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May 1, 2014

Ms. Dilan Roe
Alameda County Health Care Services Agency
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Alameda, California 94502-6577

Semi-Annual Summary Report, October 2013 through March 2014
76 (Former BP) Station No. 2611117
7210 Bancroft Avenue
Oakland, California
Fuel Leak Case No. RO0000356

Dear Ms. Roe:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact Mr. Dennis Dettloff at (916) 503-1261.

Sincerely,

A handwritten signature in black ink that reads "EQ Ralston".

Edward C. Ralston
Program Manager
Remediation Management

Semi-Annual Summary Report, October 2013 through March 2014

*76 (Former BP) Station No. 11117
7210 Bancroft Avenue
Oakland, California USA*

*Alameda County Environmental Health,
Fuel Leak Case No. R00000356
San Francisco Bay, Regional Water Quality
Control Board (REGION 2) - CASE # 01-0215*

*Antea Group Project No. I42611117
May 1, 2014*

Prepared for:
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Alameda County Health Care Services
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Semi-Annual Summary Report, October 2013 through March 2014

*76 (Former BP) Station No. 11117
7210 Bancroft Avenue, CA USA
Alameda County Health Care Services Agency
Fuel Leak Case No. RO0000356*

1.0 INTRODUCTION

Antea™Group prepared this *Semi-Annual Summary Report, October 2013 through March 2014*, for the 76 (Former BP) Station No. 11117 in Oakland, California (**Figure 1**). This report summarizes the data obtained from the most recent groundwater monitoring event conducted on February 4, 2014. Please refer to **Figure 2** for the site layout. **Appendix A** contains additional site information and a history of previous environmental investigations and remediation activities.

1.1 Work Performed, October 2013 through March 2014

1. Antea Group submitted the *Semi-Annual Monitoring Report – April through September 2013* to the Alameda County Health Care Services Agency (ACHCSA) on October 31, 2013.
2. Antea Group conducted a site investigation on October 14 through 18, 2013 including the advancement of nine cone penetrometer test (CPT) borings (CPT-4 through CPT-12).
3. Antea Group prepared and submitted the *Site Investigation Report*, dated January 24, 2014 to the ACHCSA.
4. Blaine Tech Services, Inc. (Blaine Tech) conducted the groundwater monitoring event on February 4, 2014.
5. Antea Group prepared and submitted the *Site Conceptual Model*, dated March 14, 2014 to the ACHCSA.

1.2 Work Proposed, April through September 2014

1. Antea Group will submit the *Semi-Annual Summary Report, October 2013 through March 2014* (contained herein) to ACHCSA by April 30, 2014.
2. Antea Group will review case files for a feasibility study/corrective action plan (FS/CAP), if a new FS/CAP is required, Antea Group will prepare and submit the FS/CAP.
3. Blaine Tech will conduct the semi-annual groundwater monitoring and sampling event during the third quarter of 2014.

2.0 CURRENT PROJECT STATUS

Current phase of project:	Semi-Annual Groundwater Monitoring
Monitoring well gauging schedule:	Semi-Annually (1Q, 3Q): MW-1, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, EX-1, and EX-2
Monitoring well sampling schedule:	Semi-Annually (1Q, 3Q): MW-4, MW-7, MW-9, MW-10, MW-11, EX-1, and EX-2 Annually (1Q): MW-1, MW-3, MW-6, and MW-8
Wells with historical measurable LNAPL (light non-aqueous phase liquid):	Yes, sporadic trace amounts in wells EX-2 and MW-4, and greater amounts in MW-2 between 1993 and 1998 (maximum of 4.25 feet was reported in well MW-2 on 1/25/1995).
Generalized site geology:	<u>Surface to ~3' bgs:</u> Gravel (Fill) <u>~3 to 30' bgs:</u> silt and silty sand <u>~30 to 45' bgs:</u> clay
Local receptors:	As many as 10 wells within one mile of the site, plus several sensitive receptors within 0.5 miles of the site. According to the October 2010 <i>Sensitive Receptor Survey</i> prepared by Delta Consultants, no receptors likely to have been impacted by release the from this site (see Appendix A)
Current remediation technique	None

2.1 Regulatory Correspondence

Antea Group did not receive or send any correspondence during this reporting period.

2.2 Remediation Activities

No remediation activities took place between October 2013 and March 2014. For a summary of previous remedial activities and pilot testing, please refer to **Appendix A**.

2.3 Groundwater Monitoring

During the February 4, 2014 groundwater monitoring event, Blaine Tech gauged, purged, and sampled twelve wells per their standard sampling protocol. Blaine Tech's monitoring, sampling, and purge water handling procedures are presented as **Appendix B**. Soil boring and well construction details are presented in **Table 1**. Blaine Tech's field data sheets are presented as **Appendix C**.

Well gauging and sampling date:	February 4, 2014
Wells gauged:	MW-1, MW-3, MW-4, MW-6 through MW-11, EX-1, EX-2, DPE-1
Wells sampled:	MW-1, MW-3, MW-4, MW-6 through MW-11, EX-1, EX-2, DPE-1
Purge method:	3 well casing volumes via electric, submersible pump, purged through a flow cell
Sample collection method:	Disposable bailers
Groundwater parameters measured (Appendix C):	Temperature, pH, Conductivity, Oxidation-reduction potential (ORP), Turbidity, Dissolved Oxygen (DO)
Wells with measurable LNAPL:	None

2.3.1 Groundwater Flow Gradient and Directional Trends

Currently, twelve site wells are gauged on a semi-annual basis. During the February 4, 2014 groundwater monitoring and sampling event, the groundwater flow direction and gradient appeared to be variable (**Figure 3**). Historically, groundwater flow has generally been to the northeast at an average gradient of 0.015 foot per foot. A rose diagram displaying historical groundwater flow directions is shown on **Figure 3**. The previous monitoring and sampling event (August 2013) also reported variable groundwater flow and an indeterminate gradient.

2.3.2 Groundwater Quality Data

Blaine Tech submitted the groundwater samples collected for the February 4, 2014 monitoring and sampling event with chain-of-custody documentation to Kiff Analytical LLC. (KIFF), a state of California Environmental Laboratory Accreditation Program (ELAP) certified laboratory (Certification No. 08263CA). The complete analytical report is included in **Appendix D**. The chain of custody requested the laboratory to analyze groundwater samples for the following contaminants of concern:

- Total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX compounds), methyl tert-butyl ether (MTBE), ethyl tert-butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary-amyl methyl ether (TAME), tertiary butyl alcohol (TBA), ethanol, 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and naphthalene by Environmental Protection Agency (EPA) Method 8260B.

Groundwater analytical results are presented in **Table 2** (current), and **Tables 3 and 3a** (historical). The following table presents the ranges of contaminant concentrations reported above the laboratory's respective minimum reporting limits in groundwater samples collected during February 2014 sampling event:

Constituents	Number of Samples Where Constituent was Reported Above LRL of the Total Samples Collected	Minimum Reported Concentration, in µg/L (Sample ID)	Maximum Reported Concentration, in µg/L (Sample ID)
TPHg	4 of 12	53 (DPE-1)	90,000 (MW-4)
Benzene	3 of 12	0.52 (MW-11)	3,200 (MW-4)
Toluene	3 of 12	8.2 (MW-11)	200 (MW-4)
Ethylbenzene	3 of 12	110 (MW-11)	1,800 (MW-4)
Total Xylenes	3 of 12	130 (MW-11)	6,400 (MW-4)
MTBE	6 of 12	1.1 (MW-6 and DPE-1)	220 (MW-4)
TBA	3 of 12	48 (DPE-1)	3,000 (MW-4)
TAME	1 of 12	3.9 (EX-1)	3.9 (EX-1)
Naphthalene	3 of 12	56 (MW-11)	1,700 (MW-4)

Explanations:

µg/L = Micrograms per liter LRL = Laboratory reporting limit

2.3.3 Groundwater Contaminant Trends

TPHg, BTEX compounds, MTBE, and TBA continue to be reported in several of the site’s monitoring wells. Concentration versus time graphs for TPHg, benzene, MTBE, and TBA in selected wells are presented as **Appendix E**.

