



James P. Kiernan, P.E.
Project Manager

**Chevron Environmental
Management Company**
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September 22, 2017

RECEIVED

By Alameda County Environmental Health 8:16 am, Sep 27, 2017

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

Re: Unocal No. 5781 (351640)
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,

A handwritten signature in blue ink, appearing to read "J. Kiernan".

James P. Kiernan, P.E.
Project Manager

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



Arcadis U.S., Inc.
2999 Oak Road
Suite 300
Walnut Creek
CA 94597
Tel 408-797-2013
Fax 925-274-1103
www.arcadis-us.com

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

ENVIRONMENT

Subject:
Semi-Annual Status Report, Third Quarter 2017

Dear Mr. Nowell,

Date:
September 22, 2017

On behalf of Chevron Environmental Management Company's (CEMC's) affiliate, Union Oil Company of California (Union Oil), Arcadis has prepared the attached *Semi-Annual Status Report, Third Quarter 2017* for the following facility:

Contact:
Tamera Rogers

<u>76 Station No.</u>	<u>Case No.</u>	<u>Location</u>
Unocal #5781	RO0000253	3535 Pierson Street Oakland, CA

Phone:
408.797.2013

Email:
Tamera.Rogers@arcadis.com

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

Our ref:
B0035135.1640

Sincerely,

Arcadis U.S., Inc.

Tamera Rogers
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)

**SEMI-ANNUAL STATUS REPORT
Third Quarter 2017
September 22, 2017**

Facility No:	<u>Unocal #5781</u>	Address:	<u>3535 Pierson Street, Oakland, CA</u>
Arcadis Contact Person / Phone No.:	<u>Tamera Rogers / (408) 797-2013</u>		
Arcadis Project No.:	<u>GMR35135.1640</u>		
Primary Agency/Regulatory ID No.:	<u>Alameda County LOP Case # RO0000253: Keith Nowell / San Francisco Bay RWQCB (Region 2) – Case # 01-1592</u>		

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 THIRD QUARTER 2017:

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

WORK PROPOSED NEXT PERIOD [Fourth Quarter 2017 - First Quarter 2018]:

1. Conduct semi-annual groundwater monitoring activities.
2. Prepare the *Semi-Annual Status Report, First Quarter 2018*.

Current Phase of Project:	<u>Monitoring/assessment</u>	
Frequency of Monitoring / Sampling:	<u>Semi-Annual</u>	
Are Phase Separate Hydrocarbons (PSH) Present On-site:	<u>No</u>	
Cumulative PSH Recovered to Date:	<u>None</u>	(gallons)
Approximate Depth to Groundwater:	<u>11.53 to 14.38</u>	(feet below top of casing)
Approximate Groundwater Elevation:	<u>140.93 to 143.09</u>	(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 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 (where applicable) for total petroleum hydrocarbons as gasoline (TPH-g), benzene, methyl tertiary butyl ether (MTBE), tertiary butyl alcohol (TBA) and total petroleum hydrocarbons as diesel (TPH-d) are presented on Figures 4 through 8, respectively. A historical groundwater flow direction rose diagram is presented on Figure 9. A copy of the laboratory analytical report and chain-of-custody documentation are included as Attachment C.

The groundwater flow direction was determined to be variable during the current event, thus a gradient could not be calculated. The groundwater analytical results in MW-5 were consistent with previous events. Analytical results indicated that TPH-d (450 micrograms per liter [$\mu\text{g/L}$]), TPH-g (1,600 $\mu\text{g/L}$), toluene (0.7 $\mu\text{g/L}$), ethylbenzene (8.6 $\mu\text{g/L}$), and total xylenes (19 $\mu\text{g/L}$) were detected in the groundwater sample collected from MW-5. TPH-g was also detected either for the first time or for the first time in several years in wells MW-A (950 $\mu\text{g/L}$), MW-4 (330 $\mu\text{g/L}$), MW-6 (200 $\mu\text{g/L}$), and MW-7 (110 $\mu\text{g/L}$); based on the historical non-detect results in these wells, the current results appear to be anomalous as similar groundwater elevations have previously occurred with no detections. Low concentrations of MTBE were detected in monitoring wells MW-4 (1.7 $\mu\text{g/L}$), MW-5 (1.9 $\mu\text{g/L}$), MW-6 (first occurrence; 1.3 $\mu\text{g/L}$),


and MW-8 (0.63 µg/L). TPH-d was also detected in MW-8 (680 µg/L) for the first time since 2012. The detected concentrations were generally within the historical ranges. No other constituents of concern (COCs) were detected above laboratory reporting limits in any of the 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 is 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 continued groundwater monitoring to further evaluate groundwater quality and concentration trends; in particular, to evaluate if the TPH-g detections in MW-A, MW-4, MW-6, and MW-7 were indeed anomalous.

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.

Nasrin Erdelyi


Nasrin Erdelyi, P.G. #9200
Staff Geologist

Date: September 22, 2017

Tamera Rogers

Tamera Rogers
Project Manager

Date: September 22, 2017

ATTACHMENTS:

Table 1	Current Groundwater Gauging and Analytical Results
Table 2	Historical Groundwater Gauging and Analytical Results, Fourth Quarter 1990 to Current
Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Groundwater Elevation Contour Map
Figure 4	TPH-g Isoconcentration Map
Figure 5	Benzene Concentration Map
Figure 6	MTBE Concentration Map
Figure 7	TBA Concentration Map
Figure 8	TPH-d Isoconcentration Map
Figure 9	Groundwater Flow Direction Rose Diagram
Attachment A	Field Data Sheets and General Procedures
Attachment B	Historical Groundwater Analytical Data
Attachment C	Laboratory Report and Chain-of-Custody Documentation

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	TOC (ft amsl)	DTW (ft amsl)	GW Elev (ft amsl)	TPH-d (µg/L)	TPH-d (w/SGC) (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	EDB (µg/L)	EDC (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)
MW-A	8/1/2017	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
MW-4	8/1/2017	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
MW-5	8/1/2017	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	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
MW-7	8/1/2017	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
MW-8	8/1/2017	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	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 8260
 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
 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	ND	ND	ND	ND	ND	ND	ND	ND	
	2/2/1998	151.80	11.91	0	0	139.89	ND	--	ND	ND	ND	ND	ND	ND	ND	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	ND	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	ND	ND	ND	ND	ND	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	ND	
	2/22/2002	151.80	14.08	0	0	137.72	<50	--	<50	<0.50	<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	<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	<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	<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	<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	<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	<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	<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	<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	<0.50	<250	
	12/21/2010	154.79	14.43	0	0	140.36	<50	--	<50	<0.50	<0.50	<0.50	<1.0	0.85	<10	<0.50	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<10	<0.50	<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	<0.50	<250	
	8/1/2017	154.79	13.41	0	0	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	<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	
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	<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	<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	<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	<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	<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	<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	<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	<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	<0.50	<250	
	1/23/2013	153.71	13.06	0	0	140.85	<50	--	<50	<0.50	<0.50	<0.50	<1.0	<10	<250	<0.50	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	Ethylbenzene	Total Xylenes	MTBE	TBA	EDB	EDC	DIPE	ETBE	TAME	Ethanol	Comments	
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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<0.50	<250	
	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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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	<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		

