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By Alameda County Environmental Health 9:35 am, Mar 01, 2017

Ms. Karel Detterman
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94602

Arcadis U.S., Inc.
101 Creekside Ridge Court
Suite 200
Roseville
California 95678
Tel 916 786 0320
Fax 916 786 0366
www.arcadis.com

Subject:

Fourth Quarter 2016 Groundwater Monitoring Report

Former BP Facility No. 0402
1450 Fruitvale Avenue, Oakland, California 94601
Alameda County LOP Case #RO0000307

ENVIRONMENT

Date:
February 22, 2017

Dear Ms. Detterman:

Contact:
James M. Jacobsen, P.G.

"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."

Phone:
916.865.3144

Sincerely,

Email:
james.jacobsen@arcadis.com

Arcadis U.S., Inc.

Our ref:
GP16BPNA.CA02



James M. Jacobsen, P.G.
Project Manager

Ms. Karel Detterman
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California, 94602

Subject:
**CA 0402 - Fourth Quarter 2016 Monitoring Report Submittal
Case No. RO0000307**

Arcadis U.S., Inc.
101 Creekside Ridge
Court
Suite 200
Roseville
California 95678
Tel 916 786 0320
www.arcadis.com

Dear Ms. Detterman:

On behalf of BP West Coast Products, LLC (BP), Arcadis U.S., Inc. (Arcadis) is submitting the enclosed Semi-Annual Monitoring Report for the Fourth Quarter 2016. The enclosed quarterly report was prepared for the following Former BP facility (referred to herein as the "site"):

<u>Former BP Facility No.</u>	<u>Location</u>
0402	1450 Fruitvale Avenue, Oakland, CA 94601

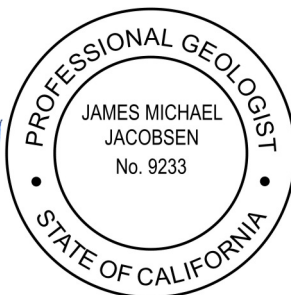
If you have any questions, please contact the undersigned.

Sincerely,

Arcadis U.S., Inc.



James M. Jacobsen, P.G.
Project Manager



ENVIRONMENT

Date:
February 22, 2017

Contact:
James M. Jacobsen, P.G.

Phone:
916.865.3144

Email:
james.jacobsen@arcadis.com

Our ref:
GP16BPNA.CA02

Copies:
File

SEMI-ANNUAL MONITORING AND STATUS REPORT
Fourth Quarter 2016
February 22, 2017

Station No:	<u>0402</u>	Address:	<u>1450 Fruitvale Avenue, Oakland, California 94601</u>
Arcadis Contact/Phone No.:	<u>Mr. James Jacobsen / 916.865.3144</u>		
Arcadis Project No.:	<u>GP16BPNA.CA02.6B000</u>		
Primary Agency/Regulatory ID No.:	<u>Alameda County Department of Environmental Health / Ms. Karel Detterman / Case No. RO0000307</u>		
Other Agencies to Receive Copies:	<u>NA</u>		

WORK PERFORMED DURING FOURTH QUARTER 2016:

1. Conducted semi-annual groundwater monitoring and sampling on December 23, 2016. A local area map and a site map are provided as **Figure 1** and **Figure 2**, respectively. The following summarizes the Fourth Quarter 2016 event:
 - Prior to gauging, all monitoring wells were left open for at least 15 minutes for the water column to equilibrate with atmospheric pressure.
 - Gauged and sampled monitoring wells MW-4 through MW-7.
 - Monitoring wells were sampled for the analysis of Gasoline Range Organics (GRO), benzene, toluene, ethylbenzene, xylenes (total) (BTEX), oxygenates, 1,2-Dichloroethane (1,2-DCA), ethylene dibromide (EDB) and ethanol according to United States Environmental Protection Agency (USEPA) Method 8260B.
2. A review of the analytical laboratory results, summarized in **Table 1** and **Table 2**, indicates the following:
 - Based on the analytical results, the constituents-of-concern (COCs) include GRO, benzene, and MTBE.
 - GRO and benzene were detected exceeding the San Francisco Regional Water Quality Control Board (SF-RWQCB) Environmental Screening Levels (ESLs) at monitoring wells MW-4 and MW-7.
 - Methyl tert-butyl ether (MTBE) was detected exceeding SF-RWQCB ESLs at monitoring well MW-6.
3. Prepared and submitted Fourth Quarter 2016 Monitoring and Status Report, dated February 22, 2017.
4. Prepared and submitted General Correspondence to Alameda County Local Oversight Program (LOP), dated February 17, 2017.

PROPOSED WORK:

1. Conduct semi-annual groundwater monitoring and sampling in the Second Quarter 2017 if Alameda County LOP and/or State Water Resources Control Board determines Low-Threat Underground Storage Tank Closure Policy criteria have not been met.
2. Prepare and submit the Second Quarter 2017 Monitoring Report 60 days following the sampling event.

Current Phase of Project:	Monitoring
Frequency of Monitoring/Sampling:	Semi-annual
Is Light Non-Aqueous Phase Liquid (LNAPL) Present On-site:	No
LNAPL Detected During the Third Quarter 2016 (thickness in feet):	NA
Approximate Depth to Groundwater (feet below top of casing):	6.18 (MW-5) to 9.46 (MW-7)
Groundwater Flow Direction:	Northeast
Groundwater Flow Magnitude (foot/foot):	0.04
Agency Directive Requirements:	Semi-annual monitoring and reporting; awaiting case closure review under Low Threat Closure Policy (LTCP)

DISCUSSION

The Fourth Quarter 2016 gradient magnitude and direction is consistent with previous monitoring events. Historical groundwater flow has varied from north to south, but is primarily in an easterly direction. Figures illustrating the potentiometric surface for the Fourth Quarter 2016 event and a rose diagram representing the historic gradient and magnitude variances are provided as **Figure 3** and **Figure 4**.

Although GRO slightly exceed the SF-RWQCB ESLs at monitoring wells MW-4 and MW-7, a notable decrease in concentration was observed at MW-4 in the Fourth Quarter 2016. Specifically, GRO concentrations have historically ranged between 1,700 micrograms per liter (ug/L) and 600 ug/L at monitoring well MW-4. GRO concentrations during the Fourth Quarter 2016 event for monitoring well MW-4 is 230 ug/L.

Benzene concentration reduction was also observed at monitoring wells MW-4 and MW-7. Specifically, benzene concentrations have historically ranged between 130 ug/L to 28 ug/L at monitoring well MW-4 and 59 ug/L to 2.3 ug/L at monitoring well MW-7. Benzene concentrations during the Fourth Quarter 2016 event for monitoring well MW-4 and MW-7 are 9.4 ug/L and 1.6 ug/L, respectively.

Based on a review of the December 23, 2016 analytical data, it appears that the groundwater plume meets the Groundwater-Specific Criteria scenario number 2. Groundwater analytical data map for the Fourth

Quarter 2016 event is provided as **Figure 5**. Isoconcentration maps for GRO and benzene are provided as **Figure 6** and **Figure 7**, respectively.

Semi-annual groundwater monitoring and sampling will continue on the current schedule until Alameda County LOP or the State issues a groundwater monitoring suspension directive or case closure is granted. The next semi-annual groundwater monitoring event will occur during the Second Quarter of 2017. A copy of the field notes for the December 23, 2016 groundwater monitoring event are provided as **Attachment 1**. A copy of the laboratory analytical report is provided as **Attachment 2**. Hydrographs for select monitoring which have historically contained concentrations of COCs are presented in **Attachment 3**.

ENCLOSURES:

Tables

Table 1 – Current Groundwater Monitoring and Analytical Data – GRO/BTEX

Table 2 – Current Analytical Data – Oxygenates and Other Analytes

Table 3 – Historical Groundwater Monitoring and Analytical Data

Figures

Figure 1 – Site Location Map

Figure 2 – Site Plan

Figure 3 – Groundwater Elevation Contour Map – December 23, 2016

Figure 4 – Groundwater Flow Direction Rose Diagram

Figure 5 – Groundwater Analysis Concentration Map – December 23, 2016

Figure 6 – GRO Concentration Map – December 23, 2016

Figure 7 – Benzene Concentration Map – December 23, 2016

Attachments

Attachment 1 – Groundwater Sampling Data Package

Attachment 2 – Laboratory Report

Attachment 3 – Hydrographs

TABLES



Table 1. Current Groundwater Monitoring and Analytical Data – GRO/BTEX

Former ARCO Service Station No. 0402
 1450 Fruitvale Avenue
 Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	DO (mg/L)	Notes
MW-4	12/23/2016	48.18	6.72	0.00	41.46	230	9.4	<0.50	0.78	1.1	1.78	--
MW-5	12/23/2016	47.62	6.18	0.00	41.44	<50	<0.50	<0.50	<0.50	<1.0	0.68	--
MW-6	12/23/2016	48.89	8.75	0.00	40.14	<50	<0.50	<0.50	<0.50	<1.0	0.60	--
MW-7	12/23/2016	48.28	9.46	0.00	38.82	390	1.6	<0.50	1.2	<1.0	0.35	--
SF-RWQCB ESLs¹						220	1.0	40	30	20	--	--

Notes:

TOC = top of casing measured
 ft = feet
 ft msl = feet above mean sea level
 DTW = depth to water
 LNAPL = light non-aqueous phase liquid
 GW Elev = groundwater elevation
 GRO = gasoline range organics
 B = benzene
 T = toluene
 E = ethylbenzene
 X = total xylenes
 DO = dissolved oxygen

BOLD = concentration exceeds SF-RWQCB ESLs
 SF-RWQCB ESLs = San Francisco Regional Water Quality Control Board Environmental Screening Levels - Direct Exposure Human Health Risk levels - MCL Priority
 -- = not analyzed/applicable/measured/available
 < = not detected at or above specified laboratory reporting limit
 µg/L = micrograms per liter
 mg/L = milligrams per liter

Table 2. Current Analytical Data - Oxygenates and Other Analytes

Former ARCO Service Station No. 0402

1450 Fruitvale Avenue

Oakland, California

Well ID	Date	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Notes
MW-4	12/23/2016	<0.50	<20	<0.50	0.82	<0.50	<0.50	<0.50	<500	--
MW-5	12/23/2016	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--
MW-6	12/23/2016	11	<20	<0.50	0.82	<0.50	<0.50	<0.50	<500	--
MW-7	12/23/2016	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	--
SF-RWQCB ESLs¹		5.0	12	0.50	--	--	0.05	--	--	--

Notes:

MTBE = methyl tert-butyl ether

TBA = tert-butyl alcohol

1,2-DCA = 1,2-dichloroethane

DIPE = di-isopropyl ether

ETBE = ethyl tert-butyl ether

EDB = 1,2-dibromoethane

TAME = tert-Amyl methyl ether

BOLD = concentration exceeds SF-RWQCB ESLs

SF-RWQCB ESLs = San Francisco Regional Water Quality Control Board Environmental Screening Levels - Direct Exposure Human Health Risk levels - MCL Priority

-- = not analyzed/applicable/measured/available

< = not detected at or above specified laboratory reporting limit

µg/L = micrograms per liter

Table 3. Historical Groundwater Monitoring and Analytical Data
 Former ARCO Service Station No. 0402
 1450 Fruitvale Avenue
 Oakland, California

Well ID	Date	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	EDB (µg/L)	TAME (µg/L)	Ethanol (µg/L)	DO (mg/L)	Notes
MW-4	12/2/2013	48.18	14.06	0.00	34.12	810	38	0.71	57	15	<0.50	<10	--	1.7	<0.50	--	<0.50	--	1.60	--
	3/18/2014	48.18	10.72	0.00	37.46	600	28	<0.50	20	4.8	<0.50	<10	<0.50	1.8	<0.50	<0.50	<0.50	<150	1.64	--
	6/26/2014	48.18	13.54	0.00	34.64	1,300	51	0.76	32	1.7	<0.50	<10	<0.50	1.9	<0.50	<0.50	<0.50	<150	1.58	--
	9/17/2014	48.18	15.37	0.00	32.81	1,100	41	<0.50	6.6	<1.0	<0.50	<10	<0.50	2.3	<0.50	<0.50	<0.50	<150	0.57	--
	3/12/2015	48.18	10.63	0.00	37.55	1,100	85	0.69	2.5	1.6	<0.50	<10	<0.50	2.1	<0.50	<0.50	<0.50	<150	1.78	--
	6/8/2016	48.18	11.75	0.00	36.43	1,700	130	1.5	12	3.3	<0.50	<10	<0.50	2.3	<0.50	<0.50	<0.50	<150	1.36	--
	12/23/2016	48.18	6.72	0.00	41.46	230	9.4	<0.50	0.78	1.1	<0.50	<20	<0.50	0.82	<0.50	<0.50	<0.50	<500	1.78	--
	12/2/2013	47.62	13.67	0.00	33.95	<50	<0.50	<0.50	<0.50	<1.0	0.69	<10	--	<0.50	<0.50	--	<0.50	--	4.70	--
MW-5	3/18/2014	47.62	10.91	0.00	36.71	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	3.03	--
	6/26/2014	47.62	12.52	0.00	35.10	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.76	--
	9/17/2014	47.62	14.44	0.00	33.18	58	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.66	--
	3/12/2015	47.62	10.20	0.00	37.42	<50	<0.50	<0.50	<0.50	<1.0	0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	2.00	--
	6/8/2016	47.62	10.83	0.00	36.79	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.56	--
	12/23/2016	47.62	6.18	0.00	41.44	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.68	--
	12/2/2013	48.89	15.07	0.00	33.82	<50	<0.50	<0.50	<0.50	<1.0	10	<10	--	<0.50	<0.50	--	<0.50	--	1.25	--
	3/18/2014	48.89	11.72	0.00	37.17	<50	<0.50	<0.50	<0.50	<1.0	14	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.94	--
MW-6	6/26/2014	48.89	14.20	0.00	34.69	<50	<0.50	<0.50	<0.50	<1.0	13	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.47	--
	9/17/2014	48.89	16.10	0.00	32.79	<50	<0.50	<0.50	<0.50	<1.0	7.2	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.71	--
	3/12/2015	48.89	11.86	0.00	37.03	<50	<0.50	<0.50	<0.50	<1.0	5.0	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.66	--
	6/8/2016	48.89	12.94	0.00	35.95	<50	<0.50	<0.50	<0.50	<1.0	12	<10	<0.50	1.2	<0.50	<0.50	<0.50	<150	0.63	--
	12/23/2016	48.89	8.75	0.00	40.14	<50	<0.50	<0.50	<0.50	<1.0	11	<20	<0.50	0.82	<0.50	<0.50	<0.50	<500	0.60	--
	12/2/2013	48.28	15.35	0.00	32.93	96	<0.50	<0.50	1.5	<1.0	<0.50	<10	--	<0.50	<0.50	--	<0.50	--	5.35	--
	3/18/2014	48.28	11.25	0.00	37.03	190	2.3	<0.50	2.2	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	2.63	--
	6/26/2014	48.28	13.44	0.00	34.84	530	5.0	0.63	1.9	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.14	--
MW-7	9/17/2014	48.28	15.75	0.00	32.53	360	2.5	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	0.63	--
	3/12/2015	48.28	11.33	0.00	36.95	2,200	59	9.8	87	54	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.82	--
	6/8/2016	48.28	11.51	0.00	36.77	390	6.6	1.2	11	5.5	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<150	1.59	--
	12/23/2016	48.28	9.46	0.00	38.82	390	1.6	<0.50	1.2	<1.0	<0.50	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<500	0.35	--

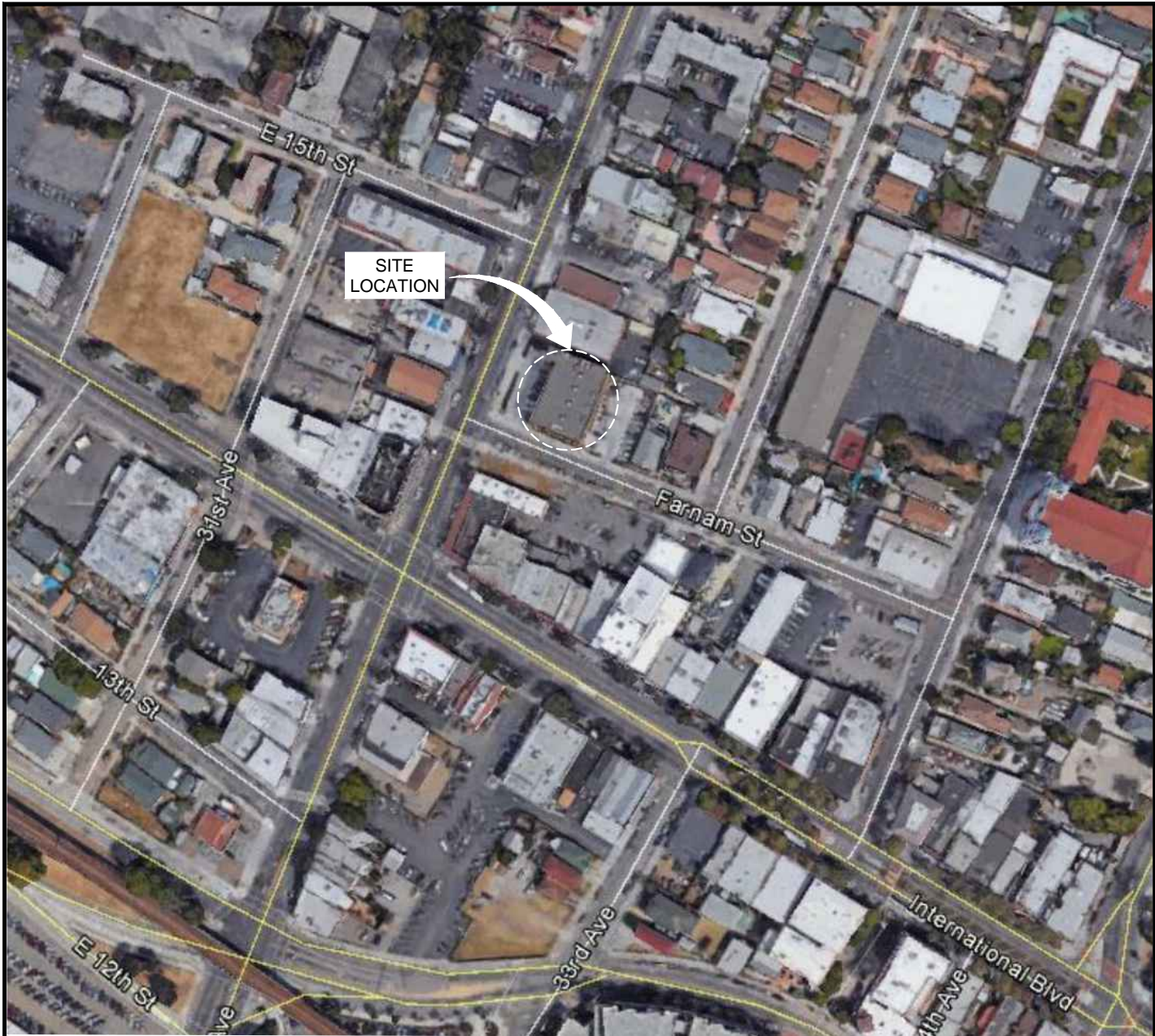
Notes:
 GRO = gasoline range organic
 B = benzene
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 E = ethylbenzene
 X = total xylenes
 MTBE = methyl tert-butyl ether
 TBA = tert-butyl alcohol
 1,2-DCA = 1,2-dichloroethane
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 TAME = tert-Amyl methyl ether
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BOLD = concentration exceeds SF-RWQCB ESLs
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 -- = not analyzed/applicable/measured/available
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 µg/L = micrograms per liter
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 DTW = depth to water
 LNAPL = light non-aqueous phase liquid
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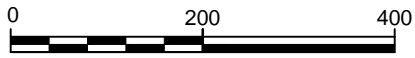
FIGURES



CITY: MUMBAI, INDIA DIV: GROUP: ENV/CAD DB: AMRITA KAUR LD: PIC: PM: TM: ES:
\\hc-ukr-bh-hs-10\BL_Proj\Environment - Arcadis\ARCADIS USA, PROJECTS\22_BP Flexiglove I\Westem\1 - CALIFORNIA\BP_CA_0402\E-Drawings\2-10-2017\CAD\FIG 1 BP_CA_0402 SITE LOCATION MAP (2 10 17).dwg LAYOUT: 1 SAVED: 2/13/2017 3:41 PM ACADVER: 20.05 (LMS TECH) PAGES SETUP: ...
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MAP SOURCE: Google Earth™ 2016, 37°46'41.57"N 122°13'30.57"W



APPROXIMATE SCALE: 1 in. = 200 ft

OAKLAND

CALIFORNIA



FORMER ARCO STATION NO. 402
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

