James P. Kiernan, P.E.
Project Manager

Chevron Environmental Management Company
6001 Bollinger Canyon Road
Room C2102
San Ramon, CA 94583
Tel (925) 842-3220
jkiernan@chevron.com

November 27, 2017

RECEIVED
By Alameda County Environmental Health 1:53 pm, Nov 28, 2017

Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Unocal No. 5781 (351640)
Revised Semi-Annual Status Report – Third Quarter 2017
3535 Pierson Street, Oakland, California
Fuel Leak Case No.: RO0000253
GeoTracker Global ID #T0600101467

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: Revised Semi-Annual Status Report – Third Quarter 2017 by Arcadis

Arcadis U.S., Inc.
2300 Clayton Road
Suite 400
Concord
CA 94520
Tel 925-274-1100
Fax 925-274-1103
www.arcadis-us.com

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:
Revised Semi-Annual Status Report, Third Quarter 2017

Date:
November 27, 2017

Contact:
Carl Edwards

Phone:
415.432.6945

Email:
Carl.Edwards@arcadis.com

Our ref:
GMR35135.1640

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 *Revised Semi-Annual Status Report, Third Quarter 2017* for the following facility:

76 Station No.	**Case No.**	**Location**
Unocal #5781	RO0000253	3535 Pierson Street Oakland, CA

Following submittal of the original report (dated September 22, 2017), a laboratory error in the TPH-g analyses was discovered that lead to false positive detections in several of the samples. The laboratory re-analyzed the samples in question, and this revised report was prepared incorporating the results of the re-analysis.

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

Sincerely,

Arcadis U.S., Inc.

Carl Edwards
Project Manager

Copies:
Geotracker Database
Mr. James Kiernan, CEMC (electronic)
Dr. Delong Liu, United Brothers Enterprise Inc. (2501 North Main Street, Walnut Creek, CA 94597)
Mr. Ed Ralston, Phillips 66 (electronic)

ARCADIS Design & Consultancy for natural and built assets

REVISED SEMI-ANNUAL STATUS REPORT
Third Quarter 2017
November 27, 2017

Facility No:	Unocal #5781	Address:	3535 Pierson Street, Oakland, CA

Arcadis Contact Person / Phone No.:	Carl Edwards / (415) 432-6945
Arcadis Project No.:	GMR35135.1640
Primary Agency/Regulatory ID No.:	Alameda County LOP Case # RO0000253: Keith Nowell / San Francisco Bay RWQCB (Region 2) – Case # 01-1592

WORK CONDUCTED SECOND QUARTER 2017:

1. Prepared the April 10, 2017 *Quarterly Status Report, First Quarter 2017*.
2. Implemented offsite investigation (borings SB-16 through SB-19) and documented the results in the June 28, 2017 *Offsite Investigation Report*.

WORK CONDUCTED THIS QUARTER [Third Quarter 2017]:

1. Conducted semi-annual groundwater monitoring activities on August 1, 2017.
2. Prepared the *Semi-Annual Status Report, Third Quarter 2017*.

WORK CONDUCTED/PROPOSED NEXT PERIOD [Fourth Quarter 2017 – First Quarter 2018]:

1. Conducted semi-annual groundwater monitoring activities on November 10, 2017 (switching to 2Q/4Q schedule moving forward).
2. Prepared the *Revised Semi-Annual Status Report, Third Quarter 2017*.
3. Prepare the *Semi-Annual Status Report, Fourth Quarter 2017* and evaluate groundwater concentrations against the State Water Resources Control Board Low Threat Closure Policy.

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:	11.53 to 14.38	(feet below top of casing)

Approximate Groundwater Elevation:	140.93 to 143.09	(feet above mean sea level)
Groundwater Flow Direction	Variable	
Groundwater Gradient	Variable	(foot per foot)
Current Remediation Techniques:	None	
Permits for Discharge:	N/A	
Summary of Unusual Activity:	N/A	
Agency Directive Requirements:	None	

DISCUSSION

Gettler-Ryan, Inc. (G-R) conducted semi-annual groundwater monitoring activities on August 1, 2017. Field data sheets and general procedures are included as Attachment A. Seven (7) monitoring wells (MW-A and MW-4 through MW-9) were gauged, purged, and sampled by G-R representatives.

Groundwater samples were submitted to BC Laboratories, Inc. of Bakersfield, California (BC Labs) under standard chain-of-custody protocols. Gauging and analytical data obtained by G-R for this event are summarized in Table 1. Historical gauging and analytical data for the site are summarized in Table 2, and included as Attachment B. The site location map and site plan are presented as Figures 1 and 2, respectively; the groundwater elevation contour map for the site on August 1, 2017 is presented as Figure 3. Isoconcentration contours for total petroleum hydrocarbons as gasoline (TPH-g) and total petroleum hydrocarbons as diesel (TPH-d) are presented on Figures 4 and 5, respectively. Concentration maps for benzene, methyl tertiary butyl ether (MTBE), and tertiary butyl alcohol (TBA) are presented on Figures 6 through 8, respectively. A historical groundwater flow direction rose diagram is presented on Figure 9. Copies of the laboratory analytical reports and chain-of-custody documentation are included as Attachment C.

The anomalous TPH-g detections in the samples collected from MW-A, MW-4, MW-6, and MW-7 reported in the original laboratory report (dated August 1, 2017) were later determined by the laboratory to be the result of carry-over from a previous outside sample set during analysis (see correspondence in

Attachment D). Therefore, the samples from these wells were re-analyzed for TPH-g to confirm the carry-over in the original run, and TPH-g was not detected in the samples (Table 1). The re-analysis was performed after the hold time of the samples had expired; however, Arcadis does not consider this a significant data quality issue as the results clearly show the laboratory error. The TPH-g isoconcentration figure in this report was revised to show the updated results, and the discussion below was also revised to incorporate the updated (non-detect) results.

A consistent groundwater flow direction could not be determined based on the current groundwater elevations. Therefore, a groundwater gradient was not calculated. Residual dissolved petroleum hydrocarbons are primarily limited to on-site monitoring well MW-5, and overall are declining. Analytical results indicated that TPH-d (310 micrograms per liter [µg/L] following silica gel cleanup), TPH-g (1,600 µg/L), toluene (0.70 µg/L), ethylbenzene (8.6 µg/L), total xylenes (19 µg/L), and MTBE (1.9 µg/L) were detected in the groundwater sample collected from MW-5. Only TPH-d (680 µg/L at MW-8) and low concentrations of MTBE (1.7 µg/L at MW-4; 1.3 µg/L at MW-6; 0.63 µg/L at MW-8) were detected in other site monitoring wells. No other constituents of concern (COCs) were detected above laboratory reporting limits in any site wells during this sampling event.

In December 2015 AECOM submitted the *Site Conceptual Model*, and identified potential groundwater impacts to the east of MW-5 as a data gap, which was consistent with the Low Threat Closure Policy (LTCP) checklist on the State Water Resources Control Board (SWRCB) GeoTracker website. On June 28, 2017, Arcadis submitted the *Offsite Investigation Report* (report), documenting field activities to collect offsite soil samples east of MW-5 and attempts to collect grab groundwater samples. No groundwater was encountered in the borings; however, based on the soil results, it was concluded that groundwater impacts were delineated offsite given the absence of COCs. Therefore, Arcadis considers the offsite groundwater delineation data gap closed and no further investigation is warranted.

Arcadis recommends one additional groundwater monitoring event (fourth quarter 2017) to confirm low-threat conditions and case closure applicability.

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.

PROFESSIONAL GEOLOGIST
NASRIN TINA ERDELYI
No. 9200
Exp. 11/30/17
STATE OF CALIFORNIA

Date: November 27, 2017

Date: November 27, 2017

Carl Edwards
Project Manager

ATTACHMENTS:

TABLES

Table 1. Current Groundwater Gauging and Analytical Results
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

Well ID	Sample Date	Analysis Date	TOC (ft amsl)	DTW (ft bTOC)	GW Elev (ft amsl)	TPH-d (µg/L)	TPH-d (w/SGC) (µg/L)	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)	Comments
MW-A	8/1/2017	8/8/2017[1]	154.79	13.41	141.38	<50	--	**950**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
		10/2/2017	--	--	--	--	--	<50	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Z1, S1**
MW-4	8/1/2017	8/8/2017[1]	153.48	12.33	141.15	<50	--	**330**	<0.50	<0.50	<0.50	<1.0	**1.7**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
		10/3/2017	--	--	--	--	--	<50	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Z1, S1**
MW-5	8/1/2017	8/8/2017[1]	153.66	12.73	140.93	**450**	**310**	**1,600**	<0.50	**0.70**	**8.6**	**19**	**1.9**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-6	8/1/2017	8/8/2017[1]	154.62	11.53	143.09	<50	--	**200**	<0.50	<0.50	<0.50	<1.0	**1.3**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
		10/3/2017	--	--	--	--	--	<50	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Z1, S1**
MW-7	8/1/2017	8/8/2017[1]	155.38	14.38	141.00	<50	--	**110**	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
		10/3/2017	--	--	--	--	--	<50	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Z1, S1**
MW-8	8/1/2017	8/8/2017[1]	153.71	12.10	141.61	**680**	--	<50	<0.50	<0.50	<0.50	<1.0	**0.63**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-9	8/1/2017	8/8/2017[1]	153.37	11.97	141.40	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
QA	8/1/2017	--	--	--	--	--	--	<50	<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
-- = Not sampled/not measured
ft = Feet
Samples analyzed by EPA Method 8260B:
GW Elev = Groundwater elevation
µg/L = Micrograms per liter
Bold = Value exceeds laboratory reporting limits
<0.50 = Not detected at or above the laboratory detection limit

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Environmental Protection Agency (EPA) Method 8015
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to EPA Method 8015B
TPH-d (w/SGC) = Total petroleum hydrocarbons, diesel with Silica Gel Cleanup, by LUFT method
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
S1 - TPH-g was analyzed after hold time expired.
Z1 = TPH-g was re-analyzed to confirm initial TPH-g carry over in original run.
[1] = TPH-g analysis run on 8/4/2017; TPH-d analyses performed on 8/9/2017
Data QA/QC by: IC 08.29.2017

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 1990 to Current
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

Well ID	Sample Date	TOC (ft amsl)	DTW (ft bTOC)	PSH thickness (ft)	PSH recovered (gal)	GW Elev (ft amsl)	TPH-d (µg/L)	TPH-d (w/SGC) (µg/L)	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)	Comments
MW-A	12/18/1990	--	--	--	--	--	73	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	5/3/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	8/7/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	11/8/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	2/6/1992	151.80	19.88	0	0	131.92	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	8/4/1992	151.80	18.95	0	0	132.85	ND	--	ND	ND	ND	ND	0.51	--	--	--	--	--	--	--	--	
	2/10/1993	151.80	17.71	0	0	134.09	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	2/10/1994	151.80	15.25	0	0	136.55	ND	--	ND	ND	0.52	ND	0.92	--	--	--	--	--	--	--	--	
	2/9/1995	151.80	15.68	0	0	136.12	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	
	2/6/1996	151.80	12.52	0	0	139.28	120	--	ND	ND	ND	ND	2.1	--	--	--	--	--	--	--	--	
	2/5/1997	151.80	13.01	0	0	138.79	61	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	
	2/2/1998	151.80	11.91	0	0	139.89	ND	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	
	2/22/1999	151.80	11.24	0	0	140.56	ND	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	
	2/26/2000	151.80	12.16	0	0	139.64	ND	--	ND	ND	1.01	ND	ND	ND	--	--	--	--	--	--	--	
	3/7/2001	151.80	11.91	0	0	139.89	131	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	2/22/2002	151.80	14.08	0	0	137.72	<50	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	
	2/22/2003	151.80	14.41	0	0	137.39	93	--	<50	<0.50	<0.50	<0.50	<0.50	<2.0	<100	<2.0	<0.50	<2.0	<2.0	<2.0	<500	
	2/3/2004	151.80	14.32	0	0	137.48	60	--	<50	<0.50	<0.50	<0.50	<0.50	<2.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<50	
	2/18/2005	151.80	14.21	0	0	137.59	<50	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/29/2006	151.80	12.72	0	0	139.08	<200	--	<50	<0.30	<0.30	<0.30	<0.60	0.54	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/28/2007	151.80	13.98	0	0	137.82	92	--	<50	<0.30	<0.30	<0.30	<0.60	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/22/2008	151.80	12.68	0	0	139.12	<50	--	<50	<0.30	<0.30	<0.30	<0.60	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/27/2009	151.80	14.35	0	0	137.45	53	--	<50	<0.30	<0.30	<0.30	<0.60	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/23/2010	151.80	19.55	0	0	132.25	<58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	6/16/2010	154.79	17.85	0	0	136.94	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/29/2010	154.79	15.50	0	0	139.29	<1200	--	<50	<0.50	<0.50	<0.50	<1.0	0.63	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/21/2010	154.79	14.43	0	0	140.36	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.65	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	154.79	17.70	0	0	137.09	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.56	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	154.79	13.92	0	0	140.87	<40	--	<50	<0.50	<0.50	<0.50	<1.0	0.57	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	154.79	18.83	0	0	135.96	<40	--	<50	<0.50	<0.50	<0.50	<1.0	0.61	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	154.79	14.67	0	0	140.12	<40	--	<50	<0.50	<0.50	<0.50	<1.0	0.72	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	154.79	16.75	0	0	138.04	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	154.79	17.14	0	0	137.65	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	154.79	14.79	0	0	140.00	<40	--	<50	<0.50	<0.50	<0.50	<1.0	0.56	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	154.79	17.52	0	0	137.27	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	154.79	15.08	0	0	139.71	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.55	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	154.79	15.60	0	0	139.19	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.59	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	154.79	16.42	0	0	138.37	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	154.79	16.57	0	0	138.22	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	154.79	17.33	0	0	137.46	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	154.79	16.65	0	0	138.14	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	154.79	18.02	0	0	136.77	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	154.79	18.41	0	0	136.38	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	154.79	17.95	0	0	136.84	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	154.79	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	154.79	18.70	0	0	136.09	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	154.79	18.18	0	0	136.61	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	154.79	18.50	0	0	136.29	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	154.79	18.27	0	0	136.52	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	154.79	15.48	0	0	139.31	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	154.79	17.30	0	0	137.49	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	154.79	18.09	0	0	136.70	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	**47**	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	154.79	15.98	0	0	138.81	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	154.79	13.41	0	0	141.38	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	Z1, S1

