James P. Kiernan, P.E.
Project Manager

Chevron Environmental Management Company
6001 Bollinger Canyon Road
Room C2102
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jkiernan@chevron.com

January 9, 2017

Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RECEIVED
By Alameda County Environmental Health 1:36 pm, Feb 08, 2017

Re: 76 Station No. 7124 (351638)
Semi-Annual Status Report, Fourth Quarter 2016
10151 International Blvd, Oakland, California
Fuel Leak Case No.: RO0002444
GeoTracker Global ID #T0600173591

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

The information in this report is accurate to the best of my knowledge. This report was prepared by Arcadis, upon whose assistance and advice I have relied.

Sincerely,

James P. Kiernan, P.E.
Project Manager

Attachment: Semi-Annual Status Report, Fourth Quarter 2016 by Arcadis

ARCADIS Design & Consultancy for natural and built assets

Arcadis U.S., Inc.
1100 Olive Way
Suite 800
Seattle
WA 98101
Tel 206-726-4720
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ENVIRONMENT

Mr. Keith Nowell
Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:
Semi-Annual Status Report, Fourth Quarter 2016

Date:
January 15, 2017

Dear Mr. Nowell,

On behalf of Chevron Environmental Management Company's (CEMC's) affiliate, Union Oil Company of California (Union Oil), Arcadis has prepared the attached *Semi-Annual Status Report, Fourth Quarter 2016* for the following facility:

76 Station No.	**Case No.**	**Location**
7124	RO0002444	10151 International Blvd, Oakland, California

If you have any questions, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.

Contact:
Samuel Miles

Phone:
206.726.4720

Email:
Samuel.Miles@arcadis.com

Our ref:
B0035135.1638

Samuel Miles
Project Manager

Katherine Brandt, P.G.
Senior Geologist

Copies:
Geotracker Database
Mr. James Kiernan, CEMC (electronic)
Mr. Ed Ralston, Phillips 66 (electronic)
Ibrahim and Nawal Abbushi (paper copy)

ARCADIS Design & Consultancy for natural and built assets

Semi-Annual Status Report
Fourth Quarter 2016
January 15, 2017

Facility No: Former 76 Station No. 7124 Address: 10151 International Blvd, Oakland, CA

Arcadis Contact Person / Phone No.:	Samuel Miles / (206) 726-4720
Arcadis Project No.:	B0035135.1638
Primary Agency/Regulatory ID No.:	Alameda County Department of Environmental Health (ACDEH) / Keith Nowell / Case No. RO0002444

WORK CONDUCTED THIS PERIOD [Fourth Quarter 2016]:

1. Conducted semi-annual groundwater monitoring activities on November 21, 2016.
2. Prepared the *Semi-Annual Status Report, Fourth Quarter 2016*.

WORK PROPOSED NEXT PERIOD [Second Quarter 2017]:

1. If required, conduct semi-annual groundwater monitoring activities.
2. Prepare the *Semi-Annual Status Report, Second Quarter 2017*.

Current Phase of Project:	Monitoring	
Frequency of Monitoring / Sampling:	Semi-Annual	
Are Phase Separate Hydrocarbons (PSH) Present On-site:	No	
Cumulative PSH Recovered to Date:	None	(gallons)
Approximate Depth to Groundwater:	16.91 to 18.72	(feet below top of casing)
Approximate Groundwater Elevation:	19.64 to 20.46	(feet above mean sea level)
Groundwater Flow Direction	West	
Groundwater Gradient	0.01	(foot per foot)
Current Remediation Techniques:	None	

Permits for Discharge:	None
Summary of Unusual Activity:	None
Agency Directive Requirements:	None

DISCUSSION

Gettler-Ryan Inc. (GR) conducted semi-annual groundwater monitoring activities on November 21, 2016. Field data sheets and general procedures are included as Attachment A. Four (4) monitoring wells (MW-1 through MW-4) were gauged, purged, and sampled by GR representatives.

Groundwater samples were submitted to BC Laboratories, Inc. of Bakersfield, California under standard chain-of-custody protocols. Gauging and analytical data obtained by GR for this event are summarized in Table 1 and Table 2. Historical gauging and analytical data for the site are summarized in Table 3 and Table 4. The site location and layout are presented on Figures 1 and 2, respectively; the groundwater elevation contours for the site on November 21, 2016 are presented on Figure 3. Concentration maps for total petroleum hydrocarbons as gasoline (TPH-g), benzene, methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) are presented on Figures 4 through 7, respectively. A copy of the laboratory analytical report and chain-of-custody documentation are included as Attachment B.

The calculated direction of groundwater flow and gradient and the analytical results were generally consistent with previous monitoring events. TPH-g was detected in wells MW-2 through MW-4; the concentration in MW-3 was consistent with previous monitoring events while the concentrations in MW-2 and MW-4 were the highest to date in these wells, but similar to previous results at the site. Benzene and TBA continue to not be detected in groundwater samples from the four wells. MTBE was only detected in MW-3; the detected concentration was low and consistent with previous events.

The site continues to meet the criteria for low-threat closure. As such, no further monitoring is warranted and we recommend ACDEH move forward with closure notification per the January 16, 2015 letter. If further monitoring is required, Arcadis recommends transitioning to an annual frequency.

LIMITATIONS

This report was prepared in accordance with the scope of work outlined in Arcadis' contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of Chevron Environmental Management Company's affiliate, Union Oil Company of California ("Union Oil"), for the express purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Arcadis. To the extent that this report is based on information provided to Arcadis by third parties, Arcadis may have made efforts to verify this third party information, but Arcadis cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Arcadis.

Date: January 15, 2017

Katherine Brandt, P.G.
Senior Geologist

Date: January 15, 2017

Samuel Miles
Project Manager

TABLES

FIGURES

ATTACHMENTS

TABLES

Table 1. Current Groundwater Gauging and Analytical Results
Union Oil Company of California
76 Station No. 7124
10151 International Blvd, Oakland, California

Well ID	Sample Date	TOC (ft amsl)	DTW (ft bTOC)	GW Elev (ft amsl)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)
MW-1	11/21/2016	37.37	16.91	20.46	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	11/21/2016	37.87	18.12	19.75	**140**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	11/21/2016	37.72	17.98	19.74	**780**	<0.50	<0.50	<0.50	<1.0	**21**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	11/21/2016	38.36	18.72	19.64	**1,000**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250

Notes:

MW = Groundwater monitoring well
TOC = Top of casing
ft amsl = Feet above mean sea level
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
Bold = Value exceeds laboratory reporting
ft = Feet
GW Elev = Groundwater elevation
µg/L = Micrograms per liter

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Environmental Protection Agency (EPA) Method 8260B
Samples analyzed by EPA Method 8260B:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
TBA = Tert-butanol or tertiary butyl alcohol
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
ETBE = Ethyl tert-butyl ether
TAME = Tert-amyl methyl ether
Ethanol
Data QA/QC by: PC 12/8/2016

]

Table 2. Current Groundwater Analytical Results - Monitored Natural Attenuation Parameters
Union Oil Company of California
76 Station No. 7124
10151 International Blvd, Oakland, California

Well ID	Sample Date	Methane mg/L	Total Alkalinity As CaCO3 mg/L	Nitrate as NO3 mg/L	Sulfate mg/L	Iron (II) Species (µg/L)	Nitrate as NO2 mg/L	Total Sulfide mg/L	Non-Volatile Organic Carbon mg/L	Dissolved Iron (µg/L)	Total Manganese (µg/L)
MW-1	11/21/2016	<0.0010	170	34	28	<100	<0.17	<0.10	<1.0	<50	910
MW-2	11/21/2016	0.011	200	<0.44	31	530	<0.17	<0.10	<1.0	<50	4,700
MW-3	11/21/2016	0.10	300	<0.44	1.0	2,700	<0.17	<0.10	1.4	<50	6,800
MW-4	11/21/2016	0.061	170	5.5	28	1,000	<0.17	<0.10	15	<50	1,700

Notes:

MW = Groundwater monitoring well
mg/L = Miligrams per liter
µg/L = Micrograms per liter
Methane analyzed by Method RSK-175M
Total alkalinity as CaCO3 analyzed by Environmental Protection Agency (EPA) Method 310.1
Nitrate as NO3 and sulfate analyzed by EPA Method 300.0
Iron (II) species analyzed by Method SM-3500-FeD
Nitrate as NO2 analyzed by EPA Method 353.2
Total sulfide analyzed by Method SM-4500SD
Non-volatile organic carbon analyzed by EPA Method 415.1
Dissolved iron and total manganese analyzed by EPA Method 6010B
Data QA/QC by: PC 12/8/2016

Table 3. Historical Groundwater Gauging and Analytical Results, 2011 to Current
Union Oil Company of California
Former 76 Station No. 7124
10151 International Blvd, Oakland, California

Well ID	Sample Date	TOC (ft amsl)	DTW (ft bTOC)	GW Elev (ft amsl)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)
MW-1	11/2/2011	37.37	17.52	19.85	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	4/6/2012	37.37	14.20	23.17	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	6/12/2013	37.37	16.81	20.56	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	10/7/2013	37.37	17.62	19.75	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	4/8/2014	37.37	17.52	19.85	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	10/15/2014	37.37	18.29	19.08	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	6/17/2015	37.37	17.30	20.07	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	12/15/2015	37.37	17.98	19.39	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	6/15/2016	37.37	16.22	21.15	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-1	11/21/2016	37.37	16.91	20.46	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	11/2/2011	37.87	17.15	20.72	**96**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	4/6/2012	37.87	15.63	22.24	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	6/12/2013	37.87	18.03	19.84	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	10/7/2013	37.87	18.74	19.13	**99**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	4/8/2014	37.87	17.80	20.07	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	10/15/2014	37.87	19.31	18.56	**100**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	6/17/2015	37.87	18.55	19.32	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	12/15/2015	37.87	19.00	18.87	**66**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	6/15/2016	37.87	17.75	20.12	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-2	11/21/2016	37.87	18.12	19.75	**140**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	11/2/2011	37.72	17.55	20.17	**880**	<0.50	<0.50	<0.50	<1.0	**35**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	4/6/2012	37.72	16.40	21.32	**1,000**	<0.50	<0.50	<0.50	<1.0	**210**	**85**	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	6/12/2013	37.72	17.95	19.77	<50	<0.50	<0.50	<0.50	<1.0	**6.5**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	10/7/2013	37.72	18.62	19.10	**880**	<0.50	<0.50	<0.50	<1.0	**12**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	4/8/2014	37.72	17.10	20.62	**320**	<0.50	<0.50	<0.50	<1.0	**150**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	10/15/2014	37.72	19.17	18.55	**1,600**	<0.50	<0.50	<0.50	<1.0	**27**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	6/17/2015	37.72	18.34	19.38	**250**	<0.50	<0.50	<0.50	<1.0	**3.2**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	12/15/2015	37.72	18.83	18.89	**490**	<0.50	<0.50	<0.50	<1.0	**20**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	6/15/2016	37.72	17.57	20.15	<50	<0.50	<0.50	<0.50	<1.0	**0.96**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-3	11/21/2016	37.72	17.98	19.74	**780**	<0.50	<0.50	<0.50	<1.0	**21**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	11/2/2011	38.36	18.27	20.09	**170**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	4/6/2012	38.36	15.68	22.68	**200**	<0.50	<0.50	<0.50	<1.0	**1.7**	**58**	<0.50	<0.50	<0.50	<0.50	<0.50	<250