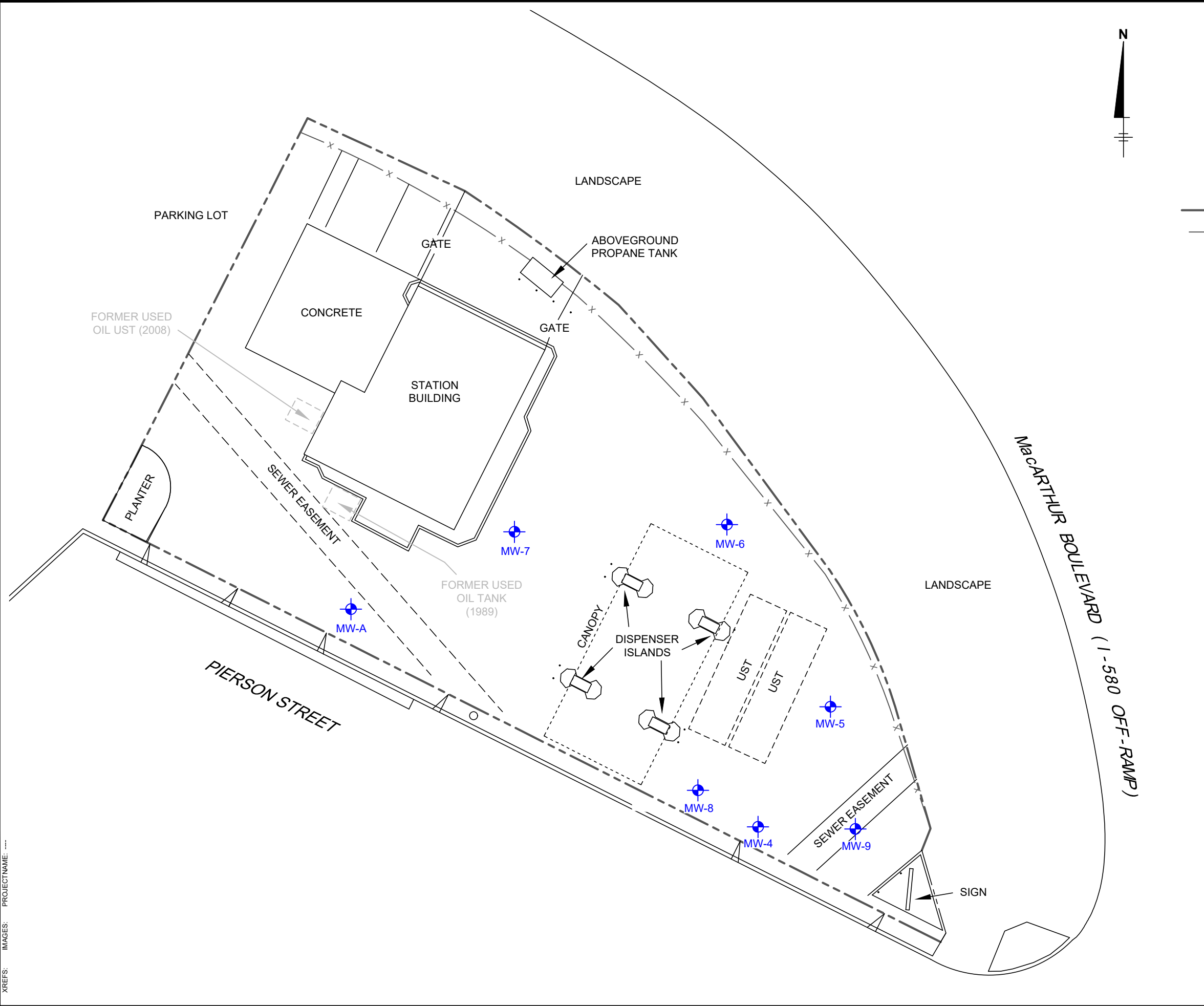
Notes: MW = Groundwater monitoring well
 TOC = Top of casing
 ft amsl = Feet above mean sea level
 DTW = Depth to groundwater
 ft bTOC = Feet below top of casing
 PSH = Phase separate hydrocarbons
 ft = Feet
 gal = Gallons
 GW Elev = Groundwater elevation
 µg/L = Micrograms per liter
Bold = Value exceeds 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
 Data QA/QC by IC 08.29.2017

FIGURES



CITY: MUMBAI, INDIA DIV: GROUP: ENV CAD DB: A: KAUR
 D: PROJECTS: 000 CHEVRON SITES: 112 35 1640E: Drawings: 351640 SITE PLAN.dwg LAYOUT: 2
 XREFS: IMAGES: PROJECT NAME: ---
 PLOTTED: 9/21/2017 11:35 AM BY: PAVAN KUMAR ANJANEYAKUMAR
 PAGES: 21.05 (LMS TECH) PAGES SETUP: ---
 ACADVER: 21.05 (LMS TECH) PAGES: 21.05 (LMS TECH) PAGES SETUP: ---
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LEGEND

	SUBJECT PROPERTY BOUNDARY
	FENCE LINE
	MONITORING WELL
	UST



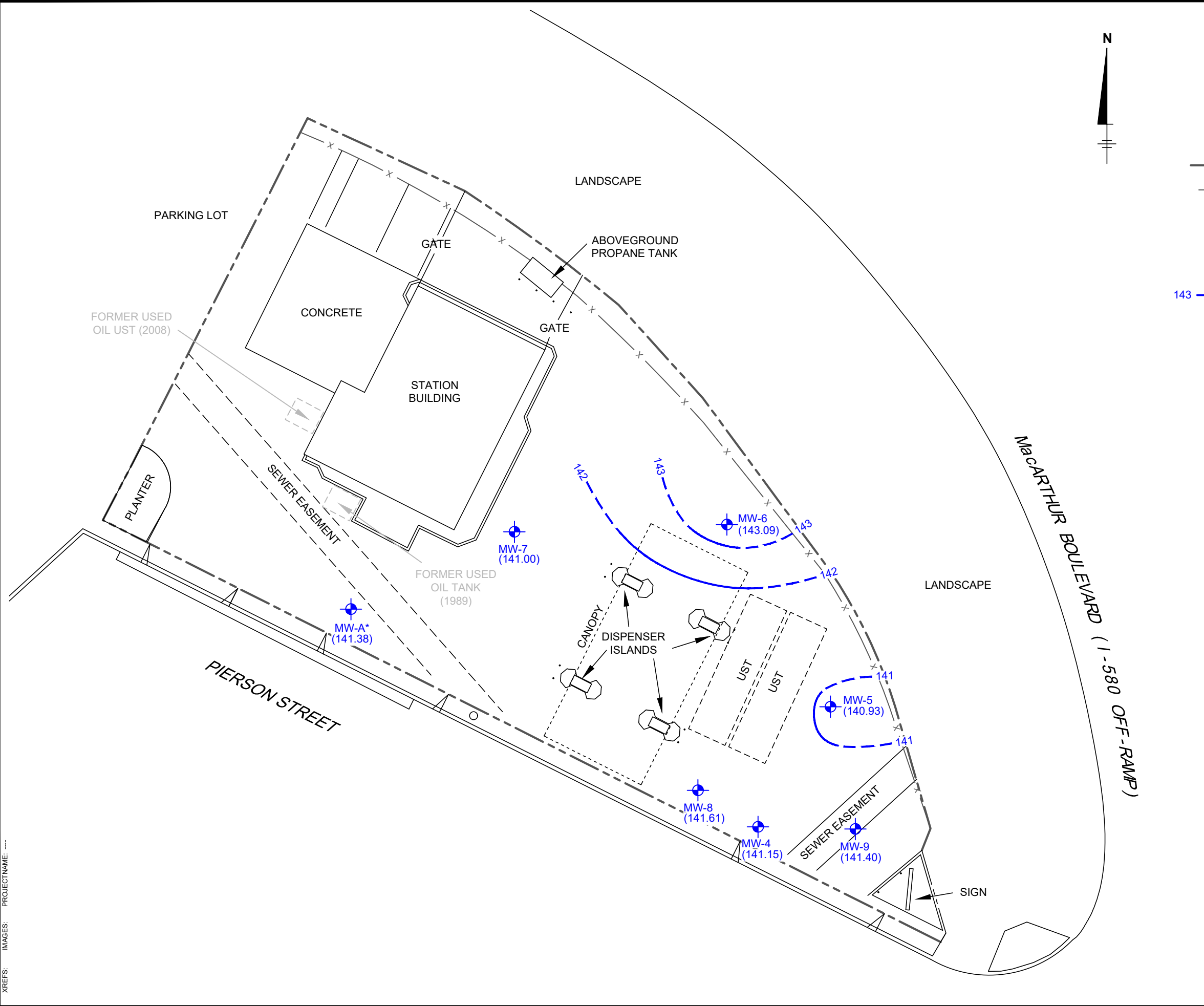
UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
**SECOND SEMI-ANNUAL GROUNDWATER
 MONITORING REPORT, THIRD QUARTER 2017**