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 1990 to Current
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

	Sample	TOC	DTW	PSH thickness	PSH recovered	GW Elev	TPH-d	TPH-d (w/SGC)	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
MW-4	6/16/2010	153.48	11.13	0	0	142.35	<50	--	58	<0.50	9.7	1.3	16	5.4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/29/2010	153.48	12.62	0	0	140.86	<50	--	<50	<0.50	<0.50	<0.50	<1.0	7.3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/21/2010	153.48	11.17	0	0	142.31	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	153.48	10.57	0	0	142.91	<50	--	<50	<0.50	<0.50	<0.50	<1.0	2.2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	153.48	10.94	0	0	142.54	<40	--	<50	<0.50	<0.50	<0.50	<1.0	1.6	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	153.48	12.07	0	0	141.41	<40	--	<50	<0.50	<0.50	<0.50	<1.0	4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	153.48	12.70	0	0	140.78	<40	--	<50	<0.50	<0.50	<0.50	<1.0	3.8	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	153.48	12.40	0	0	141.08	<40	--	<50	<0.50	<0.50	<0.50	<1.0	1.5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	153.48	11.10	0	0	142.38	<40	--	390	<0.50	3.8	11	150	2.2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	153.48	12.14	0	0	141.34	<40	--	<50	<0.50	<0.50	<0.50	<1.0	2.4	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	153.48	13.43	0	0	140.05	<50	--	<50	<0.50	<0.50	<0.50	<1.0	1.3	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	153.48	11.64	0	0	141.84	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	153.48	12.22	0	0	141.26	<50	--	<50	<0.50	<0.50	<0.50	<1.0	2.5	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	153.48	13.24	0	0	140.24	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.95	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	153.48	13.85	0	0	139.63	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	153.48	13.06	0	0	140.42	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	153.48	11.96	0	0	141.52	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	153.48	12.90	0	0	140.58	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	153.48	13.68	0	0	139.80	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	153.48	11.98	0	0	141.50	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	153.48	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	153.48	12.42	0	0	141.06	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	153.48	13.18	0	0	140.30	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	153.48	12.38	0	0	141.10	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	153.48	10.71	0	0	142.77	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	153.48	12.05	0	0	141.43	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	153.48	13.08	0	0	140.40	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	153.48	12.43	0	0	141.05	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	153.48	9.80	0	0	143.68	<50	--	<50	<0.50	<0.50	<0.50	<1.0	**0.93**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	153.48	12.33	0	0	141.15	<50	--	<50	<0.50	<0.50	<0.50	<1.0	**1.7**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	Z1, S1
MW-5	6/16/2010	153.66	11.95	0	0	141.71	3,000	--	29,000	580	6,800	850	7,200	<50	<1000	<50	<50	<50	<50	<50	<25000	
	9/29/2010	153.66	13.67	0	0	139.99	64,000	--	29,000	220	4,100	2,500	23,000	52	<1000	<50	<50	<50	<50	<50	<25000	
	12/21/2010	153.66	11.17	0	0	142.49	11,000	--	50,000	81	4,800	2,200	22,000	<50	<1000	<50	<50	<50	<50	<50	<25000	
	3/10/2011	153.66	11.35	0	0	142.31	4,900	--	48,000	69	3,600	1,700	20,000	<50	<1000	<50	<50	<50	<50	<50	<25000	
	06/07/2011	153.66	11.45	0	0	142.21	3,700	--	40,000	32	2,300	1,500	16,000	24	150	<0.50	<0.50	<0.50	<0.50	<0.50	330	
	08/18/2011	153.66	12.30	0	0	141.36	5,400	--	30,000	29	1,000	980	7,200	56	44	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	153.66	13.72	0	0	139.94	20,000	--	42,000	21	2,400	2,400	20,000	42	<250	<12	<12	<12	<12	<12	<6,200	
	01/24/2012	153.66	12.20	0	0	141.46	46,000	--	71,000	<25	1,100	1,400	10,000	<25	<500	<25	<25	<25	<25	<25	<12,000	
	04/06/2012	153.66	11.88	0	0	141.78	21,000	--	58,000	9.9	880	660	9,800	12	<120	<6.2	<6.2	<6.2	<6.2	<6.2	<3,100	
	07/02/2012	153.66	12.75	0	0	140.91	30,000	--	53,000	89	590	1,000	12,000	26	<500	<25	<25	<25	<25	<25	<12,000	
	10/4/2012	153.66	16.03	0.39	0	137.34			No Sample Collected - Free Product in Well													
	1/23/2013	153.66	12.02	0	0	141.64	22,000	--	54,000	<25	160	1,100	13,000	<25	<500	<25	<25	<25	<25	<25	<12,000	
	4/22/2013	153.66	12.37	0	0	141.29	7,600	--	39,000	0.7	65	330	4,500	2.9	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	153.66	15.62	0	0	138.04	11,000	--	35,000	1	59	470	3,500	9.8	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	153.66	16.41	0	0	137.25	<50	--	86,000	<10	66	770	9,300	<10	<200	<10	<10	<10	<10	<10	<5,000	
	2/24/2014	153.66	15.27	0	0	138.39	1,700	--	3,900	<0.50	4.5	240	1,800	1.7	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	153.66	12.02	0	0	141.64	960	--	27,000	<0.50	2.5	160	1,100	1.4	310	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	153.66	15.28	0	0	138.38	2,100	--	6,600	<0.50	0.97	84	330	3.6	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	153.66	17.03	0	0	136.63	3,000	--	27,000	<0.50	40	370	2,900	7.7	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	153.66	12.24	0	0	141.42	880	--	9,100	<0.50	0.65	85	400	2.2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	153.66	--	--	--	--	1,800	--	10,000	<0.50	0.54	85	370	2.0	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	153.66	14.70	0	0	138.96	760	--	5,100	<0.50	<0.50	39	120	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	153.66	16.63	0	0	137.03	3,800	--	4,100	<5.0	<5.0	130	540	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 1990 to Current
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

	Sample	TOC	DTW	PSH thickness	PSH recovered	GW Elev	TPH-d	TPH-d (w/SGC)	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
	12/22/2015	153.66	11.82	0	0	141.84	1,700	--	5,600	16	63	53	320	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<2,500	
	3/15/2016	153.66	11.54	0	0	142.12	1,300	--	2,200	2.8	1	13	9.4	0.7	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	153.66	12.35	0	0	141.31		--	**1,600**	**0.55**	<0.50	**8.6**	**2.3**	**3.3**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	153.66	15.18	0	0	138.48	**880**	--	**2,600**	<0.50	**0.66**	**6.6**	**14**	**4.4**	**180**	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	153.66	12.31	0	0	141.35	**4,300**	--	**10,000**	<0.50	**0.99**	**89**	**260**	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	153.66	10.93	0	0	142.73	**690**	--	**2,100**	<0.50	<0.50	**9.1**	**12**	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	153.66	12.73	0	0	140.93	**450**	**310**	**1,600**	<0.50	**0.70**	**8.6**	**19**	**1.9**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-6	12/21/2010	154.62	12.10	0	0	142.52	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	154.62	11.36	0	0	143.26	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	154.62	11.33	0	0	143.29	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	154.62	13.00	0	0	141.62	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	154.62	14.02	0	0	140.60	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	154.62	11.94	0	0	142.68	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	154.62	11.39	0	0	143.23	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	154.62	11.49	0	0	143.13	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	154.62	16.09	0	0	138.53	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	154.62	11.41	0	0	143.21	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	154.62	11.43	0	0	143.19	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	154.62	15.71	0	0	138.91	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	154.62	16.83	0	0	137.79	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	154.62	15.22	0	0	139.40	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	154.62	11.43	0	0	143.19	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	154.62	14.96	0	0	139.66	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	154.62	16.70	0	0	137.92	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	154.62	11.61	0	0	143.01	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	154.62	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	154.62	11.76	0	0	142.86	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	154.62	16.08	0	0	138.54	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	154.62	15.55	0	0	139.07	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	154.62	11.33	0	0	143.29	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	154.62	11.50	0	0	143.12	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	154.62	13.98	0	0	140.64	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	154.62	11.46	0	0	143.16	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	154.62	11.25	0	0	143.37	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	154.62	11.53	0	0	143.09	<50	--	<50	<0.50	<0.50	<0.50	<1.0	**1.3**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	Z1, S1
MW-7	12/21/2010	155.38	13.46	0	0	141.92	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	155.38	12.07	0	0	143.31	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	155.38	12.59	0	0	142.79	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	155.38	14.37	0	0	141.01	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	155.38	15.22	0	0	140.16	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	155.38	15.32	0	0	140.06	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	155.38	13.09	0	0	142.29	<49	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	155.38	14.42	0	0	140.96	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	155.38	16.20	0	0	139.18	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	155.38	13.27	0	0	142.11	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	155.38	14.30	0	0	141.08	<50	--	52	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	155.38	16.30	0	0	139.08			Insufficient Water to Sample													
	10/17/2013	155.38	16.77	0	0	138.61	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	155.38	15.33	0	0	140.05	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	155.38	13.82	0	0	141.56	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	155.38	15.70	0	0	139.68	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	155.38	16.67	0	0	138.71	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	155.38	14.13	0	0	141.25	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge

Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 1990 to Current
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