SITE LOCATION MAP



FIGURE

1

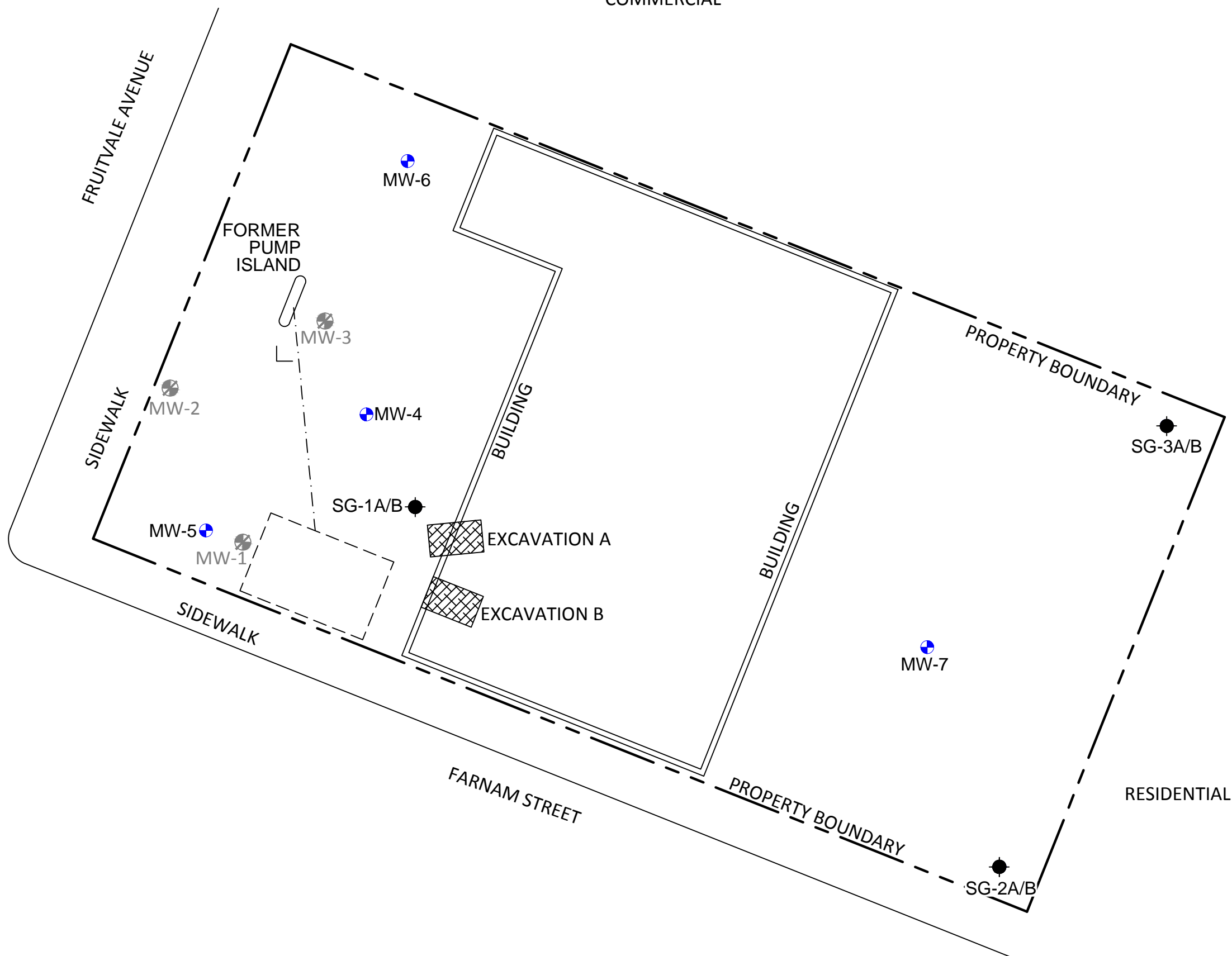
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COMMERCIAL



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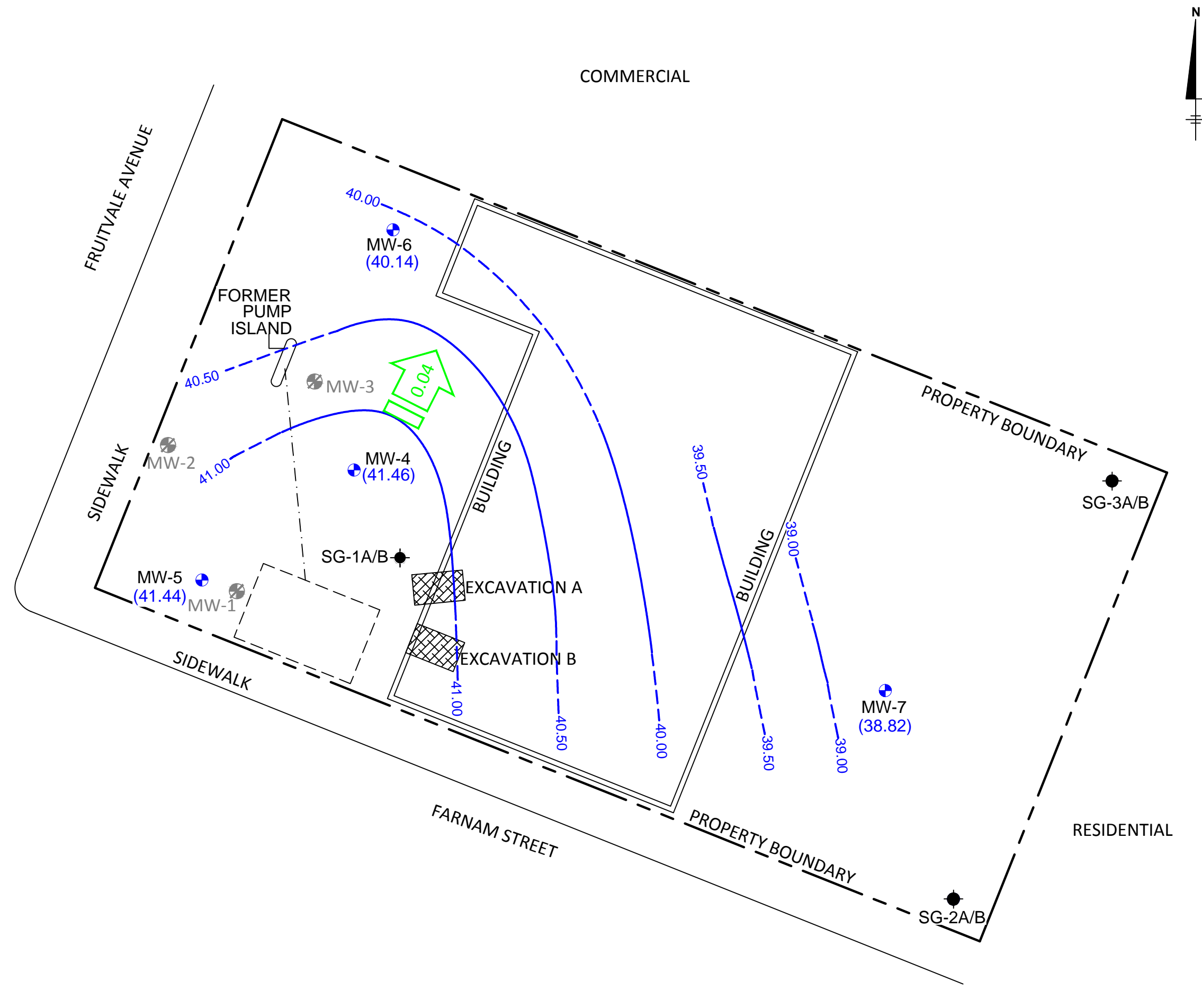
- MONITORING WELL LOCATION
- SOIL VAPOUR PROBE WELL
- DESTROYED MONITORING WELL
- FORMER PRODUCT LINES
- FORMER UST LOCATION
- EXCAVATION



NOTE:
SITE MAP ADAPTED FROM BROADBENT & ASSOCIATES, INC.
FIGURES, SITE DIMENSIONS AND FACILITY
LOCATIONS NOT VERIFIED.



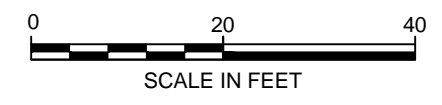
FORMER ARCO STATION NO. 402 1450 FRUITVALE AVENUE OAKLAND, CALIFORNIA	
SITE PLAN	
 ARCADIS <small>Design & Consultancy for natural and built assets</small>	FIGURE 2



- LEGEND:**
- ⊕ MONITORING WELL LOCATION
 - SOIL VAPOUR PROBE WELL
 - ⊗ DESTROYED MONITORING WELL
 - FORMER PRODUCT LINES
 - - - - - FORMER UST LOCATION
 - ▨ EXCAVATION
 - (41.46) GROUNDWATER ELEVATION (FEET MSL)
 - 40.00- - - GROUNDWATER ELEVATION CONTOURLINE (FEET MSL; DASHED WHERE INFERRED)
 - ➔ 0.04 GROUNDWATER FLOW DIRECTION GRADIENT (FT/FT)

NOTE:

- 1) SITE MAP ADAPTED FROM BROADBENT & ASSOCIATES, INC. FIGURES, SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
- 2) ALL MONITORING WELLS WERE GAUGED ON DECEMBER 23, 2016.