Table 3. Historical Groundwater Gauging and Analytical Results, 2011 to Current
Union Oil Company of California
Former 76 Station No. 7124
10151 International Blvd, Oakland, California

Well ID	Sample Date	TOC (ft amsl)	DTW (ft bTOC)	GW Elev (ft amsl)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)
MW-4	6/12/2013	38.36	18.65	19.71	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	10/7/2013	38.36	19.33	19.03	**95**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	4/8/2014	38.36	18.04	20.32	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	10/15/2014	38.36	19.88	18.48	**190**	<0.50	<0.50	<0.50	<1.0	**0.63**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	6/17/2015	38.36	19.04	19.32	**78**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	12/15/2015	38.36	19.56	18.80	**110**	<0.50	<0.50	<0.50	<1.0	**0.51**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	6/15/2016	38.36	18.20	20.16	**92**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
MW-4	11/21/2016	38.36	18.72	19.64	**1,000**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250

Notes:
MW = Groundwater monitoring well
TOC = Top of casing
ft amsl = Feet above mean sea level
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
PSH = Phase separate hydrocarbons
ft = Feet
<0.50 = Not detected at or above the stated limit
GW Elev = Groundwater elevation
µg/L = Micrograms per liter
Bold = Value exceeds laboratory reporting limits; PSH thickness
Data QA/QC by: PC 12/8/2016

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Environmental Protection Agency (EPA) Method 8260B
Samples analyzed by EPA Method 8260B:
Benzene, toluene, ethylbenzene, and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
TBA = Tert-butanol or tertiary butyl alcohol
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = Tert-amyl methyl ether
Ethanol

Table 4. Historical Groundwater Analytical Results - Monitored Natural Attenuation Parameters
Union Oil Company of California
76 Station No. 7124
10151 International Blvd, Oakland, California

Well ID	Sample Date	Methane mg/L	Total Alkalinity As CaCO3 mg/L	Nitrate as NO3 mg/L	Sulfate mg/L	Iron (III) Species (µg/L)	Nitrate as NO2 mg/L	Total Sulfide mg/L	Non-Volatile Organic Carbon mg/L	Dissolved Iron (µg/L)	Total Manganese (µg/L)
MW-1	6/13/2013	<0.0010	**17.52**	**24**	**23**	<100	<0.17	<0.50	**1.1**	<50	**31,000**
MW-1	10/7/2013	**0.0015**	**150**	**0**	**22**	<100	<0.17	<0.10	**3.4**	<50	**13,000**
MW-1	4/8/2014	**0.0049**	**170**	**22**	**25**	<100	<0.17	<0.10	**1.3**	<50	**11,000**
MW-1	10/15/2014	<0.001	**160**	**27**	**26**	<100	<0.17	<0.50	<1.0	<50	**39,000**
MW-1	6/17/2015	<0.001	**170**	**28**	**28**	<100	<0.17	<0.10	<1.0	<50	**2,900**
MW-1	12/15/2015	<0.0010	**170**	**34**	**26**	<100	<0.17	<0.10	**1.0**	<50	**11,000**
MW-1	6/15/2016	0.0016	**170**	**40**	**29**	<100	<0.17	<0.10	<1.0	<50	**2,600**
MW-2	6/13/2013	<0.0010	**180**	<0.44	**20**	**250**	<0.17	<0.10	**1.0**	**120**	**9,700**
MW-2	10/7/2013	**0.0049**	**200**	<0.44	**9.6**	**2,700**	<0.17	<0.10	**3.2**	**260**	**5,600**
MW-2	4/8/2014	**0.007**	**210**	<0.44	**33**	**1,700**	<0.17	<0.10	**1.4**	**140**	**8,400**
MW-2	10/15/2014	**0.011**	**210**	<0.44	**20**	**19,000**	<0.17	<0.50	<1.0	**200**	**6,400**
MW-2	6/17/2015	<0.001	**210**	<0.44	**34**	**2,500**	<0.17	<0.10	<1.0	**320**	**5,300**
MW-2	12/15/2015	**0.027**	**210**	<0.44	**23**	**1,700**	<0.17	<0.10	**1.3**	**140**	**6,300**
MW-2	6/15/2016	**0.0020**	**200**	<0.44	**36**	**1,000**	<0.17	<0.10	<1.0	<50	**6,700**
MW-3	6/13/2013	**0.0075**	**260**	<0.44	<1.0	**3,200**	<0.17	<0.10	**1.4**	**160**	**5,700**
MW-3	10/7/2013	**0.071**	**260**	<0.44	<1.0	**9,000**	<0.17	<0.10	**3.1**	**710**	**9,600**
MW-3	4/8/2014	**0.034**	**290**	<0.44	**2.1**	**1,200**	<0.17	<0.10	**1.3**	**220**	**6,000**
MW-3	10/15/2014	**0.069**	**290**	<0.44	<1.0	**<100**	<0.17	<0.50	<1.0	**93**	**6,900**
MW-3	6/17/2015	**0.11**	**310**	<0.44	<1.0	**4,700**	<0.17	<0.50	**25.0**	**350**	**6,300**
MW-3	12/15/2015	**0.13**	**280**	<0.44	<1.0	**5,900**	<0.17	<0.10	**1.6**	**140**	**6,900**
MW-3	6/15/2016	**0.035**	**280**	<0.44	**7.4**	**1,400**	<0.17	<0.10	**1.8**	<50	**6,000**
MW-4	6/13/2013	<0.0010	**210**	<0.44	**15**	**5,200**	<0.17	<0.50	**4.7**	<50	**7,900**
MW-4	10/7/2013	<0.0010	**190**	<0.44	**18**	**13,000**	<0.17	<0.10	**8.2**	**220**	**5,000**
MW-4	4/8/2014	<0.0010	**130**	**5**	**17**	**280**	<0.17	<0.10	**12.0**	**200**	**1,200**
MW-4	10/15/2014	**0.17**	**210**	<0.44	**24**	**5,800**	<0.17	<0.50	**1.5**	<50	**8,000**
MW-4	6/17/2015	**0.0027**	**210**	<0.44	**51**	**2,100**	<0.17	<0.10	**1.9**	<50	**2,400**
MW-4	12/15/2015	**0.057**	**200**	**2.5**	**37**	**2,900**	<0.17	<0.10	**17**	<50	**4,200**
MW-4	6/15/2016	**0.0016**	**250**	<0.44	**26**	**1,200**	<0.17	<0.50	**4.8**	<50	**1,800**

Notes:

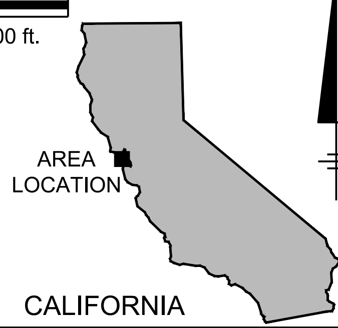
MW = Groundwater monitoring well
mg/L = Miligrams per liter
µg/L = Micrograms per liter
Methane analyzed by Method RSK-175M
Total alkalinity as CaCO3 analyzed by Environmental Protection Agency (EPA) Method 310.1
Nitrate as NO3 and sulfate analyzed by EPA Method 300.0
Iron (II) species analyzed by Method SM-3500-FeD
Nitrate as NO2 analyzed by EPA Method 353.2
Total sulfide analyzed by Method SM-4500SD
Non-volatile organic carbon analyzed by EPA Method 415.1
Dissolved iron and total manganese analyzed by EPA Method 6010B
Data QA/QC by: PC 12/8/2016