SITE PLAN

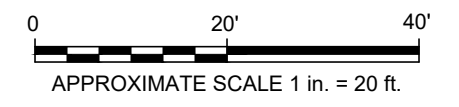
ARCADIS Design & Consultancy
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built assets

FIGURE **2**

CITY: MUMBAI, INDIA DIV: GROUP: ENV: CAD DBA: KAUR
 D:\PROJECTS\00_CHEVRON_SITES\112_351640E-Drawings\351640 GWE.dwg LAYOUT: 3 SAVED: 9/20/2017 5:16 PM ACADVER: 21.05 (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/21/2017 11:36 AM BY: PAVAN KUMAR ANJANEYAKUMAR
 XREFS: IMAGES: PROJECTNAME: ---



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



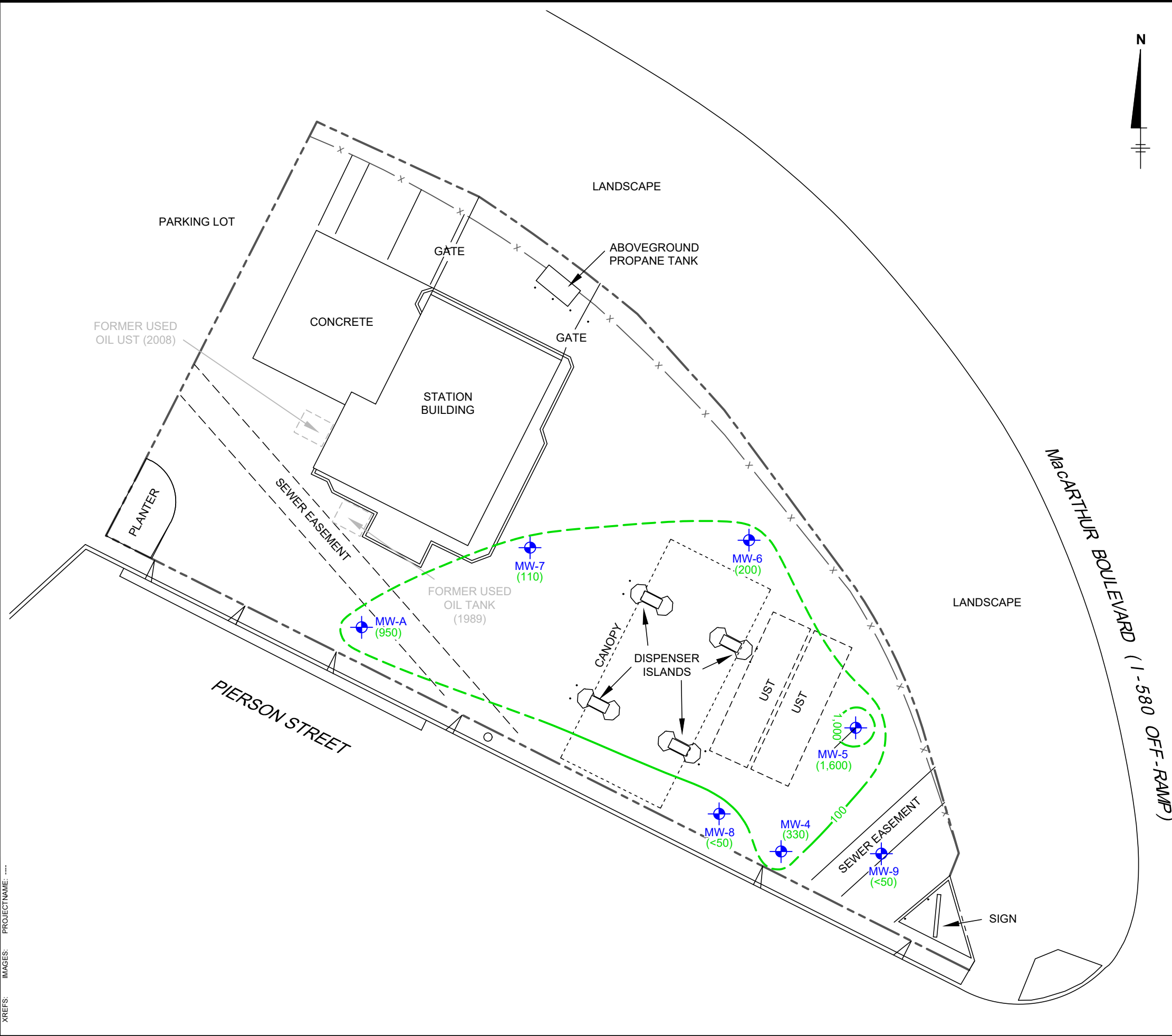
UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

GROUNDWATER ELEVATION CONTOUR MAP
AUGUST 1, 2017

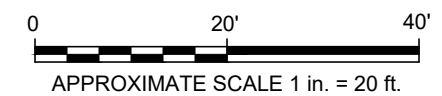
ARCADIS Design & Consultancy for natural and built assets

FIGURE **3**

CITY: MUMBAI, INDIA DIV: GROUP: ENV: CAD DBA: KAUR
 D:\PROJECTS\00_CHEVRON_SITES\112_351640E-Drawings\351640-TPHg.dwg LAYOUT: 4. SAVED: 9/20/2017 5:32 PM ACADVER: 21.05 (LMS TECH) PAGES: 10 PAGES: 10 PAGES: 10 PAGES: 10
 XREFS: IMAGES: PROJECTNAME: ---



LEGEND	
	SUBJECT PROPERTY BOUNDARY
	FENCE LINE
	UST UNDERGROUND STORAGE TANK
	MW-4 MONITORING WELL
	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