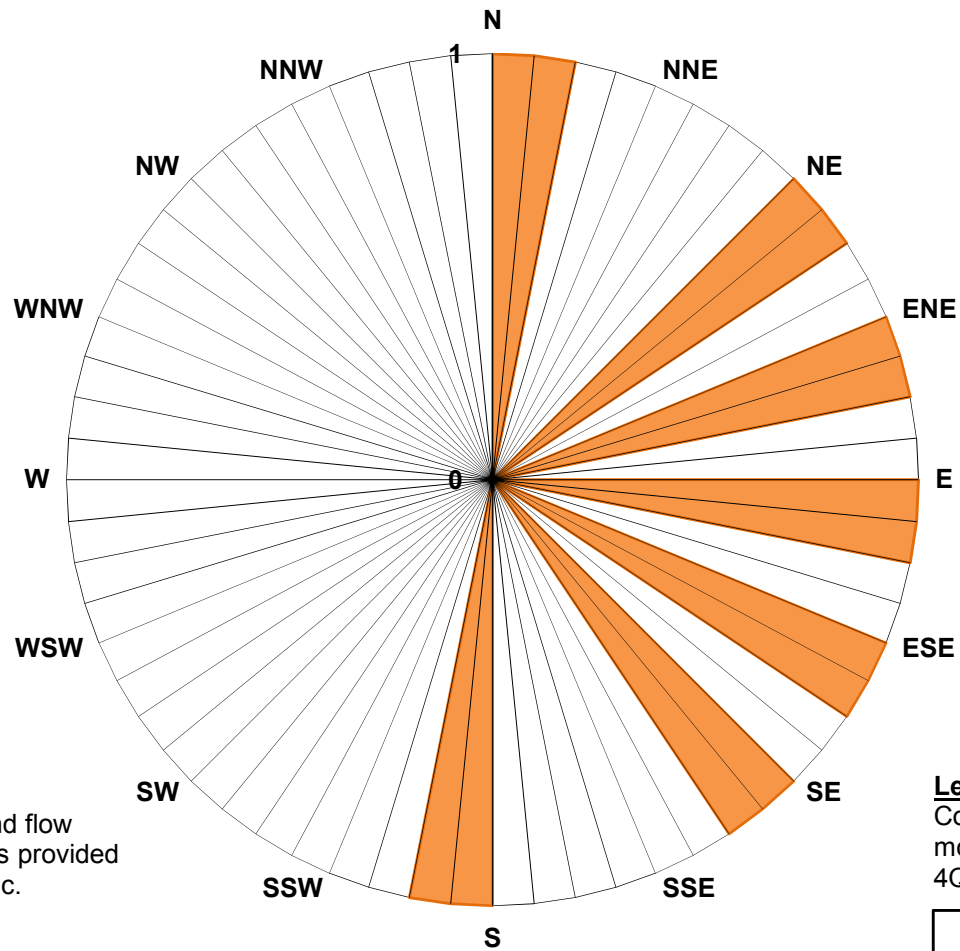


FORMER ARCO STATION NO. 402
 1450 FRUITVALE AVENUE
 OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP
DECEMBER 23, 2016

Figure 4
GROUNDWATER FLOW DIRECTION ROSE DIAGRAM

Former ARCO Service Station No. 0402
1450 Fruitvale Avenue
Oakland, California

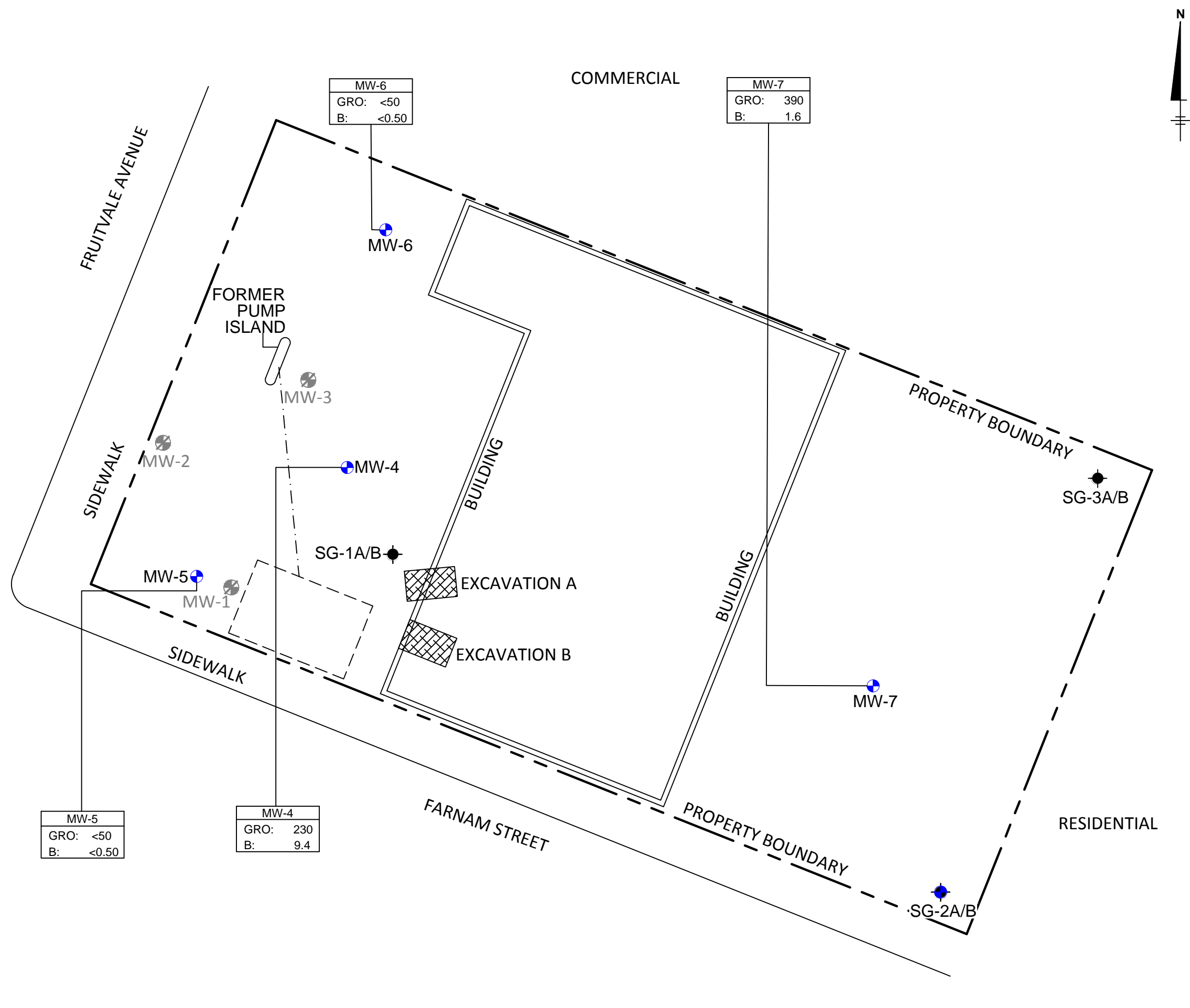


Note
Historic groundwater gradient and flow direction data, prior to 4Q16, was provided by Broadbent and Associates, Inc.

Legend
Concentric circles represent 7 monitoring events beginning 4Q13 through 4Q16.

Groundwater Flow Direction

CITY:MUMBAI DIV/GRUPE/ENV/CAD DB:AMRITA KAUR LDE: PIC: PM:TM: ES: D:\Amrita Kaur\BP CA 0402\Combined CAD_CA_0402_02-15-2017\New folder\402 - SITE ANALYSIS CONCENTRATION MAP.dwg LAYOUT: 8.5X11 SAVED: 22/12/2017 10:01 AM ACADVER: 20.05 (LMS TECH) PAGES: 1 PLOTSTYLETABLE: ACAD.CTB PLOTTED: 2/21/2017 10:15 AM BY: AMRITA KAUR



MW-5
GRO: <50
B: <0.50

MW-4
GRO: 230
B: 9.4

MW-6
GRO: <50
B: <0.50

MW-7
GRO: 390
B: 1.6

LEGEND:

- MONITORING WELL LOCATION
- SOIL VAPOUR PROBE WELL
- DESTROYED MONITORING WELL
- FORMER PRODUCT LINES
- FORMER UST LOCATION
- EXCAVATION

MW-7	SAMPLE LOCATION ID
GRO: 390	CONCENTRATION (µg/L)
B: 1.6	GRO: GASOLINE RANGE ORGANICS
	B: BENZENE

< LESS THAN LABORATORY REPORTING LIMIT

- NOTE:**
- 1) SITE MAP ADAPTED FROM BROADBENT & ASSOCIATES, INC. FIGURES, SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
 - 2) ALL MONITORING WELLS WERE GAUGED AND SAMPLED ON DECEMBER 23, 2016.



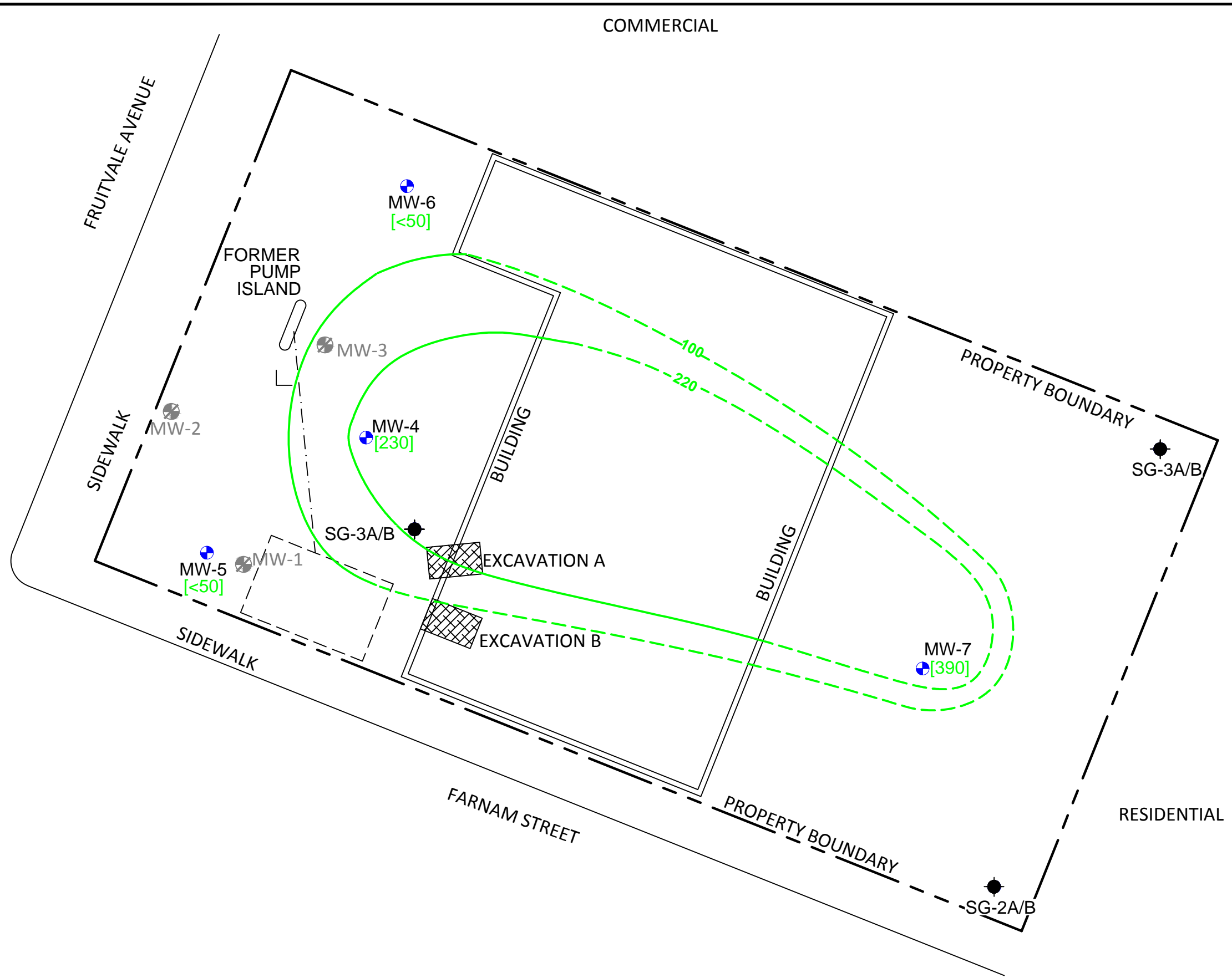
FORMER ARCO STATION NO. 402
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