	Sample	TOC	DTW	PSH thickness	PSH recovered	GW Elev	TPH-d	TPH-d (w/SGC)	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
	1/20/2015	155.38	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	155.38	15.13	0	0	140.25	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	155.38	16.17	0	0	139.21	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	155.38	15.58	0	0	139.80	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	155.38	12.83	0	0	142.55	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	155.38	14.20	0	0	141.18	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	155.38	15.67	0	0	139.71	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	155.38	14.87	0	0	140.51	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	155.38	11.32	0	0	144.06	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	155.38	14.38	0	0	141.00	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	Z1, S1
MW-8	12/21/2010	153.71	11.63	0	0	142.08	81	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	153.71	11.38	0	0	142.33	61	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	153.71	11.54	0	0	142.17	71	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	153.71	12.47	0	0	141.24	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	153.71	12.90	0	0	140.81	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	153.71	12.52	0	0	141.19	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	153.71	11.35	0	0	142.36	160	--	270	<0.50	3.7	7.8	91	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	153.71	12.50	0	0	141.21	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	153.71	13.89	0	0	139.82	<50	--	<50	<0.50	<0.50	<0.50	2.4	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	153.71	13.06	0	0	140.65	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	153.71	12.82	0	0	140.89	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	153.71	13.63	0	0	140.08	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	153.71	14.48	0	0	139.23	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	153.71	13.56	0	0	140.15	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	153.71	11.90	0	0	141.81	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	153.71	13.78	0	0	139.93	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	153.71	14.38	0	0	139.33	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	153.71	13.28	0	0	140.43	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	153.71	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	153.71	12.88	0	0	140.83	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	153.71	14.19	0	0	139.52	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	153.71	12.90	0	0	140.81	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	153.71	13.14	0	0	140.57	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	153.71	12.32	0	0	141.39	<50	--	<50	<0.50	<0.50	<0.50	<1.0	**0.97**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	153.71	13.57	0	0	140.14	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	153.71	13.46	0	0	140.25	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	153.71	9.60	0	0	144.11	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	153.71	12.10	0	0	141.61	**680**	--	<50	<0.50	<0.50	<0.50	<1.0	**0.63**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
MW-9	12/21/2010	153.37	10.53	0	0	142.84	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/10/2011	153.37	10.86	0	0	142.51	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	06/07/2011	153.37	11.36	0	0	142.01	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	08/18/2011	153.37	12.52	0	0	140.85	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/04/2011	153.37	13.32	0	0	140.05	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	01/24/2012	153.37	11.23	0	0	142.14	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	04/06/2012	153.37	10.98	0	0	142.39	<40	--	340	<0.50	4.4	9	120	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	07/02/2012	153.37	12.58	0	0	140.79	<40	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/4/2012	153.37	14.31	0	0	139.06	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/23/2013	153.37	11.11	0	0	142.26	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	153.37	12.22	0	0	141.15	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	153.37	14.10	0	0	139.27	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	153.37	14.56	0	0	138.81	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	153.37	12.85	0	0	140.52	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	153.37	11.73	0	0	141.64	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	

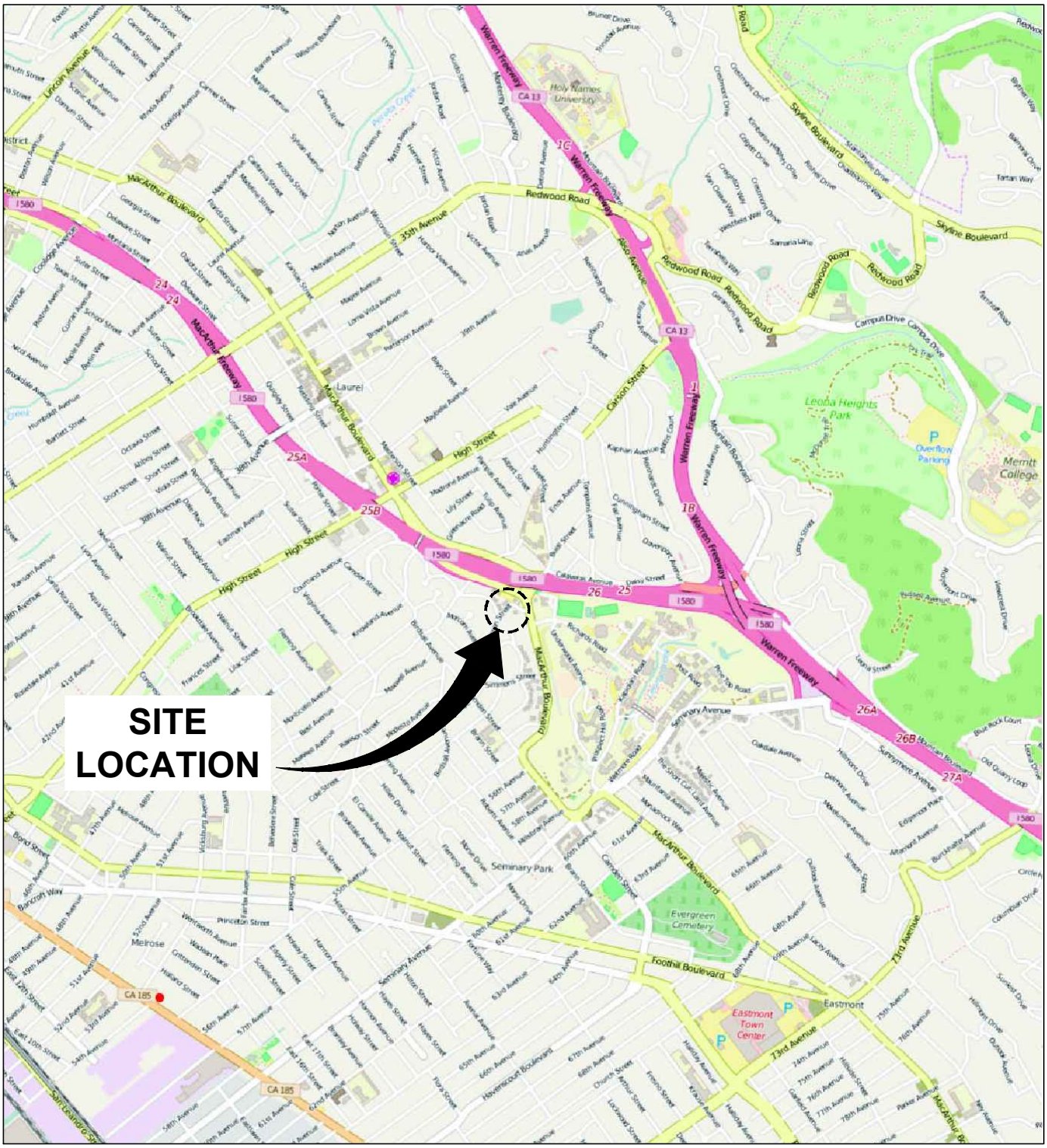
Table 2. Historical Groundwater Gauging and Analytical Results
Fourth Quarter 1990 to Current
Union Oil Company of California
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

	Sample	TOC	DTW	PSH thickness	PSH recovered	GW Elev	TPH-d	TPH-d (w/SGC)	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments
	7/18/2014	153.37	13.69	0	0	139.68	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	153.37	14.32	0	0	139.05	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	1/20/2015	153.37	11.80	0	0	141.57	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	pre-purge
	1/20/2015	153.37	--	--	--	--	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	post-purge
	6/3/2015	153.37	13.30	0	0	140.07	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	153.37	14.05	0	0	139.32	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	153.37	10.50	0	0	142.87	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	153.37	10.26	0	0	143.11	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	153.37	11.92	0	0	141.45	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	153.37	13.75	0	0	139.62	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	153.37	11.62	0	0	141.75	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	153.37	9.79	0	0	143.58	**60**	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	153.37	11.97	0	0	141.40	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
QA	1/23/2013	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/22/2013	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/31/2013	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/17/2013	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/24/2014	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	4/17/2014	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	7/18/2014	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	10/21/2014	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	9/7/2015	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	12/22/2015	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	3/15/2016	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	6/22/2016	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/25/2016	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	11/23/2016	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	2/10/2017	--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250	
	8/1/2017	--	--	--	--	--	--	--	<50	<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
gal = Gallons
GW Elev = Groundwater elevation
µg/L = Micrograms per liter
Bold = Value exceeds laboratory reporting limits; PSH thickness is greater than 0.00 ft
<0.50 = Not detected at or above the stated limit
-- = Not sampled/Not measured

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to Environmental Protection Agency (EPA) Method 8015
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to EPA Method 8015B
TPH-d (w/SGC) = Total petroleum hydrocarbons, diesel with Silica Gel Cleanup, by LUFT method
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
S1 - TPH-g was analyzed after hold time expired.
Z1 = TPH-g was re-analyzed to confirm initial TPH-g carry over in original run
Data QA/QC by IC 08.29.2017

FIGURES



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

N

0 2,000' 4,000'

APPROXIMATE SCALE 1 in. = 2,000 ft.

CALIFORNIA

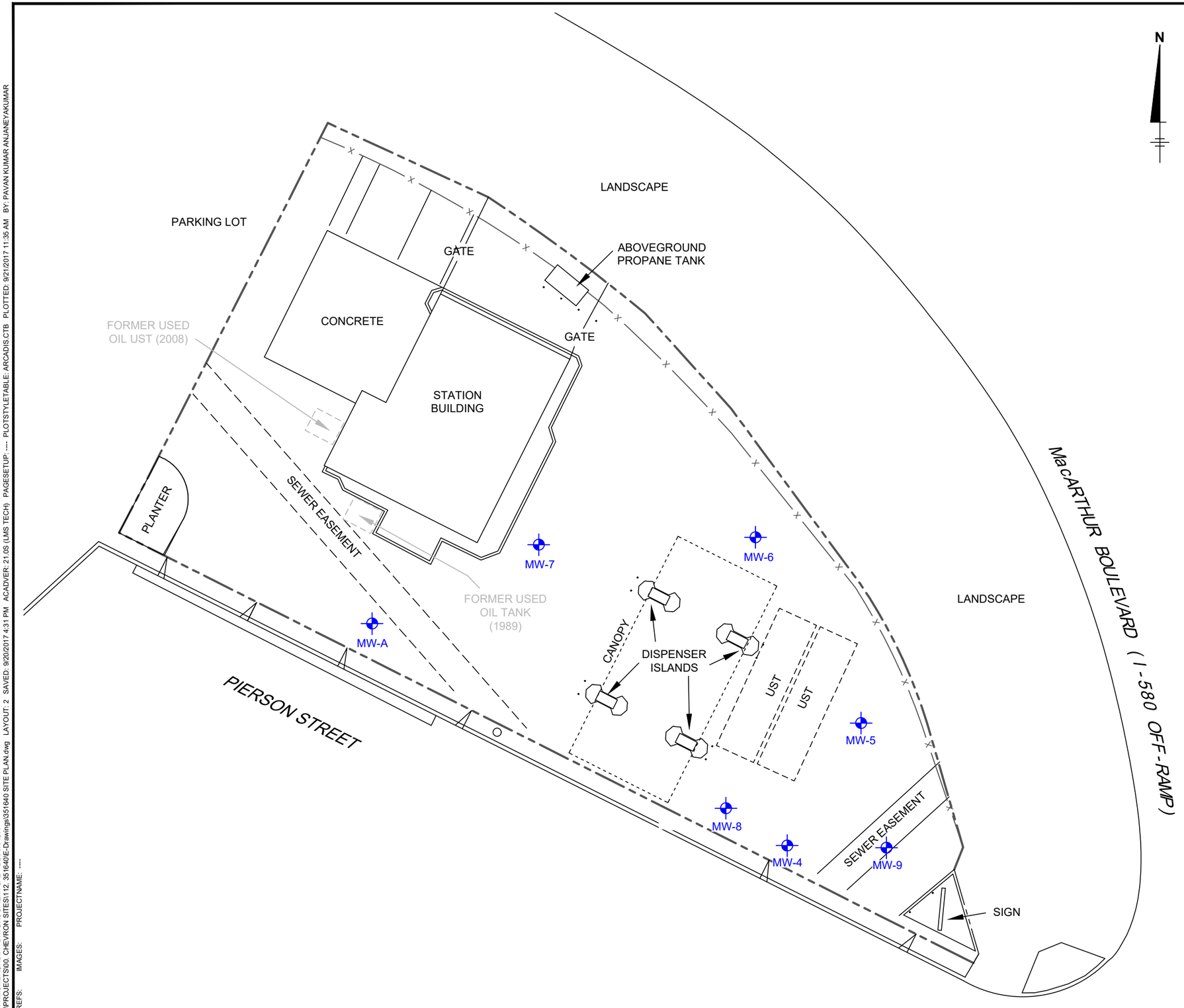
UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA

SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

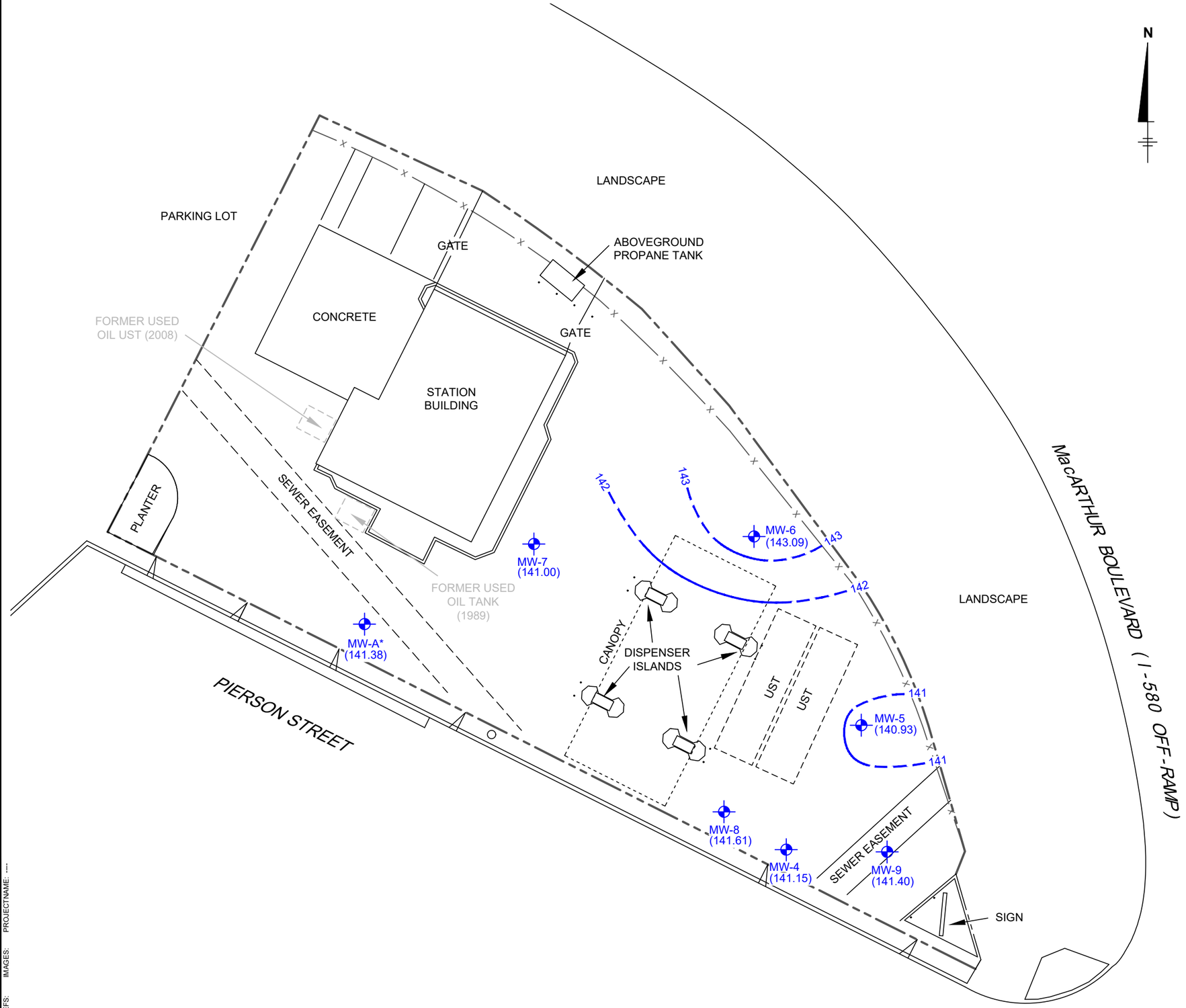


UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA
SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2



LEGEND

- SUBJECT PROPERTY BOUNDARY
- FENCE LINE
- UST — UNDERGROUND STORAGE TANK
- MW-4 — GROUNDWATER MONITORING WELL
- (141.61) — GROUNDWATER ELEVATION (FEET)
- 143 — GROUNDWATER ELEVATION (DASHED WHERE INFERRED)
- MW-A* — NOT USED IN CONTOURING AS IT WAS SCREENED IN DEEPER AQUIFER

0 20' 40'

APPROXIMATE SCALE 1 in. = 20 ft.

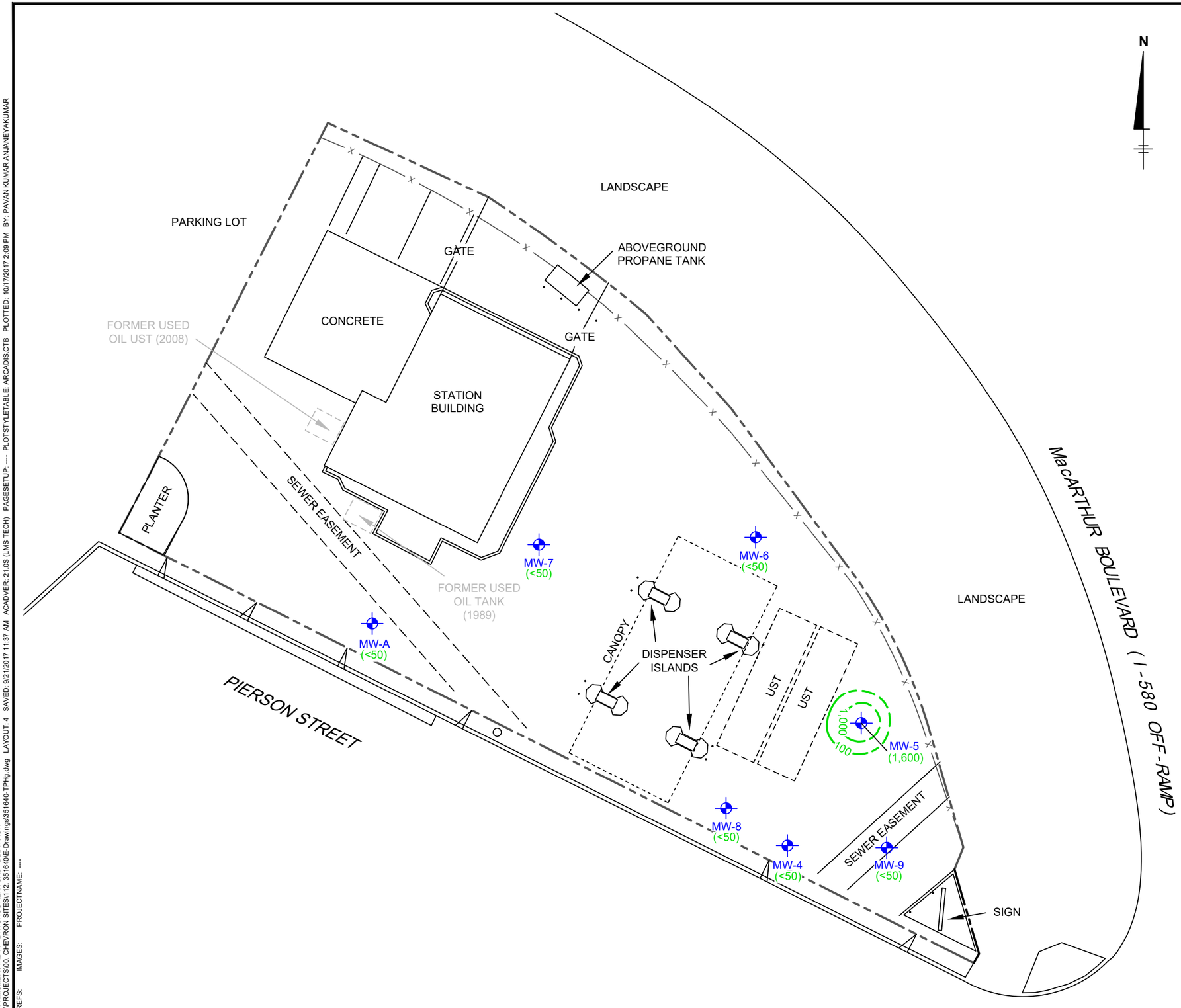
UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA

SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

GROUNDWATER ELEVATION CONTOUR MAP AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3



LEGEND

- SUBJECT PROPERTY BOUNDARY
- FENCE LINE
- UST — UNDERGROUND STORAGE TANK
- MW-4 — MONITORING WELL
- (1,600) — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPH-g) CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
- 1,000 — TPH-g CONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- (<50) — NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

0 20' 40'

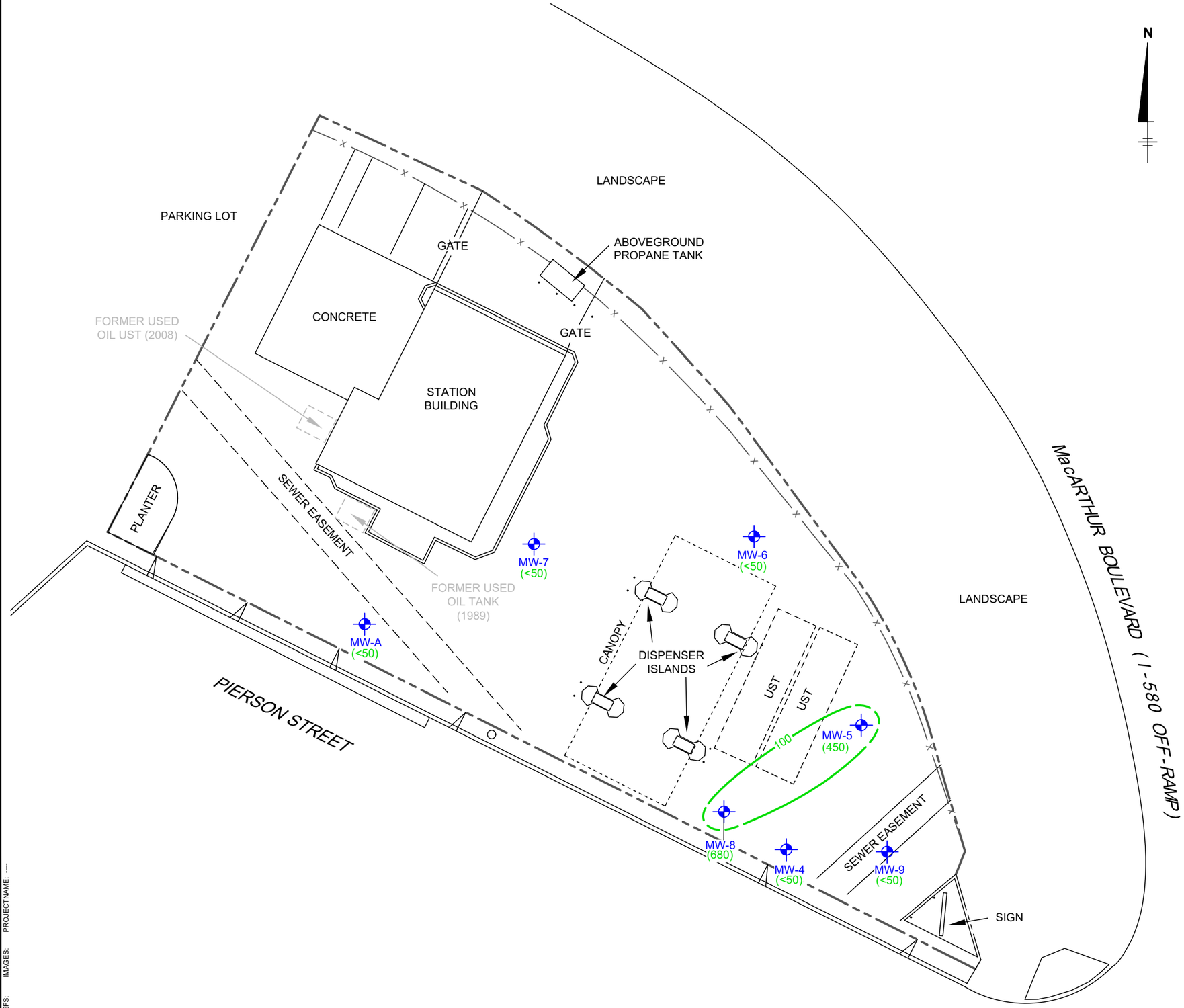
APPROXIMATE SCALE 1 in. = 20 ft.

UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA
SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

TPH-g ISOCONCENTRATION MAP AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4



LEGEND

- SUBJECT PROPERTY BOUNDARY
- FENCE LINE
- UST — UNDERGROUND STORAGE TANK
- MW-4 — MONITORING WELL
- (680) — TOTAL PETROLEUM HYDROCARBONS AS DIESEL (TPH-d) CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
- 100 — TPH-d CONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- (<50) — NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

0 20' 40'

APPROXIMATE SCALE 1 in. = 20 ft.

UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA

SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

TPH-d ISOCONCENTRATION MAP AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 5

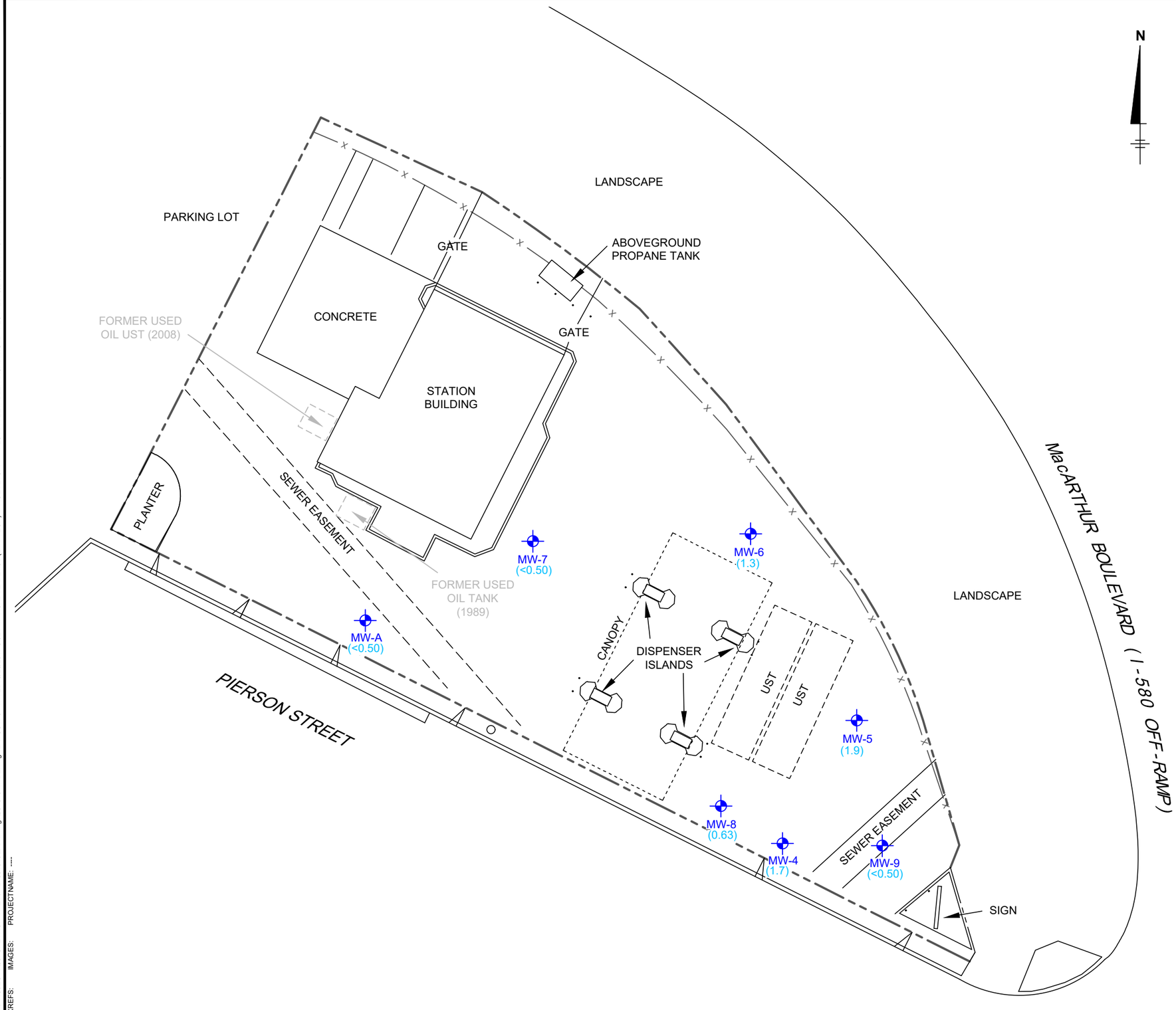
UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA

SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

BENZENE CONCENTRATION MAP AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6



LEGEND

- SUBJECT PROPERTY BOUNDARY
- FENCE LINE
- UST — UNDERGROUND STORAGE TANK
- MW-4 — MONITORING WELL
- (1.9) — METHYL TERTIARY BUTYL ETHER (MTBE) CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
- (<0.50) — NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT

0 20' 40'

APPROXIMATE SCALE 1 in. = 20 ft.

UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA
SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

MTBE CONCENTRATION MAP
AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

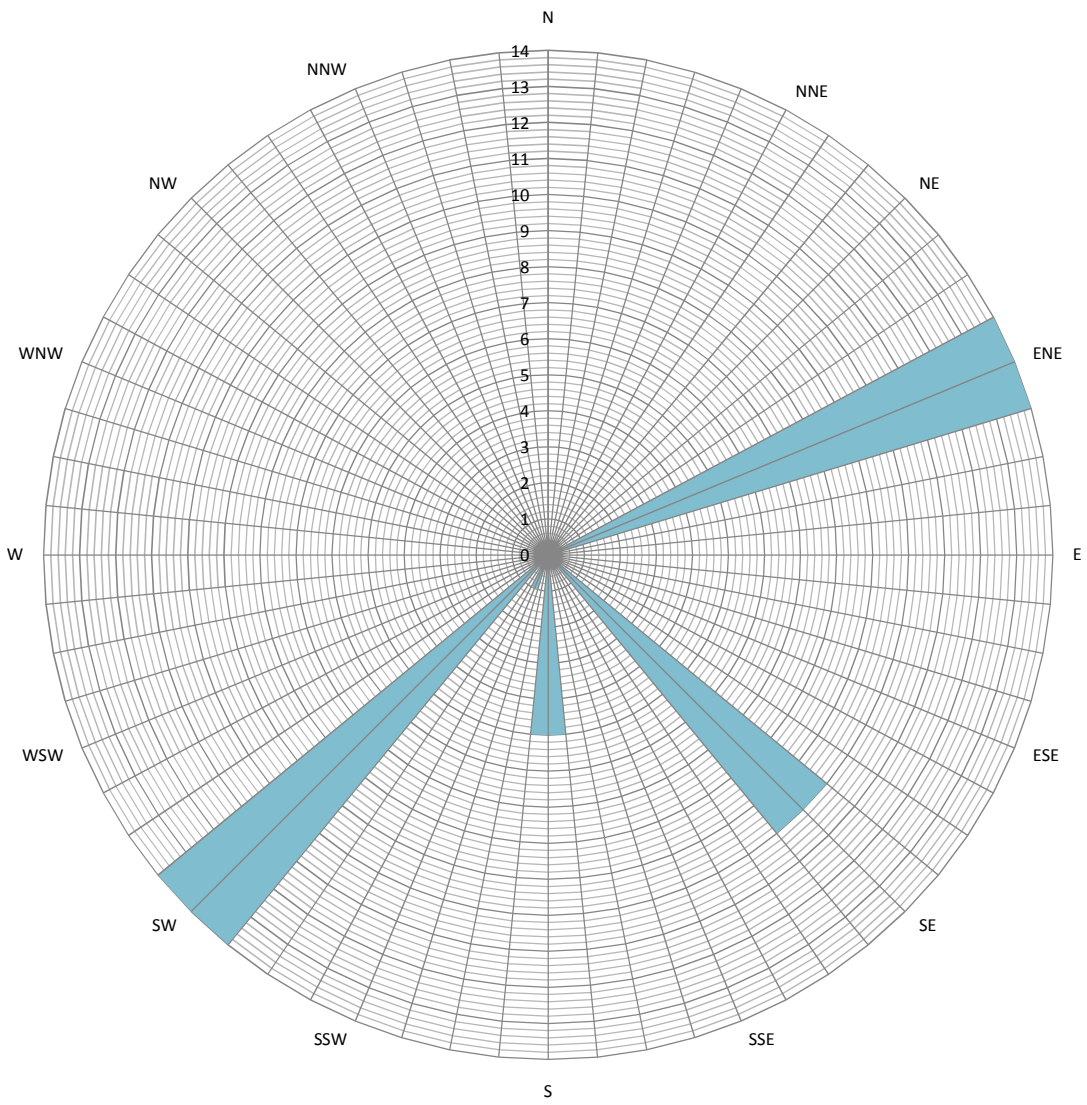
FIGURE
7

UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA
SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

TBA CONCENTRATION MAP AUGUST 1, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 8



Note

Rose diagram based on gradient direction calculations from groundwater monitoring events conducted by Arcadis from 2012 to 2016. Prior to 2012, monitoring events were conducted by Stantec, TRC and ATC Associates.

Number of Events = 44

UNOCAL NO. 5781 (351640)
3535 PIERSON STREET
OAKLAND, CALIFORNIA

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM

ARCADIS Design & Consultancy for natural and built assets

FIGURE 9

ATTACHMENT A

Field Data Sheets and General Procedures

GETTLER-RYAN INC.

TRANSMITTAL

August 9, 2017
G-R #17155641

TO: Mr, Carl Edwards
Arcadis
100 Montgomery Street, Suite 300
San Francisco, California 94104

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

RE: Chevron Facility
#351640/5781
3535 Pierson Street
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package **Second Semi Annual Event of August 1, 2017**

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/351640 5781

WELL CONDITION STATUS SHEET

Client/
Facility #: **Chevron #351640 / 5781**

Site Address: **3535 Pierson Street**

City: **Oakland, CA**

Job #: **17155641**

Event Date: 8.1.17

Sampler: FT

WELL ID	Vault Frame Condition	Gasket/ O-Ring (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Bolt Flanges B=Broken S=Stripped R=Retaped	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-A	OK	→	→	S=1	OK	→	→	↓	↓	Emco | 8" | 2	
MW-4	OK	→	→			→	→			Emco | 12" | 2	
MW-5	OK	→	→	1 Broken Bolt in flange	OK	→	→			↓	
MW-6	OK	→	→			→	→				
MW-7	OK	→	→	S=1	OK	→	→				
MW-8	OK	→	→			→	→				
MW-9	OK	→	→			→	→	↓	↓	↓	

DRUMS PRESENT ONSITE? Y/N #:

ARE DRUMS PROPERLY LABELED? Y / N N/A

LOCATION OF DRUMS: N/A

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 #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8-1-17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-A Date Monitored: 8-1-17
Well Diameter 2/4 in.
Total Depth 45.00 ft.
Depth to Water 13.41 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.

31.59 xVF .17 = 5.37 x3 case volume = Estimated Purge Volume: 16.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 19.72

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): 1120 Weather Conditions: SUNNY
Sample Time/Date: 1355 / 8.1.17 Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: ≈ 1.5 gpm. Sediment Description: NONE
Did well de-water? No If yes, Time: Volume: gal. DTW @ Sampling: 17.52

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1124	5.5	6.93	566	21.9		
1128	11.0	6.96	572	22.1		
1132	16.0	7.01	579	22.3		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-A	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS: SLOW RECOVERY

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? Y (N) DTW READING: TIME:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8.1.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW- 4 Date Monitored: 8.1.17
Well Diameter 2 (4) in.
Total Depth 24.74 ft.
Depth to Water 12.33 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.

12.41 xVF .66 = 8.19 x3 case volume = Estimated Purge Volume: 25.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 14.81

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): 1150 Weather Conditions: Sunny
Sample Time/Date: 1145 / 8.1.17 Water Color: Clear Odor: Y / (N)
Approx. Flow Rate: ≈ 2.0 gpm. Sediment Description: None
Did well de-water? Yes If yes, Time: 1158 Volume: 16.0 gal. DTW @ Sampling: 12.33

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1154	8.0	7.17	472	22.1		
1158	16.0	7.20	481	22.9	✓	✓

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)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? (Y) / N DTW READING: 17.69 TIME: 1410

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 | Job Number: 17155641
Site Address: 3535 Pierson Street | Event Date: 8.1.17 (inclusive)
City: Oakland, CA | Sampler: FT

Well ID: MW-5 | Date Monitored: 8-1-17
Well Diameter: 2 (4) in.
Total Depth: 19.89 ft.
Depth to Water: 12.73 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.

7.16 xVF .66 = 4.72 x3 case volume = Estimated Purge Volume: 14.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 14.16

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): 1215 | Weather Conditions: Sunny
Sample Time/Date: 1210 / 8.1.17 | Water Color: Clear | Odor: (Y) / N | Strong
Approx. Flow Rate: 1.5 gpm. | Sediment Description: None
Did well de-water? Yes | If yes, Time: 1219 | Volume: 5.0 gal. | DTW @ Sampling: 12.73

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1218	4.5	6.85	865	22.5		
					/	/
					/	/

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS: ____

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? (Y) / N DTW READING: 17.56 TIME: 1415

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8-1-17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-6 Date Monitored: 8-1-17
Well Diameter 2/4 in.
Total Depth 19.95 ft.
Depth to Water 11.53 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.