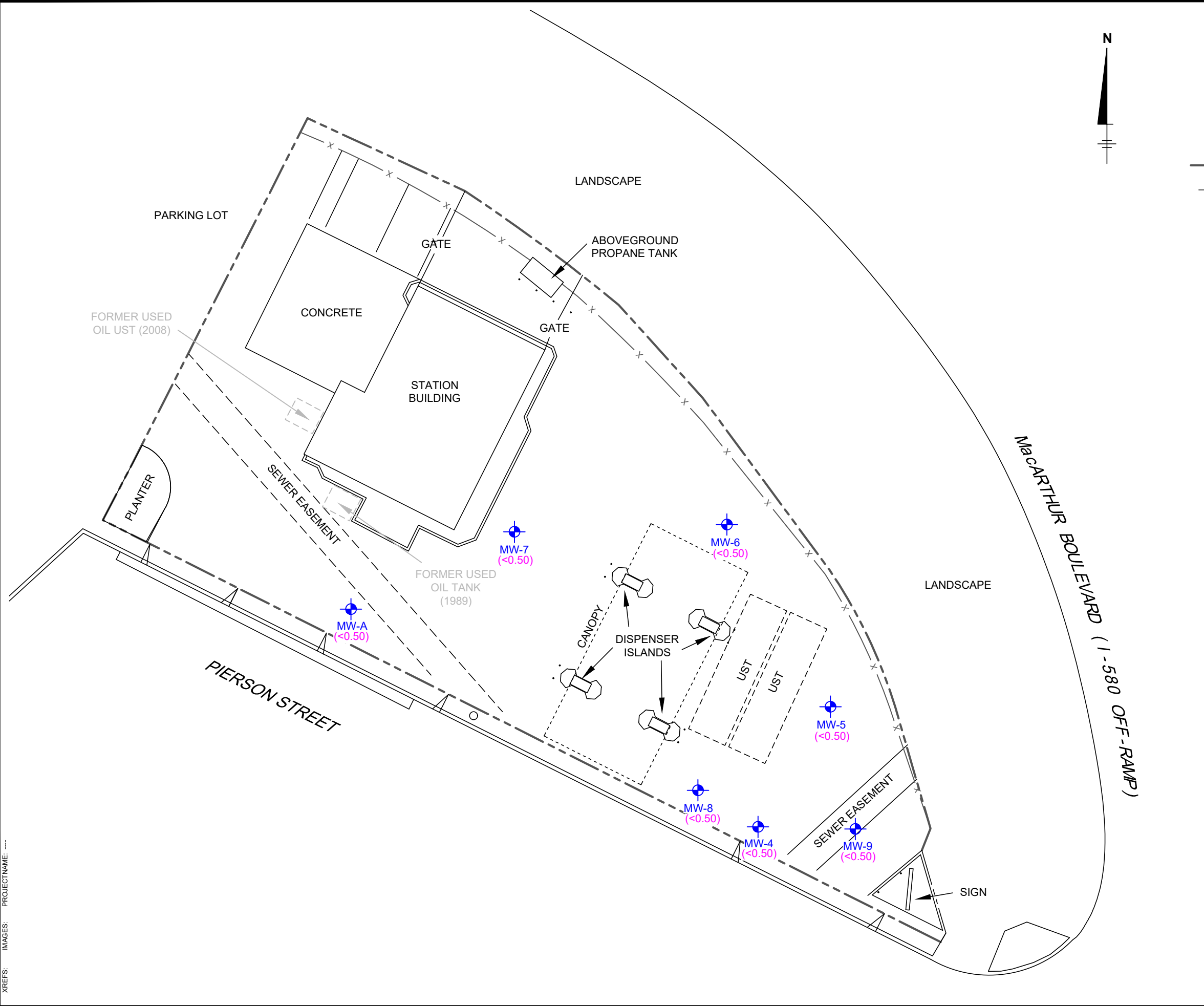
UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

**TPH-g ISOCONCENTRATION MAP
 AUGUST 1, 2017**

ARCADIS Design & Consultancy for natural and built assets

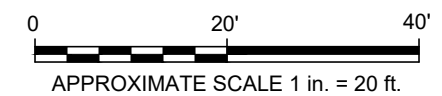
FIGURE **4**

CITY: MUMBAI, INDIA DIV: GROUP: ENV: CAD DBA: KAUR D:\PROJECTS\00_CHEVRON_SITES\112_351640E-DRAWINGS\351640-BENZENE.dwg LAYOUT: 5 SAVED: 9/20/2017 5:01 PM ACADVER: 21.05 (LMS TECH) PAGES: 5 PLOTSTYLE: TABLE: ARCADIS.CTB PLOTTED: 9/21/2017 11:42 AM BY: PAVAN KUMAR ANJANEYAKUMAR XREFS: IMAGES: PROJECTNAME: ---



LEGEND

- SUBJECT PROPERTY BOUNDARY
- FENCE LINE
- UST UNDERGROUND STORAGE TANK
- MW-4 MONITORING WELL
- (<math><0.50</math>) BENZENE CONCENTRATION IN MICROGRAMS PER LITER ($\mu\text{g/L}$)
- (<math><0.50</math>) NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT



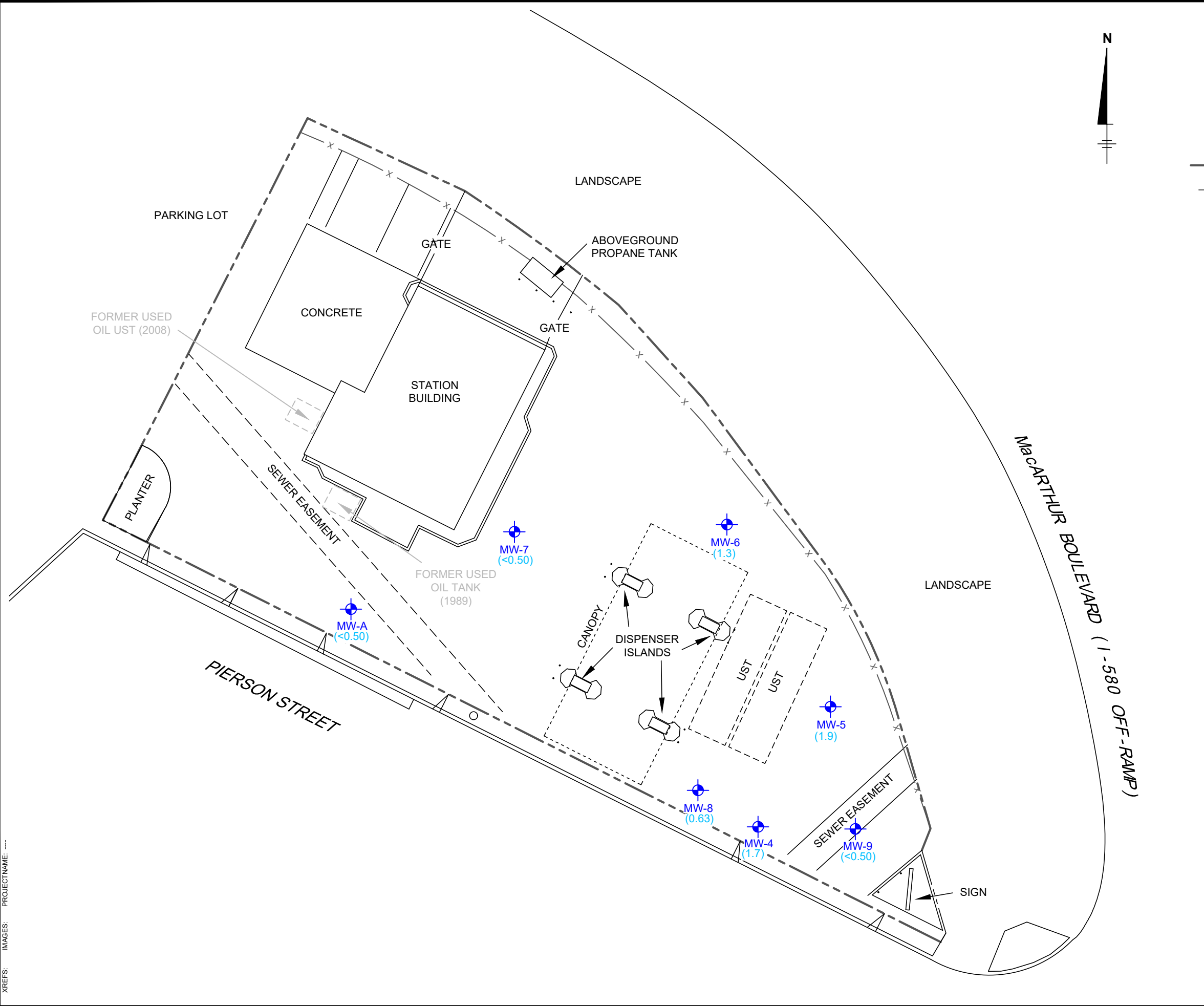
UNOCAL NO. 5781 (351640)
3535 PIERSON STREET, OAKLAND, CALIFORNIA
**SECOND SEMI-ANNUAL GROUNDWATER
MONITORING REPORT, THIRD QUARTER 2017**