- Reported concentrations of benzene, MTBE, and TPHg in monitoring well MW-4 are generally consistent with a recent increasing trend observed since the third quarter 2011, and overall consistent with the historical range of concentrations. Antea Group considers that the fluctuations (one to two orders of magnitude between sampling events) of the concentrations reported in monitoring well MW-4 may be attributed to a submerged screen. The presence of sheen periodically noted in monitoring well MW-4 suggests contaminant concentrations may be highest on the top of the water column.
- Well EX-1 reported decreases in TPHg, benzene, ethylbenzene, MTBE, TAME, and TBA since the last sampling event. There was a reported increase in total xylenes this sampling event.
- MTBE continues to be the only analyte reported in well EX-2. The current concentration is an increase from the previous event, but remains within the historical range.
- Concentrations reported in monitoring wells MW-10 and MW-11 are consistent with those reported during the third quarter 2013, and are within a historical range.
- Overall, TPHg, benzene, MTBE and TBA concentration trends show relatively steady or decreasing concentrations. Recent apparent concentration increases remain within a historical range of contaminant concentrations.

Dissolved TPHg, benzene, and TBA plumes continue to be limited to the southeastern portion of the site. The dissolved MTBE plume continues to extend from the southeast portion of the site, north to monitoring wells MW-7 and MW-10. Dissolved-phase isoconcentration maps for TPHg, benzene, MTBE, and TBA, for the February 4, 2014 groundwater monitoring and sampling event, are presented as **Figures 4** through **7**.

2.3.4 Waste Disposal Summary

Approximately 177 gallons of wastewater were generated during well purging, well sampling, and equipment cleaning during the February 4, 2014 groundwater monitoring and sampling event. The wastewater was transported to Seaport Environmental in Redwood City, California for disposal.

2.3.5 Quality Assurance / Quality Control

Antea Group’s QA/QC measures included use of a trip blank and a detailed QA/QC data validation check on the KIFF analytical results for the February 2014 sampling event. Antea Group’s laboratory data validation checklist and the Kiff laboratory reports are presented as **Appendix D**.

Trip Blank (TB1_20120831):	No contaminants reported
Laboratory QA/QC Performed:	Yes (validated by Antea Group)

Laboratory Data Qualifiers:	None
Are the data valid for their intended purpose?	Yes, the data are valid

Based on a review of the laboratory’s analytical report, including their QA/QC procedures and those implemented by Antea Group, we conclude that the laboratory data obtained during this groundwater sampling event are valid for their intended purpose.

3.0 LOW THREAT CLOSURE POLICY CHECKLIST

Several items in the Low Threat Closure Policy (LTCP) checklist on GeoTracker need to be updated.

General Criteria:

- Section “d” states, “Free Product Remaining: Measurable Free Product. Removal Methods Tried: Other – indirect evidence of free product”
 - In the *Site Conceptual Model*, dated March 14, 2014, Antea Group recommended that wells with submerged screens be replaced with appropriate screen intervals to assess the presence of free product on the site.
- Section “e” states that a conceptual site model has not been completed.
 - On March 14, 2014, Antea Group submitted a *Site Conceptual Model* detailing the nature and extent of contamination as well as recommendations for closing any identified data gaps.
- Section “f” states, “persistent and elevated levels of benzene and GRO in source areas indicates secondary source has not been removed to the extent practicable”.
 - In the *Site Conceptual Model*, dated March 14, 2014, Antea Group recommended that a FS/CAP be prepared to evaluate remedial strategies for removing the secondary source.
- Section “h” describes a nuisance condition exists as “nuisance condition can not be ruled out as site characterization incomplete - free product site with offsite migration and shallow groundwater.”
 - According to Water Code section 13050, a nuisance means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes. Contamination at the site is not the result of the treatment or disposal of wastes. Therefore the site does not meet the definition of a nuisance and a nuisance condition does not exist.

Media Specific Criteria: Petroleum Vapor Intrusion to Indoor Air:

- The LTCP checklist has listed “NO” for the Exemption – Active Commercial Petroleum Fueling Facility.
 - The site is currently an active commercial petroleum fueling facility. Antea Group does not believe the release characteristics pose an unacceptable health risk to neighboring properties. Concentrations of benzene, ethylbenzene, and naphthalene in monitoring well MW-6 and MW-10 (off-site wells) are below the laboratory’s indicated reporting limits.

Media Specific Criteria: Direct Contact and Outdoor Air Exposure:

- Petroleum constituents in soil: ≤5 feet bgs, soil concentrations of benzene: >14 mg/kg, soil concentrations of ethylbenzene: >32 mg/kg and ≤89 mg/kg, soil concentrations of naphthalene: unknown, and soil concentrations of PAH: unknown.
 - In 2011, five soil borings (C-1 through C-5) were advanced at the site and shallow soil samples were collected at 5 and 10 feet bgs. Concentrations of benzene, ethylbenzene, and naphthalene were reported below the laboratory’s indicated reporting limits in all five soil borings and at both depths. PAHs have not been analyzed for in shallow soil samples to date. According to the LTCP PAH analysis is only required if soils have been impacted by either waste oil or bunker C fuel. The site has not historically contained waste oil or bunker C fuel and the analysis of PAHs per the LTCP is not warranted at this time. Based on the concentrations reported in borings C-1 through C-5 for benzene, ethylbenzene, and naphthalene, Antea Group believes the media specific criteria for direct contact and outdoor air exposure has been met.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Contaminant concentrations continue to be reported above the laboratory’s indicated reporting limits, primarily in wells along the southeastern property line.

Antea Group is currently preparing a FS/CAP to assess potential remediation strategies to remove secondary source material at the site. Meanwhile, Antea Group will continue semi-annual groundwater monitoring and sampling per the existing monitoring schedule.

5.0 REMARKS

The findings contained in this report represent Antea Group's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. For any reports cited that were not generated by Antea USA, Inc., the data from those reports are used "as is" and is assumed to be accurate. Antea USA, Inc. does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. This report is based upon a specific scope of work requested by the client. The Contract between Antea Group and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea Group's Client and anyone else specifically listed on this report. Antea Group will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea Group makes no express or implied warranty as to the contents of this report.

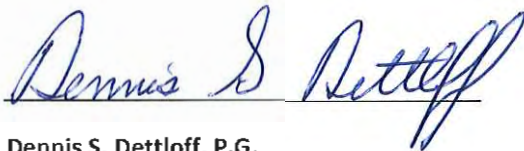
Prepared by:



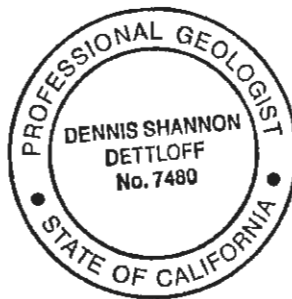
Edward T. Weyrens, G.I.T.
Project Professional
Antea Group

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature follows.

