<390	**962**	13.9	125	71.4	2.1	--	--	--	--	--
	01/13/10	43.92	54.52	**2,010**	116	<388	**621**	11.3	122	66.4	1.5	--	--	--	--	--
	04/12/10	43.43	55.01	**1,630**	<80	<400	**856**	9.5	107	38.7	1.7	--	--	--	--	--
	07/12/10	42.44	56.00	**1,480**	<77.7	<388	**658**	8.3	91.5	39.3	<1.0	--	--	--	--	--
	10/11/10	42.17	56.27	**1,280**	102	<388	**995**	7.6	93.2	27.3	1.5	--	--	--	--	--
	01/07/11	41.24	57.20	**2,190**	79.7	<388	**611**	12.2	116	95.9	1.3	--	--	--	--	--
	05/03/11	40.97	57.47	**850**	120	<72	**230**	4	40	35	<0.5	--	--	--	--	<50
	08/12/11	41.00	57.44	**1,600**	150	<67	**220**	6	58	80	<1	--	--	--	--	<100
	10/13/11	41.71	56.73	**2,300**	29	<67	**630**	13	90	84	1	--	--	--	--	--
MTCA Method A CULs:				1,000/800[1]	500	500	5	1,000	700	1,000	20	5	0.01	15	15	NE

EXPLANATIONS:
Analytical results in bold indicate concentrations exceed MTCA Method A CULs.
Groundwater monitoring data, top of casing elevations, and laboratory analytical results prior to May 3, 2011, provided by STANTEC Consulting Corporation.

BTEX = Benzene, toluene, ethylbenzene, and total xylenes
CULs = Cleanup levels
EDB = 1,2-Dibromoethane
Ecology = Washington State Department of Ecology
EDC = 1,2-Dichloroethane
ft = feet
J = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL = Method detection limit
MTBE = Methyl Tertiary Butyl Ether
MTCA = Model Toxics Control Act
NE = Not Established
QC = Quality control
TOC = Top of casing
TPH = Total Petroleum Hydrocarbons
TPH-D = TPH as Diesel-range organics
TPH-G = TPH as Gasoline-range organics
TPH-O = TPH as Heavy Oil-range organics
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
-- = Not measured/Not analyzed
< = Less than the stated laboratory reporting limit
2n = Sample was evaluated to the MDL
M0 = Matrix spike recovery and/or spike duplicate recovery was outside the laboratory control limits
Z2 = Analyte present in the associated method blank above the detection limit

ANALYTICAL METHODS:
BTEX analyzed by USEPA Method 8260B.
EDB analyzed by USEPA Method 504.1.
EDC analyzed by USEPA Method 8260B.
Ethanol analyzed by USEPA Method 8260B.
MTBE analyzed by USEPA Method 8260B.
TPH-D analyzed by Northwest Method NWTPH-Dx .
TPH-G analyzed by Northwest Method NWTPH-Gx.
TPH-O analyzed by Northwest Method NWTPH-Dx.

NOTE:
1 MTCA Method A CULs for TPH-G are 1,000 µg/L when no benzene is present and 800 µg/L when benzene is present.
2 The surrogate data is outside th QC limits. Results from the reextraction are within limits. See laboratory report for more information.

SAIC

Attachment A:
Groundwater Monitoring and Sampling Data Package

WELL GAUGING DATA

Project # 111013-T852 Date 10/13/11 Client CHEVRON

Site 3000 FIRST AVE / SEATTLE

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or (TOC)	Notes
MW-D	1114	2					19.51	19.70		
MW-E	1120	2					24.92	25.08		
MW-F	1137	2					23.47	27.42		
MW-G	1126	2					13.59	28.62		
MW-1	1131	2					41.71	49.90	↓	

LOW FLOW WELL MONITORING DATA SHEET

Project #: 111013-SB2	Client: CHEVRON
Sampler: SB	Gauging Date: 10/13/11
Well I.D.: MW-1D	Well Diameter (in.) (2) 3 4 6 8 ___
Total Well Depth (ft.): 19.70	Depth to Water (ft.): 19.51
Depth to Free Product: ___	Thickness of Free Product (feet): ___
Referenced to: (PVC) Grade	Flow Cell Type:

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other

Start Purge Time: Flow Rate: Pump Depth:

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
		INSUFFICIENT	WATER	TO	PURGE		NO	
		SAMPLE	COLLECTED					

Did well dewater? Yes No Amount actually evacuated:

Sampling Time: Sampling Date:

Sample I.D.: Laboratory:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 111013-T82	Client: CHEVRON
Sampler: JB	Gauging Date: 10/13/11
Well I.D.: MW-6	Well Diameter (in.): (2) 3 4 6 8 ___
Total Well Depth (ft.): 25.08	Depth to Water (ft.): 24.92
Depth to Free Product: ___	Thickness of Free Product (feet): ___
Referenced to: (PVC) Grade	Flow Cell Type: ___

Purge Method: 2" Grundfos Pump / Peristaltic Pump / Bladder Pump
Sampling Method: Dedicated Tubing / New Tubing / Other ___

Start Purge Time: ___ Flow Rate: ___ Pump Depth: ___

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
___	___	INSUFFICIENT WATER TO PURGE,						
		NO SAMPLE COLLECTED						
___	___	___	___	___	___	___	___	___

Did well dewater? Yes No	Amount actually evacuated:
Sampling Time:	Sampling Date:
Sample I.D.:	Laboratory:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 111013-J32	Client: CHEVRON
Sampler: JS	Gauging Date: 10/13/11
Well I.D.: MW-F	Well Diameter (in.): (2) 3 4 6 8 ___
Total Well Depth (ft.): 27.42	Depth to Water (ft.): 23.47
Depth to Free Product: ___	Thickness of Free Product (feet): ___
Referenced to: (PVC) Grade	Flow Cell Type: 351556

Purge Method: 2" Grundfos Pump (Peristaltic Pump) Bladder Pump
Sampling Method: Dedicated Tubing New Tubing Other ___

Start Purge Time: 1314 Flow Rate: 200 ml/min Pump Depth: 25.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1317	16.84	6.52	379	55	1.35	-67.2	600	23.55
1320	16.64	6.41	369	48	0.85	-70.1	1200	23.57
1323	16.56	6.36	366	39	0.86	-69.5	1800	23.60
1326	16.60	6.35	365	20	0.86	-69.9	2400	23.60
1329	16.58	6.35	365	9	0.82	-71.5	3000	23.62
1332	16.51	6.35	363	5	0.80	-72.6	3600	23.63
1335	16.54	6.35	363	4	0.79	-72.8	4200	23.63