**BENZENE CONCENTRATION MAP
AUGUST 1, 2017**

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FIGURE
5

CITY: MUMBAI, INDIA DIV: GROUP: ENV: CAD DBA: KAUR
 D:\PROJECTS\00_CHEVRON_SITES\112_351640E-Drawings\351640-MTBE.dwg LAYOUT: 6 SAVED: 9/20/2017 5:02 PM ACADVER: 21.0S (LMS TECH) PAGES: 6 BY: PAVAN KUMAR ANJANEYAKUMAR
 XREFS: IMAGES: PROJECTNAME: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/21/2017 11:43 AM



LEGEND	
---	SUBJECT PROPERTY BOUNDARY
— x —	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



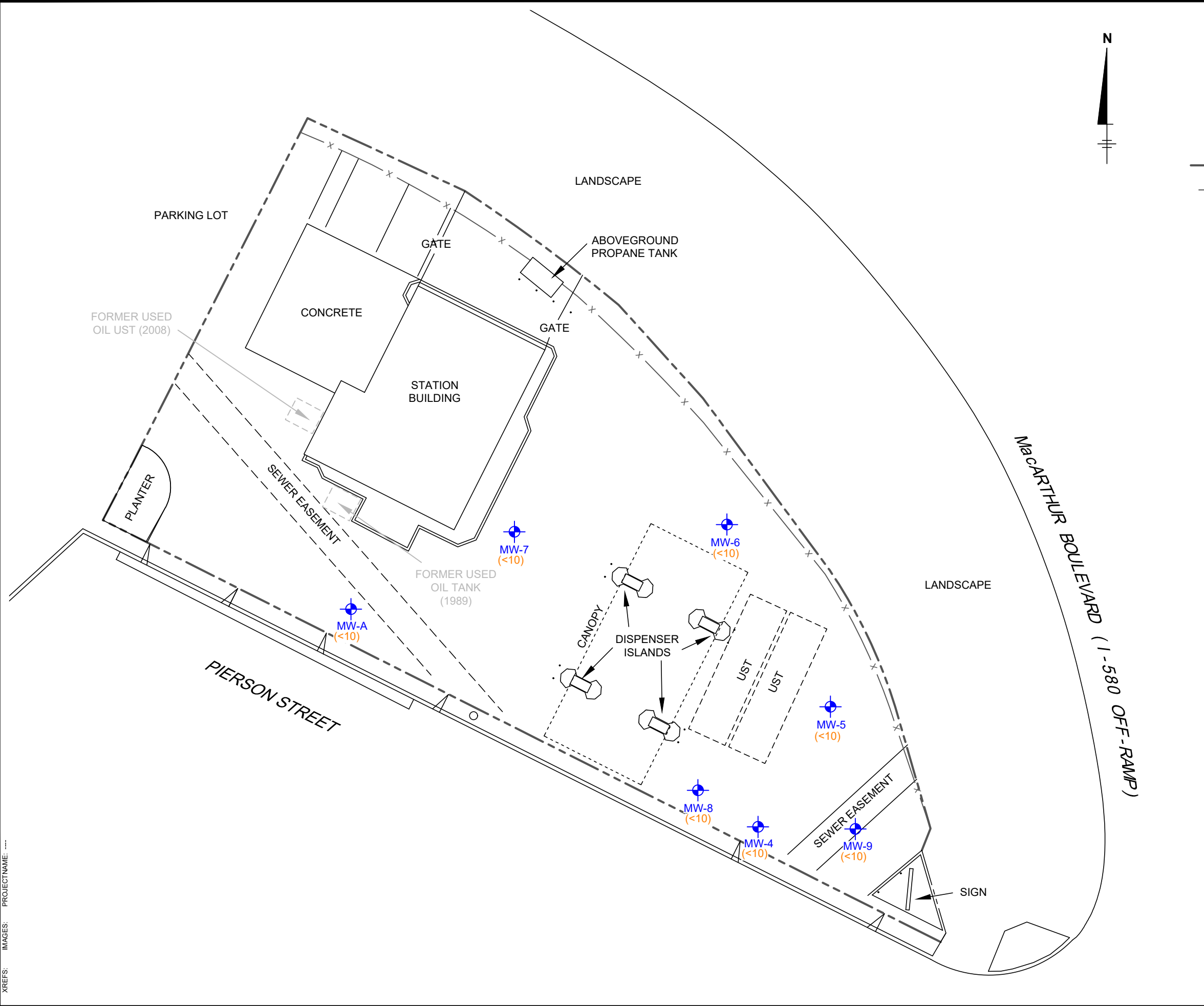
UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

**MTBE CONCENTRATION MAP
 AUGUST 1, 2017**

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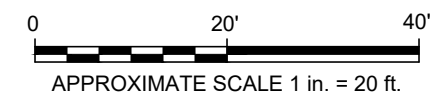
FIGURE **6**

CITY: MUMBAI, INDIA DIV: GROUP: ENVCAD DBA: KAUR
 D:\PROJECTS\00_CHEVRON_SITES\112_351640E-Drawings\351640-TBA.dwg LAYOUT: 7 SAVED: 9/20/2017 5:02 PM ACADVER: 21.05 (LMS TECH) PAGES: 7 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/21/2017 11:39 AM BY: PAVAN KUMAR ANJANEYAKUMAR
 XREFS: IMAGES: PROJECTNAME: ---



LEGEND

- SUBJECT PROPERTY BOUNDARY
- x — FENCE LINE
- UST UNDERGROUND STORAGE TANK
- MW-4 MONITORING WELL
- (<10) TERTIARY - BUTYL ALCOHOL (TBA) CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
- (<10) NOT DETECTED AT OR ABOVE LABORATORY METHOD DETECTION LIMIT



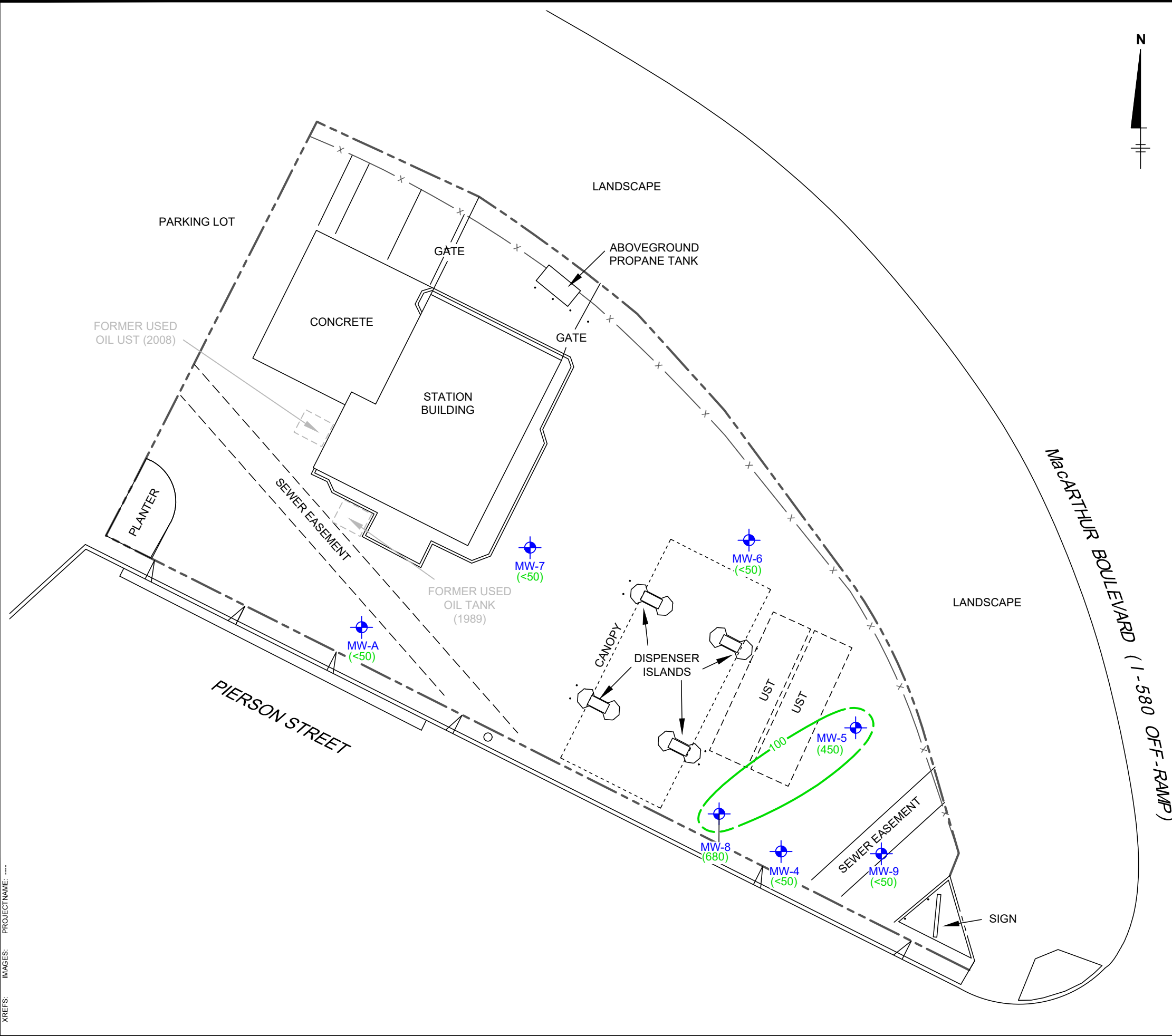
UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