Licensed Approver:



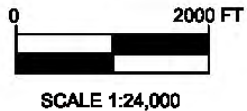
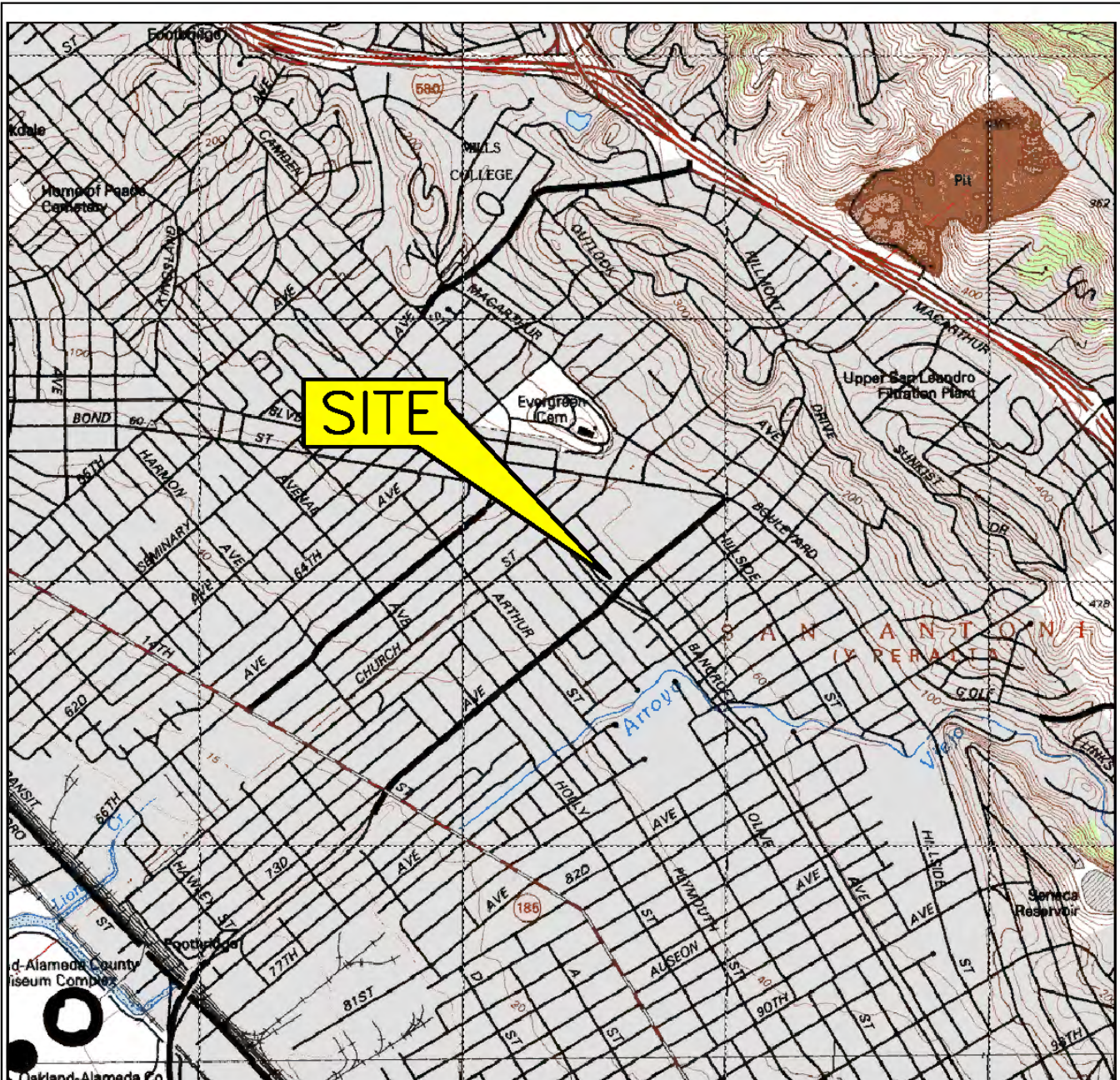
Dennis S. Dettloff, P.G.
Senior Project Manager
California Registered Professional Geologist No. 7480
Antea Group



cc: Ms. Tiffany McClendon, One Eastmont Town Center, 7200 Bancroft Avenue, Oakland, CA 94605
GeoTracker (upload)

Figures

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Groundwater Elevation Contour Map – February 4, 2014
Figure 4	Dissolved Phase TPHg Isoconcentration Map – February 4, 2014
Figure 5	Dissolved Phase TPHg Isoconcentration Map – February 4, 2014
Figure 6	Dissolved Phase TPHg Isoconcentration Map – February 4, 2014
Figure 7	Dissolved Phase TPHg Isoconcentration Map – February 4, 2014