**GROUNDWATER ANALYSIS
CONCENTRATION MAP
DECEMBER 23, 2016**

ARCADIS Design & Consultancy
for natural and built assets

FIGURE **5**

CITY:MUMBAI DIV/GROUP:ENV/CAD DB:AMRITA KAUR, L.D.E. PIC: PM: TM: ES: D:\Amrita Kaur\BP CA 0402\Combined CAD CA 0402_02-15-2017\New folder\402 - GRO CONCENTRATION.dwg LAYOUT: 8.5X11. SAVED: 2/21/2017 10:04 AM. ACADVER: 20.05 (LMS TECH). PAGESETUP: PLOTSTYLETABLE: ACAD.CTB. PLOTTED: 2/21/2017 10:16 AM. BY: AMRITA KAUR



- LEGEND:**
- MONITORING WELL LOCATION
 - SOIL VAPOUR PROBE WELL
 - DESTROYED MONITORING WELL
 - FORMER PRODUCT LINES
 - FORMER UST LOCATION
 - EXCAVATION
 - [230] GRO CONCENTRATION (µg/L)
 - 220 GRO CONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)

- NOTE:**
- 1) SITE MAP ADAPTED FROM BROADBENT & ASSOCIATES, INC. FIGURES, SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
 - 2) SAN FRANCISCO REGIONAL WATER QUALITY CONTROL BOARD ENVIRONMENTAL SCREENING LEVEL (ESL) - DIRECT EXPOSURE HUMAN HEALTH RISK LEVEL, MCL PRIORITY=220 µg/L.
 - 3) ALL MONITORING WELLS WERE GAUGED AND SAMPLED ON DECEMBER 23, 2016.

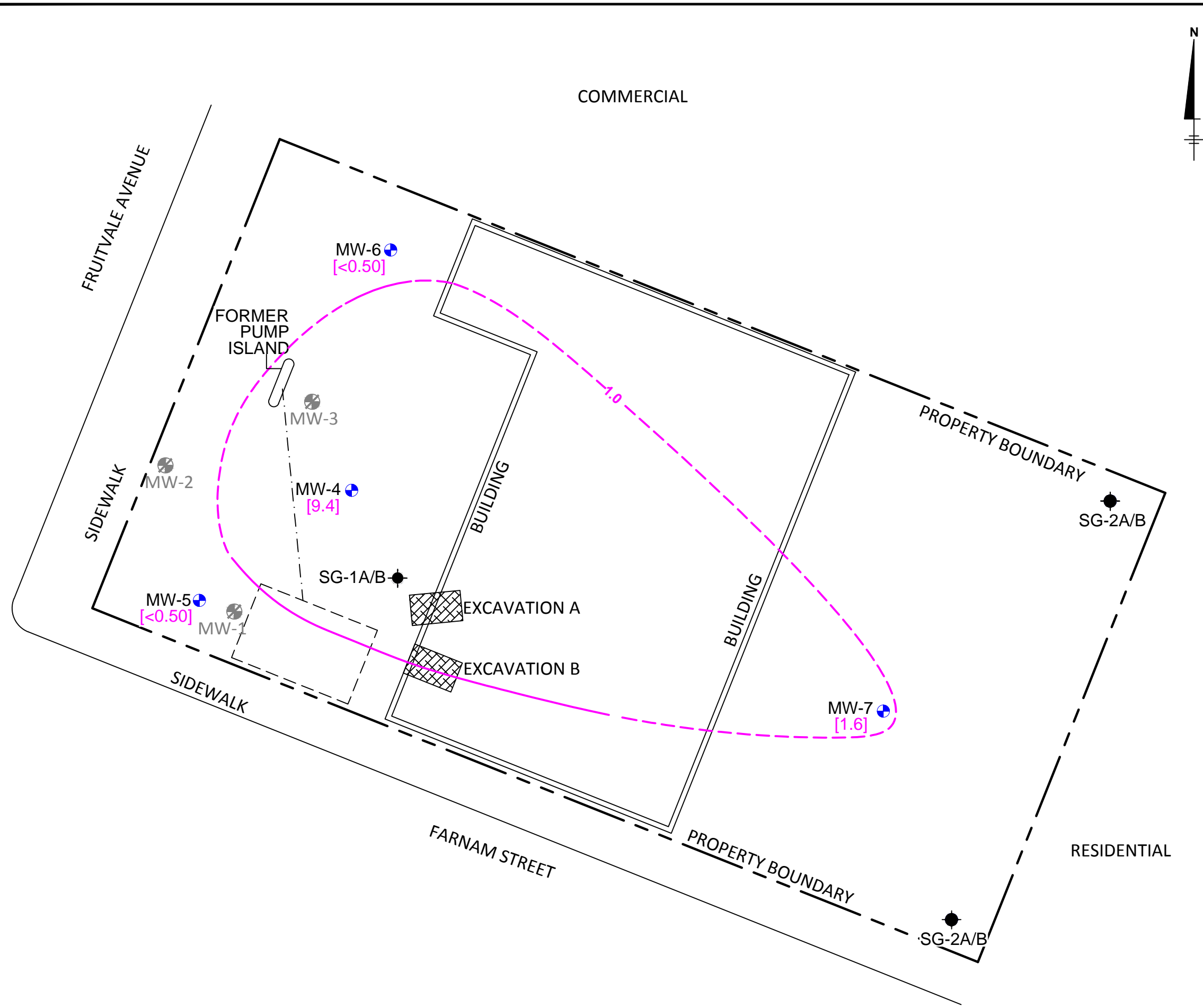


FORMER ARCO STATION NO. 402
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

**GRO CONCENTRATION MAP
DECEMBER 23, 2016**

ARCADIS Design & Consultancy
for natural and built assets

FIGURE **6**



- LEGEND:**
- MONITORING WELL LOCATION
 - SOIL VAPOUR PROBE WELL
 - DESTROYED MONITORING WELL
 - FORMER PRODUCT LINES
 - FORMER UST LOCATION
 - EXCAVATION
 - [9.4] BENZENE CONCENTRATION (µg/L)
 - 1- BENZENE CONCENTRATION CONTOUR (µg/L; DASHED WHERE INFERRED)

- NOTE:**
- 1) SITE MAP ADAPTED FROM BROADBENT & ASSOCIATES, INC. FIGURES, SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.
 - 2) SAN FRANCISCO REGIONAL WATER QUALITY CONTROL BOARD ENVIRONMENTAL SCREENING LEVEL (ESL) - DIRECT EXPOSURE HUMAN HEALTH RISK LEVEL, MCL PRIORITY=1.0 µg/L.
 - 3) ALL MONITORING WELLS WERE GAUGED AND SAMPLED ON DECEMBER 23, 2016.



FORMER ARCO STATION NO. 402
1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

**BENZENE CONCENTRATION MAP
DECEMBER 23, 2016**

ARCADIS Design & Consultancy
for natural and
built assets

FIGURE **7**

ATTACHMENT 1

Groundwater Sampling Data Package



WELL GAUGING DATA

Project # 161223-CW Date 12/23/16 Client ARCADIS

Site 1450 FRUITVALE AVE, OAKLAND

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-4	1156	2					6.72	27.78	↓	
MW-5	1148	2				6.18	27.74			
MW-6	1145	2				8.75	27.72			
MW-7	1153	2				9.46	31.79	↓		

BP ARCO LOW FLOW WELL MONITORING DATA SHEET

Project #: 161223-CK2	Station #: 402
Sampler: MM	Start Date: 12-23-16
Well I.D.: MW-4	Well Diameter: ② 3 4 6 8
Total Well Depth: 27.78	Depth to Water: 6.72
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVC Grade	DO Meter: _____

Purge Method: Peristaltic Bladder Pump Electric Submersible
 Sampling Method: Dedicated Tubing New Tubing
 Instruments Used: Myron L Ultrameter HACH Turbidimeter
 Durham Geoslope Indicator YSI 556 Flow-Thru Cell
 GeoTech Interface Probe YSI 550 DO Meter
 MMC Interface Probe Other: _____

Flow Rate: 100 mL/min START PURGE: 1257 Pump Depth: 23.00'

Time	Temp. (°C or °F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Depth to Water
1300	16.6	6.93	1003	18	2.68	90.0	300	6.79
1303	17.6	6.73	1037	19	2.50	90.9	600	6.84
1306	17.8	6.65	1033	20	2.22	87.5	900	6.88
1309	17.5	6.60	1023	20	1.87	76.5	1200	6.91
1312	17.6	6.58	1030	22	1.81	72.6	1500	6.94
1315	17.6	6.56	1036	21	1.78	68.2	1800	6.97

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: <u>1800 mL</u>
Sampling Time: <u>1316</u>	Sampling Date: <u>12-23-16</u>
Sample I.D.: <u>MW-4</u>	Laboratory: <u>Test America</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>see vol</u>
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

BP ARCU LOW FLOW WELL MONITORING DATA SHEET

Project #: 161223-002	Station #: 402
Sampler: cu	Start Date: 12/23/16
Well I.D.: mw-5	Well Diameter: (2) 3 4 6 8
Total Well Depth: 27.74	Depth to Water: 6.18
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: eye Grade	DO Meter: YSI 990 PWS

Purge Method: Peristaltic Sampling Method: Dedicated Tubing Instruments Used: Myron L Ultrameter HACH Turbidimeter
 Bladder Pump Electric Submersible New Tubing Durham Geoslope Indicator YSI 556 Flow-Thru Cell
 GeoTech Interface Probe YSI 550 DO Meter
 MMC Interface Probe Other: _____
 Flow Rate: 200 ml/min Pump Depth: 23.00

Time	Temp. (C or F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water
1244	17.7	6.79	683	80	1.21	-209.7	600	6.18
1247	17.7	6.79	660	75	1.02	-212.1	1200	6.18
1250	17.8	6.77	652	70	0.90	-213.4	1800	6.18
1253	17.8	6.74	648	48	0.70	-214.9	2400	6.18
1256	17.8	6.74	648	46	0.68	-216.1	3000	6.18
1259	17.8	6.74	646	46	0.68	-216.3	3600	6.18