**TBA CONCENTRATION MAP
 AUGUST 1, 2017**

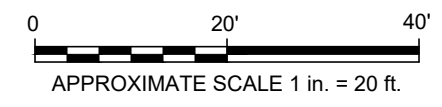
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 for natural and built assets

FIGURE **7**

CITY: MUMBAI, INDIA DIV: GROUP: ENV: CAD DBA: KAUR
 D:\PROJECTS\00_CHEVRON_SITES\112_351640E-Drawings\351640-TPH.dwg LAYOUT: 8
 XREFS: IMAGES: PROJECTNAME: ---
 ACADVER: 21.05 (LMS TECH) PAGES: 21
 PLOTTED: 9/21/2017 11:38 AM BY: PAVAN KUMAR ANJANEYAKUMAR
 PLOTTED: 9/21/2017 11:38 AM BY: PAVAN KUMAR ANJANEYAKUMAR



LEGEND	
	SUBJECT PROPERTY BOUNDARY
	FENCE LINE
	UST UNDERGROUND STORAGE TANK
	MW-4 MONITORING WELL
	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

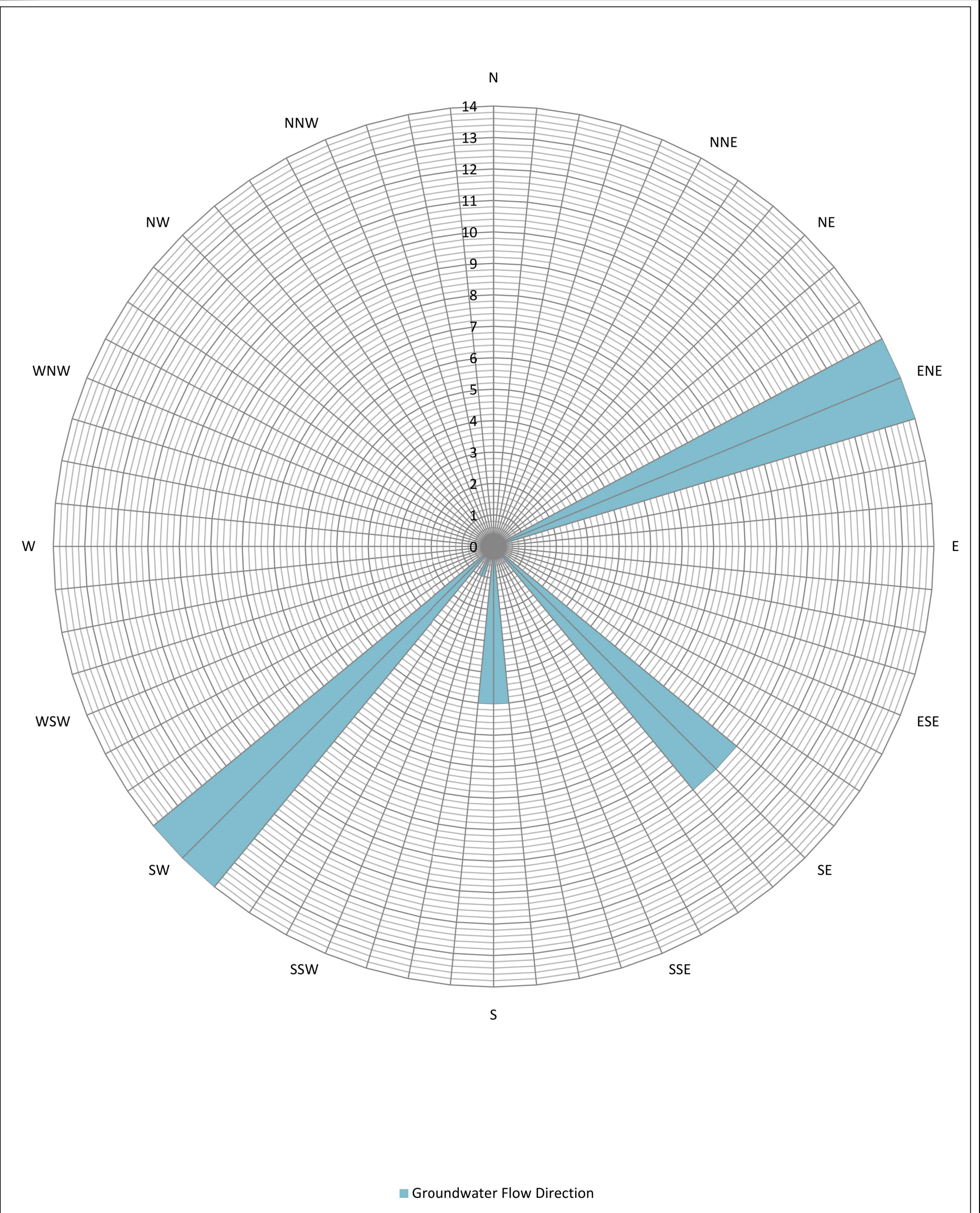


UNOCAL NO. 5781 (351640)
 3535 PIERSON STREET, OAKLAND, CALIFORNIA
SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT, THIRD QUARTER 2017

**TPH-d ISOCONCENTRATION MAP
 AUGUST 1, 2017**

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FIGURE **8**



LEGEND:

- N=North
- NNE= North Northeast
- NE= Northeast
- ENE= East Northeast
- E= East
- ESE= East Southeast
- SE=Southeast
- SSE= South Southeast
- S= South
- SW= Southwest
- SSW= South Southwest
- WSW= West South West
- W= West
- WNW= West Northwest
- NW=Northwest
- NNW= North Northwest

NOTE:

Concentric circles represent the frequency of groundwater flow direction conducted from second quarter 2010 through third quarter 2017.