FIGURES

SOURCE: OpenStreetMap (and) contributors, CC-BY-SA

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

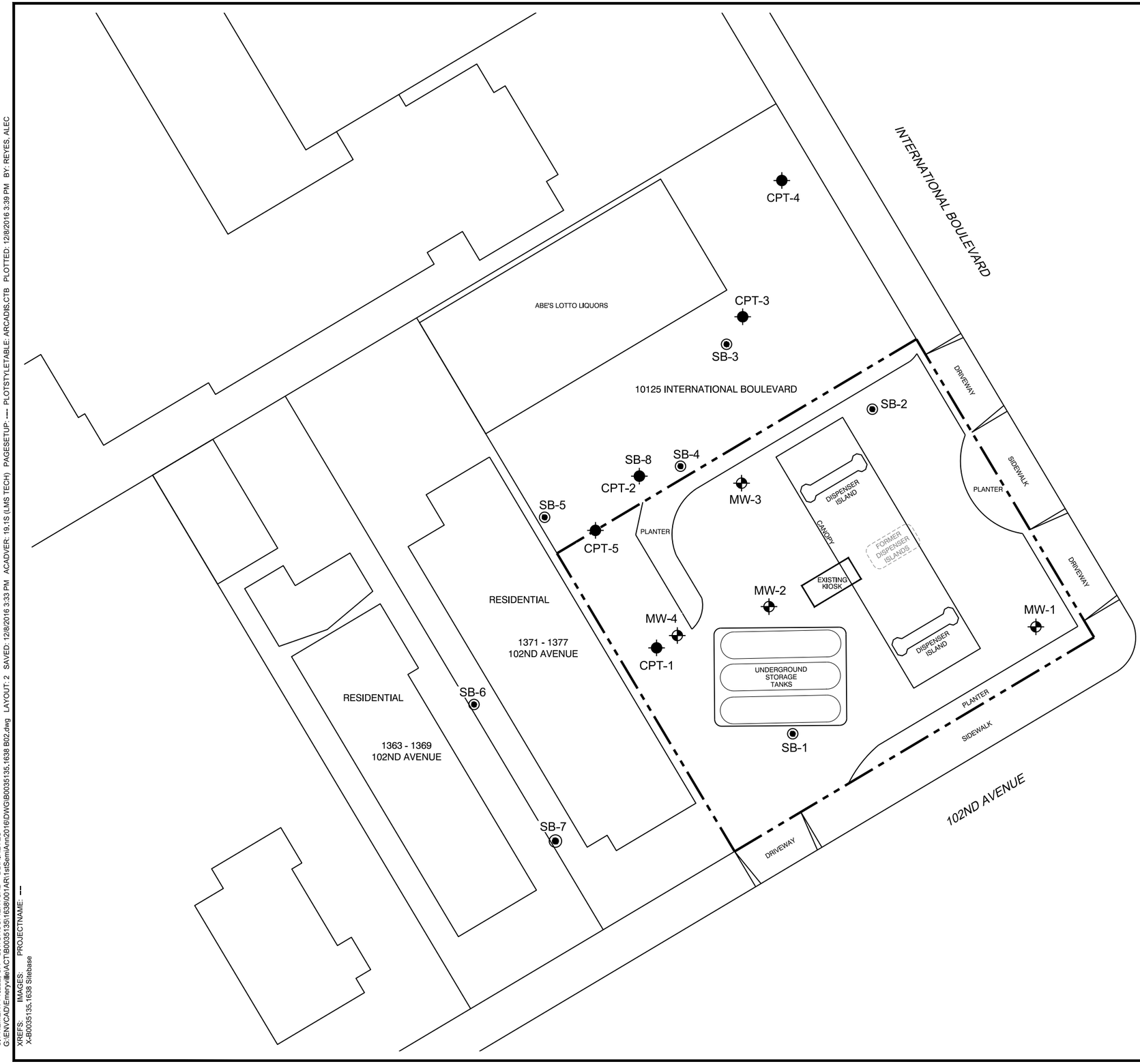


76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1



NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER MONITORING WELL
- SOIL BORING
- CPT LOCATION

NOTES:

1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

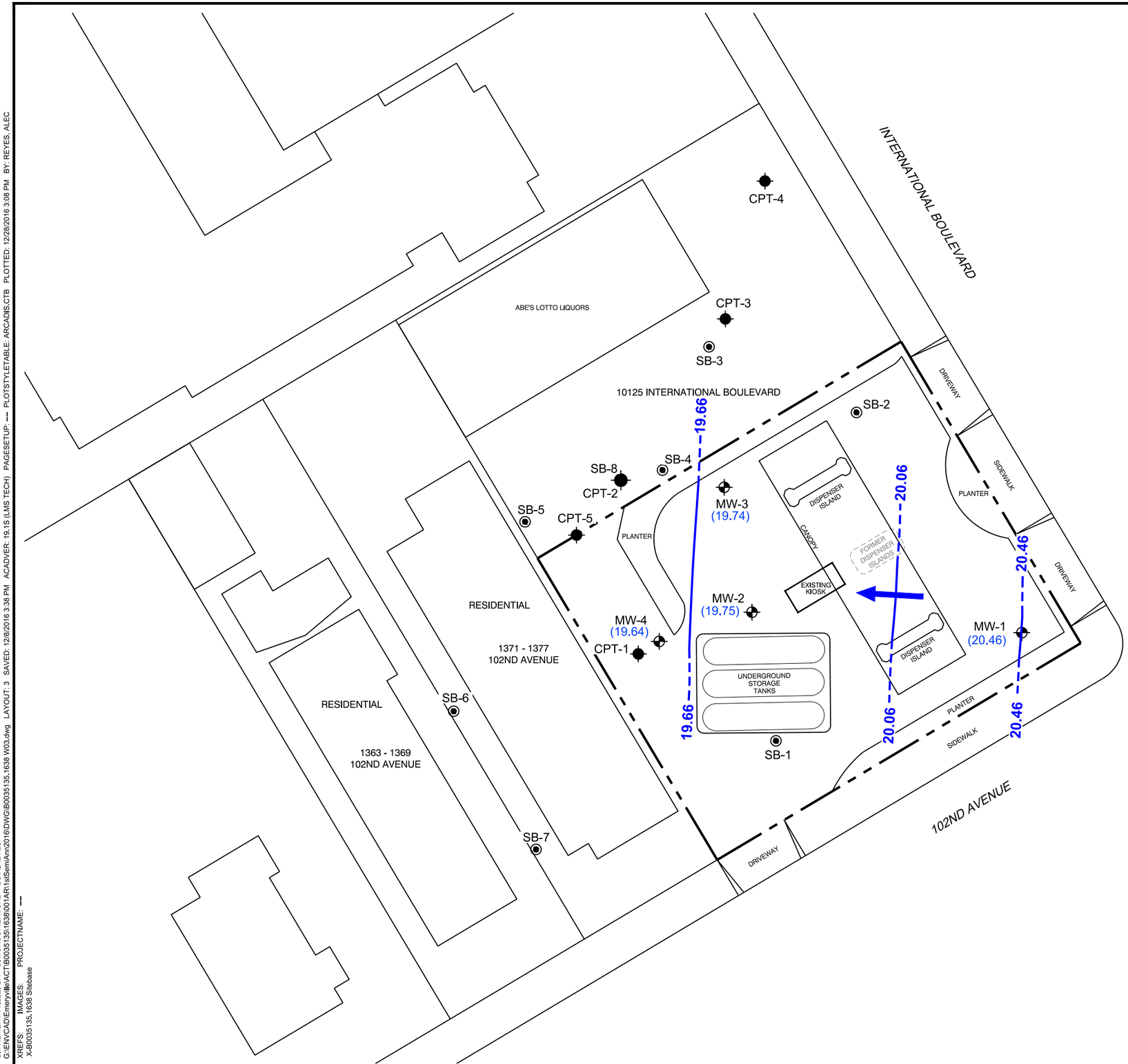
Approximate Scale: 1 in. = 30 ft.

76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2



NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER MONITORING WELL
- SOIL BORING
- CPT LOCATION
- (20.46) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- APPROXIMATE DIRECTION OF GROUNDWWATER FLOW
- 20.06 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTES:
1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

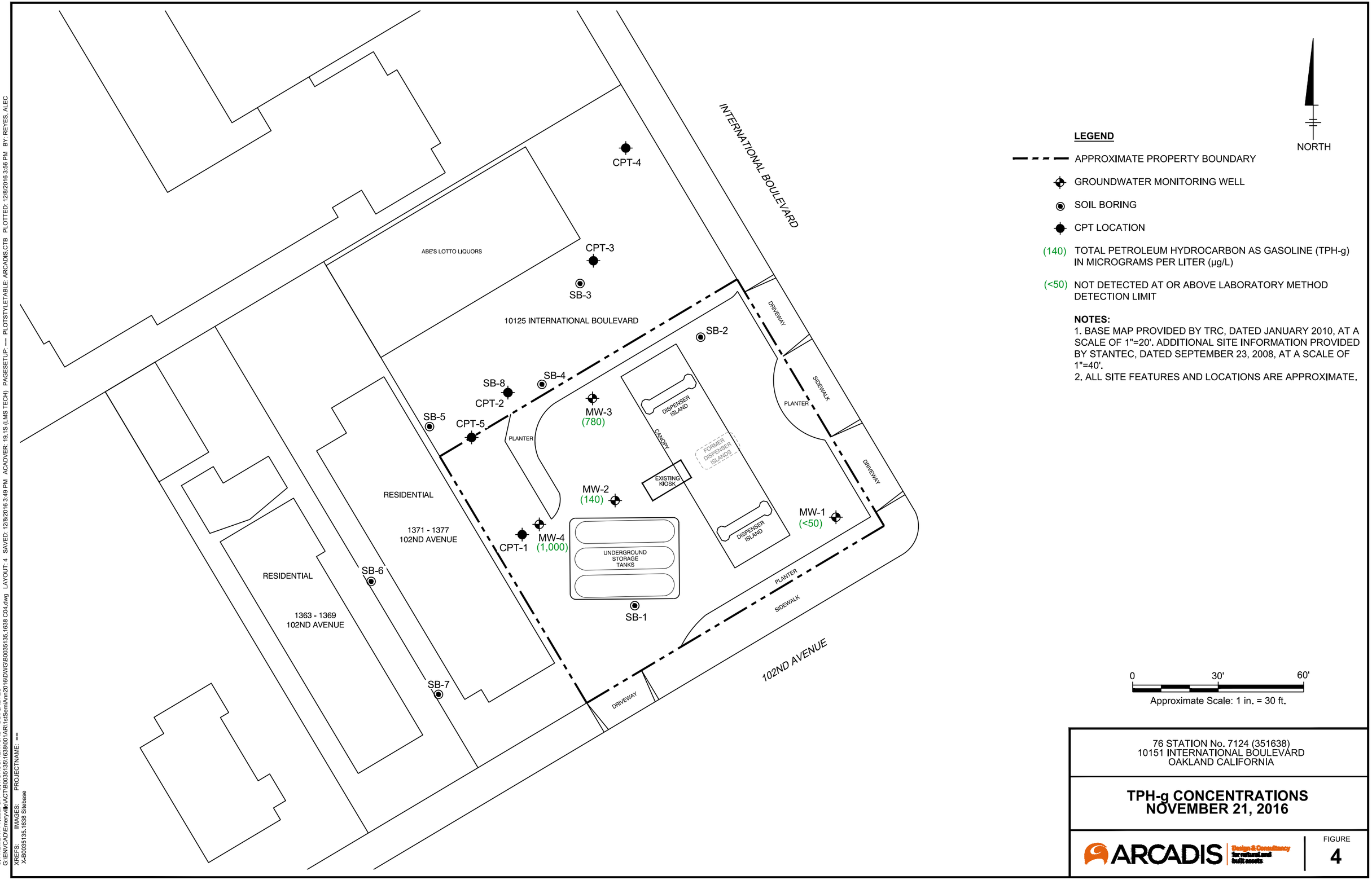
Approximate Scale: 1 in. = 30 ft.