Did well dewater? Yes <u>No</u>	Amount actually evacuated: 3600
Sampling Time: 1300	Sampling Date: 12/23/16
Sample I.D.: mw-5	Laboratory: Test America
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>SEB COC</u>
Equipment Blank I.D.: @	Duplicate I.D.:

BP ARCO LOW FLOW WELL MONITORING DATA SHEET

Project #: 161223-CK1	Station #: 402
Sampler: Cu	Start Date: 12/23/16
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth: 27.72	Depth to Water: 8.75
Depth to Free Product: ✓	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	DO Meter: 411 PPO PWS

Purge Method:

Sampling Method:

Instruments Used:

(Peristaltic)
Bladder Pump
Electric Submersible

Dedicated Tubing
(New Tubing)

Myron L Ultrameter HACH Turbidimeter
Durham Geoslope Indicator YSI 556 Flow Thru Cell
GeoTech Interface Probe YSI 550 DO Meter
MMC Interface Probe Other: _____

Flow Rate: 200 mL/min

Pump Depth: 23.0'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water
1215	16.1	6.70	1091	40	1.20	-190.2	600	8.75
1221	16.1	6.48	1090	30	0.78	-206.7	1200	8.75
1224	16.2	6.44	1090	21	0.60	-210.2	1800	8.75
1227	16.2	6.44	1088	20	0.61	-210.9	2400	8.75
1230	16.2	6.44	1088	20	0.60	-211.3	3000	8.75

Did well dewater? Yes (No)

Amount actually evacuated: 3000

Sampling Time: 1232

Sampling Date: 12/23/16

Sample I.D.: MW 6

Laboratory: Test America

Analyzed for: TPH-G BTEX MTBE TPH-D

Other: SEC COC

Equipment Blank I.D.: T217 TB-402 @ -1232016 Time 1145

Duplicate I.D.:

BP ARCO LOW FLOW WELL MONITORING DATA SHEET

Project #: 16/1223-CK2	Station #: 462
Sampler: MM	Start Date: 12-23-16
Well I.D.: MW-7	Well Diameter: ② 3 4 6 8
Total Well Depth: 31.78	Depth to Water: 9.46
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVC Grade	DO Meter: 27.00

Purge Method:

Sampling Method:

Instruments Used:

Peristaltic
Bladder Pump
Electric Submersible

Dedicated Tubing
New Tubing

Myron L Ultrameter
Durham Geoslope Indicator
GeoTech Interface Probe
MMC Interface Probe
HACH Turbidimeter
YSI 556 Flow-Thru Cell
YSI 550 DO Meter
Other: _____

Flow Rate: 200 mL/min START PURGE 1226

Pump Depth: 27.00

Time	Temp. (°C or °F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	DTW Depth to Water
1229	17.1	6.60	1154	10	0.76	66.1	600	9.46 clear
1232	17.3	6.41	1205	10	0.53	30.8	1200	9.48
1235	17.1	6.36	1209	11	0.45	20.0	1800	9.49
1238	17.6	6.34	1208	10	0.38	12.2	2400	9.49
1241	17.5	6.33	1214	9	0.36	8.0	3000	9.50
1244	17.4	6.32	1217	9	0.35	5.2	3600	9.50 ↓

Did well dewater? Yes No

Amount actually evacuated: 3600 mL

Sampling Time: 1245

Sampling Date: 12-23-16

Sample I.D.: MW-7

Laboratory: Test America

Analyzed for: TPH-G BTEX MTBE TPH-D

Other: see coc

Equipment Blank I.D.: @ Time

Duplicate I.D.:

WELLHEAD INSPECTION CHECKLIST

Client ARCADIS Date 12/23/10

Site Address 1450 FRUITVALE AVE, OAKLAND

Job Number 161223-CW2 Technician CU/AM

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-4	X							
MW-5	X	f						
MW-6	X	f						
MW-7	f	X						

NOTES: _____

ARCADIS Project Name: CA 402

Req Due Date (mm/dd/yy): Standard TAT Rush TAT: Yes No

Lab Work Order Number: _____

Lab Name: <u>Test America</u>				Facility Address: <u>1450 Fruitvale Ave.</u>				Consultant/Contractor: <u>Blaine Tech Services, Inc.</u>											
Lab Address: <u>1220 Quarry Lane, Pleasanton, CA, 94566</u>				City, State, ZIP Code: <u>Oakland, CA</u>				Blaine Tech Project No: <u>ARCADIS/BP-402</u>											
Lab PM: <u>Dimple Sharma</u>				Lead Regulatory Agency: <u>Alameda County Env. Health Svcs</u>				Consultant/Contractor Address: <u>1680 Rogers Ave., San Jose, CA 95112</u>											
Lab Phone: <u>925.484.1919</u>				California Global ID No.: <u>T06019734265</u>				Consultant/Contractor PM: <u>Michael Ninokata</u>											
Lab Shipping Acct:				ARCADIS Project No: <u>GP09BPNA.CA02</u>				Phone: <u>408.573.0555 x202</u>											
Lab Bottle Order No:				ARCADIS PM/ Phone: <u>Carl Edwards</u>				Email EDD To: <u>carl.edwards@arcadis.com</u>											
Other Info:				Email: <u>carl.edwards@arcadis.com</u>				Invoice To: <u>ARCADIS</u> <input checked="" type="checkbox"/> Contractor _____											
				Matrix		No. Containers / Preservative				Requested Analyses						Report Type & QC Level			
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO 8260B	BTEX 8260B	(5) Oxygenates 8260B	1,2-DCA, EDB 8260B	Ethanol 8260B	Standard <u>x</u>	
																		Full Data Package _____	
																			Comments
																			Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.
	<u>TB-402-12232aL</u>	<u>12/23/16</u>	<u>1145</u>	<input checked="" type="checkbox"/>			<u>2</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<u>ON HOLD</u>
	<u>MW-4</u>	<u> </u>	<u>1316</u>	<input checked="" type="checkbox"/>			<u>3</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	<u>MW-5</u>	<u> </u>	<u>1300</u>	<input checked="" type="checkbox"/>			<u>3</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	<u>MW-6</u>	<u> </u>	<u>1232</u>	<input checked="" type="checkbox"/>			<u>3</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
	<u>MW-7</u>	<u> </u>	<u>1245</u>	<input checked="" type="checkbox"/>			<u>3</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Sampler's Name: <u>Carl Edwards</u>				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time				
Sampler's Company: <u>BLAINE TECH</u>				<u>CE / BTS</u>				<u>12/23/16</u>	<u>1530</u>	<u>Carl Edwards (S.C.)</u>				<u>12/23/16</u>	<u>1530</u>				
Shipment Method: <u>COOLER</u> Ship Date:																			
Shipment Tracking No:																			
Special Instructions:																			
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No				Temp Blank: Yes / No				Cooler Temp on Receipt: _____ °F/C				Trip Blank: Yes / No		MS/MSD Sample Submitted: Yes / No					

ATTACHMENT 2

Laboratory Report



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

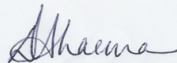
TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-76689-1

Client Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

For:
ARCADIS U.S., Inc
2000 Powell Street 7th Floor
Emeryville, California 94608

Attn: Carl Edwards



Authorized for release by:
1/4/2017 5:19:48 PM

Dimple Sharma, Senior Project Manager
(925)484-1919
dimple.sharma@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: ARCADIS U.S., Inc
Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S., Inc
Project/Site: BP-402– 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Job ID: 720-76689-1

Laboratory: TestAmerica Pleasanton

Narrative

**Job Narrative
720-76689-1**

Comments

No additional comments.

Receipt

The samples were received on 12/27/2016 12:54 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Detection Summary

Client: ARCADIS U.S., Inc
Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-4

Lab Sample ID: 720-76689-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.4		0.50		ug/L	1		8260B	Total/NA
Ethylbenzene	0.78		0.50		ug/L	1		8260B	Total/NA
Xylenes, Total	1.1		1.0		ug/L	1		8260B	Total/NA
DIPE	0.82		0.50		ug/L	1		8260B	Total/NA
Gasoline Range Organics (GRO) -C6-C12	230		50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 720-76689-3

No Detections.

Client Sample ID: MW-6

Lab Sample ID: 720-76689-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	11		0.50		ug/L	1		8260B	Total/NA
DIPE	0.82		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 720-76689-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.6		0.50		ug/L	1		8260B	Total/NA
Ethylbenzene	1.2		0.50		ug/L	1		8260B	Total/NA
Gasoline Range Organics (GRO) -C6-C12	390		50		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-4
Date Collected: 12/23/16 13:16
Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	9.4		0.50		ug/L			01/03/17 23:58	1
Ethylbenzene	0.78		0.50		ug/L			01/03/17 23:58	1
Ethanol	ND		500		ug/L			01/03/17 23:58	1
MTBE	ND		0.50		ug/L			01/03/17 23:58	1
TAME	ND		0.50		ug/L			01/04/17 04:08	1
Ethyl t-butyl ether	ND		0.50		ug/L			01/04/17 04:08	1
Toluene	ND		0.50		ug/L			01/03/17 23:58	1
EDB	ND		0.50		ug/L			01/03/17 23:58	1
Xylenes, Total	1.1		1.0		ug/L			01/03/17 23:58	1
1,2-DCA	ND		0.50		ug/L			01/03/17 23:58	1
TBA	ND		20		ug/L			01/03/17 23:58	1
DIPE	0.82		0.50		ug/L			01/03/17 23:58	1
Gasoline Range Organics (GRO)	230		50		ug/L			01/03/17 23:58	1
-C6-C12									

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	111		67 - 130		01/03/17 23:58	1
4-Bromofluorobenzene	102		67 - 130		01/04/17 04:08	1
1,2-Dichloroethane-d4 (Surr)	89		72 - 130		01/03/17 23:58	1
1,2-Dichloroethane-d4 (Surr)	100		72 - 130		01/04/17 04:08	1
Toluene-d8 (Surr)	109		70 - 130		01/03/17 23:58	1
Toluene-d8 (Surr)	101		70 - 130		01/04/17 04:08	1