8.42 xVF .17 = 1.43 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 13.24

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): 1335 Weather Conditions: Sunny
Sample Time/Date: 1335 / 8.1.17 Water Color: Lt. Brown Odor: Y / (N)
Approx. Flow Rate: — gpm. Sediment Description: S. Silty
Did well de-water? Yes If yes, Time: 1342 Volume: 3.0 gal. DTW @ Sampling: 11.53

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1338	1.5	6.98	278	21.8		
1342	3.0	7.01	285	22.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? (Y) / N DTW READING: 17.95 TIME: 1425

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8.1.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-7 Date Monitored: 8.1.17
Well Diameter 2 4 in.
Total Depth 19.69 ft.
Depth to Water 14.38 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.

5.31 xVF .17 = .90 x3 case volume = Estimated Purge Volume: 3.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 15.44

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): 1100 Weather Conditions: Sunny
Sample Time/Date: 1100 /8.1.17 Water Color: CLEAR Odor: Y / (N)
Approx. Flow Rate: ✓ gpm. Sediment Description: NONE
Did well de-water? Yes If yes, Time: 1104 Volume: 2.0 gal. DTW @ Sampling: 14.38

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS / mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1103	1.5	7.22	412	23.1		
					✓	✓

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? (Y) / N DTW READING: 16.97 TIME: 1405

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8.1.17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW-8 Date Monitored: 8.1.17
Well Diameter (2)/4 in.
Total Depth 19.92 ft.
Depth to Water 12.10 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.

7.82 xVF .17 = 1.32 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 13.66

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): 1235 Weather Conditions: Sunny
Sample Time/Date: 1255 / 8.1.17 Water Color: Clear Odor: Y / (N)
Approx. Flow Rate: ✓ gpm. Sediment Description: None
Did well de-water? No If yes, Time: Volume: gal. DTW @ Sampling: 13.63

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS) mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1238	1.5	7.30	578	21.9		
1241	3.0	7.32	584	22.1		
1244	4.0	7.34	590	22.2		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? Y (N) DTW READING: TIME:

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

GETTLER-RYAN INC.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/Facility#: Chevron #351640 / 5781 Job Number: 17155641
Site Address: 3535 Pierson Street Event Date: 8-1-17 (inclusive)
City: Oakland, CA Sampler: FT

Well ID MW- 9 Date Monitored: 8-1-17
Well Diameter (2)/ 4 in.
Total Depth 19.65 ft.
Depth to Water 11.97 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.

7.68 xVF .17 = 1.30 x3 case volume = Estimated Purge Volume: 4.0 gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 13.50

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): 1310 Weather Conditions: Sunny
Sample Time/Date: 1310 / 8.1.17 Water Color: Lt. Brn. Odor: Y / (N)
Approx. Flow Rate: — gpm. Sediment Description: S. Silty
Did well de-water? Yes If yes, Time: 1317 Volume: 3.0 gal. DTW @ Sampling: 11.97

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µS/mS µmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1313	1.5	7.13	478	22.4		
1317	3.0	7.15	483	22.7		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 9	6 x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	2 x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	x 1 liter ambers	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? (Y) / N DTW READING: 16.56 TIME: 1420

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: 5781	Union Oil Consultant: ARCADIS
Site Global ID: T0600101467	Consultant Contact: CARL EDWARDS
Site Address: 3535 PIERSON ST. OAKLAND, CA	Consultant Phone No.: (415) 825-0759
	Sampling Company: GETTLER-RYAN
Union Oil PM: JAMES P. KIERNAN	Sampled By (PRINT): FRANK TERRINONI
Union Oil PM Phone No.: (925) 842-3220	Sampler Signature: [signature]
Charge Code: NWRTB- 0 351640 **-0- LAB**	**BC Laboratories, Inc.**
	Project Manager: Molly Meyers
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.	4100 Atlas Court, Bakersfield, CA 93308
	Phone No. 661-327-4911

ANALYSES REQUIRED

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

Special Instructions

SAMPLE ID

Field Point Name	Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	TPH - Diesel by EPA 8015 M	TPH - G by ~~GC/MS~~ (8015)	BTEX/MTBE/~~OXYS~~ by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	8 (OXY's) 8260B	TPH - DRO w/ SGC (8015M)					Notes / Comments
QA	(W)-S-A		17.8.1		2		X	X									
MW-A	W-S-A		↓	1355	8	X	X	X			X						
MW-4	W-S-A		↓	1145	8	↓	↓	↓			↓						
MW-5	W-S-A		↓	1210	10	↓	↓	↓			↓	X					
MW-6	W-S-A		↓	1335	8	↓	↓	↓			↓						
MW-7	W-S-A		↓	1100	8	↓	↓	↓			↓						
MW-8	W-S-A		↓	1255	8	↓	↓	↓			↓						
MW-9	W-S-A		↓	1310	8	↓	↓	↓			↓						
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

Relinquished By	Company	Date / Time:	Relinquished By	Company	Date / Time :	Relinquished By	Company	Date / Time:
[signature]	G-R INC.	17.8.1 (1900)	[signature]	G-R INC.	8-2-17 1140			
Received By	**Company**	**Date / Time:**	**Received By**	**Company**	**Date / Time :**	**Received By**	**Company**	**Date / Time:**
GETTLER-RYAN FRIDGE		[illegible]	Gary Bogan	BC LAB	8-2-17 1140			

ATTACHMENT B

Historical Groundwater Analytical Data

Table 3 - Historical Groundwater Analytical Data
February 2004 - March 2009
Unocal No. 5781 (351640)
3535 Pierson Street
Oakland, California

WELL ID	DATE	DICHLORO-dIFLUORO-METHANE (µg/L)	1,1-DCA (µg/L)	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)	1,2-DICHLORO-PROPANE (µg/L)	cis-1,3-DICHLORO-PROPANE (µg/L)	1,1,2,2-TETRACHLORO-ETHANE (µg/L)	TETRACHLORO-ETHENE (µg/L)	TRICHLORO-TRIFLUORO-ETHANE (µg/L)	1,1,1-TRICHLORO-ETHANE (µg/L)	1,1,2-TRICHLORO-ETHANE (µg/L)	TRICHLORO-ETHENE (µg/L)	TRICHLORO-FLUORO-METHANE (µg/L)	VINYL CHLORIDE (µg/L)
MW-A	2/3/2004	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
	2/18/2005	ND<1.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50
	3/29/2006	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	3/28/2007	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	3/22/2008	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	3/27/2009	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

NOTES:

µg/L = Micrograms per liter

ID = Identification

ND<# = Analyte not detected at or above indicated laboratory practical quantitation limit

ATTACHMENT C

Laboratory Report and Chain-of-Custody Documentation

Date of Report: 08/10/2017

Tamera Rogers

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Client Project:	351640
BCL Project:	5781
BCL Work Order:	1721379
Invoice ID:	B275789

Enclosed are the results of analyses for samples received by the laboratory on 8/2/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Table of Contents

17-21379

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: 5781	Union Oil Consultant: ARCADIS
Site Global ID: T0600101467	Consultant Contact: CHAD EDWARDS
Site Address: 3535 PIERSON ST. OAKLAND, CA	Consultant Phone No.: (415) 825-0759
Union Oil PM: JAMES P. KIERNAN	Sampling Company: GETTLER-RYAN
Union Oil PM Phone No.: (925) 842-3220	Sampled By (PRINT): FRANK TENTINONI
Charge Code: NWRTB-0 351640 -0- LAB	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 M	TPH - G by (8015)	BTEX/MTBE by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	8 (Oxy's) 8260B	TPH-DRO w/SGC (8015M)					Notes / Comments
QA	W-S-A	-1	17.8.1		2		X	X									
MW-A	W-S-A	-2		1355	8	X	X	X			X						
MW-4	W-S-A	-3		1145	8												
MW-5	W-S-A	-4		1210	10							X					
MW-6	W-S-A	-5		1335	8												
MW-7	W-S-A	-6		1100	8												
MW-8	W-S-A	-7		1255	8												
MW-9	W-S-A	-8		1310	8												
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

CHK BY DISTRIBUTION SUB-OUT ☐

Relinquished By	Company	Date / Time:	Received By	Company	Date / Time:
	GTNL	17.8.1 (1900)	GETTLER-RYAN FRIDGE		08-02-17 0700
	GTNL	08-02-17 1140	Mary Bogan	BCLab	8.2.17 1140
Mary Bogan	BCLab	8.2-17 1830		BCLAB	8/2/17 18:30
	BCLAB	8.2 2200	REL.		8/2/17 2200

Chain of Custody and Cooler Receipt Form for 1721379 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 2

Submission #: 17-21379

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: 0.95 Container: VOA Thermometer ID: 208 Date/Time 8/22/00

Temperature: (A) 0.3 °C / (C) 0.6 °C Analyst Init BSP

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK	AB									
40ml VOA VIAL	A→F	A→F	A→F	A→F	A→F	A→F	A→F	A→F		
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
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				GPJ	G, H					
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: JNL Date/Time: 8.3.17 0850 Rev 21 05/23/2016

A = Actual / C = Corrected [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

Chain of Custody and Cooler Receipt Form for 1721379 Page 3 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 2

Submission #: 17-21379

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☒ Other ☐ (Specify)_____	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)_____	YES ☐ NO ☐ 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: Amber Thermometer ID: 208 Date/Time 8/2/2200

Temperature: (A) 0.0 °C / (C) 0.4 °C Analyst Init GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	12	13	16	17	18	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
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	G,H	G,H	G,H	G,H	G,H					
8oz / 16oz / ~~32oz~~ JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: _____ Date/Time: 8-3-17 0852

A = Actual / C = Corrected

Rev 21 05/23/2016

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20]

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-01	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	QA-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): QA			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-02	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-A-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-A			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-03	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 11:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-4-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-4			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-04	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 12:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-5-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-5			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-05	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-6			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-06	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 11:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-7-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-7			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-07	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 12:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-8-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-8			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-08	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-9			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-01 | **Client Sample Name:** 5781, QA-W-170801, 8/1/2017 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)	113	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	120	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 13:50	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-01 | **Client Sample Name:** 5781, QA-W-170801, 8/1/2017 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	92.9	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/08/17	08/09/17 12:21	TDH	GC-V9	1	B[H0497

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

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)	107	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:08	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**950**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	96.9	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 16:38	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	102	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 08:59	RSM	GC-5	0.980	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

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	**1.7**	**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)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	107	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:26	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**330**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	103	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 16:58	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	107	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:13	RSM	GC-5	0.980	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

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	**8.6**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Methyl t-butyl ether	**1.9**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Toluene	**0.70**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Total Xylenes	**19**	**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)	110	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:44	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**1600**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	134	%	70 - 130 (LCL - UCL)		EPA-8015B		S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 17:18	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**450**	**ug/L**	**50**		**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	82.0	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:27	RSM	GC-5	0.970	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**310**	**ug/L**	**50**		**Luft/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	99.1	%	40 - 140 (LCL - UCL)		Luft/TPHd			1
Capric acid (Reverse Surrogate)	0	%	0 - 1 (LCL - UCL)		Luft/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	Luft/TPHd	08/07/17	08/09/17 11:20	RSM	GC-5	1	B[H0890

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

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	**1.3**	**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)	101	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	116	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:02	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**200**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	100	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 17:39	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	99.3	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:41	RSM	GC-5	0.990	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

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)	107	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	111	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:20	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**110**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	91.6	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 18:00	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	113	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:55	RSM	GC-5	0.960	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

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	**0.63**	**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)	113	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:37	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	99.6	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 19:42	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**680**	**ug/L**	**50**		**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	109	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 10:08	RSM	GC-5	0.960	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