76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

GROUNDWATER ELEVATION CONTOUR NOVEMBER 21, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

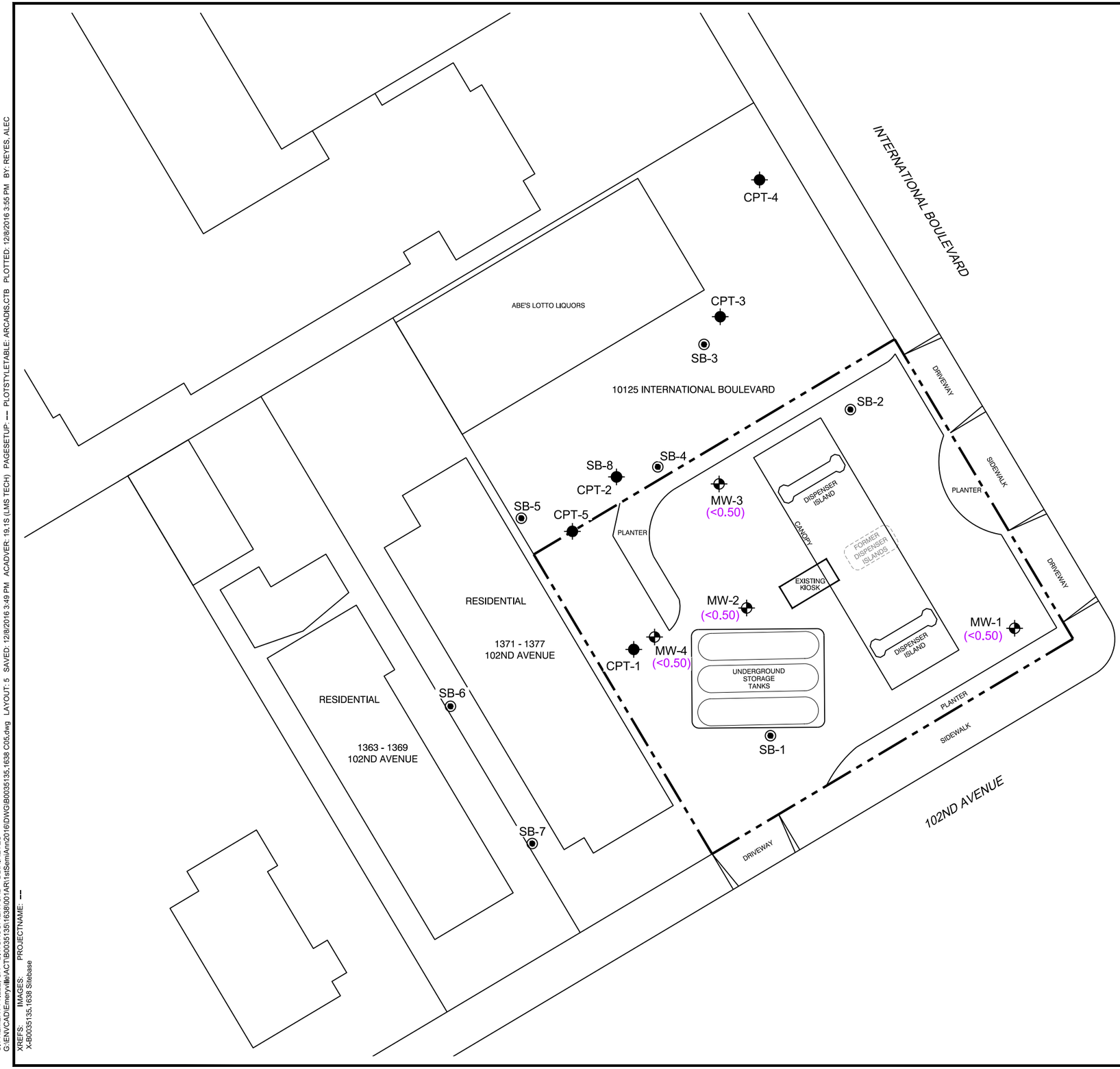


76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

TPH-g CONCENTRATIONS NOVEMBER 21, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4



NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER MONITORING WELL
- SOIL BORING
- CPT LOCATION
- (<0.50) NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

NOTES:
1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

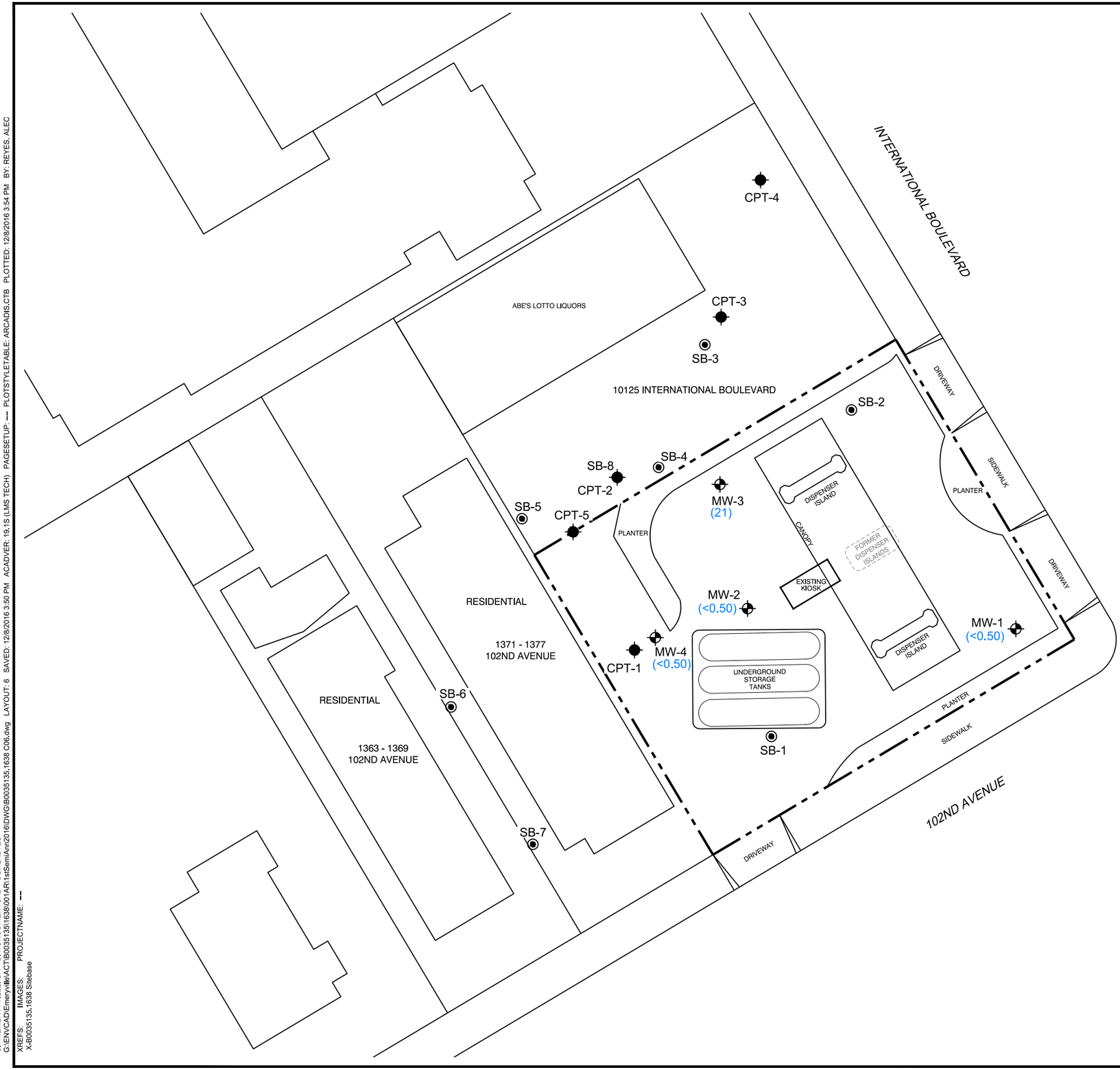
Approximate Scale: 1 in. = 30 ft.

76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

BENZENE CONCENTRATIONS NOVEMBER 21, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 5



NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER MONITORING WELL
- SOIL BORING
- CPT LOCATION
- (21) METHYL TERTIARY BUTYL ETHER (MTBE) IN MICROGRAMS PER LITER (µg/L)
- (<0.50) NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

NOTES:
1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

Approximate Scale: 1 in. = 30 ft.