QUADRANGLE LOCATION

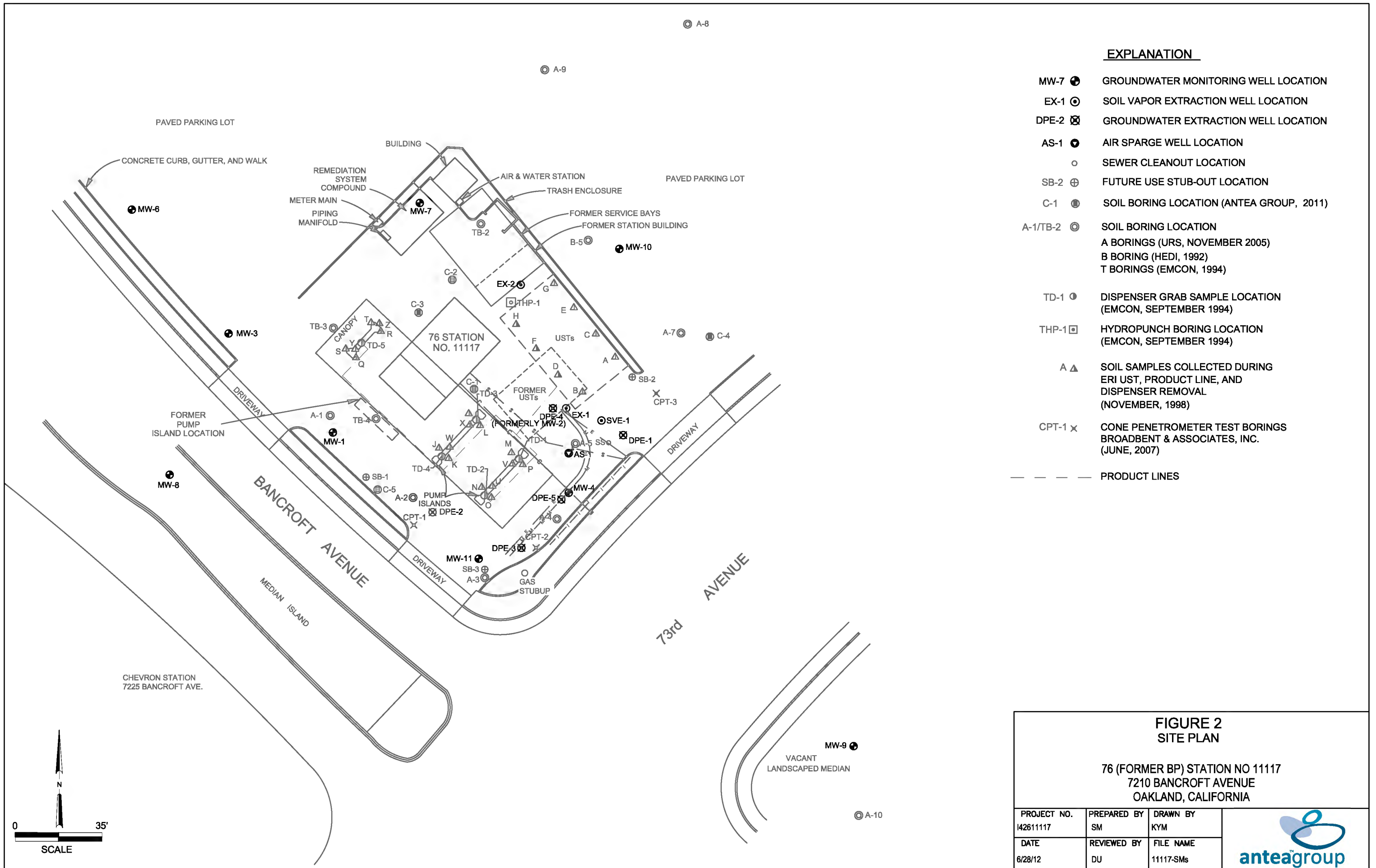
**FIGURE 1
SITE LOCATION MAP**

**76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND CALIFORNIA**

GENERAL NOTES:
BASE MAP FROM USGS, 7.5 MINUTE
TOPOGRAPHIC OAKLAND, CA. PHOTO REVISED 1980

PROJECT NO. 42611117	PREPARED BY DK	DRAWN BY JH
DATE 03/30/11	REVIEWED BY DU	FILE NAME 11117-TOPO





EXPLANATION

- MW-7 ● GROUNDWATER MONITORING WELL LOCATION
- EX-1 ○ SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 ☒ GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 ● AIR SPARGE WELL LOCATION
- SEWER CLEANOUT LOCATION
- SB-2 ⊕ FUTURE USE STUB-OUT LOCATION
- C-1 ● SOIL BORING LOCATION (ANTEA GROUP, 2011)
- A-1/TB-2 ○ SOIL BORING LOCATION
 A BORINGS (URS, NOVEMBER 2005)
 B BORING (HEDI, 1992)
 T BORINGS (EMCON, 1994)
- TD-1 ● DISPENSER GRAB SAMPLE LOCATION
(EMCON, SEPTEMBER 1994)
- THP-1 □ HYDROPUNCH BORING LOCATION
(EMCON, SEPTEMBER 1994)
- A ▲ SOIL SAMPLES COLLECTED DURING
 ERI UST, PRODUCT LINE, AND
 DISPENSER REMOVAL
 (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS
 BROADBENT & ASSOCIATES, INC.
 (JUNE, 2007)
- PRODUCT LINES

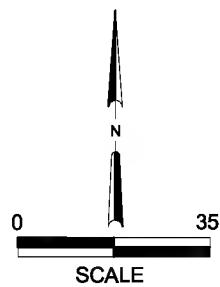
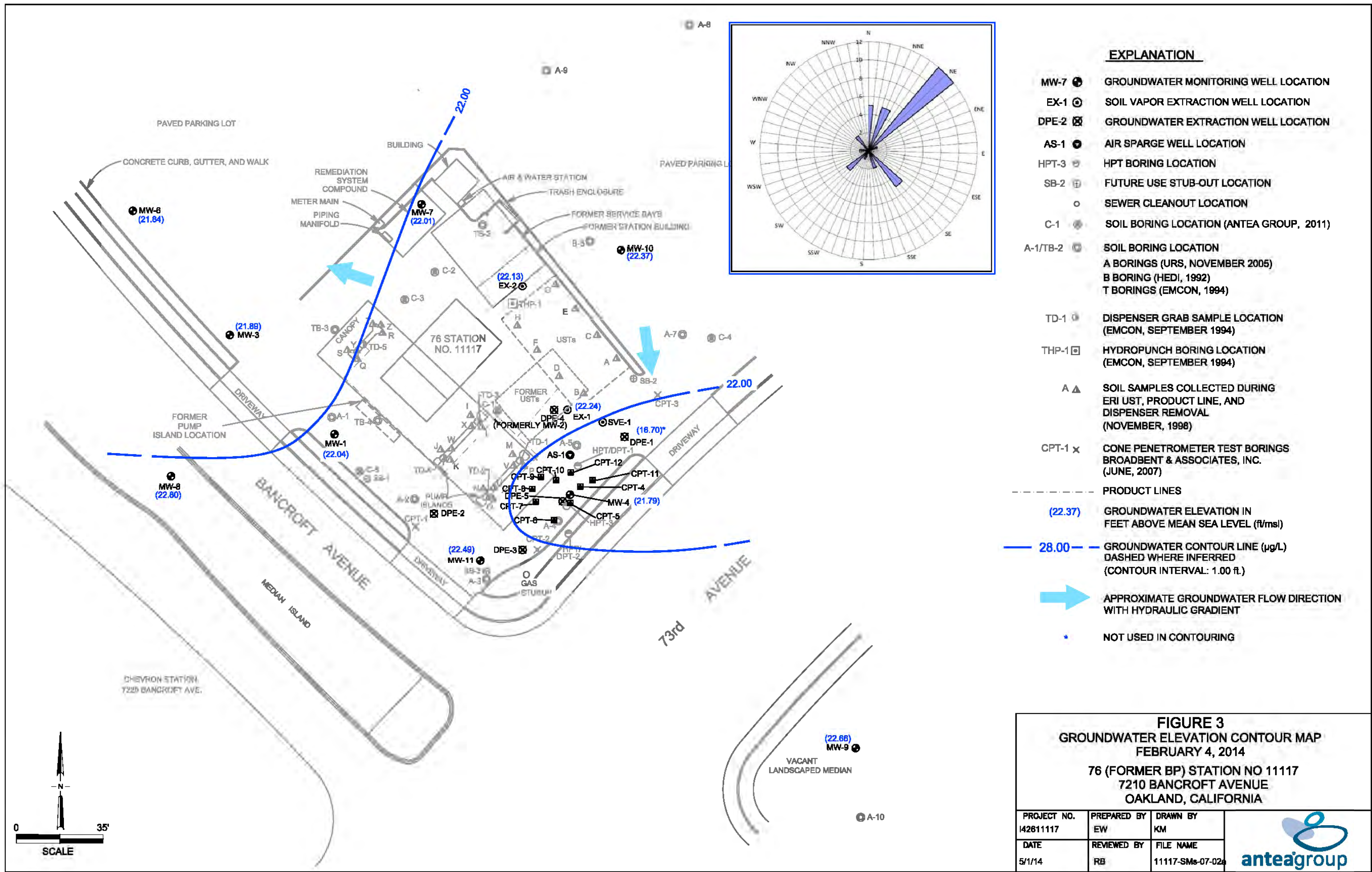


FIGURE 2 SITE PLAN			
76 (FORMER BP) STATION NO 11117 7210 BANCROFT AVENUE OAKLAND, CALIFORNIA			
PROJECT NO. 142611117	PREPARED BY SM	DRAWN BY KYM	
DATE 6/28/12	REVIEWED BY DU	FILE NAME 11117-SMs	