Did well dewater? Yes (No)	Amount actually evacuated: 4.2 L
Sampling Time: 1336	Sampling Date: 10/13/11
Sample I.D.: MW-F	Laboratory: LONESTAR
Analyzed for: (TPH-G) (BTEX) (MTBE) (TPH-D)	Other: TPH-O
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 111013-832	Client: CHEVRON
Sampler: JB	Gauging Date: 10/13/11
Well I.D.: MW-6	Well Diameter (in.): (2) 3 4 6 8 ___
Total Well Depth (ft.): 28.62	Depth to Water (ft.): 13.59
Depth to Free Product: ———	Thickness of Free Product (feet): ———
Referenced to: (PVC) Grade	Flow Cell Type: 351556

Purge Method: 2" Grundfos Pump (Peristaltic Pump) Bladder Pump
Sampling Method: (Dedicated Tubing) New Tubing Other ___

Start Purge Time: 1158 Flow Rate: 160 ml/min Pump Depth: 21'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1204	16.89	6.75	299	24	1.24	45.9	600	13.86
1207	16.83	6.75	298	22	0.98	41.6	900	14.01
1210	16.82	6.76	298	21	0.95	40.7	1200	14.10
1213	16.84	6.76	297	20	0.94	39.9	1500	14.17
1216	16.85	6.76	297	20	0.94	39.4	1800	14.26

Did well dewater? Yes (No)	Amount actually evacuated: 1.8 L
Sampling Time: 1217	Sampling Date: 10/13/11
Sample I.D.: MW-6	Laboratory: (OTHER)
Analyzed for: (TPH-G) (BTEX) (MTBE) (TPH-D)	(Other:) TPH-O
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 111013-JB2	Client: CHEVRON
Sampler: JB	Gauging Date: 10/13/11
Well I.D.: MW-1	Well Diameter (in.): (2) 3 4 6 8 ___
Total Well Depth (ft.): 49.90	Depth to Water (ft.): 41.71
Depth to Free Product: ___	Thickness of Free Product (feet): ___
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: (8" Grundfos Pump) Peristaltic Pump Bladder Pump
Sampling Method: (Dedicated Tubing) New Tubing Other ___

Start Purge Time: 1244 Flow Rate: 500 ml/min Pump Depth: 46'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1247	16.12	6.87	410	192	0.82	-84.7	1500	41.91
1250	20.13	6.95	407	169	0.37	-103.6	3000	41.91
1253	19.73	7.00	410	163	0.38	-101.9	4500	41.91
1256	19.80	7.00	412	159	0.37	-102.3	6000	41.91
1259	19.89	7.02	412	165	0.37	-102.5	7500	41.91

Did well dewater? Yes (No) Amount actually evacuated: 7.5 L

Sampling Time: 1300 Sampling Date: 10/13/11

Sample I.D.: MW-1 Laboratory: LANCASTER

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other: TPH-D

Equipment Blank I.D.: @ Time Duplicate I.D.:

CHAIN OF CUSTODY FORM

Chevron Environmental Management Company ▪ 6001 Bollinger Canyon Road ▪ San Ramon, CA 94583-2324 COC 1 of 1

Chevron Site Number: 35-1445

Program Designation: CMP

Site Address (street, city, state / county): 3000 First Ave. Seattle, WA

Chevron PM:

Chevron PM Phone No.:

☐ Retail and Terminal Business Unit (RTBU) Job
☐ Construction/Retail Job

Chevron Consultant: SAIC

Address: 405 S 8th St, Suite 301, Boise ID

Consultant Contact: Ron Santos

Consultant Phone No. (208) 429-3772

Consultant Project No. 111013-[illegible]

Sampling Company: Blaine Tech Services

Sampled By (Print): [illegible] BUSTAMANTE

Sampler Signature: [signature]

Charge Code:
NWRTB 00SITE NUMBER-0- OML

WBS ELEMENTS:
SITE ASSESSMENT: A1L REMEDIATION IMPLEMENTATION: R5L
SITE MONITORING: OML OPERATION MAINTENANCE & MONITORING: M1L

Lancaster Laboratories
☒ Lancaster, PA
Lab Contact: Megan Moeller
2425 New Holland Pike, Lancaster, PA 17601
Phone No: (717)656-2300

Other Lab

Temp. Blank Check Time	Temp.
1200	3°
1300	3°
1400	3°

Preservation Codes: H = HCL T = Thiosulfate N = HNO₃ B = NaOH S = H_2SO_4 O = Other

ANALYSES REQUIRED (preservation: H, H, –, H, –, H)

SAMPLE ID

Field Point Name	Matrix	Top Depth	Date (yymmdd)	Sample Time	# of Containers	Container Type	TPH-DRO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	TPH-ORO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	TPH-HRO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	8260B FULL LIST☐ EDC☐ TBA☐ TAME☐ ETBE☐ ETHANOL☐ BTEX☒ MTBE☒	PAH's☐ CPAH's☐ 8270 SIM	TPH-G (NWTPH-Gx)	TOTAL LEAD (6020)	EDB (8011) ☐	TPH-D AND TPH-0 BY (NWTPH-DX)			Notes/Comments
MW-F	W		111013	1336	9	VOA, AMBER	X	X		X		X						
MW-G	W		↓	1217	9	↓	X	X		X		X						
MW-1	W			1300	9	↓	X	X		X		X						
QA	T		↓	1110	3	VOA				X		X						

Special Instructions

Relinquished By	Company	Date/Time	Relinquished To	Company	Date/Time
[signature]	BTS	10/13/2011 1700	SHIPPED VIA FEDEX		

Turnaround Time: Standard☒ 24 Hours☐ 48 hours☐ 72 Hours☐ Other☐

Sample Integrity: (Check by lab on arrival)
Intact: On Ice: Temp:
COC #

WELLHEAD INSPECTION FORM

Client: CHEVRON Site: 2020 FIRST AVE \ SEATTLE Date: 10/13/11

Job #: 111013-TB2 Technician: TB Page 1 of 1

Well ID	Well Inspected - No Corrective Action Required	Check Indicates deficiency: Cap non-functional	Lock non-functional	Lock missing	Bolts missing (list qty)	Tabs stripped (list qty)	Tabs broken (list qty)	Annular seal incomplete	Apron damaged	Rim / Lid broken	Trip Hazard	Below Grade	Other (explain in notes)	Well Not Inspected (explain in notes)	Notes (list if cap or lick replaced, if there are access issues associated with repairs, if traffic control is required, if stand pipe damaged, or any specific details not covered by checklist)
MW-D	X														
MW-E	X														
MW-F	X														
MW-G	X														
MW-1	X														