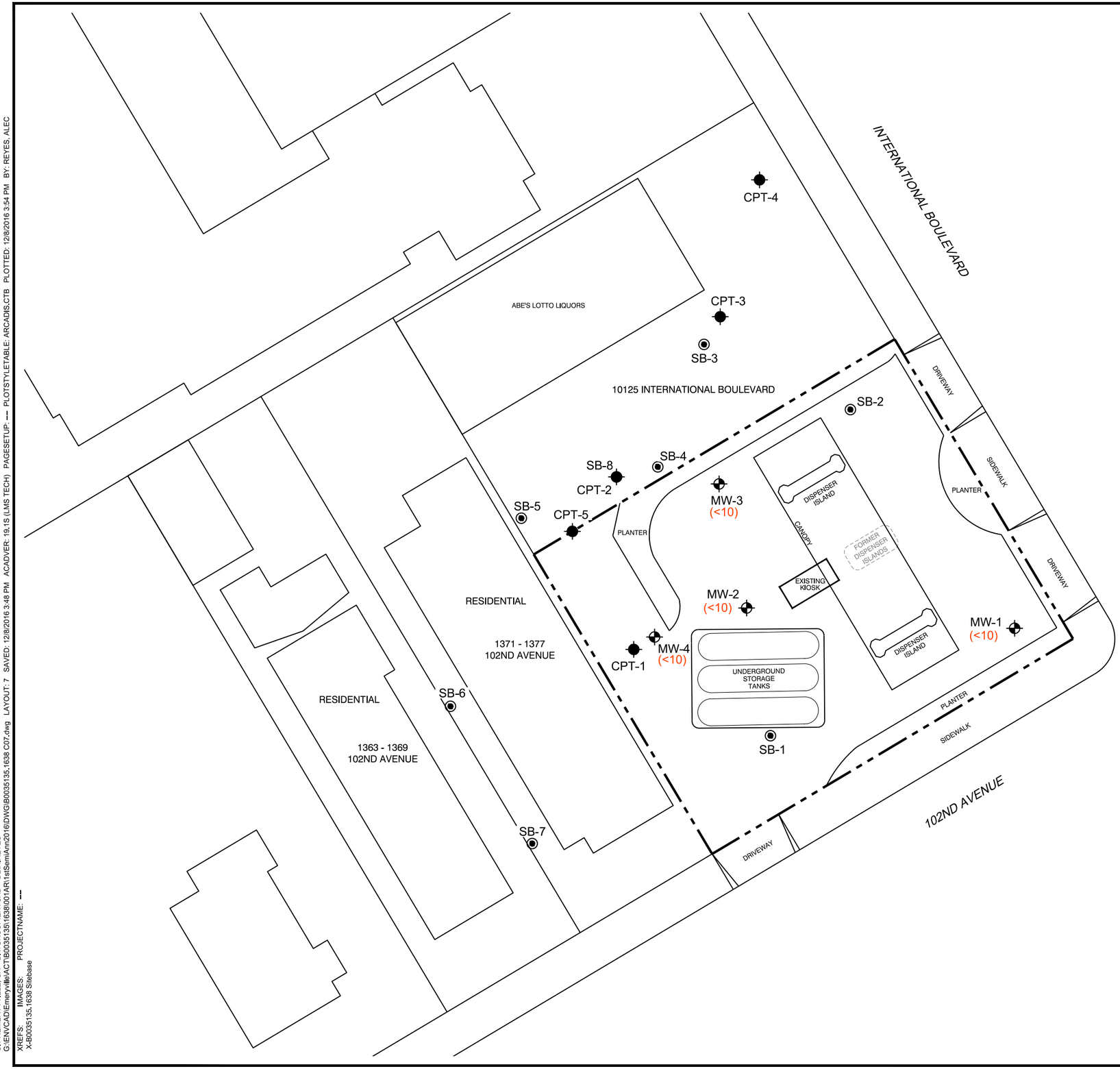
76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

MTBE CONCENTRATIONS NOVEMBER 21, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6

CITY:EMERYVILLE, CA DIV/GROUP:ENVCAD DB:A.REYES
G:\ENVCAD\Emeryville\ACTIB\B0035135\1638\001AR\1stSemiAnn2016\DWG\B0035135.1638 C06.dwg LAYOUT: 6 SAVED: 12/8/2016 3:50 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 12/8/2016 3:54 PM BY: REYES, ALEC
XREFS: IMAGES: PROJECTNAME: ---
X-B0035135.1638 Sitebase



NORTH

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER MONITORING WELL
- SOIL BORING
- CPT LOCATION
- TBA TERTIARY BUTYL ALCOHOL
- (<10) NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

NOTES:
1. BASE MAP PROVIDED BY TRC, DATED JANUARY 2010, AT A SCALE OF 1"=20'. ADDITIONAL SITE INFORMATION PROVIDED BY STANTEC, DATED SEPTEMBER 23, 2008, AT A SCALE OF 1"=40'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 30' 60'

Approximate Scale: 1 in. = 30 ft.

76 STATION No. 7124 (351638)
10151 INTERNATIONAL BOULEVARD
OAKLAND CALIFORNIA

TBA CONCENTRATIONS NOVEMBER 21, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 7

ATTACHMENTS

ATTACHMENT A

Field Data Sheets and General Procedures

GETTLER-RYAN INC.

TRANSMITTAL

November 23, 2016
G-R #385639

TO: Ms. Tamera Rogers
Arcadis
6296 San Ignacio Ave., Suite C & D
San Jose, California 95119

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6805 Sierra Court, Suite G
Dublin, California 94568

RE: Chevron Facility
#351638/7124
10151 International Boulevard
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package **Second Semi-Annual Event of November 21, 2016**

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/351638 7124

WELL CONDITION STATUS SHEET

Client/
Facility #: **Chevron #351638 / 7124**

Site Address: **10151 International Blvd.**

City: **Oakland, CA**

Job #: **385639**

Event Date: 11-21-16

Sampler: AW

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retap	Apron Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) Inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Y/N
MW-1	OK							N	N	Brico /12"/2	N
MW-2	OK										
MW-3	OK										
MW-4	OK			LB	OK					morrison /12"/2	

Comments

STANDARD OPERATING PROCEDURE
GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells. Total well depths are measured annually.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by Clean Harbors Environmental Services to Seaport Environmental located in Redwood City, California.

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351638 / 7124 | Job Number: 385639
Site Address: 10151 International Blvd. | Event Date: 11-21-16 (inclusive)
City: Oakland, CA | Sampler: HW

Well ID: MW-1 | Date Monitored: 11-21-16
Well Diameter: 4 in.
Total Depth: 29.84 ft.
Depth to Water: 16.91 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

12.93 xVF -66 = 8.53 x3 case volume = Estimated Purge Volume: 26.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.49

Purge Equipment:		Sampling Equipment:	
Disposable Bailer		Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump	✓	Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description: _____
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr

Start Time (purge): 0700 | Weather Conditions: Dawn
Sample Time/Date: 0740 / 11-21-16 | Water Color: Cloudy | Odor: Y / (N)
Approx. Flow Rate: 1-2 gpm. | Sediment Description: Cloudy
Did well de-water? N | If yes, Time: — | Volume: — gal. | DTW @ Sampling: 18.57

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
0705	9.0	7.60	280	17.5	PRE: 1.4	PRE: 130
0710	18.0	7.54	311	17.6		
0715	26.0	7.50	334	17.7		
					POST: 1.2	POST: 166

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Lock: _____ Add/Replaced Plug: _____

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 11-21-16 (inclusive)
City: Oakland, CA Sampler: MW

Well ID MW-2 Date Monitored: 11-21-16
Well Diameter 4 in.
Total Depth 25.26 ft.
Depth to Water 18.12 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.14 xVF .66 = 4.71 x3 case volume = Estimated Purge Volume: 14.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.54

Purge Equipment:		Sampling Equipment:	
Disposable Bailer		Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump	✓	Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0845 Weather Conditions: Cloudy
Sample Time/Date: 0925 / 11-21-16 Water Color: Cloudy Odor: Y / N
Approx. Flow Rate: 1.0 gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 19.06

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/cm) mS µmhos/cm	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0850	5.0	7.49	270	19.9	PRE: 1.3	PRE: 136
0855	10.0	7.52	294	19.9		
0900	14.5	7.56	316	20.2		
					POST: 1.4	POST: 154

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 11-21-16 (inclusive)
City: Oakland, CA Sampler: AW

Well ID MW-3 Date Monitored: 11-21-16
Well Diameter 4 in.
Total Depth 25.20 ft.
Depth to Water 17.98 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

7.22 xVF .66 = 4.76 x3 case volume = Estimated Purge Volume: 14.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.42

Purge Equipment:
Disposable Bailer
Stainless Steel Bailer
Stack Pump ✓
Peristaltic Pump
QED Bladder Pump
Other:

Sampling Equipment:
Disposable Bailer ✓
Pressure Bailer
Metal Filters
Peristaltic Pump
QED Bladder Pump
Other:

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0755 Weather Conditions: Cloudy
Sample Time/Date: 0830 / 11-21-16 Water Color: Cloudy Odor: Y (N)
Approx. Flow Rate: 1.0 gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 19.40

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
0800	5.0	7.44	307	18.3	PRE: 1.2	PRE: 135
0805	10.0	7.40	326	18.5		
0810	14.5	7.35	340	18.6		
					POST: 1.3	POST: 111

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351638 / 7124 Job Number: 385639
Site Address: 10151 International Blvd. Event Date: 11-21-16 (inclusive)
City: Oakland, CA Sampler: AW

Well ID MW-4 Date Monitored: 11-21-16
Well Diameter 4 in.
Total Depth 24.95 ft.
Depth to Water 18.72 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

☐ Check if water column is less then 0.50 ft.

6.23 xVF .66 = 4.11 x3 case volume = Estimated Purge Volume: 12.5 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.96

Purge Equipment:		Sampling Equipment:	
Disposable Bailer		Disposable Bailer	✓
Stainless Steel Bailer		Pressure Bailer	
Stack Pump	✓	Metal Filters	
Peristaltic Pump		Peristaltic Pump	
QED Bladder Pump		QED Bladder Pump	
Other:		Other:	

Time Started: (2400 hrs)
Time Completed: (2400 hrs)
Depth to Product: ft
Depth to Water: ft
Hydrocarbon Thickness: ft
Visual Confirmation/Description:
Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: ltr
Amt Removed from Well: ltr
Water Removed: ltr

Start Time (purge): 0935 Weather Conditions: Sunny
Sample Time/Date: 1015 / 11-21-16 Water Color: Cloudy Odor: Y / N
Approx. Flow Rate: 1.0 gpm. Sediment Description: Cloudy
Did well de-water? N If yes, Time: — Volume: — gal. DTW @ Sampling: 19.11

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS mS µmhos/cm)	Temperature (C F)	D.O. (mg/L)	ORP (mV)
0940	4.5	7.18	244	19.9	PRE: 1.2	PRE: 146
0945	9.0	7.24	290	20.3		
0950	12.5	7.27	325	20.4		
					POST: 1.3	POST: 129

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-4	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	1 x 1 liter poly	YES	NP	BC LABS	NITRATE/NITRITE/SULFATE/ALKALINITY/DISSOLVED IRON
	1 x 500ml poly	YES	ZnAc	BC LABS	SULFIDE(376.2)
	1 x 500ml amber	YES	H2SO4	BC LABS	TOC
	1 x 250ml poly	YES	HCL	BC LABS	FERROUS IRON
	1 x 500ml poly	YES	HNO3	BC LABS	TOTAL MANGANESE
	2 x voa vial	YES	NP	BC LABS	METHANE

COMMENTS:

Add/Replaced Gasket: Add/Replaced Bolt: Add/Replaced Lock: Add/Replaced Plug:

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 1 of 1

Union Oil Site ID: 7124
Site Global ID: T0600173591
Site Address: 10151 INTERNATIONAL BLVD Oakland CA
Union Oil PM: JAMES KIERNAN
Union Oil PM Phone No.: 925-842-3220
Charge Code: NWRTB-0 351638 -0- LAB

This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.