Client Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-5
Date Collected: 12/23/16 13:00
Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			01/04/17 00:26	1
Ethylbenzene	ND		0.50		ug/L			01/04/17 00:26	1
Ethanol	ND		500		ug/L			01/04/17 00:26	1
MTBE	ND		0.50		ug/L			01/04/17 00:26	1
TAME	ND		0.50		ug/L			01/04/17 04:36	1
Ethyl t-butyl ether	ND		0.50		ug/L			01/04/17 04:36	1
Toluene	ND		0.50		ug/L			01/04/17 00:26	1
EDB	ND		0.50		ug/L			01/04/17 00:26	1
Xylenes, Total	ND		1.0		ug/L			01/04/17 00:26	1
1,2-DCA	ND		0.50		ug/L			01/04/17 00:26	1
TBA	ND		20		ug/L			01/04/17 00:26	1
DIPE	ND		0.50		ug/L			01/04/17 00:26	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			01/04/17 00:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	103		67 - 130		01/04/17 00:26	1
4-Bromofluorobenzene	101		67 - 130		01/04/17 04:36	1
1,2-Dichloroethane-d4 (Surr)	88		72 - 130		01/04/17 00:26	1
1,2-Dichloroethane-d4 (Surr)	100		72 - 130		01/04/17 04:36	1
Toluene-d8 (Surr)	106		70 - 130		01/04/17 00:26	1
Toluene-d8 (Surr)	101		70 - 130		01/04/17 04:36	1

Client Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-6
Date Collected: 12/23/16 12:32
Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			01/04/17 00:54	1
Ethylbenzene	ND		0.50		ug/L			01/04/17 00:54	1
Ethanol	ND		500		ug/L			01/04/17 00:54	1
MTBE	11		0.50		ug/L			01/04/17 00:54	1
TAME	ND		0.50		ug/L			01/04/17 05:05	1
Ethyl t-butyl ether	ND		0.50		ug/L			01/04/17 05:05	1
Toluene	ND		0.50		ug/L			01/04/17 00:54	1
EDB	ND		0.50		ug/L			01/04/17 00:54	1
Xylenes, Total	ND		1.0		ug/L			01/04/17 00:54	1
1,2-DCA	ND		0.50		ug/L			01/04/17 00:54	1
TBA	ND		20		ug/L			01/04/17 00:54	1
DIPE	0.82		0.50		ug/L			01/04/17 00:54	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			01/04/17 00:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		67 - 130		01/04/17 00:54	1
4-Bromofluorobenzene	95		67 - 130		01/04/17 05:05	1
1,2-Dichloroethane-d4 (Surr)	93		72 - 130		01/04/17 00:54	1
1,2-Dichloroethane-d4 (Surr)	101		72 - 130		01/04/17 05:05	1
Toluene-d8 (Surr)	100		70 - 130		01/04/17 00:54	1
Toluene-d8 (Surr)	95		70 - 130		01/04/17 05:05	1

Client Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-7
Date Collected: 12/23/16 12:45
Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.6		0.50		ug/L			01/04/17 01:22	1
Ethylbenzene	1.2		0.50		ug/L			01/04/17 01:22	1
Ethanol	ND		500		ug/L			01/04/17 01:22	1
MTBE	ND		0.50		ug/L			01/04/17 01:22	1
TAME	ND		0.50		ug/L			01/04/17 05:33	1
Ethyl t-butyl ether	ND		0.50		ug/L			01/04/17 05:33	1
Toluene	ND		0.50		ug/L			01/04/17 01:22	1
EDB	ND		0.50		ug/L			01/04/17 01:22	1
Xylenes, Total	ND		1.0		ug/L			01/04/17 01:22	1
1,2-DCA	ND		0.50		ug/L			01/04/17 01:22	1
TBA	ND		20		ug/L			01/04/17 01:22	1
DIPE	ND		0.50		ug/L			01/04/17 01:22	1
Gasoline Range Organics (GRO)	390		50		ug/L			01/04/17 01:22	1

-C6-C12

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	115		67 - 130		01/04/17 01:22	1
4-Bromofluorobenzene	97		67 - 130		01/04/17 05:33	1
1,2-Dichloroethane-d4 (Surr)	94		72 - 130		01/04/17 01:22	1
1,2-Dichloroethane-d4 (Surr)	99		72 - 130		01/04/17 05:33	1
Toluene-d8 (Surr)	104		70 - 130		01/04/17 01:22	1
Toluene-d8 (Surr)	97		70 - 130		01/04/17 05:33	1

Surrogate Summary

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (67-130)	12DCE (72-130)	TOL (70-130)
720-76689-2	MW-4	111	89	109
720-76689-2	MW-4	102	100	101
720-76689-2 MS	MW-4	112	100	110
720-76689-2 MSD	MW-4	105	84	108
720-76689-3	MW-5	103	88	106
720-76689-3	MW-5	101	100	101
720-76689-4	MW-6	98	93	100
720-76689-4	MW-6	95	101	95
720-76689-5	MW-7	115	94	104
720-76689-5	MW-7	97	99	97
LCS 720-215654/5	Lab Control Sample	100	93	104
LCS 720-215654/7	Lab Control Sample	100	86	102
LCS 720-215655/5	Lab Control Sample	95	94	98
LCSD 720-215654/6	Lab Control Sample Dup	96	85	102
LCSD 720-215654/9	Lab Control Sample Dup	99	88	103
LCSD 720-215655/6	Lab Control Sample Dup	97	98	98
MB 720-215654/8	Method Blank	101	88	104
MB 720-215655/8	Method Blank	102	99	98

Surrogate Legend

BFB = 4-Bromofluorobenzene
 12DCE = 1,2-Dichloroethane-d4 (Surr)
 TOL = Toluene-d8 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-215654/8

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			01/03/17 21:36	1
Ethylbenzene	ND		0.50		ug/L			01/03/17 21:36	1
Ethanol	ND		500		ug/L			01/03/17 21:36	1
MTBE	ND		0.50		ug/L			01/03/17 21:36	1
Toluene	ND		0.50		ug/L			01/03/17 21:36	1
EDB	ND		0.50		ug/L			01/03/17 21:36	1
Xylenes, Total	ND		1.0		ug/L			01/03/17 21:36	1
1,2-DCA	ND		0.50		ug/L			01/03/17 21:36	1
TBA	ND		20		ug/L			01/03/17 21:36	1
DIPE	ND		0.50		ug/L			01/03/17 21:36	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			01/03/17 21:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101		67 - 130		01/03/17 21:36	1
1,2-Dichloroethane-d4 (Surr)	88		72 - 130		01/03/17 21:36	1
Toluene-d8 (Surr)	104		70 - 130		01/03/17 21:36	1

Lab Sample ID: LCS 720-215654/5

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	22.7		ug/L		91	79 - 130
Ethylbenzene	25.0	21.6		ug/L		87	80 - 120
Ethanol	1000	1010		ug/L		101	31 - 216
m-Xylene & p-Xylene	25.0	22.9		ug/L		92	70 - 142
MTBE	25.0	23.2		ug/L		93	62 - 130
Toluene	25.0	22.5		ug/L		90	78 - 120
EDB	25.0	27.3		ug/L		109	70 - 130
1,2-DCA	25.0	22.6		ug/L		90	61 - 132
TBA	250	255		ug/L		102	70 - 130
DIPE	25.0	20.3		ug/L		81	69 - 134
o-Xylene	25.0	22.9		ug/L		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	93		72 - 130
Toluene-d8 (Surr)	104		70 - 130

Lab Sample ID: LCS 720-215654/7

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	500	455		ug/L		91	58 - 120

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-215654/7

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	86		72 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 720-215654/6

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	25.0	22.2		ug/L		89	79 - 130	3	20
Ethylbenzene	25.0	22.0		ug/L		88	80 - 120	1	20
Ethanol	1000	1130		ug/L		113	31 - 216	12	30
m-Xylene & p-Xylene	25.0	23.0		ug/L		92	70 - 142	0	20
MTBE	25.0	20.4		ug/L		82	62 - 130	13	20
Toluene	25.0	22.6		ug/L		90	78 - 120	1	20
EDB	25.0	24.4		ug/L		98	70 - 130	11	20
1,2-DCA	25.0	20.7		ug/L		83	61 - 132	9	20
TBA	250	267		ug/L		107	70 - 130	4	20
DIPE	25.0	19.3		ug/L		77	69 - 134	5	20
o-Xylene	25.0	22.6		ug/L		90	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	85		72 - 130
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 720-215654/9

Matrix: Water

Analysis Batch: 215654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	500	449		ug/L		90	58 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	88		72 - 130
Toluene-d8 (Surr)	103		70 - 130

Lab Sample ID: 720-76689-2 MS

Matrix: Water

Analysis Batch: 215654

Client Sample ID: MW-4

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	9.4		25.0	33.9		ug/L		98	60 - 140
Ethylbenzene	0.78		25.0	22.5		ug/L		87	60 - 140
Ethanol	ND		1000	813		ug/L		81	60 - 140
m-Xylene & p-Xylene	1.1		25.0	23.6		ug/L		90	60 - 140

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 720-76689-2 MS

Matrix: Water

Analysis Batch: 215654

Client Sample ID: MW-4

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
MTBE	ND		25.0	25.9		ug/L		104	60 - 138
Toluene	ND		25.0	21.9		ug/L		87	60 - 140
EDB	ND		25.0	30.0		ug/L		120	60 - 140
1,2-DCA	ND		25.0	26.9		ug/L		108	60 - 140
TBA	ND		250	240		ug/L		96	60 - 140
DIPE	0.82		25.0	23.3		ug/L		90	60 - 140
o-Xylene	ND		25.0	23.3		ug/L		93	60 - 140

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	112		67 - 130
1,2-Dichloroethane-d4 (Surr)	100		72 - 130
Toluene-d8 (Surr)	110		70 - 130

Lab Sample ID: 720-76689-2 MSD

Matrix: Water

Analysis Batch: 215654

Client Sample ID: MW-4

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Benzene	9.4		25.0	34.1		ug/L		99	60 - 140	1	20
Ethylbenzene	0.78		25.0	22.4		ug/L		86	60 - 140	1	20
Ethanol	ND		1000	988		ug/L		99	60 - 140	19	20
m-Xylene & p-Xylene	1.1		25.0	23.7		ug/L		90	60 - 140	0	20
MTBE	ND		25.0	23.9		ug/L		96	60 - 138	8	20
Toluene	ND		25.0	22.8		ug/L		90	60 - 140	4	20
EDB	ND		25.0	27.6		ug/L		111	60 - 140	8	20
1,2-DCA	ND		25.0	23.8		ug/L		95	60 - 140	12	20
TBA	ND		250	242		ug/L		97	60 - 140	1	20
DIPE	0.82		25.0	23.8		ug/L		92	60 - 140	2	20
o-Xylene	ND		25.0	22.8		ug/L		91	60 - 140	2	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	105		67 - 130
1,2-Dichloroethane-d4 (Surr)	84		72 - 130
Toluene-d8 (Surr)	108		70 - 130