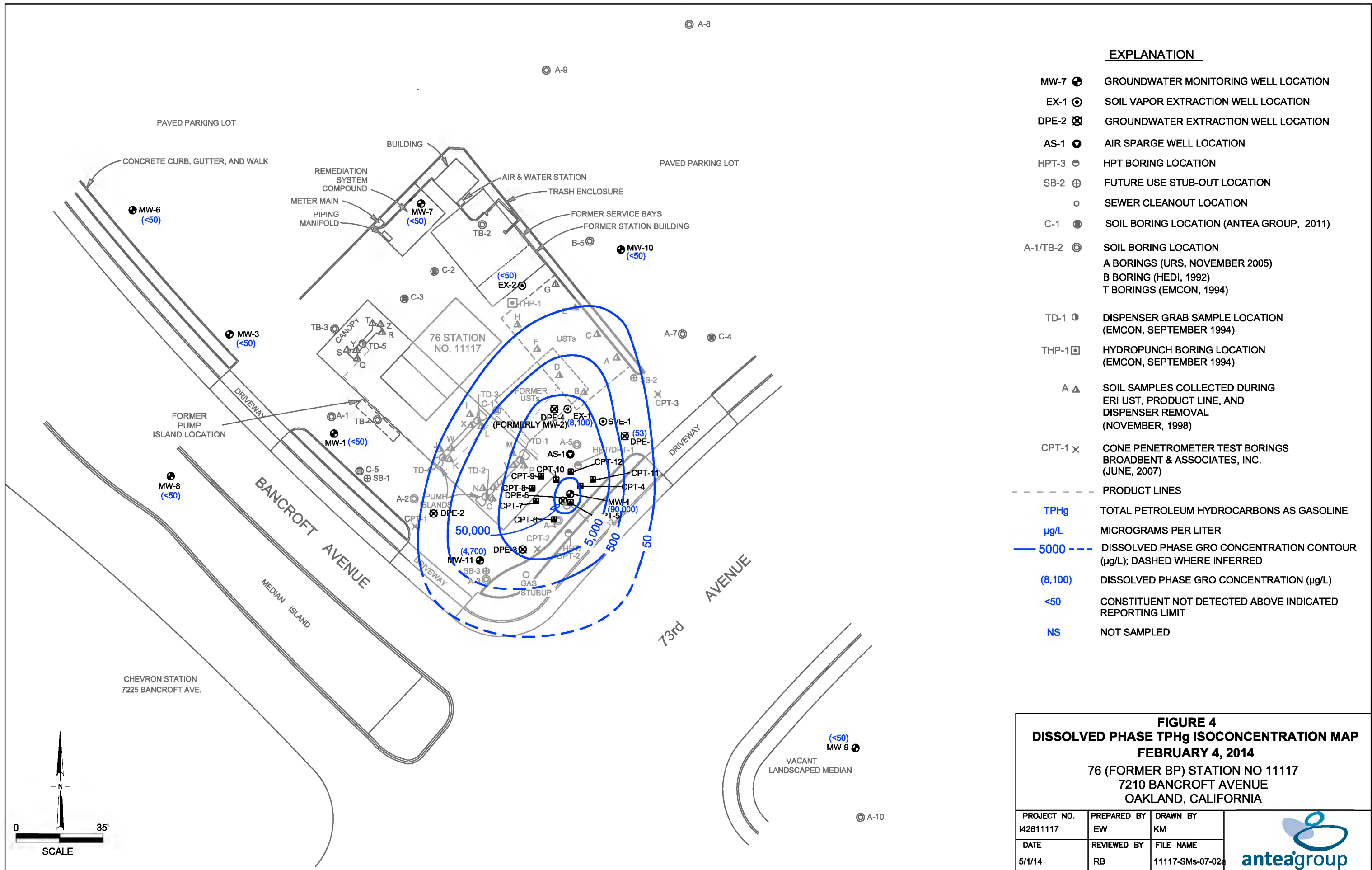
EXPLANATION

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- DPE-2 ⊠ GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 ● AIR SPARGE WELL LOCATION
- HPT-3 ⊖ HPT BORING LOCATION
- SB-2 ⊕ FUTURE USE STUB-OUT LOCATION
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- THP-1 ⊖ HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A ▲ SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- - - - - PRODUCT LINES
- (22.37) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (ft/msl)
- 28.00 — GROUNDWATER CONTOUR LINE (μg/L) DASHED WHERE INFERRED (CONTOUR INTERVAL: 1.00 ft.)
- ➡ APPROXIMATE GROUNDWATER FLOW DIRECTION WITH HYDRAULIC GRADIENT
- NOT USED IN CONTOURING

FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
 FEBRUARY 4, 2014
 76 (FORMER BP) STATION NO 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