NOTES:

CHEVRON TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT CHEVRON FACILITIES IN THE STATE OF WASHINGTON OR OREGON. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND-WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY EMERALD SERVICES

The contractor performing this work is BLAINE TECH SERVICES, INC. 22727 72ND Ave South, Suite D – 102, Kent, WA 98032. BTS Seattle adress. Blaine Tech Services, Inc. is authorized by CHEVRON PRODUCTS COMPANY (CHEVRON) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the CHEVRON facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Chevron facility to BTS; from one Chevron facility to BTS via another Chevron facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of CHEVRON.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Chevron facility described below:

35-1445	MARKINGUS
CHEVRON #	Chevron Engineer

3000	FIRST AVE	SEATTLE	WA
street number	street name	city	state

SAIC

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-E	11.5		
MW-G	10.5		
MW-1	12		

added equip. rinse water 13

any other adjustments

TOTAL GALS. RECOVERED 37

loaded onto BTS vehicle # 86

BTS event #	time	date
111013-SB2	1410	10/13/11

signature

****

REC'D AT

time date

unloaded by signature

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME 35-1445				JOB NUMBER 111013-352				
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED WITHIN 10% Y or N	COMMENTS	TEMP.	INIT
YSI 556	BTS-SEA	10/13/11 0600	PH. 7.4.10 ORP. 254.0	7.00, 4.00, 10.03 3900	YES YES		9.96 10.14	SB SB
↓	↓	↓	ORP. 254.0 DO. 100%	253.7 100.3%	YES YES		9.73 —	SB SB

Blaine Tech Services, Inc.

Permit To Work

for Chevron EMC Sites

Client: CHEVRON Date 10/13/11

Site Address: 3000 1ST AVE SEATTLE

Job Number: 111013-SB2 Technician(s): SB

Pre-Job Safety Review

1. JMP reviewed, site restrictions and parking/access issues addressed. Reviewed: ☒

2. Special Permit Required Task Review

Are there any conditions or tasks that would require:	Yes	No
Confined space entry	☐	☒
Working at height	☐	☒
Lock-out/Tag-out	☐	☒
Excavations greater than 4 feet deep	☐	☒
Excavations within 3 feet of a buried active electrical line or product piping or within 10 feet of a high pressure gas line.	☐	☒
Use of overhead equipment within 15 feet of an overhead electrical power line or pole supporting one	☐	☒
Hot work	☐	☒

If "Yes" was the answer to any of the Special Permit Required Tasks above, the Project Manager will contact the client and arrange to modify the Scope of Work so that the Special Permit Required Tasks are not required to be performed by Blaine Tech Services employees.

3. Is a Traffic Control Permit required for today's work?	Yes	No
	☐	☒
If so is it in the folder?	☐	☐
Is it current?	☐	☐
Do you understand the Traffic Control Plan and what equipment you will need?	☐	☐

On site Pre-Job Safety Review

1. Reviewed and signed the site specific HASP.	☒
2. Route to hospital understood.	☒
3. Reviewed "Groundwater Monitoring Well Sampling General Job Safety Analysis included in the HASP.	☒
4. Exceptional circumstances today that are not covered by the HASP, JSA or JMP have been addressed and mitigated.	☒
5. Understands procedure to follow, if site circumstances change, to address new site hazards.	☒
6. There are no unexpected conditions which would make your task a Special Permit Required Task. If there is, contact your Project Manager.	☒
7. All site hazards have been communicated to all necessary onsite personnel during tailgate safety meeting.	☒
8. After lunch tailgate safety meeting refresher conducted.	☒

If Checklist Task cannot be completed, explain:

Permit To Work Authority: Matt Hagemann (Name) PM (Title) 9/26/11 (Date) 0900 (Time)

Attachment B:
Laboratory Analysis Report

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

October 25, 2011

Project: 351445

Submittal Date: 10/14/2011
Group Number: 1271355
PO Number: 0015080263
Release Number: INGLIS
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LLI) #
MW-F Water Sample	6437545
MW-G Water Sample	6437546
MW-I Water Sample	6437547
QA Water Sample	6437548

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	SAIC	Attn: Mike Lange
ELECTRONIC COPY TO	SAIC	Attn: Ron Santos
ELECTRONIC COPY TO	Blaine Tech Services	Attn: Alex Stack

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Analysis Report

Questions? Contact your Client Services Representative
Elizabeth A Leonhardt at (510) 232-8894

Respectfully Submitted,

Sarah M. Snyder
Senior Specialist

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: MW-F Water Sample
Facility# 351445
3000 First Ave - Seattle, WA

LLI Sample # WW 6437545
LLI Group # 1271355
Account # 11255

Project Name: 351445

Collected: 10/13/2011 13:36 by JB

Submitted: 10/14/2011 09:15
Reported: 10/25/2011 23:56

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FASMF

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	
10943	Benzene	71-43-2	260	3	5
10943	Ethylbenzene	100-41-4	53	3	5
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	3	5
10943	Toluene	108-88-3	16	3	5
10943	Xylene (Total)	1330-20-7	1,500	3	5
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**	**ug/l**	
08273	NWTPH-Gx water C7-C12	n.a.	11,000	500	10
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**ug/l**	**ug/l**	
02211	DRO C12-C24 w/Si Gel	n.a.	270	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

The reverse surrogate, capric acid, was present at 0%.

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	P112903AA	10/18/2011 01:38	Kevin A Sposito	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P112903AA	10/18/2011 01:38	Kevin A Sposito	5
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11290A20A	10/18/2011 03:06	Marie D John	10
01146	GC VOA Water Prep	SW-846 5030B	1	11290A20A	10/18/2011 03:06	Marie D John	10
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	112910006A	10/20/2011 12:41	Elizabeth J Marin	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	112910006A	10/18/2011 18:00	Kathryn I DeHaven	1

Lancaster Laboratories

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Analysis Report

Sample Description: MW-G Water Sample
Facility# 351445
3000 First Ave - Seattle, WA

LLI Sample # WW 6437546
LLI Group # 1271355
Account # 11255

Project Name: 351445

Collected: 10/13/2011 12:17 by JB

Submitted: 10/14/2011 09:15
Reported: 10/25/2011 23:56

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FASMG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		ug/l	ug/l	
02211	DRO C12-C24 w/Si Gel	n.a.	N.D.	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

The reverse surrogate, capric acid, was present at 0%.