Number of Events Observed = 44

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

**GROUNDWATER FLOW DIRECTION ROSE
 DIAGRAM**



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 <small>(M) Missing (R) Replaced</small>	Bolts <small>(M) Missing (R) Replaced</small>	Bolt Flanges <small>B=Broken S=Stripped R=Retaped</small>	Apron Condition <small>C=Cracked B=Broken G=Gone</small>	Grout Seal <small>(Deficient) Inches from TOC</small>	Casing <small>(Condition prevents tight cap seal)</small>	REPLACE LOCK <small>Y/<input checked="" type="checkbox"/>N</small>	REPLACE CAP <small>Y/<input checked="" type="checkbox"/>N</small>	WELL VAULT <small>Manufacture/Size/ # of Bolts</small>	Pictures Taken <small>Y/<input checked="" type="checkbox"/>N</small>	
MW-A	OK	→	→	S21	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	→	→	S21	OK	→						
MW-8	OK	→	→			→						
MW-9	OK	→	→			→						
DRUMS PRESENT ONSITE? Y/ <input checked="" type="checkbox"/> N			#: _____			ARE DRUMS PROPERLY LABELED? Y / N			<u>NA</u>	LOCATION OF DRUMS: <u>NA</u>		

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 1/4 in.
 Total Depth: 45.00 ft.
 Depth to Water: 13.41 ft. Check if water column is less than 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

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

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): 1120 Weather Conditions: Sunny
 Sample Time/Date: 1355/8.1.17 Water Color: Clear Odor: Y 10
 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 (S) mS (µmhos/cm)	Temperature (°/ F)	D.O. (mg/L)	ORP (mV)
<u>1124</u>	<u>5.5</u>	<u>6.93</u>	<u>566</u>	<u>21.9</u>	_____	_____
<u>1128</u>	<u>11.0</u>	<u>6.96</u>	<u>572</u>	<u>22.1</u>	_____	_____
<u>1132</u>	<u>16.0</u>	<u>7.01</u>	<u>579</u>	<u>22.3</u>	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-A</u>	<u>6</u> x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	<u>2</u> 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 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: FR

Well ID: MW-4 Date Monitored: 8.1.17
 Well Diameter: 21(4) in.
 Total Depth: 24.74 ft.
 Depth to Water: 12.33 ft. Check if water column is less than 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

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

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: CLEAN Odor: Y / 0
 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 (MS μmhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
<u>1154</u>	<u>8.0</u>	<u>7.17</u>	<u>472</u>	<u>22.1</u>	_____	_____
<u>1158</u>	<u>16.0</u>	<u>7.20</u>	<u>481</u>	<u>22.9</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>6</u> x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	<u>2</u> x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	<u>x 1 liter ambers</u>	YES	NP	BC LABS	TPH-DRO w/sgc(8015M)

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? 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
 Site Address: 3535 Pierson Street
 City: Oakland, CA

Job Number: 17155641
 Event Date: 8.1.17 (inclusive)
 Sampler: FT

Well ID: MW-5
 Well Diameter: 21④ in.
 Total Depth: 19.89 ft.
 Depth to Water: 12.73 ft.

Date Monitored: 8-1-17

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

Check if water column is less than 0.50 ft.
 Depth to Water 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
 Sample Time/Date: 1210 / 8.1.17
 Approx. Flow Rate: 1.5 gpm.
 Did well de-water? yes If yes, Time: 1219 Volume: 5.0 gal.

Weather Conditions: Sunny
 Water Color: Clear Odor: DI N STRONG
 Sediment Description: None
 DTW @ Sampling: 12.73

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (S) mS (µmhos/cm)	Temperature (° F)	D.O. (mg/L)	ORP (mV)
<u>1218</u>	<u>4.5</u>	<u>6.85</u>	<u>865</u>	<u>22.5</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

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

COMMENTS:

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? DI 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
 Site Address: 3535 Pierson Street
 City: Oakland, CA

Job Number: 17155641
 Event Date: 8-1-17 (inclusive)
 Sampler: FT

Well ID: MW-6
 Well Diameter: 2.4 in.
 Total Depth: 19.95 ft.
 Depth to Water: 11.53 ft.

Date Monitored: 8-1-17

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

Check if water column is less than 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): 13.21

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 / Absorbent Sock (circle one)
 Amt Removed from Skimmer: _____ ltr
 Amt Removed from Well: _____ ltr
 Water Removed: _____ ltr

Start Time (purge): 1335
 Sample Time/Date: 1335 / 8.1.17
 Approx. Flow Rate: _____ gpm.
 Did well de-water? Yes If yes, Time: 1342

Weather Conditions: Sunny
 Water Color: lt. Brown Odor: Y / 10
 Sediment Description: S-Silty
 Volume: 3.0 gal. DTW @ Sampling: 11.53

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

LABORATORY INFORMATION

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

COMMENTS: _____

WERE PRE PURGE SAMPLES SUBMITTED TO THE LAB? / N DTW READING: 17.85 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: FR

Well ID: MW-7 Date Monitored: 8.1.17
 Well Diameter: 214 in.
 Total Depth: 19.69 ft.
 Depth to Water: 14.38 ft. Check if water column is less than 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

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

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): 1100 Weather Conditions: Sunny
 Sample Time/Date: 1100 / 8.1.17 Water Color: CLEAR Odor: Y 10
 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)
<u>1103</u>	<u>1.5</u>	<u>7.22</u>	<u>412</u>	<u>23.1</u>	/	/
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

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

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
 Site Address: 3535 Pierson Street
 City: Oakland, CA

Job Number: 17155641
 Event Date: 8-1-17 (inclusive)
 Sampler: FT

Well ID: MW-8
 Well Diameter: 2.14 in.
 Total Depth: 19.92 ft.
 Depth to Water: 12.10 ft.

Date Monitored: 8-1-17

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

Check if water column is less than 0.50 ft.
 Depth to Water 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:
 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): 1235
 Sample Time/Date: 1255 / 8.1.17
 Approx. Flow Rate: / gpm.
 Did well de-water? No If yes, Time: _____ Volume: _____ gal.

Weather Conditions: Sunny
 Water Color: Clean Odor: Y / 0
 Sediment Description: None
 DTW @ Sampling: 13.63

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

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-8</u>	<u>6</u> x voa vial	YES	HCL	BC LABS	TPH-GRO(8015)/BTEX+MTBE(8260)/8 OXYS(8260)
	<u>2</u> x 1 liter ambers	YES	NP	BC LABS	TPH-DRO(8015M)
	<u>1</u> 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 1/4 in.
 Total Depth: 19.65 ft.
 Depth to Water: 11.97 ft. Check if water column is less than 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

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

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): 1310 Weather Conditions: Sunny
 Sample Time/Date: 1310 / 8.1.17 Water Color: lt. Brn. Odor: Y / 10
 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 (mS / μmhos/cm)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
<u>1313</u>	<u>1.5</u>	<u>7.13</u>	<u>478</u>	<u>22.4</u>	_____	_____
<u>1317</u>	<u>3.0</u>	<u>7.15</u>	<u>483</u>	<u>22.7</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

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

COMMENTS: _____


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

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

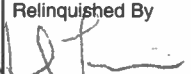
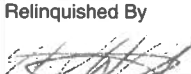
CHAIN OF CUSTODY FORM

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

COC 1 of 1

Union Oil Site ID: <u>5781</u>	Union Oil Consultant: <u>ARCADIS</u>	<p style="text-align: center;">ANALYSES REQUIRED</p> <p>Turnaround Time (TAT): Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/></p> <p>Special Instructions</p>
Site Global ID: <u>T0600101467</u>	Consultant Contact: <u>CARL EDWARDS</u>	
Site Address: <u>3535 PIERSON ST. OAKLAND, CA</u>	Consultant Phone No.: <u>(415) 825-0759</u>	
Union Oil PM: <u>JAMES P. KIERNAN</u>	Sampling Company: <u>GETTLEIN-RYAN</u>	
Union Oil PM Phone No.: <u>(925) 842-3220</u>	Sampled By (PRINT): <u>FRANK TEURINONI</u>	
Charge Code: <u>NWRB-0 351640-0-LAB</u>	Sampler Signature: 	
<p><i>This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.</i></p>		<p>BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911</p>