PROJECT NO. 142611117	PREPARED BY EW	DRAWN BY KM
DATE 5/1/14	REVIEWED BY RB	FILE NAME 11117-SMs-07-02a






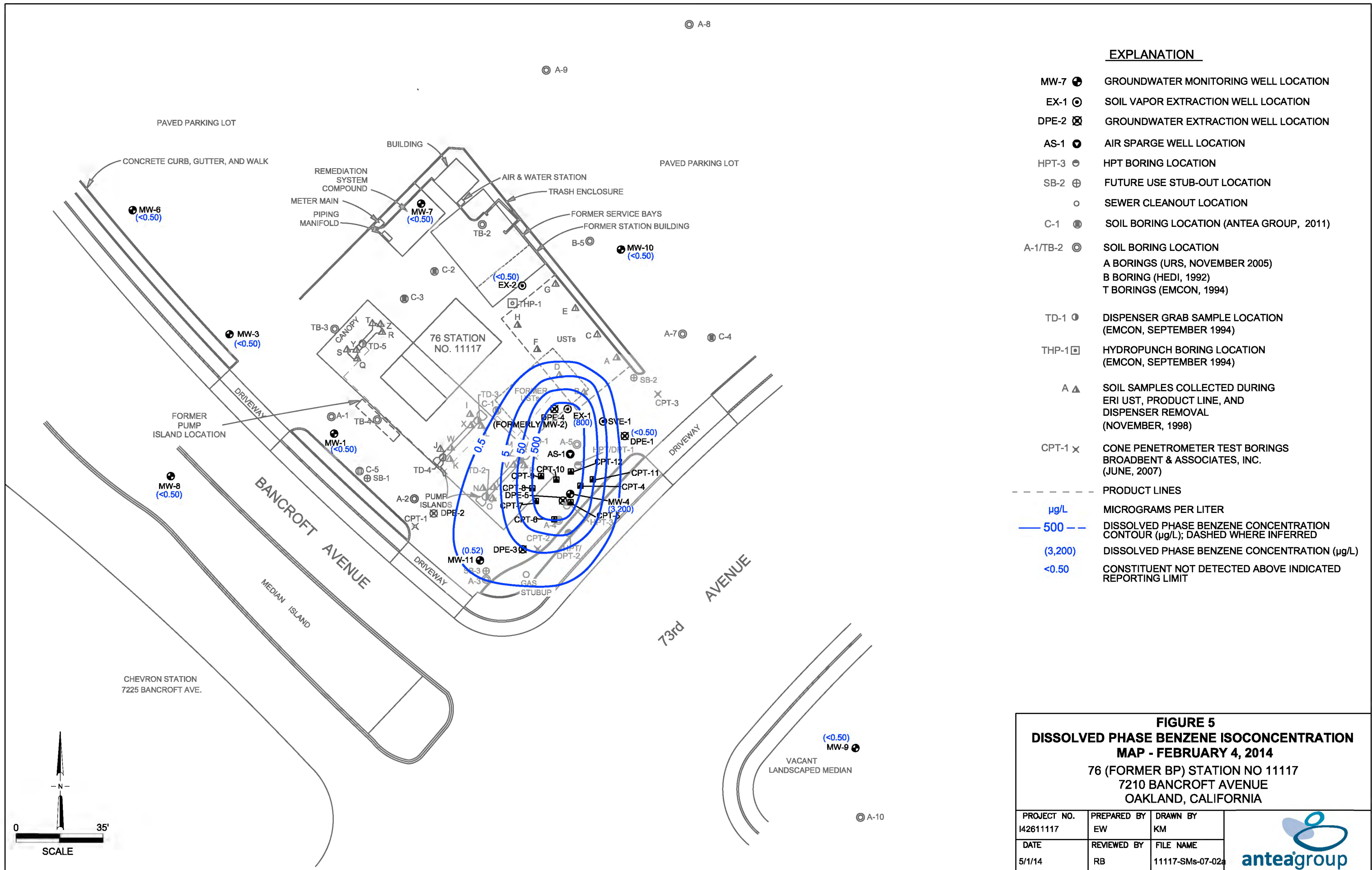
EXPLANATION

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- A ▲ SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- - - - - PRODUCT LINES
- TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- µg/L MICROGRAMS PER LITER
- 5000 - - - DISSOLVED PHASE GRO CONCENTRATION CONTOUR (µg/L); DASHED WHERE INFERRED
- (8,100) DISSOLVED PHASE GRO CONCENTRATION (µg/L)
- <50 CONSTITUENT NOT DETECTED ABOVE INDICATED REPORTING LIMIT
- NS NOT SAMPLED

FIGURE 4
DISSOLVED PHASE TPHg ISOCONCENTRATION MAP
FEBRUARY 4, 2014
 76 (FORMER BP) STATION NO 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

PROJECT NO. I42611117	PREPARED BY EW	DRAWN BY KM
DATE 5/1/14	REVIEWED BY RB	FILE NAME 11117-SMs-07-02a



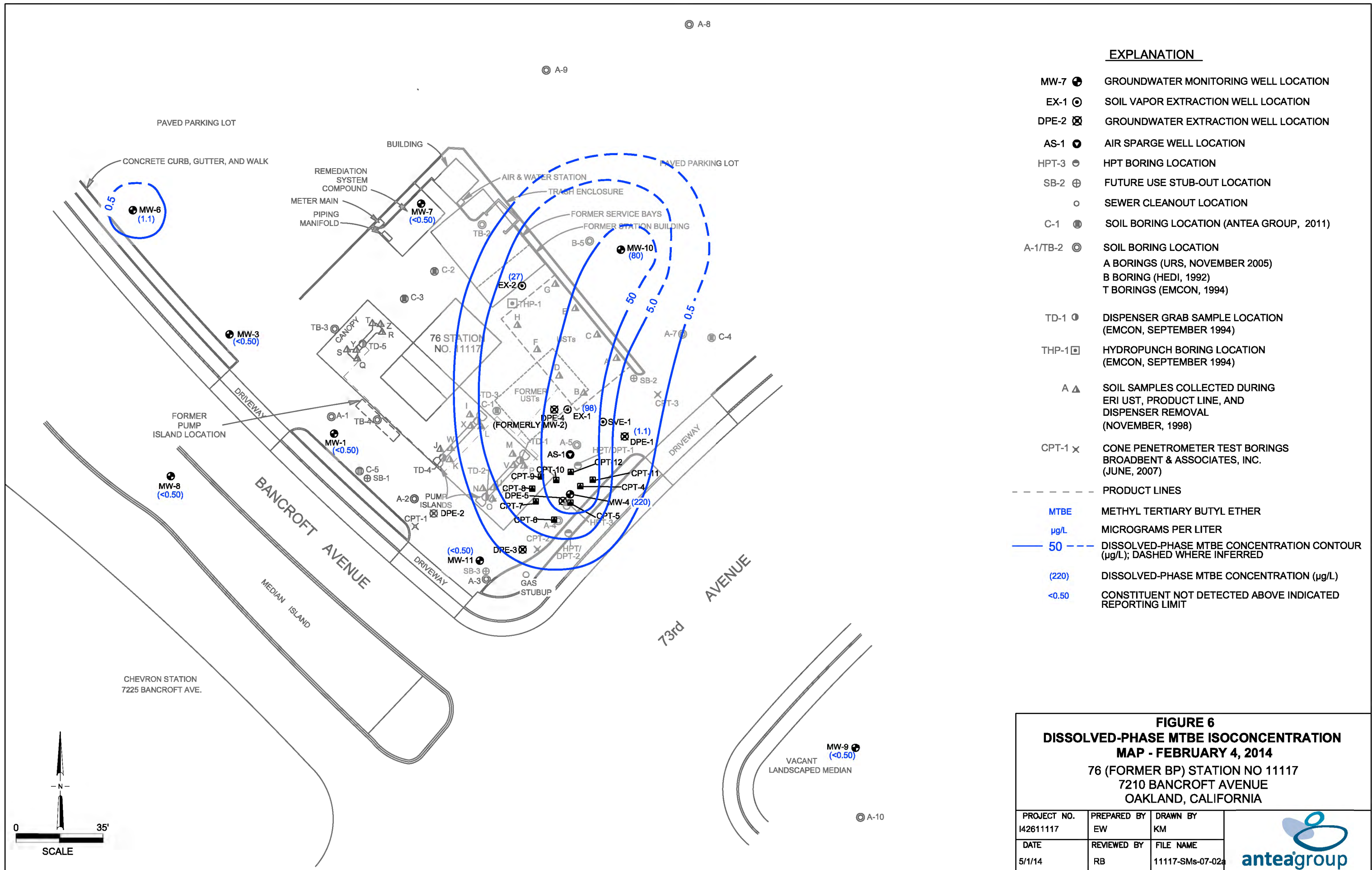


EXPLANATION

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- A ▲ SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- - - - - PRODUCT LINES
- µg/L MICROGRAMS PER LITER
- 500 — DISSOLVED PHASE BENZENE CONCENTRATION CONTOUR (µg/L); DASHED WHERE INFERRED
- (3,200) DISSOLVED PHASE BENZENE CONCENTRATION (µg/L)
- <0.50 CONSTITUENT NOT DETECTED ABOVE INDICATED REPORTING LIMIT

FIGURE 5
DISSOLVED PHASE BENZENE ISOCONCENTRATION
MAP - FEBRUARY 4, 2014
 76 (FORMER BP) STATION NO 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