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	P112903AA	10/18/2011 02:06	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P112903AA	10/18/2011 02:06	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11290A20A	10/18/2011 01:16	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	11290A20A	10/18/2011 01:16	Marie D John	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	112910006A	10/20/2011 13:02	Elizabeth J Marin	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	112910006A	10/18/2011 18:00	Kathryn I DeHaven	1

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Analysis Report

Sample Description: MW-I Water Sample
Facility# 351445
3000 First Ave - Seattle, WA

LLI Sample # WW 6437547
LLI Group # 1271355
Account # 11255

Project Name: 351445

Collected: 10/13/2011 13:00 by JB

Submitted: 10/14/2011 09:15
Reported: 10/25/2011 23:56

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FASMI

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	630	5	10
10943	Ethylbenzene	100-41-4	90	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	1	0.5	1
10943	Toluene	108-88-3	13	0.5	1
10943	Xylene (Total)	1330-20-7	84	0.5	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	2,300	250	5
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		ug/l	ug/l	
02211	DRO C12-C24 w/Si Gel	n.a.	29	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

The reverse surrogate, capric acid, was present at 0%.

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	P112903AA	10/18/2011 02:33	Kevin A Sposito	1
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z112941AA	10/21/2011 16:48	Daniel H Heller	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P112903AA	10/18/2011 02:33	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z112941AA	10/21/2011 16:48	Daniel H Heller	10
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11290A20A	10/18/2011 02:44	Marie D John	5
01146	GC VOA Water Prep	SW-846 5030B	1	11290A20A	10/18/2011 02:44	Marie D John	5
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	112910008A	10/21/2011 21:59	Margaret L Stoltzfus	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	112910008A	10/18/2011 18:00	Kathryn I DeHaven	1

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Analysis Report

Sample Description: QA Water Sample
Facility# 351445
3000 First Ave - Seattle, WA

LLI Sample # WW 6437548
LLI Group # 1271355
Account # 11255

Project Name: 351445

Collected: 10/13/2011 11:10

Submitted: 10/14/2011 09:15
Reported: 10/25/2011 23:56

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

FASQA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles	**ECY 97-602 NWTPH-Gx**		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	P112903AA	10/17/2011 23:19	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P112903AA	10/17/2011 23:19	Kevin A Sposito	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11290A20A	10/18/2011 00:32	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	11290A20A	10/18/2011 00:32	Marie D John	1

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Analysis Report

Quality Control Summary

Client Name: Chevron Group Number: 1271355
Reported: 10/25/11 at 11:56 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P112903AA	Sample number(s): 6437545-6437548							
Benzene	N.D.	0.5	ug/l	91	89	79-120	2	30
Ethylbenzene	N.D.	0.5	ug/l	91	89	79-120	2	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	94	93	76-120	1	30
Toluene	N.D.	0.5	ug/l	91	88	79-120	3	30
Xylene (Total)	N.D.	0.5	ug/l	91	89	80-120	2	30
Batch number: Z112941AA	Sample number(s): 6437547							
Benzene	N.D.	0.5	ug/l	103		79-120		
Batch number: 11290A20A	Sample number(s): 6437545-6437548							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: 112910006A	Sample number(s): 6437545-6437546							
DRO C12-C24 w/Si Gel	N.D.	30.	ug/l	65	69	56-103	6	20
HRO C24-C40 w/Si Gel	N.D.	70.	ug/l					
Batch number: 112910008A	Sample number(s): 6437547							
DRO C12-C24 w/Si Gel	N.D.	30.	ug/l	60	65	56-103	8	20
HRO C24-C40 w/Si Gel	N.D.	70.	ug/l					

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: Z112941AA	Sample number(s): 6437547 UNSPK: P437337								
Benzene	110	113	80-126	3	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST VOCs by 8260B - Water
Batch number: P112903AA

Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 10/25/11 at 11:56 PM

Group Number: 1271355

Surrogate Quality Control

6437545	100	94	100	99
6437546	100	97	99	98
6437547	95	94	100	98
6437548	100	95	100	98
Blank	100	99	100	98
LCS	99	95	100	100
LCSD	100	97	100	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST VOCs by 8260B - Water
Batch number: Z112941AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
Blank	111	101	101	95
LCS	110	104	100	103
MS	110	102	100	102
MSD	107	102	99	103
Limits:	80-116	77-113	80-113	78-113

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 11290A20A

	Trifluorotoluene-F
6437545	87
6437546	85
6437547	96
6437548	84
Blank	86
LCS	119
LCSD	122
Limits:	63-135

Analysis Name: NWTPH-Dx water w/Si Gel
Batch number: 112910006A

	Orthoterphenyl
6437545	72
6437546	70
Blank	82
LCS	89
LCSD	91
Limits:	50-150

Analysis Name: NWTPH-Dx water w/Si Gel
Batch number: 112910008A

	Orthoterphenyl
6437547	69
Blank	86
LCS	79
LCSD	82

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Group Number: 1271355
Reported: 10/25/11 at 11:56 PM

Surrogate Quality Control

Limits: 50-150

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

CHAIN OF CUSTODY FORM

Chevron Environmental Management Company ■ 6001 Bollinger Canyon Road ■ San Ramon, CA 94583-2324 COC 1 of 1

Chevron Site Number: 35-1445

Program Designation: CMP

Site Address (street, city, state / county): 3000 First Ave. Seattle, WA

Chevron PM:

Chevron PM Phone No.:

☐ Retail and Terminal Business Unit (RTBU) Job
☐ Construction/Retail Job

Chevron Consultant: SAIC

Address: 405 S 8th St. Suite 301, Boise ID

Consultant Contact: Ron Santos

Consultant Phone No. (208) 429-3772

Consultant Project No. 111013-[illegible]

Sampling Company: Blaine Tech Services

Sampled By (Print): SAL BUSTAMANTE

Sampler Signature: [signature]

Charge Code: NWRTB 00SITE NUMBER-0- OML

WBS ELEMENTS:
SITE ASSESSMENT: A1L REMEDIATION IMPLEMENTATION: R6L
SITE MONITORING: OML OPERATION MAINTENANCE & MONITORING: M1L

Lancaster Laboratories
☒ Lancaster, PA
Lab Contact: Megan Moeller
2425 New Holland Pike, Lancaster, PA 17601
Phone No: (717)656-2300

Other Lab

Temp. Blank Check Time	Temp.
1200	3°
1300	2°
1400	2°

Preservation Codes: H = HCL T = Thiosulfate; N = HNO_3 B = NaOH; S = H_2SO_4 O = Other