Union Oil Consultant: ARCADIS
Consultant Contact: SAMUEL MILES
Consultant Phone No.: 206-781-4720
Sampling Company: Gettler-Ryan
Sampled By (PRINT): Alex Wong
Sampler Signature:

BC Laboratories, Inc.
Project Manager: Molly Meyers
4100 Atlas Court, Bakersfield, CA 93308
Phone No. 661-327-4911

Turnaround Time (TAT): Standard ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐

Special Instructions

SAMPLE ID						ANALYSES REQUIRED												
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by GC/MS (8015) (C6-C12)	BTEX/MTBE/OXYS by EPA 8260B	METHANE	EPA 8260B Full List with OXYS	NITRATE/NITRITE/SULFATE	ALKALINITY / DISSOLVED IRON	SULFIDE (376.2)	TOC	FERROUS IRON	TOTAL MANGANESE	Notes / Comments
QA	W-S-A		161121	—	2		X	X									
MW-1	W-S-A		↓	0740	13		X	X	X		X	X	X	X	X	X	
MW-2	W-S-A			0925	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓	
MW-3	W-S-A			0830													
MW-4	W-S-A		↓	1015	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓	
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

Relinquished By	Company	Date / Time:
[signature]	GRM	161121 / 1153
~~GR office~~		~~11/21/16 1153~~

Received By	Company	Date / Time:
GETTLER-RYAN FRIDGE		11-21-16 1153
Hong Boyan	BC LAB	11.21.16 1445

ATTACHMENT B

Laboratory Report and Chain-of-Custody Documentation

Date of Report: 12/01/2016

Samuel Miles

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Client Project:	351638
BCL Project:	7124
BCL Work Order:	1632639
Invoice ID:	B253244

Enclosed are the results of analyses for samples received by the laboratory on 11/21/2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Authorized Signature

Table of Contents

CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583 COC 1 of 1

Union Oil Site ID: 7124	Union Oil Consultant: ARCADIS
Site Global ID: T0600173591	Consultant Contact: SAMUEL MILES
Site Address: 10151 INTERNATIONAL BLVD Oakland CA	Consultant Phone No.: 206-726-4720
Union Oil PM: JAMES KIERNAN	Sampling Company: Gettler-Ryan
Union Oil PM Phone No.: 925-842-3220	Sampled By (PRINT): Alex Wong
Charge Code: NWRTB-0 351638 -0- LAB 16-32639	Sampler Signature:

This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.

BC Laboratories, Inc.
Project Manager: Molly Meyers
4100 Atlas Court, Bakersfield, CA 93308
Phone No. 661-327-4911

Turnaround Time (TAT): Standard ☒ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐

Special Instructions

SAMPLE ID						ANALYSES REQUIRED												
Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by GC/MS (8015) (C6-C12)	BTEX/MTBE/OXYS by EPA 8260B	METHANE	EPA 8260B Full List with OXYS	NITRATE/NITRITE/SULFATE	ALKALINITY / DISSOLVED IRON	SULFIDE (376.2)	TOC	FERROUS IRON	TOTAL MANGANESE	Notes / Comments
1 QA	W-S-A		161121	—	2		X	X									
2 MW-1	W-S-A			0740	13		X	X	X		X	X	X	X	X	X	
3 MW-2	W-S-A			0925													
4 MW-3	W-S-A			0830													
5 MW-4	W-S-A			1015													
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

SHORT HOLDING TIME
Cr^{+6} NO_2 NO_3 OP SS
DO Cl_2 BOD MBAS COT

CHK BY DISTRIBUTION
WHITE PINK YELLOW
SUB-OUT ☐

Relinquished By	Company	Date / Time:
	GRINC	161121 / 1153

Received By	Company	Date / Time:
GETTLER-RYAN FRIDGE		11-21-16 1153

Relinquished By	Company	Date / Time:
GR Office	GRINC	161121 / 1153

Received By	Company	Date / Time:
Hang Bogan	BCLAB	11-21-16 1445

REL. Hang Bogan 11-21-16 1830 REC.
REL. 11/21/16 2100

Relinquished By	Company	Date / Time:
	GRINC	11-21-16 1445

Received By	Company	Date / Time:
	BCLAB	11.21 2200

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 16-32639

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☒ None ☐ Box ☐	YES ☒ NO ☐
BC Lab Field Service ☒ Other ☐ (Specify)______	Other ☐ (Specify)______	(W) / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received		
☒ YES ☐ NO	Emissivity: 0.98 Container: PE Thermometer ID: 207	Date/Time 11/21/16 21:40
	Temperature: (A) 1.2 °C / (C) 1.3 °C	Analyst Init GS

SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES		I	I	I	I					
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / (16oz)		J	J	J	J					
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE		K	K	K	K					
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON		M	M	M	M					
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK	AB									
40ml VOA VIAL	~~AB~~	AF	AF	AF	AF					
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- ~~504~~ RSK		GH	GH	GH	GH					
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON		L	L	L	L					
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:
Sample Numbering Completed By: AA Date/Time: 11/21/16 2340

Rev 21 05/23/2016

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1632639-01	**COC Number:**	---	**Receive Date:** 11/21/2016 22:00
	Project Number:	7124	**Sampling Date:** 11/21/2016 00:00
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	QA-W-161121	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Blank Water
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): QA
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1632639-02	**COC Number:**	---	**Receive Date:** 11/21/2016 22:00
	Project Number:	7124	**Sampling Date:** 11/21/2016 07:40
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-1-W-161121	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Water
			Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): MW-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1632639-03	**COC Number:**	---	**Receive Date:** 11/21/2016 22:00
	Project Number:	7124	**Sampling Date:** 11/21/2016 09:25
	Sampling Location:	---	**Sample Depth:** ---
	Sampling Point:	MW-2-W-161121	**Lab Matrix:** Water
	Sampled By:	GRD	**Sample Type:** Water
			Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time
			Delivery Work Order:
			Global ID: T0600173591
			Location ID (FieldPoint): MW-2
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1632639-04	**COC Number:**	---	**Receive Date:**	11/21/2016 22:00
	Project Number:	7124	**Sampling Date:**	11/21/2016 08:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-3-W-161121	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time Delivery Work Order: Global ID: T0600173591 Location ID (FieldPoint): MW-3 Matrix: W Sample QC Type (SACode): CS Cooler ID:			
1632639-05	**COC Number:**	---	**Receive Date:**	11/21/2016 22:00
	Project Number:	7124	**Sampling Date:**	11/21/2016 10:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-4-W-161121	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Metal Analysis: 2-Lab Filtered and Acidified past 15 minute holding time Delivery Work Order: Global ID: T0600173591 Location ID (FieldPoint): MW-4 Matrix: W Sample QC Type (SACode): CS Cooler ID:			

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1632639-01 | **Client Sample Name:** 7124, QA-W-161121, 11/21/2016 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	104	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	11/23/16	11/23/16 12:41	IO1	MS-V12	1	BZK1967

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1632639-01 | **Client Sample Name:** 7124, QA-W-161121, 11/21/2016 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	90.8	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/22/16	11/22/16 12:42	AKM	GC-V9	1	BZK1800

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1632639-02 | **Client Sample Name:** 7124, MW-1-W-161121, 11/21/2016 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	95.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	11/23/16	11/23/16 13:16	IO1	MS-V12	1	BZK1967

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1632639-02 | **Client Sample Name:** 7124, MW-1-W-161121, 11/21/2016 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	106	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/22/16	11/22/16 13:03	AKM	GC-V9	1	BZK1800

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Gas Testing in Water

BCL Sample ID: 1632639-02 | **Client Sample Name:** 7124, MW-1-W-161121, 11/21/2016 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	ND	mg/L	0.0010		RSK-175M	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	11/29/16	11/29/16 15:22	JH2	GC-V1	1	BZK2446

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Water Analysis (General Chemistry)

BCL Sample ID: 1632639-02 | **Client Sample Name:** 7124, MW-1-W-161121, 11/21/2016 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**170**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	**34**	**mg/L**	**0.44**		**EPA-300.0**	ND		2
Sulfate	**28**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	ND	ug/L	100		SM-3500-FeD	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	ND	mg/L	1.0		EPA-415.1	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	11/28/16	11/28/16 12:21	RML	MET-1	1	BZK2273
2	EPA-300.0	11/22/16	11/22/16 15:02	EMW	IC1	1	BZK2042
3	SM-3500-FeD	11/28/16	11/28/16 14:11	RCC	KONE-1	1	BZK2268
4	EPA-353.2	11/22/16	11/22/16 09:50	RCC	KONE-1	1	BZK2071
5	SM-4500SD	11/23/16	11/23/16 08:00	MC1	SPEC06	1	BZK2174
6	EPA-415.1	11/22/16	11/22/16 14:27	ALW	TOC2	1	BZK1969

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Metals Analysis

BCL Sample ID: 1632639-02 | **Client Sample Name:** 7124, MW-1-W-161121, 11/21/2016 7:40:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**910**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/29/16	11/29/16 14:38	JCC	PE-OP3	1	BZK2374
2	EPA-6010B	11/28/16	11/29/16 11:20	JCC	PE-OP3	1	BZK2305

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1632639-03 | **Client Sample Name:** 7124, MW-2-W-161121, 11/21/2016 9:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	98.8	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	94.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	11/23/16	11/23/16 13:34	IO1	MS-V12	1	BZK1895

Arcadis
1100 Olive Way, Suite 800
Seattle, WA 98102

Reported: 12/01/2016 11:04
Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1632639-03 | **Client Sample Name:** 7124, MW-2-W-161121, 11/21/2016 9:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**140**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	102	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/22/16	11/22/16 13:23	AKM	GC-V9	1	BZK1800