PROJECT NO. I42611117	PREPARED BY EW	DRAWN BY KM	 anteagroup
DATE 5/1/14	REVIEWED BY RB	FILE NAME 11117-SMs-07-02a	

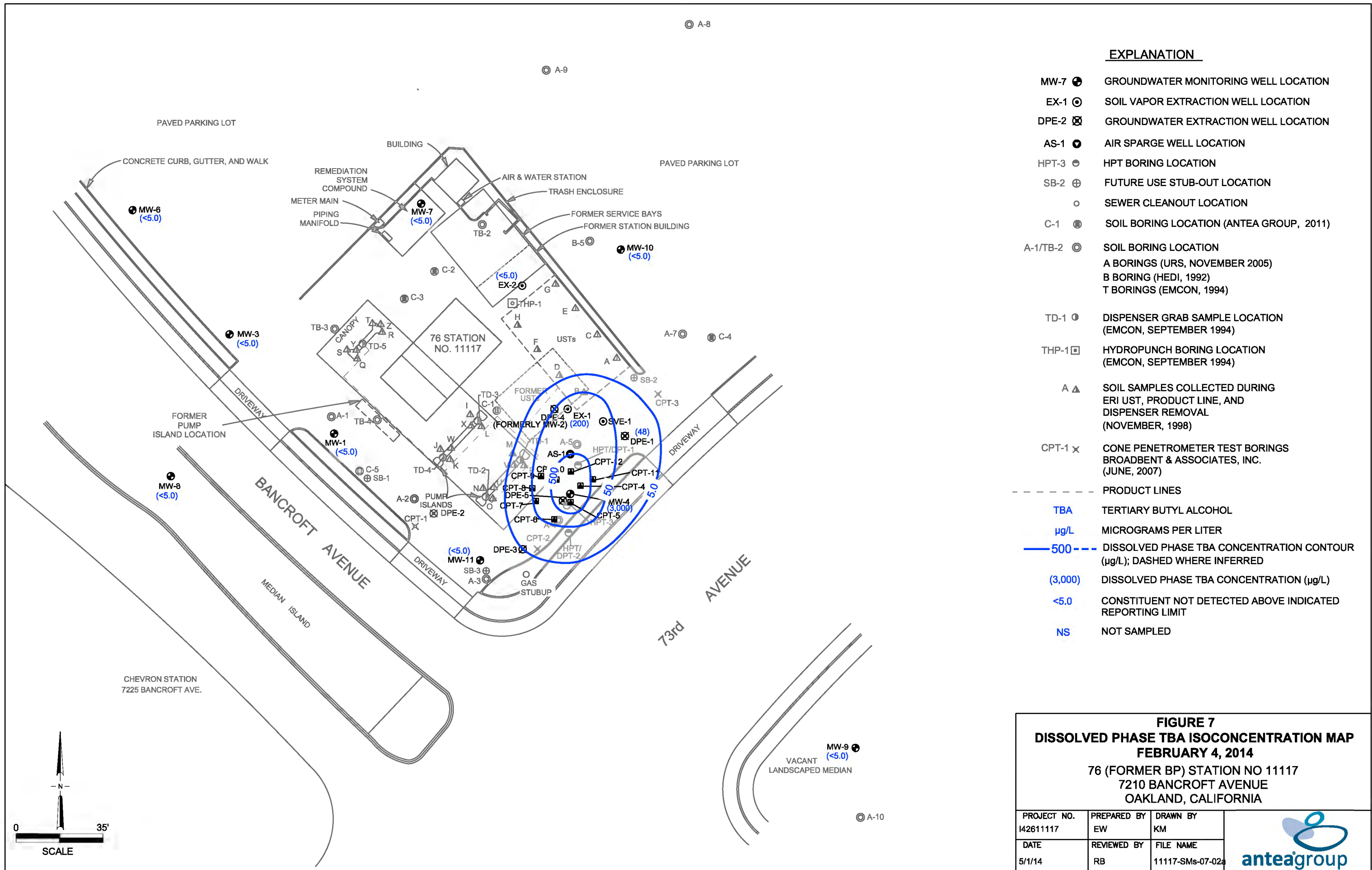


EXPLANATION

- MW-7 ● GROUNDWATER MONITORING WELL LOCATION
- EX-1 ○ SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 ⊠ GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 ● AIR SPARGE WELL LOCATION
- HPT-3 ● HPT BORING LOCATION
- SB-2 ⊕ FUTURE USE STUB-OUT LOCATION
- SEWER CLEANOUT LOCATION
- C-1 ● SOIL BORING LOCATION (ANTEA GROUP, 2011)
- A-1/TB-2 ○ SOIL BORING LOCATION
A BORINGS (URS, NOVEMBER 2005)
B BORING (HEDI, 1992)
T BORINGS (EMCON, 1994)
- TD-1 ● DISPENSER GRAB SAMPLE LOCATION (EMCON, SEPTEMBER 1994)
- THP-1 ⊠ HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A ▲ SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- - - - - PRODUCT LINES
- MTBE METHYL TERTIARY BUTYL ETHER
- µg/L MICROGRAMS PER LITER
- 50 --- DISSOLVED-PHASE MTBE CONCENTRATION CONTOUR (µg/L); DASHED WHERE INFERRED
- (220) DISSOLVED-PHASE MTBE CONCENTRATION (µg/L)
- <0.50 CONSTITUENT NOT DETECTED ABOVE INDICATED REPORTING LIMIT

FIGURE 6
DISSOLVED-PHASE MTBE ISOCONCENTRATION
MAP - FEBRUARY 4, 2014
 76 (FORMER BP) STATION NO 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

PROJECT NO. I42611117	PREPARED BY EW	DRAWN BY KM	 anteagroup
DATE 5/1/14	REVIEWED BY RB	FILE NAME 11117-SMs-07-02a	




EXPLANATION

- MW-7 ● GROUNDWATER MONITORING WELL LOCATION
- EX-1 ○ SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 ⊠ GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 ● AIR SPARGE WELL LOCATION
- HPT-3 ● HPT BORING LOCATION
- SB-2 ⊕ FUTURE USE STUB-OUT LOCATION
- SEWER CLEANOUT LOCATION
- C-1 ● SOIL BORING LOCATION (ANTEA GROUP, 2011)
- A-1/TB-2 ○ SOIL BORING LOCATION
- A BORINGS (URS, NOVEMBER 2005)
- B BORING (HEDI, 1992)
- T BORINGS (EMCON, 1994)
- TD-1 ● DISPENSER GRAB SAMPLE LOCATION (EMCON, SEPTEMBER 1994)
- THP-1 ⊠ HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A ▲ SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 × CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- - - - - PRODUCT LINES
- TBA TERTIARY BUTYL ALCOHOL
- µg/L MICROGRAMS PER LITER
- 500 — DISSOLVED PHASE TBA CONCENTRATION CONTOUR (µg/L); DASHED WHERE INFERRED
- (3,000) DISSOLVED PHASE TBA CONCENTRATION (µg/L)
- <5.0 CONSTITUENT NOT DETECTED ABOVE INDICATED REPORTING LIMIT
- NS NOT SAMPLED

FIGURE 7
DISSOLVED PHASE TBA ISOCONCENTRATION MAP
FEBRUARY 4, 2014
76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. I42611117	PREPARED BY EW	DRAWN BY KM
DATE 5/1/14	REVIEWED BY RB	FILE NAME 11117-SMs-07-02a



Tables

Table 1	Soil Boring and Monitoring Well Construction Details
Table 2	Current Groundwater Gauging and Analytical Data
Table 3	Historical Groundwater Gauging and Analytical Data
Table 3a	Additional Historical Groundwater Analytical Data

**TABLE 1
SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS
76 (FORMER BP) STATION NO. 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA**