Acct # 11255
Grp # 1271355
Sample # 6437545-48

Special Instructions

ANALYSES REQUIRED

Field Point Name	Matrix	Top Depth	Date (yymmdd)	Sample Time	# of Containers	Container Type	TPH-DRO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	TPH-ORO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	TPH-HRO w/ SILICA GEL CLEANUP (97-602M) (NWTPH-Dx w/ sgc)	8260B FULL LIST☐ EDC☐ TBA☐ TAME☐ ETBE☐ ETHANOL☐ BTEX☒ MTBE☒	PAH's☐ cPAH's☐ 8270 SIM	TPH-G (NWTPH-Gx)	TOTAL LEAD (6020)	EDB (8011) ☐	TPH-D AND TPH-O BY (NWTPH-DX)			Notes/Comments
Preservation							H	H		H		H						
MW-F	W		111013	1336	9	VOA, AMBER	X	X		X		X						
MW-G	W		↓	1217	9	↓	X	X		X		X						
MW-1	W		↓	1300	9	↓	X	X		X		X						
QA	T		↓	1110	3	VOA				X		X						

Relinquished By	Company	Date/Time	Relinquished To	Company	Date/Time
[signature]	BTS	10/13/2011 1700	SHIPPED VIA FEDEX		
Relinquished By	Company	Date/Time	Relinquished To	Company	Date/Time
Relinquished By	Company	Date/Time	Relinquished To	Company	Date/Time

Turnaround Time: Standard☒ 24 Hours☐ 48 hours☐ 72 Hours☐ Other☐

Sample Integrity: (Check by lab on arrival)
Intact ✓ On Ice: ✓ Temp: 2.8 COC #

Brandy Berby LLI 10-14-11 915

Lancaster Laboratories

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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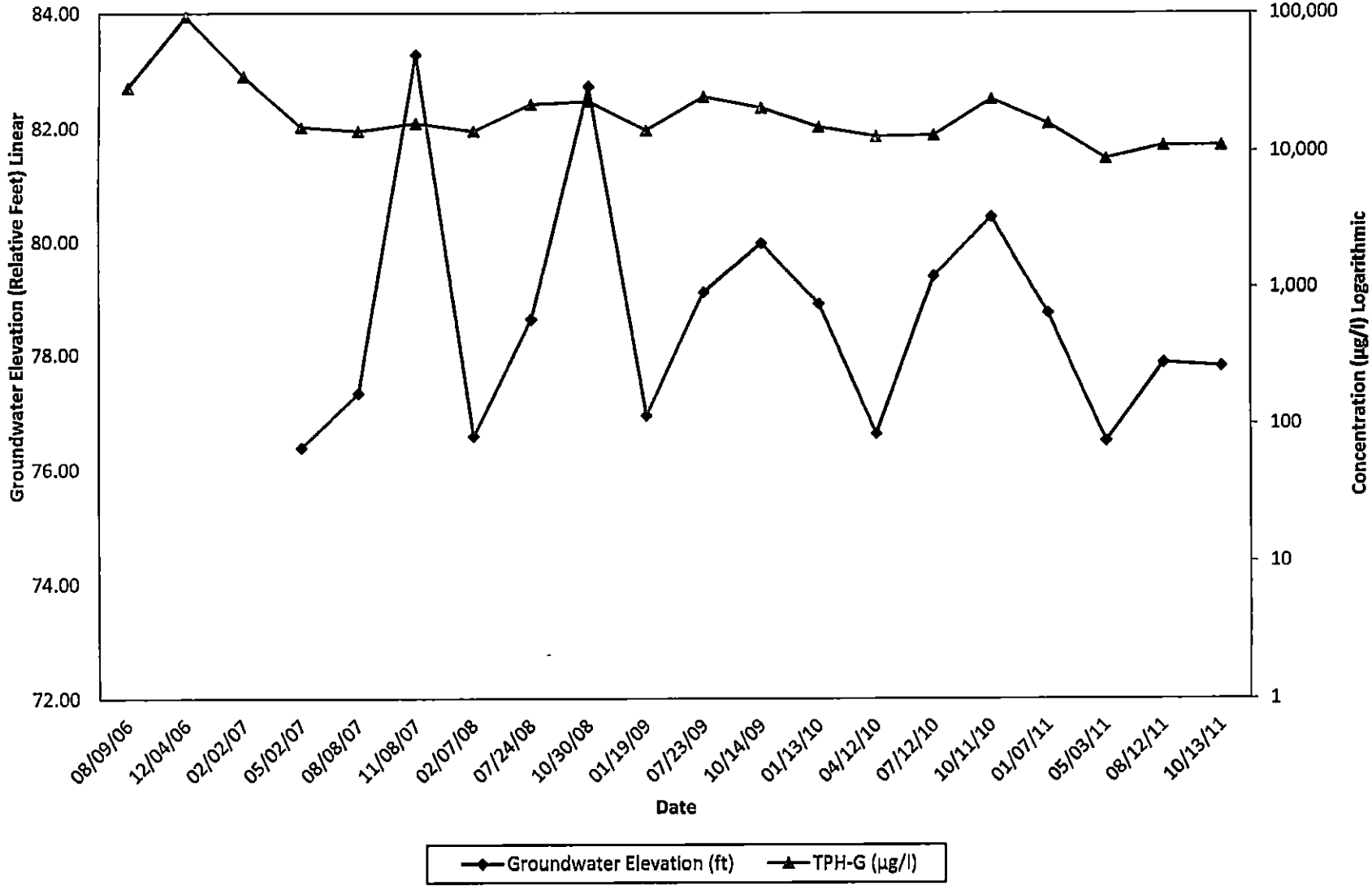
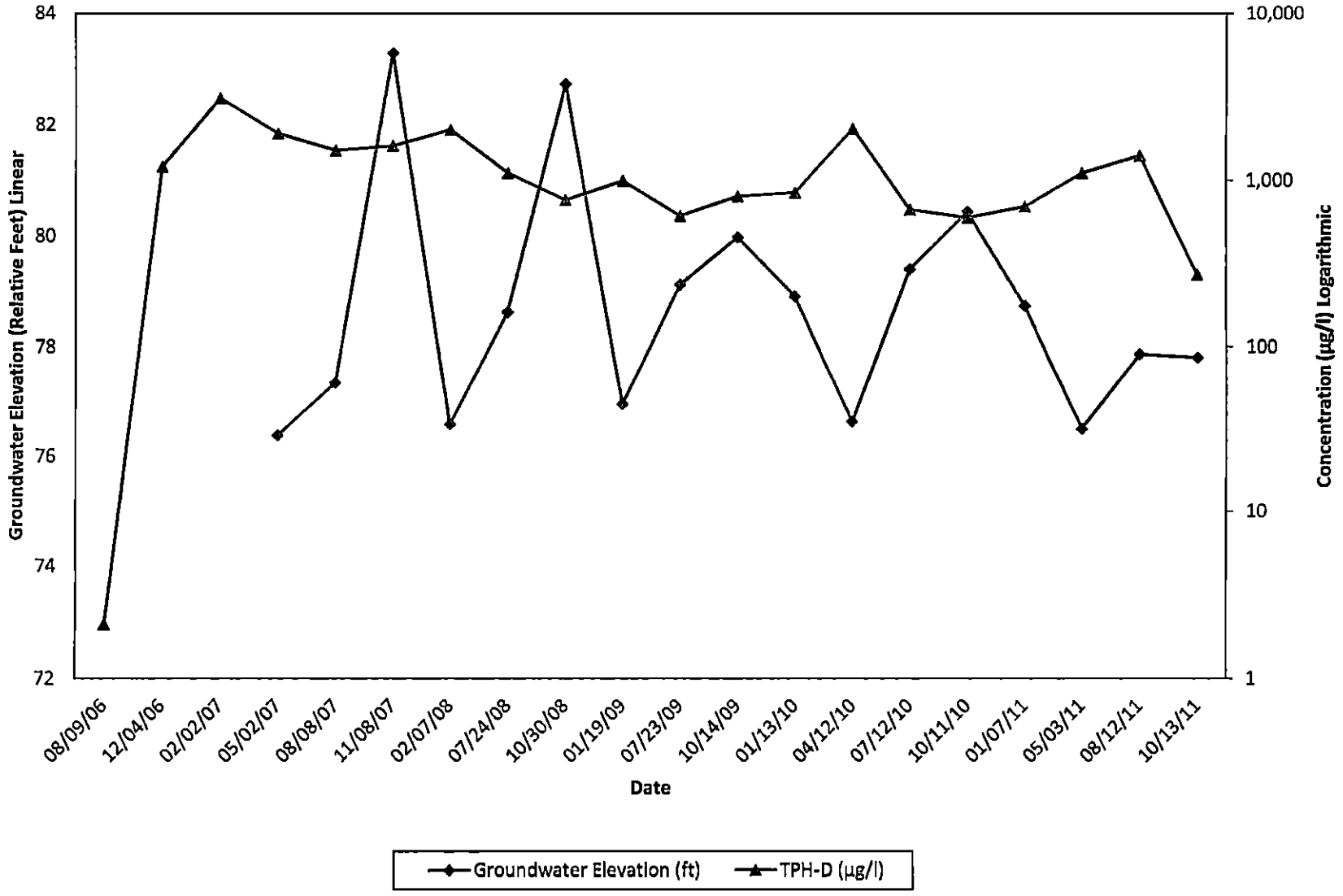
Attachment C:
Hydrographs