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Gas Testing in Water

BCL Sample ID: 1632639-03 | **Client Sample Name:** 7124, MW-2-W-161121, 11/21/2016 9:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	**0.011**	**mg/L**	**0.0010**		**RSK-175M**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	11/29/16	11/29/16 12:37	JH2	GC-V1	1	BZK2446

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Water Analysis (General Chemistry)

BCL Sample ID: 1632639-03 | **Client Sample Name:** 7124, MW-2-W-161121, 11/21/2016 9:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**200**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	ND	mg/L	0.44		EPA-300.0	ND		2
Sulfate	**31**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	**530**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	ND	mg/L	1.0		EPA-415.1	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	11/28/16	11/28/16 12:30	RML	MET-1	1	BZK2273
2	EPA-300.0	11/22/16	11/22/16 15:20	EMW	IC1	1	BZK2042
3	SM-3500-FeD	11/28/16	11/28/16 13:04	RCC	KONE-1	1	BZK2268
4	EPA-353.2	11/22/16	11/22/16 09:50	RCC	KONE-1	1	BZK2071
5	SM-4500SD	11/23/16	11/23/16 08:00	MC1	SPEC06	1	BZK2174
6	EPA-415.1	11/22/16	11/22/16 16:07	ALW	TOC2	1	BZK1969

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Project Manager: Samuel Miles

Metals Analysis

BCL Sample ID: 1632639-03 | **Client Sample Name:** 7124, MW-2-W-161121, 11/21/2016 9:25:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**4700**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/29/16	11/29/16 14:39	JCC	PE-OP3	1	BZK2374
2	EPA-6010B	11/28/16	11/29/16 11:30	JCC	PE-OP3	1	BZK2305

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1632639-04 | **Client Sample Name:** 7124, MW-3-W-161121, 11/21/2016 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	**21**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	92.0	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	11/23/16	11/23/16 15:04	IO1	MS-V12	1	BZK1895

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Project Manager: Samuel Miles

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1632639-04 | **Client Sample Name:** 7124, MW-3-W-161121, 11/21/2016 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**780**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	121	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/28/16	11/28/16 10:50	AKM	GC-V9	1	BZK2260

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Project: 7124
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Project Manager: Samuel Miles

Gas Testing in Water

BCL Sample ID: 1632639-04 | **Client Sample Name:** 7124, MW-3-W-161121, 11/21/2016 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	**0.10**	**mg/L**	**0.0010**		**RSK-175M**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	11/29/16	11/29/16 12:43	JH2	GC-V1	1	BZK2446

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Water Analysis (General Chemistry)

BCL Sample ID: 1632639-04 | **Client Sample Name:** 7124, MW-3-W-161121, 11/21/2016 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**300**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	ND	mg/L	0.44		EPA-300.0	ND		2
Sulfate	**1.0**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	**2700**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	**1.4**	**mg/L**	**1.0**		**EPA-415.1**	ND		6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	11/28/16	11/28/16 12:40	RML	MET-1	1	BZK2273
2	EPA-300.0	11/22/16	11/22/16 15:37	EMW	IC1	1	BZK2042
3	SM-3500-FeD	11/28/16	11/28/16 13:04	RCC	KONE-1	1	BZK2268
4	EPA-353.2	11/22/16	11/22/16 09:50	RCC	KONE-1	1	BZK2071
5	SM-4500SD	11/23/16	11/23/16 08:00	MC1	SPEC06	1	BZK2174
6	EPA-415.1	11/22/16	11/22/16 16:22	ALW	TOC2	1	BZK1969

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Metals Analysis

BCL Sample ID: 1632639-04 | **Client Sample Name:** 7124, MW-3-W-161121, 11/21/2016 8:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**6800**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/29/16	11/29/16 14:41	JCC	PE-OP3	1	BZK2374
2	EPA-6010B	11/28/16	11/29/16 11:37	JCC	PE-OP3	1	BZK2305

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1632639-05 | **Client Sample Name:** 7124, MW-4-W-161121, 11/21/2016 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50		EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Toluene	ND	ug/L	0.50		EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0		EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10		EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
Ethanol	ND	ug/L	250		EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	98.1	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.9	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.6	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	11/23/16	11/23/16 14:46	IO1	MS-V12	1	BZK1895

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1632639-05 | **Client Sample Name:** 7124, MW-4-W-161121, 11/21/2016 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C6 - C12)	**1000**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	110	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/28/16	11/28/16 10:30	AKM	GC-V9	1	BZK2260

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Gas Testing in Water

BCL Sample ID: 1632639-05 | **Client Sample Name:** 7124, MW-4-W-161121, 11/21/2016 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Methane	**0.061**	**mg/L**	**0.0010**		**RSK-175M**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	RSK-175M	11/29/16	11/29/16 12:48	JH2	GC-V1	1	BZK2446

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Water Analysis (General Chemistry)

BCL Sample ID: 1632639-05 | **Client Sample Name:** 7124, MW-4-W-161121, 11/21/2016 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	**170**	**mg/L**	**4.1**		**EPA-310.1**	ND		1
Nitrate as NO3	**5.5**	**mg/L**	**0.44**		**EPA-300.0**	ND		2
Sulfate	**28**	**mg/L**	**1.0**		**EPA-300.0**	ND		2
Iron (II) Species	**1000**	**ug/L**	**100**		**SM-3500-FeD**	ND		3
Nitrite as NO2	ND	mg/L	0.17		EPA-353.2	ND		4
Total Sulfide	ND	mg/L	0.10		SM-4500SD	ND		5
Non-Volatile Organic Carbon	**15**	**mg/L**	**5.0**		**EPA-415.1**	ND	**A07**	6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	11/28/16	11/28/16 12:50	RML	MET-1	1	BZK2273
2	EPA-300.0	11/22/16	11/22/16 15:55	EMW	IC1	1	BZK2042
3	SM-3500-FeD	11/28/16	11/28/16 13:04	RCC	KONE-1	1	BZK2268
4	EPA-353.2	11/22/16	11/22/16 09:50	RCC	KONE-1	1	BZK2071
5	SM-4500SD	11/23/16	11/23/16 08:00	MC1	SPEC06	1	BZK2174
6	EPA-415.1	11/22/16	11/22/16 16:36	ALW	TOC2	5	BZK1969

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Project Number: 351638
Project Manager: Samuel Miles

Metals Analysis

BCL Sample ID: 1632639-05 | **Client Sample Name:** 7124, MW-4-W-161121, 11/21/2016 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Dissolved Iron	ND	ug/L	50		EPA-6010B	ND		1
Total Manganese	**1700**	**ug/L**	**10**		**EPA-6010B**	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	11/29/16	11/29/16 14:43	JCC	PE-OP3	1	BZK2374
2	EPA-6010B	11/28/16	11/29/16 11:39	JCC	PE-OP3	1	BZK2305

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Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZK1895						
Benzene	BZK1895-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BZK1895-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BZK1895-BLK1	ND	ug/L	0.50		
Ethylbenzene	BZK1895-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BZK1895-BLK1	ND	ug/L	0.50		
Toluene	BZK1895-BLK1	ND	ug/L	0.50		
Total Xylenes	BZK1895-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BZK1895-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BZK1895-BLK1	ND	ug/L	10		
Diisopropyl ether	BZK1895-BLK1	ND	ug/L	0.50		
Ethanol	BZK1895-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BZK1895-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	**BZK1895-BLK1**	**104**	%	**75 - 125 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**BZK1895-BLK1**	**99.4**	%	**80 - 120 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**BZK1895-BLK1**	**103**	%	**80 - 120 (LCL - UCL)**		
QC Batch ID: BZK1967						
Benzene	BZK1967-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BZK1967-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BZK1967-BLK1	ND	ug/L	0.50		
Ethylbenzene	BZK1967-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BZK1967-BLK1	ND	ug/L	0.50		
Toluene	BZK1967-BLK1	ND	ug/L	0.50		
Total Xylenes	BZK1967-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BZK1967-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BZK1967-BLK1	ND	ug/L	10		
Diisopropyl ether	BZK1967-BLK1	ND	ug/L	0.50		
Ethanol	BZK1967-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BZK1967-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	**BZK1967-BLK1**	**102**	%	**75 - 125 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**BZK1967-BLK1**	**100**	%	**80 - 120 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**BZK1967-BLK1**	**95.3**	%	**80 - 120 (LCL - UCL)**		

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Project: 7124
Project Number: 351638
Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BZK1895										
Benzene	BZK1895-BS1	LCS	23.530	25.000	ug/L	94.1		70 - 130		
Toluene	BZK1895-BS1	LCS	24.330	25.000	ug/L	97.3		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BZK1895-BS1	LCS	10.250	10.000	ug/L	102		75 - 125		
Toluene-d8 (Surrogate)	BZK1895-BS1	LCS	10.270	10.000	ug/L	103		80 - 120		
4-Bromofluorobenzene (Surrogate)	BZK1895-BS1	LCS	10.080	10.000	ug/L	101		80 - 120		
QC Batch ID: BZK1967										
Benzene	BZK1967-BS1	LCS	24.650	25.000	ug/L	98.6		70 - 130		
Toluene	BZK1967-BS1	LCS	24.890	25.000	ug/L	99.6		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BZK1967-BS1	LCS	9.7500	10.000	ug/L	97.5		75 - 125		
Toluene-d8 (Surrogate)	BZK1967-BS1	LCS	10.530	10.000	ug/L	105		80 - 120		
4-Bromofluorobenzene (Surrogate)	BZK1967-BS1	LCS	10.070	10.000	ug/L	101		80 - 120		

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Project: 7124
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Project Manager: Samuel Miles