Lab Sample ID: MB 720-215655/8

Matrix: Water

Analysis Batch: 215655

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
TAME	ND		0.50		ug/L			01/03/17 21:57	1
Ethyl t-butyl ether	ND		0.50		ug/L			01/03/17 21:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene	102		67 - 130		01/03/17 21:57	1
1,2-Dichloroethane-d4 (Surr)	99		72 - 130		01/03/17 21:57	1
Toluene-d8 (Surr)	98		70 - 130		01/03/17 21:57	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-215655/5

Matrix: Water

Analysis Batch: 215655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
TAME	25.0	23.5		ug/L		94	79 - 130
Ethyl t-butyl ether	25.0	24.0		ug/L		96	70 - 130

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	95		67 - 130
1,2-Dichloroethane-d4 (Surr)	94		72 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: LCSD 720-215655/6

Matrix: Water

Analysis Batch: 215655

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
TAME	25.0	24.4		ug/L		98	79 - 130	4	20
Ethyl t-butyl ether	25.0	24.7		ug/L		99	70 - 130	3	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	97		67 - 130
1,2-Dichloroethane-d4 (Surr)	98		72 - 130
Toluene-d8 (Surr)	98		70 - 130

QC Association Summary

Client: ARCADIS U.S., Inc
Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

GC/MS VOA

Analysis Batch: 215654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-76689-2	MW-4	Total/NA	Water	8260B	
720-76689-3	MW-5	Total/NA	Water	8260B	
720-76689-4	MW-6	Total/NA	Water	8260B	
720-76689-5	MW-7	Total/NA	Water	8260B	
MB 720-215654/8	Method Blank	Total/NA	Water	8260B	
LCS 720-215654/5	Lab Control Sample	Total/NA	Water	8260B	
LCS 720-215654/7	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-215654/6	Lab Control Sample Dup	Total/NA	Water	8260B	
LCSD 720-215654/9	Lab Control Sample Dup	Total/NA	Water	8260B	
720-76689-2 MS	MW-4	Total/NA	Water	8260B	
720-76689-2 MSD	MW-4	Total/NA	Water	8260B	

Analysis Batch: 215655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-76689-2	MW-4	Total/NA	Water	8260B	
720-76689-3	MW-5	Total/NA	Water	8260B	
720-76689-4	MW-6	Total/NA	Water	8260B	
720-76689-5	MW-7	Total/NA	Water	8260B	
MB 720-215655/8	Method Blank	Total/NA	Water	8260B	
LCS 720-215655/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-215655/6	Lab Control Sample Dup	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc
 Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Client Sample ID: MW-4

Date Collected: 12/23/16 13:16

Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	215655	01/04/17 04:08	MJK	TAL PLS
Total/NA	Analysis	8260B		1	215654	01/03/17 23:58	MJK	TAL PLS

Client Sample ID: MW-5

Date Collected: 12/23/16 13:00

Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	215655	01/04/17 04:36	MJK	TAL PLS
Total/NA	Analysis	8260B		1	215654	01/04/17 00:26	MJK	TAL PLS

Client Sample ID: MW-6

Date Collected: 12/23/16 12:32

Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	215655	01/04/17 05:05	MJK	TAL PLS
Total/NA	Analysis	8260B		1	215654	01/04/17 00:54	MJK	TAL PLS

Client Sample ID: MW-7

Date Collected: 12/23/16 12:45

Date Received: 12/27/16 12:54

Lab Sample ID: 720-76689-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	215655	01/04/17 05:33	MJK	TAL PLS
Total/NA	Analysis	8260B		1	215654	01/04/17 01:22	MJK	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: ARCADIS U.S., Inc
Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-18

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Method Summary

Client: ARCADIS U.S., Inc
Project/Site: BP-402- 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



Sample Summary

Client: ARCADIS U.S., Inc
Project/Site: BP-402– 1450 Fruitvale Ave., Oakland

TestAmerica Job ID: 720-76689-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-76689-2	MW-4	Water	12/23/16 13:16	12/27/16 12:54
720-76689-3	MW-5	Water	12/23/16 13:00	12/27/16 12:54
720-76689-4	MW-6	Water	12/23/16 12:32	12/27/16 12:54
720-76689-5	MW-7	Water	12/23/16 12:45	12/27/16 12:54

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720-76689
 Chain of Custody Record

Ref # 173170

ARCADIS Project Name: CA 402

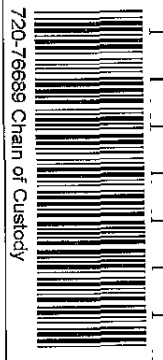
Reg Due Date (mm/dd/yy): Standard TAT
 Lab Work Order Number: Rush TAT: Yes ___ No ___ x ___

Lab Name: Test America	Facility Address: 1450 Fruitvale Ave.	City, State, ZIP Code: Oakland, CA	Consultant/Contractor: Blaine Tech Services, Inc
Lab Address: 1220 Quarry Lane, Pleasanton, CA, 94566			Blaine Tech Project No: ARCADIS/BR-402
Lab PM: Dimple Sharma	Lead Regulatory Agency: Alameda County Env. Health Svcs	California Global ID No: T06019734285	Consultant/Contractor Address: 1680 Rogers Ave., San Jose, CA 95112
Lab Phone: 925.484.1919	ARCADIS Project No: GP09BPNV.CA02	Phone: 408.573.0555 x202	Consultant/Contractor PM: Michael Ninokata
Lab Shipping Acct:	ARCADIS PM/Phone: Carl Edwards	Email EDD To: carl.edwards@arcadis.com	Invoice To: ARCADIS X Contractor: _____
Lab Bottle Order No:	Other Info:	Email: carl.edwards@arcadis.com	Report Type & QC Level: Standard <input checked="" type="checkbox"/> Full Data Package _____

Lab No.	Sample Description	Date	Time	Matrix			No. Containers / Preservative				Requested Analyses					Report Type & QC Level	Comments	
				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO 8260B	BTEX 8260B	(5) Oxygenates 8260B			1,2-DCA, EDB 8260B
	IB-402-122320AL	12/23/16	1145	X			2											
	MW-4		1316	X			3											
	MW-5		1300	X			3											
	MW-6		1232	X			3											
	MW-7		1245	X			3											

Sampler's Name: <i>Allen Vukobratovic</i>	Retinquished By / Affiliation: <i>SA 18-73</i>	Date: 12/23/16	Time: 1530	Accepted By / Affiliation: <i>SA/BTS (S.C.)</i>	Date: 12/23/16	Time: 1530
Sampler's Company: <i>BLANE TEST</i>						
Shipment Method: <i>COOLER</i>	Ship Date: <i>12/27/16</i>					
Shipment Tracking No: <i>53 853152</i>						
Special Instructions:						

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No



23°C
 No Hold
 Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc

Job Number: 720-76689-1

Login Number: 76689

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Arauz, Dennis

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

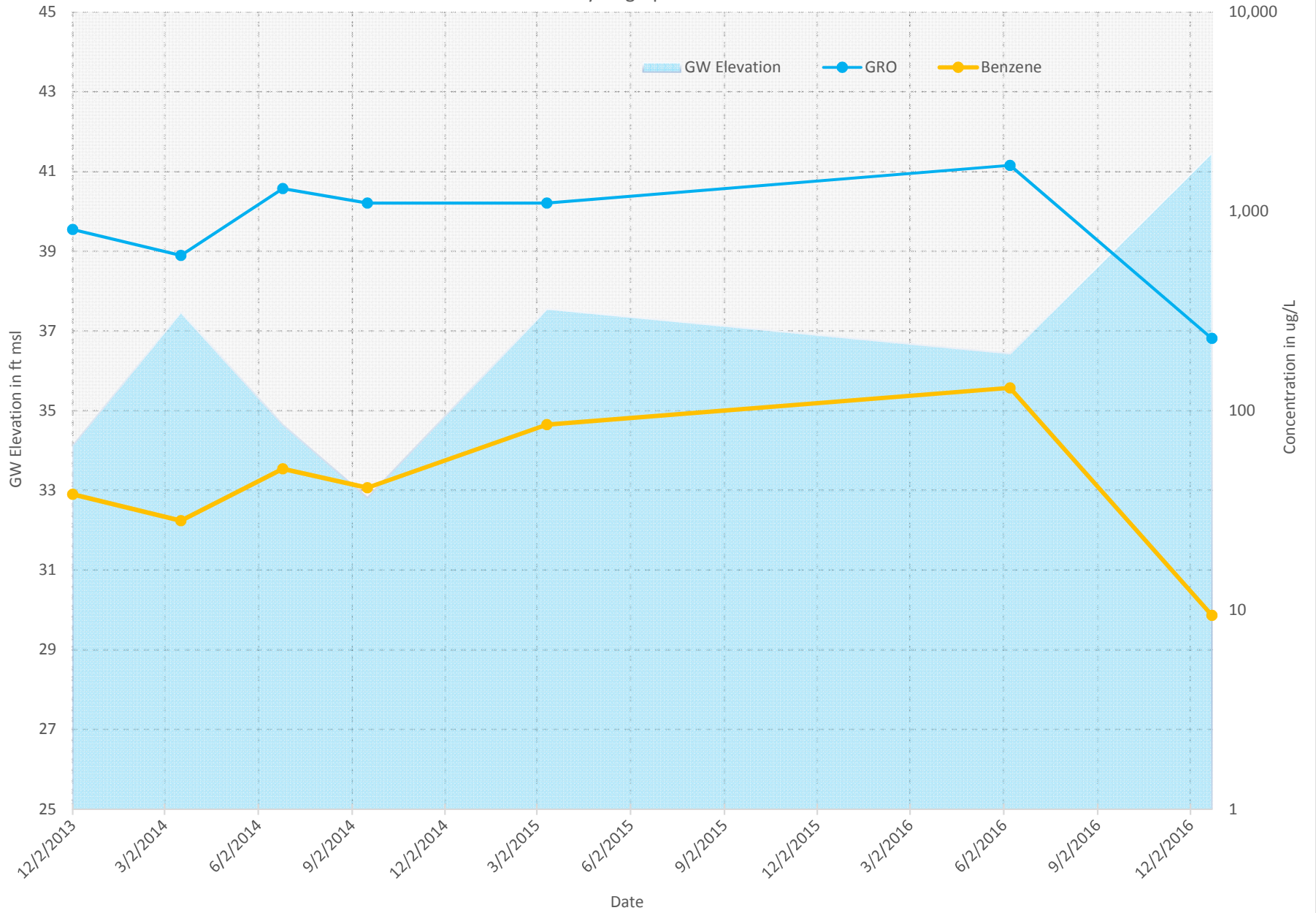


ATTACHMENT 3

Hydrographs



Hydrograph - MW-4



Hydrograph - MW-7