MW-F
Hydrograph - Gasoline-Range Hydrocarbons
76 Products Facility No. 351445
159 Denny Way, Seattle, Washington



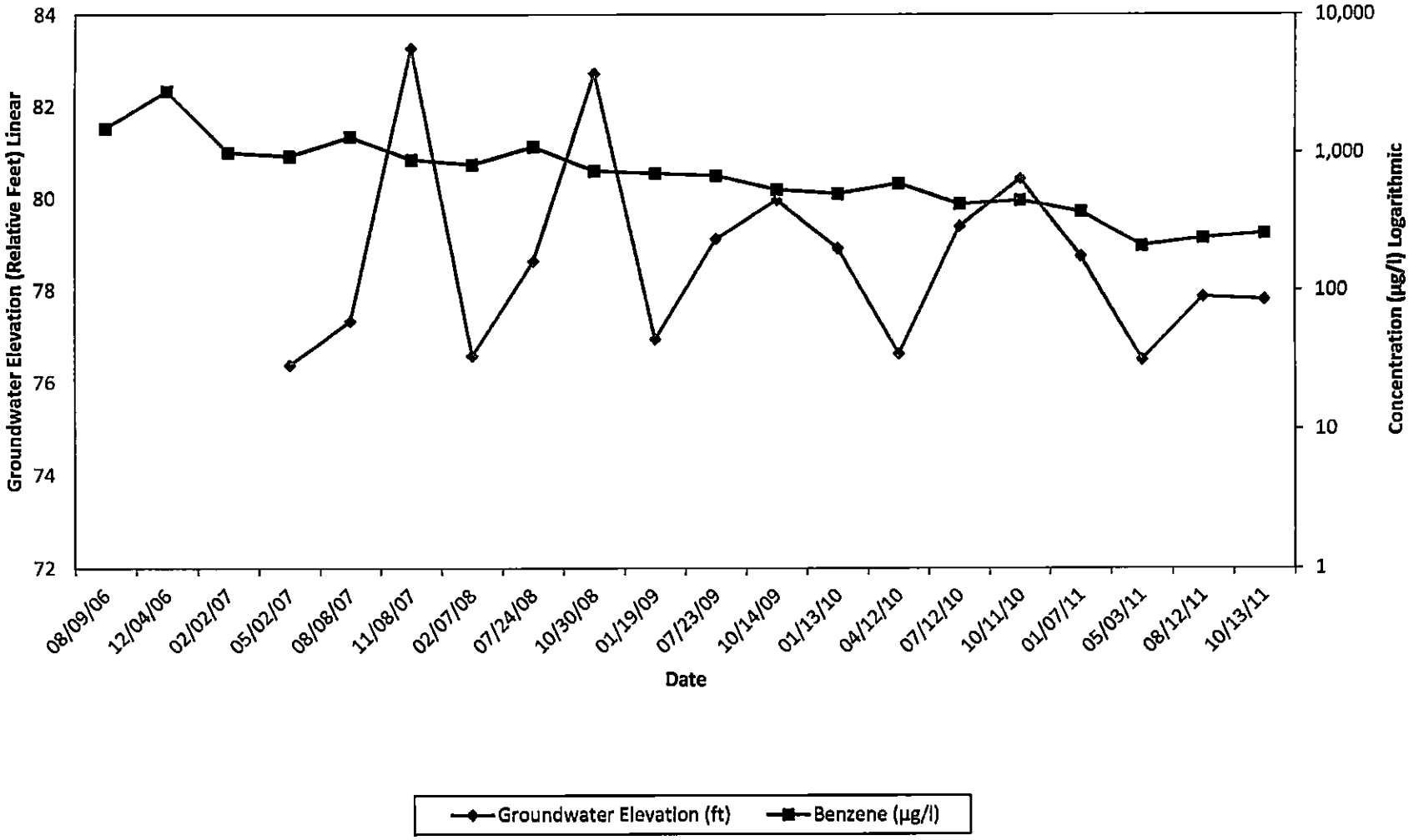
SAIC

MW-F
Hydrograph - Diesel-Range Hydrocarbons
76 Products Facility No. 351445
159 Denny Way, Seattle, Washington