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BZK1895	Used client sample: N										
Benzene	MS	1632299-09	ND	25.290	25.000	ug/L		101		70 - 130	
	MSD	1632299-09	ND	26.650	25.000	ug/L	5.2	107	20	70 - 130	
Toluene	MS	1632299-09	ND	26.240	25.000	ug/L		105		70 - 130	
	MSD	1632299-09	ND	28.170	25.000	ug/L	7.1	113	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1632299-09	ND	9.8800	10.000	ug/L		98.8		75 - 125	
	MSD	1632299-09	ND	9.7900	10.000	ug/L	0.9	97.9		75 - 125	
Toluene-d8 (Surrogate)	MS	1632299-09	ND	10.220	10.000	ug/L		102		80 - 120	
	MSD	1632299-09	ND	10.190	10.000	ug/L	0.3	102		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1632299-09	ND	10.590	10.000	ug/L		106		80 - 120	
	MSD	1632299-09	ND	10.260	10.000	ug/L	3.2	103		80 - 120	
QC Batch ID: BZK1967	Used client sample: N										
Benzene	MS	1632299-12	ND	26.630	25.000	ug/L		107		70 - 130	
	MSD	1632299-12	ND	27.350	25.000	ug/L	2.7	109	20	70 - 130	
Toluene	MS	1632299-12	ND	25.790	25.000	ug/L		103		70 - 130	
	MSD	1632299-12	ND	26.750	25.000	ug/L	3.7	107	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1632299-12	ND	9.9500	10.000	ug/L		99.5		75 - 125	
	MSD	1632299-12	ND	9.9600	10.000	ug/L	0.1	99.6		75 - 125	
Toluene-d8 (Surrogate)	MS	1632299-12	ND	10.190	10.000	ug/L		102		80 - 120	
	MSD	1632299-12	ND	9.9300	10.000	ug/L	2.6	99.3		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1632299-12	ND	9.5900	10.000	ug/L		95.9		80 - 120	
	MSD	1632299-12	ND	10.270	10.000	ug/L	6.8	103		80 - 120	

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZK1800						
Gasoline Range Organics (C6 - C12)	BZK1800-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**BZK1800-BLK1**	**81.6**	%	**70 - 130 (LCL - UCL)**		
QC Batch ID: BZK2260						
Gasoline Range Organics (C6 - C12)	BZK2260-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**BZK2260-BLK1**	**98.2**	%	**70 - 130 (LCL - UCL)**		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BZK1800										
Gasoline Range Organics (C6 - C12)	BZK1800-BS1	LCS	976.05	1000.0	ug/L	97.6		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BZK1800-BS1	LCS	33.615	40.000	ug/L	84.0		70 - 130		
QC Batch ID: BZK2260										
Gasoline Range Organics (C6 - C12)	BZK2260-BS1	LCS	1122.2	1000.0	ug/L	112		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BZK2260-BS1	LCS	35.162	40.000	ug/L	87.9		70 - 130		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BZK1800	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1632299-01	ND	1081.5	1000.0	ug/L		108		70 - 130	
	MSD	1632299-01	ND	1109.8	1000.0	ug/L	2.6	111	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1632299-01	ND	35.357	40.000	ug/L		88.4		70 - 130	
	MSD	1632299-01	ND	34.912	40.000	ug/L	1.3	87.3		70 - 130	
QC Batch ID: BZK2260	Used client sample: N										
Gasoline Range Organics (C6 - C12)	MS	1632299-02	ND	1142.2	1000.0	ug/L		114		70 - 130	
	MSD	1632299-02	ND	1038.5	1000.0	ug/L	9.5	104	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1632299-02	ND	40.011	40.000	ug/L		100		70 - 130	
	MSD	1632299-02	ND	37.322	40.000	ug/L	7.0	93.3		70 - 130	

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Gas Testing in Water

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZK2446						
Methane	BZK2446-BLK1	ND	mg/L	0.0010		

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Gas Testing in Water

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BZK2446										
Methane	BZK2446-BS1	LCS	0.010824	0.010843	mg/L	99.8		80 - 120		
	BZK2446-BSD1	LCSD	0.010948	0.010843	mg/L	101	1.1	80 - 120	20	

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Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZK1969						
Non-Volatile Organic Carbon	BZK1969-BLK1	ND	mg/L	1.0		
QC Batch ID: BZK2042						
Nitrate as NO3	BZK2042-BLK1	ND	mg/L	0.44		
Sulfate	BZK2042-BLK1	ND	mg/L	1.0		
QC Batch ID: BZK2071						
Nitrite as NO2	BZK2071-BLK1	ND	mg/L	0.17		
QC Batch ID: BZK2174						
Total Sulfide	BZK2174-BLK1	ND	mg/L	0.10		
QC Batch ID: BZK2268						
Iron (II) Species	BZK2268-BLK1	ND	ug/L	100		
QC Batch ID: BZK2273						
Total Alkalinity as CaCO3	BZK2273-BLK1	ND	mg/L	4.1		

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Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BZK1969										
Non-Volatile Organic Carbon	BZK1969-BS1	LCS	5.2480	5.0000	mg/L	105		85 - 115		
QC Batch ID: BZK2042										
Nitrate as NO3	BZK2042-BS1	LCS	22.453	22.134	mg/L	101		90 - 110		
Sulfate	BZK2042-BS1	LCS	102.24	100.00	mg/L	102		90 - 110		
QC Batch ID: BZK2071										
Nitrite as NO2	BZK2071-BS1	LCS	1.6813	1.6425	mg/L	102		90 - 110		
QC Batch ID: BZK2174										
Total Sulfide	BZK2174-BS1	LCS	0.49947	0.50000	mg/L	99.9		90 - 110		
QC Batch ID: BZK2268										
Iron (II) Species	BZK2268-BS1	LCS	2487.8	2500.0	ug/L	99.5		90 - 110		
QC Batch ID: BZK2273										
Total Alkalinity as CaCO3	BZK2273-BS3	LCS	102.84	100.00	mg/L	103		90 - 110		

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Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BZK1969	Used client sample: Y - Description: MW-1-W-161121, 11/21/2016 07:40										
Non-Volatile Organic Carbon	DUP	1632639-02	0.86800	ND		mg/L			10		
	MS	1632639-02	0.86800	5.9367	5.0251	mg/L		101		80 - 120	
	MSD	1632639-02	0.86800	5.9447	5.0251	mg/L	0.1	101	10	80 - 120	
QC Batch ID: BZK2042	Used client sample: N										
Nitrate as NO3	DUP	1632646-01	64.153	63.449		mg/L	1.1		10		
	MS	1632646-01	64.153	85.464	22.358	mg/L		95.3		80 - 120	
	MSD	1632646-01	64.153	85.875	22.358	mg/L	0.5	97.2	10	80 - 120	
Sulfate	DUP	1632646-01	21.966	22.053		mg/L	0.4		10		
	MS	1632646-01	21.966	124.01	101.01	mg/L		101		80 - 120	
	MSD	1632646-01	21.966	124.67	101.01	mg/L	0.5	102	10	80 - 120	
QC Batch ID: BZK2071	Used client sample: Y - Description: MW-1-W-161121, 11/21/2016 07:40										
Nitrite as NO2	DUP	1632639-02	0.040110	ND		mg/L			10		
	MS	1632639-02	0.040110	1.7696	1.7289	mg/L		100		90 - 110	
	MSD	1632639-02	0.040110	1.7572	1.7289	mg/L	0.7	99.3	10	90 - 110	
QC Batch ID: BZK2174	Used client sample: Y - Description: MW-1-W-161121, 11/21/2016 07:40										
Total Sulfide	DUP	**1632639-02**	**ND**	**ND**		**mg/L**			**10**		
	MS	**1632639-02**	**ND**	**0.39396**	**0.50000**	**mg/L**		**78.8**		**80 - 120**	**Q03**
	MSD	**1632639-02**	**ND**	**0.40088**	**0.50000**	**mg/L**	**1.7**	**80.2**	**10**	**80 - 120**	
QC Batch ID: BZK2268	Used client sample: Y - Description: MW-1-W-161121, 11/21/2016 07:40										
Iron (II) Species	DUP	1632639-02	ND	ND		ug/L			10		
QC Batch ID: BZK2273	Used client sample: N										
Total Alkalinity as CaCO3	DUP	1632788-01	465.22	467.66		mg/L	0.5		10		

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Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZK2305						
Total Manganese	BZK2305-BLK1	ND	ug/L	10		
QC Batch ID: BZK2374						
Dissolved Iron	BZK2374-BLK1	ND	ug/L	50		

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Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BZK2305										
Total Manganese	BZK2305-BS1	LCS	512.01	500.00	ug/L	102		85 - 115		
QC Batch ID: BZK2374										
Dissolved Iron	BZK2374-BS1	LCS	1083.2	1000.0	ug/L	108		85 - 115		

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Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BZK2305	Used client sample: Y - Description: MW-1-W-161121, 11/21/2016 07:40										
Total Manganese	DUP	**1632639-02**	**912.65**	**927.72**		**ug/L**	**1.6**		**20**		
	MS	**1632639-02**	**912.65**	**1581.0**	**500.00**	**ug/L**		**134**		**75 - 125**	**Q03**
	MSD	**1632639-02**	**912.65**	**1854.3**	**500.00**	**ug/L**	**15.9**	**188**	**20**	**75 - 125**	**Q03**
QC Batch ID: BZK2374	Used client sample: N										
Dissolved Iron	DUP	1632491-01	ND	ND		ug/L			20		
	MS	1632491-01	ND	991.94	1020.4	ug/L		97.2		75 - 125	
	MSD	1632491-01	ND	1023.0	1020.4	ug/L	3.1	100	20	75 - 125	

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Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
Q03	Matrix spike recovery(s) is(are) not within the control limits.

STATE WATER RESOURCES CONTROL BOARD

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SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**GEO_WELL**
Report Title:	**4Q16 DTW**
Facility Global ID:	**T0600173591**
Facility Name:	**UNOCAL #7124**
File Name:	**GEO_WELL.zip**
Organization Name:	**ARCADIS**
Username:	**ARCADIS76**
IP Address:	**8.39.233.109**
Submittal Date/Time:	**1/16/2017 1:14:32 PM**
Confirmation Number:	**7520193696**

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SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	**GEO_REPORT**
Report Title:	**4Q16 SASR**
Report Type:	**Monitoring Report - Semi-Annually**
Report Date:	**1/15/2017**
Facility Global ID:	**T0600173591**
Facility Name:	**UNOCAL #7124**
File Name:	**351638 _4Q16_GWMR Report_.pdf**
Organization Name:	**ARCADIS**
Username:	**ARCADIS76**
IP Address:	**8.39.233.214**
Submittal Date/Time:	**1/15/2017 8:17:52 PM**
Confirmation Number:	**3935530245**