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)	111	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:55	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	99.4	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 20:02	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	90.5	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 10:50	RSM	GC-5	1	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801						
Benzene	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	B[H0801-BLK1	ND	ug/L	0.50		
Ethylbenzene	B[H0801-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	B[H0801-BLK1	ND	ug/L	0.50		
Toluene	B[H0801-BLK1	ND	ug/L	0.50		
Total Xylenes	B[H0801-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	B[H0801-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	B[H0801-BLK1	ND	ug/L	10		
Diisopropyl ether	B[H0801-BLK1	ND	ug/L	0.50		
Ethanol	B[H0801-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	**B[H0801-BLK1**	**109**	%	**75 - 125 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**B[H0801-BLK1**	**104**	%	**80 - 120 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**B[H0801-BLK1**	**111**	%	**80 - 120 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801										
Benzene	B[H0801-BS1	LCS	29.070	25.000	ug/L	116		70 - 130		
Toluene	B[H0801-BS1	LCS	26.810	25.000	ug/L	107		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[H0801-BS1	LCS	9.8100	10.000	ug/L	98.1		75 - 125		
Toluene-d8 (Surrogate)	B[H0801-BS1	LCS	10.040	10.000	ug/L	100		80 - 120		
4-Bromofluorobenzene (Surrogate)	B[H0801-BS1	LCS	11.930	10.000	ug/L	119		80 - 120		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801	Used client sample: N										
Benzene	MS	1717894-98	ND	24.830	25.000	ug/L		99.3		70 - 130	
	MSD	1717894-98	ND	27.020	25.000	ug/L	8.4	108	20	70 - 130	
Toluene	MS	1717894-98	ND	23.900	25.000	ug/L		95.6		70 - 130	
	MSD	1717894-98	ND	25.940	25.000	ug/L	8.2	104	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1717894-98	ND	9.7800	10.000	ug/L		97.8		75 - 125	
	MSD	1717894-98	ND	9.5100	10.000	ug/L	2.8	95.1		75 - 125	
Toluene-d8 (Surrogate)	MS	1717894-98	ND	10.520	10.000	ug/L		105		80 - 120	
	MSD	1717894-98	ND	10.250	10.000	ug/L	2.6	102		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1717894-98	ND	11.310	10.000	ug/L		113		80 - 120	
	MSD	1717894-98	ND	10.760	10.000	ug/L	5.0	108		80 - 120	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496						
Gasoline Range Organics (C4 - C12)	B[H0496-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**B[H0496-BLK1**	**103**	%	**70 - 130 (LCL - UCL)**		
QC Batch ID: B[H0497						
Gasoline Range Organics (C4 - C12)	B[H0497-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**B[H0497-BLK1**	**102**	%	**70 - 130 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496										
Gasoline Range Organics (C4 - C12)	B[H0496-BS1	LCS	976.79	1000.0	ug/L	97.7		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[H0496-BS1	LCS	41.524	40.000	ug/L	104		70 - 130		
QC Batch ID: B[H0497										
Gasoline Range Organics (C4 - C12)	B[H0497-BS1	LCS	979.95	1000.0	ug/L	98.0		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[H0497-BS1	LCS	38.833	40.000	ug/L	97.1		70 - 130		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1717894-81	ND	906.00	1000.0	ug/L		90.6		70 - 130	
	MSD	1717894-81	ND	868.73	1000.0	ug/L	4.2	86.9	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1717894-81	ND	39.374	40.000	ug/L		98.4		70 - 130	
	MSD	1717894-81	ND	34.925	40.000	ug/L	12.0	87.3		70 - 130	
QC Batch ID: B[H0497	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1717894-80	ND	915.61	1000.0	ug/L		91.6		70 - 130	
	MSD	1717894-80	ND	866.50	1000.0	ug/L	5.5	86.6	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1717894-80	ND	38.657	40.000	ug/L		96.6		70 - 130	
	MSD	1717894-80	ND	41.020	40.000	ug/L	5.9	103		70 - 130	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[H0842						
Diesel Range Organics (C12 - C24)	B[H0842-BLK1	ND	ug/L	50		
Tetracosane (Surrogate)	**B[H0842-BLK1**	**88.1**	%	**40 - 140 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0842										
Diesel Range Organics (C12 - C24)	B[H0842-BS1	LCS	356.43	500.00	ug/L	71.3		50 - 120		
Tetracosane (Surrogate)	B[H0842-BS1	LCS	16.990	20.008	ug/L	84.9		40 - 140		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0842	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	1717894-90	ND	435.21	500.00	ug/L		87.0		50 - 120	
	MSD	1717894-90	ND	428.18	500.00	ug/L	1.6	85.6	30	50 - 120	
Tetracosane (Surrogate)	MS	1717894-90	ND	20.649	20.008	ug/L		103		40 - 140	
	MSD	1717894-90	ND	19.888	20.008	ug/L	3.8	99.4		40 - 140	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[H0890						
Diesel Range Organics (C12 - C24)	B[H0890-BLK1	ND	ug/L	50		
Tetracosane (Surrogate)	**B[H0890-BLK1**	**91.5**	%	**40 - 140 (LCL - UCL)**		
Capric acid (Reverse Surrogate)	B[H0890-BLK1	0	%	0 - 1 (LCL - UCL)		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

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: B[H0890										
Diesel Range Organics (C12 - C24)	B[H0890-BS1	LCS	395.92	500.00	ug/L	79.2		20 - 110		
Tetracosane (Surrogate)	B[H0890-BS1	LCS	18.600	20.008	ug/L	93.0		40 - 140		
Capric acid (Reverse Surrogate)	B[H0890-BS1	LCS	ND	100.00	ug/L	0		0 - 1		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

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: B[H0890	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	**1717894-86**	**ND**	**351.88**	**500.00**	**ug/L**		**70.4**		**20 - 110**	
	MSD	**1717894-86**	**ND**	**483.32**	**500.00**	**ug/L**	**31.5**	**96.7**	**30**	**20 - 110**	**Q02**
Tetracosane (Surrogate)	MS	1717894-86	ND	16.662	20.008	ug/L		83.3		40 - 140	
	MSD	1717894-86	ND	20.751	20.008	ug/L	21.9	104		40 - 140	
Capric acid (Reverse Surrogate)	MS	1717894-86	ND	ND	100.00	ug/L		0		0 - 1	
	MSD	1717894-86	ND	ND	100.00	ug/L		0		0 - 1	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 08/10/2017 11:31
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A52	Chromatogram not typical of diesel.
Q02	Matrix spike precision is not within the control limits.
S09	The surrogate recovery on the sample for this compound was not within the control limits.

Date of Report: 10/10/2017

Tamera Rogers

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Client Project:	351640
BCL Project:	5781
BCL Work Order:	1721379
Invoice ID:	B275789

Enclosed are the results of analyses for samples received by the laboratory on 8/2/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000635450

Sincerely,

Molly Meyers

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Table of Contents

17-21379

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: 5781	Union Oil Consultant: ARCADIS
Site Global ID: T0600101467	Consultant Contact: CHAD EDWARDS
Site Address: 3535 PIERSON ST. OAKLAND, CA	Consultant Phone No.: (415) 825-0759
Union Oil PM: JAMES P. KIERNAN	Sampling Company: GETTLER-RYAN
Union Oil PM Phone No.: (925) 842-3220	Sampled By (PRINT): FRANK TENTINONI
Charge Code: NWRTB-0 351640 -0- LAB	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 M	TPH - G by (8015)	BTEX/MTBE by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	8 (Oxy's) 8260B	TPH-DRO w/SGC (8015M)					Notes / Comments
QA	W-S-A	-1	17.8.1		2		X	X									
MW-A	W-S-A	-2		1355	8	X	X	X			X						
MW-4	W-S-A	-3		1145	8												
MW-5	W-S-A	-4		1210	10							X					
MW-6	W-S-A	-5		1335	8												
MW-7	W-S-A	-6		1100	8												
MW-8	W-S-A	-7		1255	8												
MW-9	W-S-A	-8		1310	8												
	W-S-A																
	W-S-A																
	W-S-A																
	W-S-A																

CHK BY DISTRIBUTION SUB-OUT ☐

Relinquished By	Company	Date / Time:	Received By	Company	Date / Time:
	GTNL	17.8.1 (1900)	GETTLER-RYAN FRIDGE		08-02-17 0700
	GTNL	08-02-17 1140	Mary Bogan	BCLAB	8.2.17 1140
Mary Bogan BCLAB		8.2-17 1830		BCLAB	8/2/17 18:30

REL. 8/2/17 2200 BCLAB 8.2 2200

Chain of Custody and Cooler Receipt Form for 1721379 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 2

Submission #: 17-21379

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: 0.95 Container: VOA Thermometer ID: 208 Date/Time 8/22/00

Temperature: (A) 0.3 °C / (C) 0.6 °C Analyst Init GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK	AB									
40ml VOA VIAL		A→F	A→F	A→F	A→F	A→F	A→F	A→F		
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
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				GPJ	G, H					
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: JNL Date/Time: 8.3.17 0850 Rev 21 05/23/2016

A = Actual / C = Corrected [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

Chain of Custody and Cooler Receipt Form for 1721379 Page 3 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 2

Submission #: 17-21379

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☒ Other ☐ (Specify)_____	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)_____	YES ☐ NO ☐ 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: Amber Thermometer ID: 208

Temperature: (A) 0.0 °C / (C) 0.4 °C

Date/Time 8/2/2200

Analyst Init GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	12	13	16	17	18	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
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	G,H	G,H	G,H	G,H	G,H					
8oz / 16oz / ~~32oz~~ JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: _____ Date/Time: 8-3-17 0852

A = Actual / C = Corrected

Rev 21 05/23/2016

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20]

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-01	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	QA-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): QA			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-02	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-A-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-A			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-03	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 11:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-4-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-4			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-04	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 12:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-5-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-5			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-05	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-6-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-6			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-06	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 11:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-7-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-7			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1721379-07	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 12:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-8-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-8			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			
1721379-08	**COC Number:**	---	**Receive Date:**	08/02/2017 22:00
	Project Number:	5781	**Sampling Date:**	08/01/2017 13:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	MW-9-W-170801	**Lab Matrix:**	Water
	Sampled By:	GRD	**Sample Type:**	Water
	Delivery Work Order:			
	Global ID: T0600101467			
	Location ID (FieldPoint): MW-9			
	Matrix: W			
	Sample QC Type (SACode): CS			
	Cooler ID:			

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-01 | **Client Sample Name:** 5781, QA-W-170801, 8/1/2017 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)	113	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	120	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 13:50	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-01 | **Client Sample Name:** 5781, QA-W-170801, 8/1/2017 12:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	92.9	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/08/17	08/09/17 12:21	TDH	GC-V9	1	B[H0497

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

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)	107	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	104	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:08	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**950**	**ug/L**	**50**		**EPA-8015B**	ND		1
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND	S05,Z1	2
a,a,a-Trifluorotoluene (FID Surrogate)	96.9	%	70 - 130 (LCL - UCL)		EPA-8015B			1
a,a,a-Trifluorotoluene (FID Surrogate)	99.9	%	70 - 130 (LCL - UCL)		EPA-8015B		S05,Z1	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 16:38	TDH	GC-V9	1	B[H0496
2	EPA-8015B	08/04/17	10/02/17 23:46	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-02 | **Client Sample Name:** 5781, MW-A-W-170801, 8/1/2017 1:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	102	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 08:59	RSM	GC-5	0.980	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

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	**1.7**	**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)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	107	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:26	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**330**	**ug/L**	**50**		**EPA-8015B**	ND		1
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND	S05,Z1	2
a,a,a-Trifluorotoluene (FID Surrogate)	103	%	70 - 130 (LCL - UCL)		EPA-8015B			1
a,a,a-Trifluorotoluene (FID Surrogate)	99.6	%	70 - 130 (LCL - UCL)		EPA-8015B		S05,Z1	2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 16:58	TDH	GC-V9	1	B[H0496
2	EPA-8015B	08/04/17	10/03/17 00:06	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-03 | **Client Sample Name:** 5781, MW-4-W-170801, 8/1/2017 11:45:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	107	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:13	RSM	GC-5	0.980	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

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	**8.6**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Methyl t-butyl ether	**1.9**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Toluene	**0.70**	**ug/L**	**0.50**		**EPA-8260B**	ND		1
Total Xylenes	**19**	**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)	110	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.8	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 14:44	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	**1600**	**ug/L**	**50**		**EPA-8015B**	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	134	%	70 - 130 (LCL - UCL)		EPA-8015B		S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 17:18	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**450**	**ug/L**	**50**		**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	82.0	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:27	RSM	GC-5	0.970	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 1721379-04 | **Client Sample Name:** 5781, MW-5-W-170801, 8/1/2017 12:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**310**	**ug/L**	**50**		**Luft/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	99.1	%	40 - 140 (LCL - UCL)		Luft/TPHd			1
Capric acid (Reverse Surrogate)	0	%	0 - 1 (LCL - UCL)		Luft/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	Luft/TPHd	08/07/17	08/09/17 11:20	RSM	GC-5	1	B[H0890