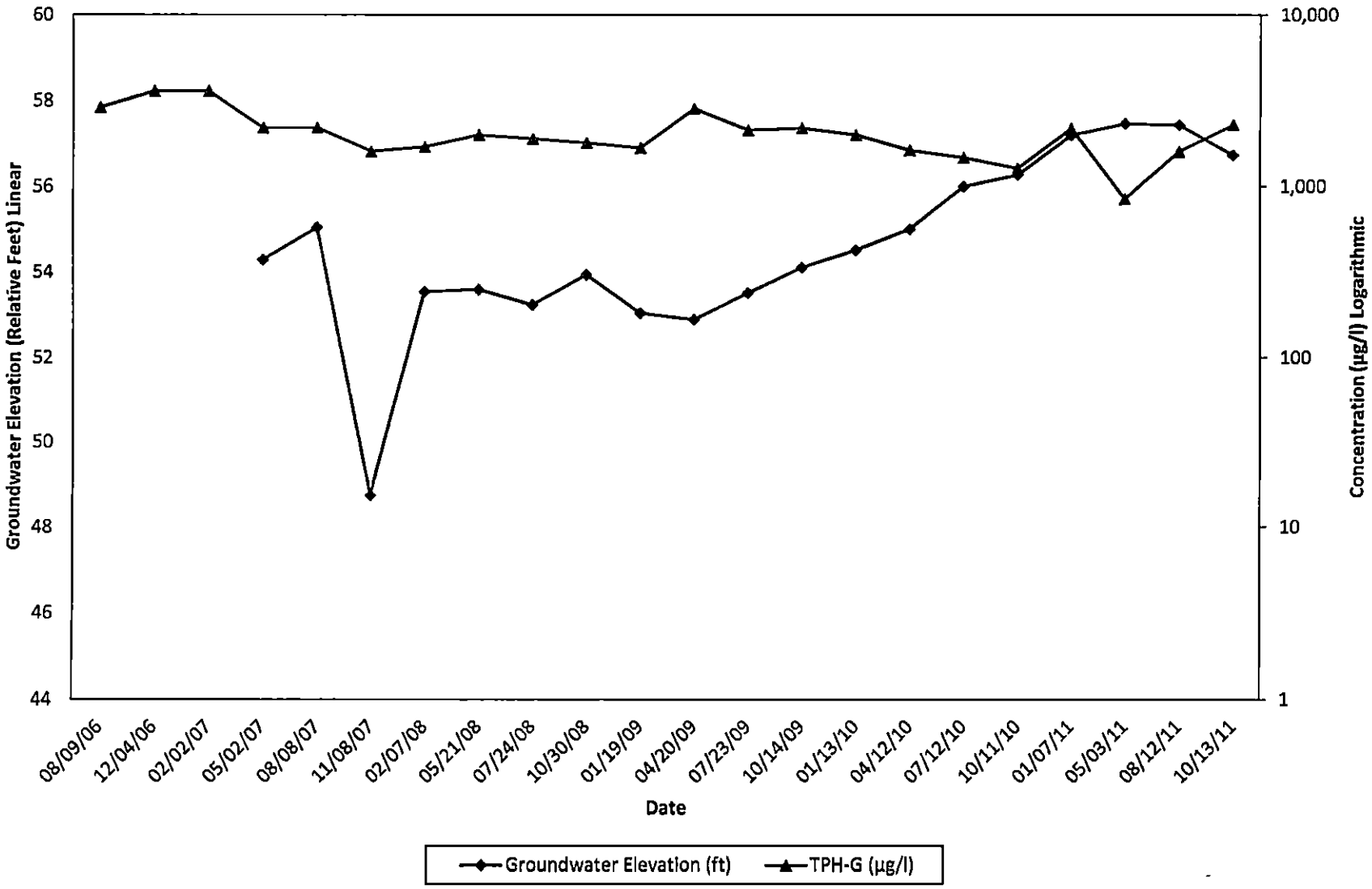
SAIC

MW-F
Hydrograph - Benzene
76 Products Facility No. 351445
159 Denny Way, Seattle, Washington