SAMPLE ID				Sample Time	# of Containers	TPH - Diesel by EPA 8015 M	TPH - G by (8015)	BTX/MTBE by EPA 8260B	Ethanol by EPA 8260B	EPA 8260B Full List with OXYS	8 (OXYS) 8260B	TPH - D10 w/5% (8015M)	Notes / Comments
Field Point Name	Matrix	Depth	Date (yymmdd)										
QA	W-S-A		17.8.1		2	X	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: <u>6-ILINE</u> Date / Time: <u>17.8.1 (1900)</u>	Relinquished By:  Company: <u>GETTLEIN-RYAN</u> Date / Time: <u>17.8.13 1140</u>	Relinquished By: _____ Company: _____ Date / Time: _____
Received By: <u>GETTLEIN-RYAN</u> Company: <u>GETTLEIN-RYAN</u> Date / Time: _____	Received By: <u>Mary Bogar-Be Lab</u> Company: <u>BC Lab</u> Date / Time: <u>8.2.17 1140</u>	Received By: _____ Company: _____ Date / Time: _____

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,

Contact Person: Molly Meyers
Client Service Rep

Stuart Buttram
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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Notes

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CHAIN OF CUSTODY FORM

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

Union Oil Site ID: 17-21379		Union Oil Consultant: ARCADIS		Turnaround Time (TAT): Standard <input checked="" type="checkbox"/> 24 Hours 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Special Instructions			
Site Global ID: ID600101467		Consultant Contact: DAVID EDWARDS		EPA 8260B Full List with OXYS			
Site Address: 3535 PIERSON ST.		Consultant Phone No.: (415) 825-0759		Ethanol by EPA 8260B			
OAKLAND CA		Sampling Company: GETZLER-RYAN		BTEX/MTBE by EPA 8260B			
Union Oil PM: JAMES P. KERNAN		Sampled By (PRINT): FRAVU TETRINONI		TFH - G by (8015)			
Union Oil PM Phone No.: (925) 842-3220		Sample Signature:		TFH - Diesel by EPA 8015			
Charge Code: NWRFB-0 351640-0-LAB		BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911		TPH - Diesel by EPA 8015			
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.							
SAMPLE ID		Matrix	Depth	Date (yymmdd)	Sample Time	# of Containers	Notes / Comments
QIA	W-S-A	1	17.8.1		2		TPH-DKO w/59c(8015M)
MW-A	W-S-A	2		1355	8	X	8 (oxy's) 8260B
MW-4	W-S-A	3		1145	8	X	
MW-5	W-S-A	4		1210	10	X	
MW-6	W-S-A	5		1335	8	X	
MW-7	W-S-A	6		1100	8	X	
MW-8	W-S-A	7		1255	8	X	
MW-9	W-S-A	8		1310	8	X	
	W-S-A						
	W-S-A						
	W-S-A						
	W-S-A						

Relinquished By: **DAVID EDWARDS** Company: **ARCADIS** Date / Time: **8/2/17 18:30**

Received By: **DAVID EDWARDS** Company: **ARCADIS** Date / Time: **8/2/17 18:30**

Relinquished By: **DAVID EDWARDS** Company: **ARCADIS** Date / Time: **8/2/17 11:40**

Received By: **DAVID EDWARDS** Company: **ARCADIS** Date / Time: **8/2/17 11:40**

REL. **ASSTO** 8/2/17 2200



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 of 2

Submission #: 17-21379

SHIPPING INFORMATION Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		FREE LIQUID YES <input type="checkbox"/> NO <input type="checkbox"/> W / S
--	--	--	--	--

Refrigerant: Ice Blue Ice None Other Comments: _____

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

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										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK	<u>AB</u>									
40ml VOA VIAL	<u>09/6</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	<u>A→F</u>	
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				<u>620</u>	<u>614</u>					
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 0950 Rev 21 05/23/2016
 A = Actual / C = Corrected (S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20)



BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 of 2

Submission #: 17-21379

SHIPPING INFORMATION Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		SHIPPING CONTAINER Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		FREE LIQUID YES <input type="checkbox"/> NO <input type="checkbox"/> W / S
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____				
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>				
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input type="checkbox"/> No <input type="checkbox"/>				
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.98 Containers: Amber Thermometer ID: 208 Temperature: (A) 0.0 °C / (C) 0.4 °C		Date/Time: 8/22/00 Analyst Init: GSP

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	12	13	14	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										
PIA 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	G1H	G1H	G1H	G1H	G1H					
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____
 Sample Numbering Completed By: MM Date/Time: 8-3-17 0852 Rev 21 05/23/2016
 A = Actual / C = Corrected [S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: QA-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 00:00 Sample Depth: --- Lab Matrix: Water 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-A-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 13:55 Sample Depth: --- Lab Matrix: Water 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-4-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 11:45 Sample Depth: --- Lab Matrix: Water Sample Type: Water Delivery Work Order: Global ID: T0600101467 Location ID (FieldPoint): MW-4 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-5-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 12:10 Sample Depth: --- Lab Matrix: Water 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-6-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 13:35 Sample Depth: --- Lab Matrix: Water 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-7-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 11:00 Sample Depth: --- Lab Matrix: Water Sample Type: Water Delivery Work Order: Global ID: T0600101467 Location ID (FieldPoint): MW-7 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-8-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 12:55 Sample Depth: --- Lab Matrix: Water 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: --- Project Number: 5781 Sampling Location: --- Sampling Point: MW-9-W-170801 Sampled By: GRD	Receive Date: 08/02/2017 22:00 Sampling Date: 08/01/2017 13:10 Sample Depth: --- Lab Matrix: Water Sample Type: Water Delivery Work Order: Global ID: T0600101467 Location ID (FieldPoint): MW-9 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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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

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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

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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

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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

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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/TPH d	ND		1
Tetracosane (Surrogate)	102	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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/TPH d	ND		1
Tetracosane (Surrogate)	107	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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/TPH d	ND	A52	1
Tetracosane (Surrogate)	82.0	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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

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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/TPH d	ND		1
Tetracosane (Surrogate)	99.3	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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/TPH d	ND		1
Tetracosane (Surrogate)	113	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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/TPH d	ND	A52	1
Tetracosane (Surrogate)	109	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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

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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

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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/TPH d	ND		1
Tetracosane (Surrogate)	90.5	%	40 - 140 (LCL - UCL)		EPA-8015B/TPH d			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

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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)		

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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		Lab	Quals
								Percent Recovery	RPD		
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			

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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		Lab Quals
									RPD	Percent Recovery	
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	

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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)	

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Project Number: 351640
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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
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		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
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

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Reported: 08/10/2017 11:31
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Project Number: 351640
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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)		

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Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
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		

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Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
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	

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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)		

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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		Lab	Quals
								Percent Recovery	RPD		
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			

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Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
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
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	

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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.

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

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<u>Report Title:</u>	1SA2017 DTW
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<u>Facility Name:</u>	UNOCAL #5781
<u>File Name:</u>	GEO_WELL.zip
<u>Organization Name:</u>	ARCADIS
<u>Username:</u>	ARCADIS76
<u>IP Address:</u>	8.39.233.51
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<u>Report Type:</u>	Monitoring Report - Semi-Annually
<u>Facility Global ID:</u>	T0600101467
<u>Facility Name:</u>	UNOCAL #5781
<u>File Name:</u>	EDD_BCLabs_1721379_EDF.zip
<u>Organization Name:</u>	ARCADIS
<u>Username:</u>	ARCADIS76
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