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

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	**1.3**	**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)	101	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	116	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:02	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND	S05,Z1	1
Gasoline Range Organics (C4 - C12)	**200**	**ug/L**	**50**		**EPA-8015B**	ND		2
a,a,a-Trifluorotoluene (FID Surrogate)	107	%	70 - 130 (LCL - UCL)		EPA-8015B		S05,Z1	1
a,a,a-Trifluorotoluene (FID Surrogate)	100	%	70 - 130 (LCL - UCL)		EPA-8015B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	10/03/17 00:45	TDH	GC-V9	1	B[H0496
2	EPA-8015B	08/04/17	08/04/17 17:39	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-05 | **Client Sample Name:** 5781, MW-6-W-170801, 8/1/2017 1:35:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	99.3	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:41	RSM	GC-5	0.990	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

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)	107	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	111	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:20	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND	S05,Z1	1
Gasoline Range Organics (C4 - C12)	**110**	**ug/L**	**50**		**EPA-8015B**	ND		2
a,a,a-Trifluorotoluene (FID Surrogate)	106	%	70 - 130 (LCL - UCL)		EPA-8015B		S05,Z1	1
a,a,a-Trifluorotoluene (FID Surrogate)	91.6	%	70 - 130 (LCL - UCL)		EPA-8015B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	10/03/17 01:05	TDH	GC-V9	1	B[H0496
2	EPA-8015B	08/04/17	08/04/17 18:00	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-06 | **Client Sample Name:** 5781, MW-7-W-170801, 8/1/2017 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	113	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 09:55	RSM	GC-5	0.960	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

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	**0.63**	**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)	113	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.1	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:37	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	99.6	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 19:42	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-07 | **Client Sample Name:** 5781, MW-8-W-170801, 8/1/2017 12:55:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	**680**	**ug/L**	**50**		**EPA-8015B/TPHd**	ND	**A52**	1
Tetracosane (Surrogate)	109	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 10:08	RSM	GC-5	0.960	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

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)	111	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	08/08/17	08/08/17 15:55	IO1	MS-V12	1	B[H0801

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	99.4	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	08/04/17	08/04/17 20:02	TDH	GC-V9	1	B[H0496

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

BCL Sample ID: 1721379-08 | **Client Sample Name:** 5781, MW-9-W-170801, 8/1/2017 1:10:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Diesel Range Organics (C12 - C24)	ND	ug/L	50		EPA-8015B/TPHd	ND		1
Tetracosane (Surrogate)	90.5	%	40 - 140 (LCL - UCL)		EPA-8015B/TPHd			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/TPHd	08/07/17	08/09/17 10:50	RSM	GC-5	1	B[H0842

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801						
Benzene	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	B[H0801-BLK1	ND	ug/L	0.50		
Ethylbenzene	B[H0801-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	B[H0801-BLK1	ND	ug/L	0.50		
Toluene	B[H0801-BLK1	ND	ug/L	0.50		
Total Xylenes	B[H0801-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	B[H0801-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	B[H0801-BLK1	ND	ug/L	10		
Diisopropyl ether	B[H0801-BLK1	ND	ug/L	0.50		
Ethanol	B[H0801-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	B[H0801-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	**B[H0801-BLK1**	**109**	%	**75 - 125 (LCL - UCL)**		
Toluene-d8 (Surrogate)	**B[H0801-BLK1**	**104**	%	**80 - 120 (LCL - UCL)**		
4-Bromofluorobenzene (Surrogate)	**B[H0801-BLK1**	**111**	%	**80 - 120 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801										
Benzene	B[H0801-BS1	LCS	29.070	25.000	ug/L	116		70 - 130		
Toluene	B[H0801-BS1	LCS	26.810	25.000	ug/L	107		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[H0801-BS1	LCS	9.8100	10.000	ug/L	98.1		75 - 125		
Toluene-d8 (Surrogate)	B[H0801-BS1	LCS	10.040	10.000	ug/L	100		80 - 120		
4-Bromofluorobenzene (Surrogate)	B[H0801-BS1	LCS	11.930	10.000	ug/L	119		80 - 120		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0801	Used client sample: N										
Benzene	MS	1717894-98	ND	24.830	25.000	ug/L		99.3		70 - 130	
	MSD	1717894-98	ND	27.020	25.000	ug/L	8.4	108	20	70 - 130	
Toluene	MS	1717894-98	ND	23.900	25.000	ug/L		95.6		70 - 130	
	MSD	1717894-98	ND	25.940	25.000	ug/L	8.2	104	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1717894-98	ND	9.7800	10.000	ug/L		97.8		75 - 125	
	MSD	1717894-98	ND	9.5100	10.000	ug/L	2.8	95.1		75 - 125	
Toluene-d8 (Surrogate)	MS	1717894-98	ND	10.520	10.000	ug/L		105		80 - 120	
	MSD	1717894-98	ND	10.250	10.000	ug/L	2.6	102		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1717894-98	ND	11.310	10.000	ug/L		113		80 - 120	
	MSD	1717894-98	ND	10.760	10.000	ug/L	5.0	108		80 - 120	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496						
Gasoline Range Organics (C4 - C12)	B[H0496-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**B[H0496-BLK1**	**103**	%	**70 - 130 (LCL - UCL)**		
QC Batch ID: B[H0497						
Gasoline Range Organics (C4 - C12)	B[H0497-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	**B[H0497-BLK1**	**102**	%	**70 - 130 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496										
Gasoline Range Organics (C4 - C12)	B[H0496-BS1	LCS	976.79	1000.0	ug/L	97.7		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[H0496-BS1	LCS	41.524	40.000	ug/L	104		70 - 130		
QC Batch ID: B[H0497										
Gasoline Range Organics (C4 - C12)	B[H0497-BS1	LCS	979.95	1000.0	ug/L	98.0		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[H0497-BS1	LCS	38.833	40.000	ug/L	97.1		70 - 130		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0496	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1717894-81	ND	906.00	1000.0	ug/L		90.6		70 - 130	
	MSD	1717894-81	ND	868.73	1000.0	ug/L	4.2	86.9	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1717894-81	ND	39.374	40.000	ug/L		98.4		70 - 130	
	MSD	1717894-81	ND	34.925	40.000	ug/L	12.0	87.3		70 - 130	
QC Batch ID: B[H0497	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1717894-80	ND	915.61	1000.0	ug/L		91.6		70 - 130	
	MSD	1717894-80	ND	866.50	1000.0	ug/L	5.5	86.6	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1717894-80	ND	38.657	40.000	ug/L		96.6		70 - 130	
	MSD	1717894-80	ND	41.020	40.000	ug/L	5.9	103		70 - 130	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[H0842						
Diesel Range Organics (C12 - C24)	B[H0842-BLK1	ND	ug/L	50		
Tetracosane (Surrogate)	**B[H0842-BLK1**	**88.1**	%	**40 - 140 (LCL - UCL)**		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0842										
Diesel Range Organics (C12 - C24)	B[H0842-BS1	LCS	356.43	500.00	ug/L	71.3		50 - 120		
Tetracosane (Surrogate)	B[H0842-BS1	LCS	16.990	20.008	ug/L	84.9		40 - 140		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

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: B[H0842	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	1717894-90	ND	435.21	500.00	ug/L		87.0		50 - 120	
	MSD	1717894-90	ND	428.18	500.00	ug/L	1.6	85.6	30	50 - 120	
Tetracosane (Surrogate)	MS	1717894-90	ND	20.649	20.008	ug/L		103		40 - 140	
	MSD	1717894-90	ND	19.888	20.008	ug/L	3.8	99.4		40 - 140	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[H0890						
Diesel Range Organics (C12 - C24)	B[H0890-BLK1	ND	ug/L	50		
Tetracosane (Surrogate)	**B[H0890-BLK1**	**91.5**	%	**40 - 140 (LCL - UCL)**		
Capric acid (Reverse Surrogate)	B[H0890-BLK1	0	%	0 - 1 (LCL - UCL)		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

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: B[H0890										
Diesel Range Organics (C12 - C24)	B[H0890-BS1	LCS	395.92	500.00	ug/L	79.2		20 - 110		
Tetracosane (Surrogate)	B[H0890-BS1	LCS	18.600	20.008	ug/L	93.0		40 - 140		
Capric acid (Reverse Surrogate)	B[H0890-BS1	LCS	ND	100.00	ug/L	0		0 - 1		

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Total Petroleum Hydrocarbons (Silica Gel Treated)

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: B[H0890	Used client sample: N										
Diesel Range Organics (C12 - C24)	MS	**1717894-86**	**ND**	**351.88**	**500.00**	**ug/L**		**70.4**		**20 - 110**	
	MSD	**1717894-86**	**ND**	**483.32**	**500.00**	**ug/L**	**31.5**	**96.7**	**30**	**20 - 110**	**Q02**
Tetracosane (Surrogate)	MS	1717894-86	ND	16.662	20.008	ug/L		83.3		40 - 140	
	MSD	1717894-86	ND	20.751	20.008	ug/L	21.9	104		40 - 140	
Capric acid (Reverse Surrogate)	MS	1717894-86	ND	ND	100.00	ug/L		0		0 - 1	
	MSD	1717894-86	ND	ND	100.00	ug/L		0		0 - 1	

Arcadis- San Jose
6296 San Ignacio Ave, Suite C&D
San Jose, CA 95119

Reported: 10/10/2017 10:50
Project: 5781
Project Number: 351640
Project Manager: Tamera Rogers

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A52	Chromatogram not typical of diesel.
Q02	Matrix spike precision is not within the control limits.
S05	The sample holding time was exceeded.
S09	The surrogate recovery on the sample for this compound was not within the control limits.
Z1	Re-analyzed sample to confirm carry-over in the original run.

ATTACHMENT D

BC Labs Correspondence

Edwards, Carl

From: Molly Meyers <mmeyers@bclabs.com>
Sent: Thursday, September 28, 2017 8:56 AM
To: Little, Jason
Cc: Miles, Samuel; Edwards, Carl; Rogers, Tamera
Subject: RE: Lab Results (Question) 351640

Hi Jason,

Yes it is from a previous sample set.

Thank you,
Molly

From: Little, Jason [mailto:Jason.Little@arcadis.com]
Sent: Thursday, September 28, 2017 8:51 AM
To: Molly Meyers
Cc: Miles, Samuel; Edwards, Carl; Rogers, Tamera
Subject: RE: Lab Results (Question) 351640

Hi Molly,

Do you know what the carryover is from? A previous sample set?

Thank you,
Jason

From: Molly Meyers [mailto:mmeyers@bclabs.com]
Sent: Wednesday, September 27, 2017 4:23 PM
To: Little, Jason <Jason.Little@arcadis.com>
Cc: Miles, Samuel <Samuel.Miles@arcadis.com>; Edwards, Carl <Carl.Edwards@arcadis.com>
Subject: RE: Lab Results (Question) 351640

Hi Jason,

My Technical Director reviewed the results and found that it does look like carryover from a prior analysis. We have 2 options: Remove the result from the 8015 analysis based upon the confirmatory 8260 analysis, or reporting the TPH-g from the 8260 analysis.

I'm very sorry for the confusion. Please let me know how you would like to proceed.

Thank you,
Molly

From: Little, Jason [mailto:Jason.Little@arcadis.com]
Sent: Thursday, September 21, 2017 3:33 PM
To: Molly Meyers
Cc: Miles, Samuel; Edwards, Carl
Subject: Lab Results (Question) 351640

Hi Molly,

We were reviewing the lab data for the 3Q event for site 351640 and we found something odd. TPH-g was detected for the first time or for the first time in several years in wells MW-A (950 µg/L), MW-4 (330 µg/L), MW-6 (200 µg/L), and MW-7 (110 µg/L). Would there be a chance that there was cross contamination?

Thank you,
Jason

Jason Little | AFS Technical Associate 2

Jason.Little@arcadis-us.com
T: 206-726-4741 | C: 206-992-7735 | F: 206-325-8218

ARCADIS U.S., Inc. | 1100 Olive Way, Suite 800 | Seattle, Washington 98101
www.arcadis-us.com

Arcadis. Improving quality of life

Be green, leave it on the screen.

This email and any files transmitted with it are the property of Arcadis and its affiliates. All rights, including without limitation copyright, are reserved. This email contains information that may be confidential and may also be privileged. It is for the exclusive use of the intended recipient(s). If you are not an intended recipient, please note that any form of distribution, copying or use of this communication or the information in it is strictly prohibited and may be unlawful. If you have received this communication in error, please return it to the sender and then delete the email and destroy any copies of it. While reasonable precautions have been taken to ensure that no software or viruses are present in our emails, we cannot guarantee that this email or any attachment is virus free or has not been intercepted or changed. Any opinions or other information in this email that do not relate to the official business of Arcadis are neither given nor endorsed by it.