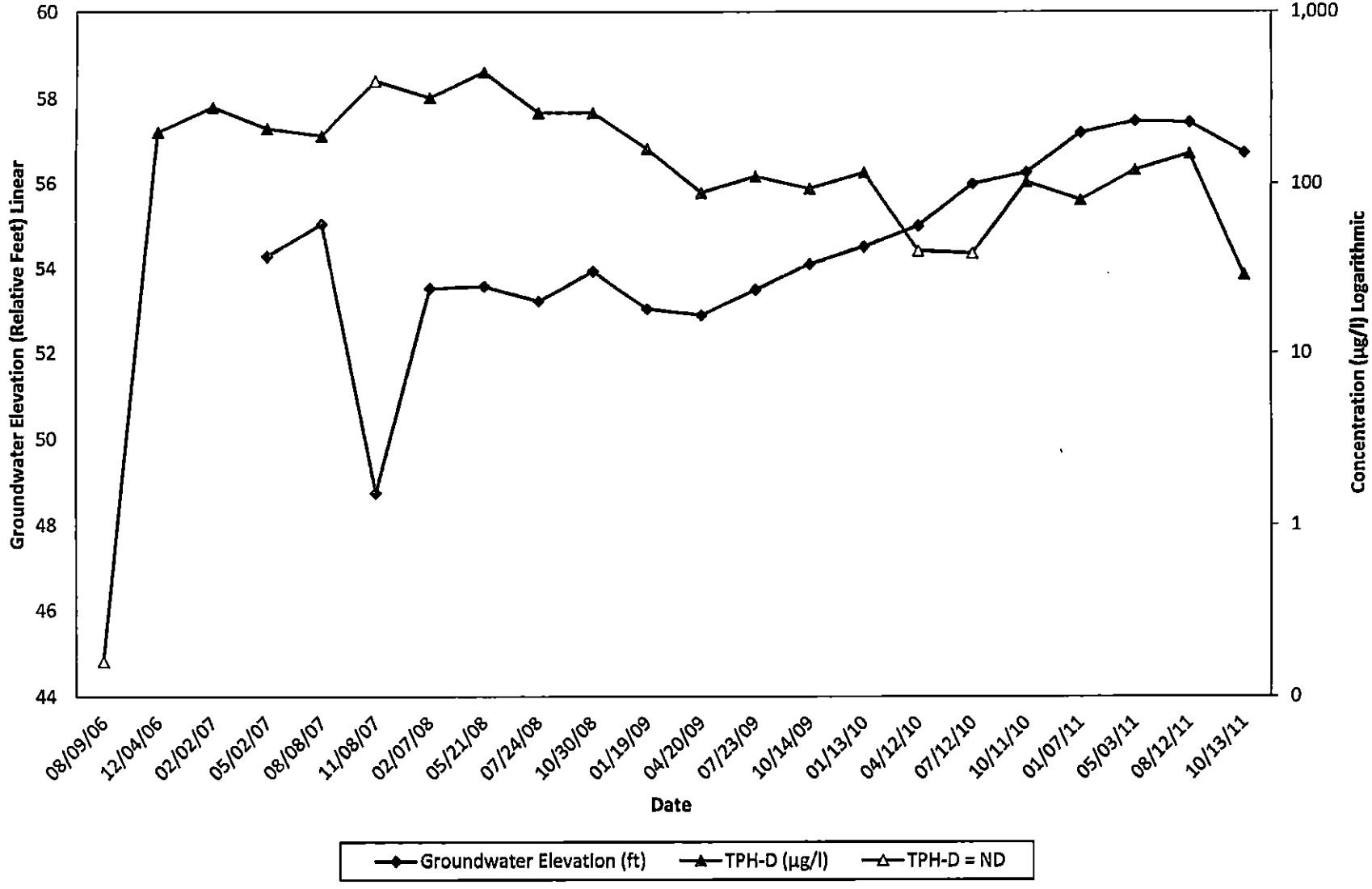
SAIC

MW-I
Hydrograph - Gasoline-Range Hydrocarbons
76 Products Facility No. 351445
159 Denny Way, Seattle, Washington



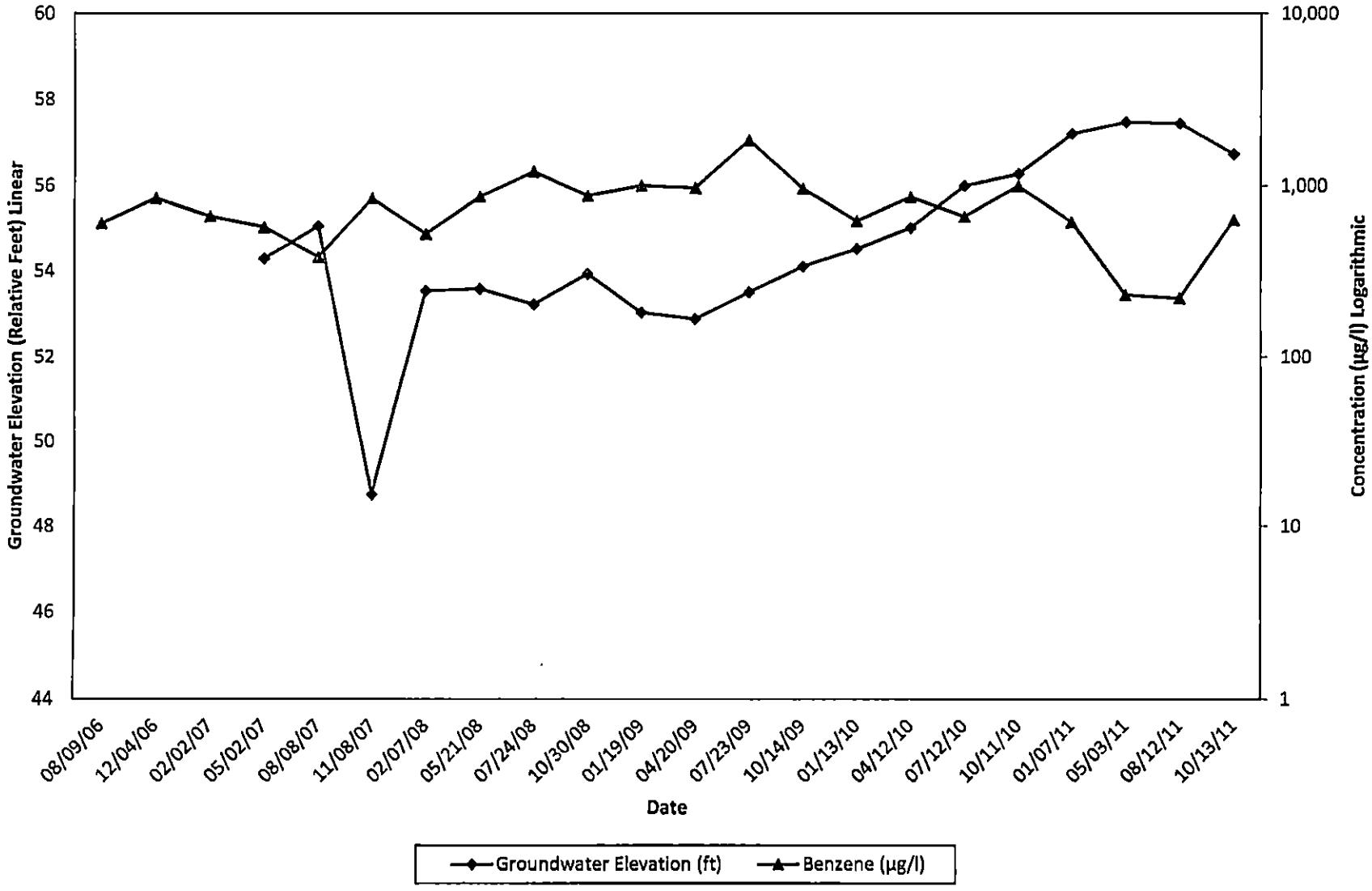
SAIC

MW-I
Hydrograph - Diesel-Range Hydrocarbons
Former 76 Products Facility No. 0355 (RMR 2857)
159 Denny Way, Seattle, Washington



SAIC

MW-I
Hydrograph - Benzene
76 Products Facility No. 351445
159 Denny Way, Seattle, Washington



SAIC