Updated 11/09/2011

Boring/Well ID	Well/Boring Completion Date	TOC Elevation ¹ (ft)	Borehole Depth (ft bgs)	Borehole Diameter (in)	Well Depth (ft)	Well Casing Diameter (in)	Well Casing Material	Well Screen Slot Size (in)	Well Screen Interval (ft bgs)	Cement Grout Seal Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Filter Pack Interval (ft bgs)	Comments
Soil Borings													
B-5	Jul-92	NA	50.0	8.0	NA	NA	NA	NA	NA to NA	0.0 to 50.0	NA to NA	NA to NA	
THP-1	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-2	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-3	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
TB-4	Sep-94	NA	45.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 45.0	NA to NA	NA to NA	
A-1	Sep-05	NA	46.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 46.5	NA to NA	NA to NA	
A-2	Sep-05	NA	42.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 42.0	NA to NA	NA to NA	
A-3	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-4	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-5	Nov-05	NA	36.0	2.0	NA	NA	NA	NA	NA to NA	0.0 to 36.0	NA to NA	NA to NA	
A-7	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-8	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-9	Nov-05	NA	36.5	4.25	NA	NA	NA	NA	NA to NA	0.0 to 36.5	NA to NA	NA to NA	
A-10	Nov-05	NA	39.0	4.25	NA	NA	NA	NA	NA to NA	0.0 to 39.0	NA to NA	NA to NA	
CPT-1	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
CPT-2	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
CPT-3	Apr-07	NA	60.0	1.75	NA	NA	NA	NA	NA to NA	0.0 to 60.0	NA to NA	NA to NA	
C-1	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-2	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-3	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-4	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
C-5	Oct-11	NA	35.0	3.25	NA	NA	NA	NA	NA to NA	0.0 to 35.0	NA to NA	NA to NA	
Groundwater Monitoring Wells													
MW-1	Dec-91	43.14	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-2	Dec-91	51.07	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	Well destroyed November 17, 2007
MW-3	Dec-89	43.27	45	8	45	2	PVC	0.02	30.0 to 45.0	0.0 to 3.0	3.0 to 25.0	25.0 to 45.0	
MW-4	Jul-92	43.64	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-6	Jul-92	43.64	40	8	40	2	PVC	0.02	20.0 to 40.0	0.0 to 17.0	17.0 to 18.0	18.0 to 40.0	
MW-7	Oct-94	44.21	45	8	45	2	PVC	0.02	25.0 to 45.0	0.0 to 21.0	21.0 to 23.0	23.0 to 45.0	
MW-8	Oct-94	44.18	40	8	40	2	PVC	0.02	25.0 to 40.0	0.0 to 21.0	21.0 to 23.0	23.0 to 40.0	
MW-9	Oct-94	44.35	40	8	40	2	PVC	0.02	25.0 to 40.0	0.0 to 21.0	21.0 to 23.0	23.0 to 40.0	
MW-10	Jul-97	46.17	37.5	8	35	2	PVC	0.02	15.0 to 35.0	0.0 to 13.0	13.0 to 14.0	14.0 to 37.5	
MW-11	Nov-07	43.34	40	10	40	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	Graphic log indicates TD = 35 ft bgs

**TABLE 1
SOIL BORING AND MONITORING WELL CONSTRUCTION DETAILS
76 (FORMER BP) STATION NO. 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA**

Updated 11/09/2011

Boring/Well ID	Well/Boring Completion Date	TOC Elevation ¹ (ft)	Borehole Depth (ft bgs)	Borehole Diameter (in)	Well Depth (ft)	Well Casing Diameter (in)	Well Casing Material	Well Screen Slot Size (in)	Well Screen Interval (ft bgs)	Cement Grout Seal Interval (ft bgs)	Bentonite Seal Interval (ft bgs)	Filter Pack Interval (ft bgs)	Comments
Remediation Wells													
EX-1	Nov-99	44.20	39.5	10	40	4	PVC	0.02	18.0 to 38.0	0.0 to 15.0	15.0 to 16.0	16.0 to 39.5	
EX-2	Nov-99	45.33	36.5	10	40	4	PVC	0.02	15.0 to 35.0	0.0 to 13.0	13.0 to 13.0	13.0 to 36.5	
DPE-1	Nov-07	44.28	40	10	38	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	
DPE-2	Nov-07	43.03	40	10	40	4	PVC	0.02	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	
DPE-3	Nov-07	43.27	40	10	40	4	PVC	0.02	13.0 to 38.0	0.0 to 8.0	8.0 to 11.0	11.0 to 40.0	
DPE-4	Nov-07	44.08	45	10	38	4	PVC	0.01	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 45.0	Installed in same borehole as destroyed well MW-2
DPE-5	Nov-07	44.60	40	10	35	4	PVC	0.01	15.0 to 40.0	0.0 to 10.0	10.0 to 13.0	13.0 to 40.0	Log indicates Screen Interval at 15-38 ft bgs
SVE-1	Oct-11	44.78	22	10	22	4	PVC	0.02	10.0 to 22.0	0.0 to 6.0	6.0 to 8.0	8.0 to 22.0	
AS-1	Oct-11	44.64	35	3.25	35	0.25/2.0	Teflon/SS	NA	33.5 to 34.0	0.0 to 31.5	31.5 to 32.5	32.5 to 35.0	

Notes:

- ft = feet
- in = inches
- TOC = Top of Casing
- bgs = below ground surface
- NA = not applicable
- PVC = polyvinyl chloride
- SS = stainless steel
- B and C = soil boring
- A = hydropunch boring
- CPT = cone penetrometer boring
- MW = monitoring well
- EX = extraction well
- DPE = extraction well
- AS=air sparge well
- SVE=soil vapor extraction well

¹ = TOC Elevations were surveyed to a local datum on the following dates:

MW-2 -- January 1, 1992 by HETI

MW-1, MW-3 through MW-11, EX-1, EX-2, DPE-1 through DPE-5, AS-1, and SVE-1 -- October 24, 2011 by Mid Coast Engineers

TABLE 2
CURRENT GROUNDWATER GAUGING AND ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft amsl)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Water Elevation* (ft amsl)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	Naphthalene (ug/L)	
EX-1	2/4/2014	44.20	21.96	NP	22.24	8,100	800	120	360	910	98	<0.50	<0.50	3.9	200	<5.0	<0.50	<0.50	120	
EX-2	2/4/2014	45.33	23.20	NP	22.13	<50	<0.50	<0.50	<0.50	<0.50	27	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-1	2/4/2014	43.14	21.10	NP	22.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-3	2/4/2014	43.27	21.38	NP	21.89	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-4	2/4/2014	43.64	21.85	NP	21.79	90,000	3,200	200	1,800	6,400	220	<10	<10	<10	3,000	<150	<10	<10	1,700	
MW-6	2/4/2014	43.64	21.80	NP	21.84	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-7	2/4/2014	44.21	22.20	NP	22.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-8	2/4/2014	44.18	21.38	NP	22.80	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-9	2/4/2014	44.35	21.69	NP	22.66	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-10	2/4/2014	46.17	23.80	NP	22.37	<50	<0.50	<0.50	<0.50	<0.50	80	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-11	2/4/2014	43.34	20.85	NP	22.49	4,700	0.52	8.2	110	130	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	56	
DPE-1	2/4/2014	38.95	22.25	NP	16.70	53	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<0.50	48	<5.0	<0.50	<0.50	<0.50

Gauging Notes:

TOC - Top of Casing
 Well Screen Interval - Top of Screen to Bottom of Screen
 ft - Feet
 NP - LNAPL not present
 * - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
 -- - No information available
 ft bgs - Feet below ground surface
 ft amsl - Feet above mean sea level
 ft btoc - Feet below top of casing
 FD - Field Duplicate
 TB - Trip Blank

Analytical Notes:

< - Below the laboratory's indicated reporting limit
 µg/L - micrograms/liter
 TPHg - Total petroleum hydrocarbons as gasoline
 MTBE - Methyl tert-butyl ether
 DIPE - Di-isopropyl ether
 ETBE - Ethyl tert-butyl ether
 TAME - Tert-amyl methyl ether
 TBA - Tert-butyl alcohol
Bold - Above the laboratory's indicated reporting limit

TABLE 3
GROUND WATER GAUGING AND ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA



Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft amsl)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Water Elevation* (ft amsl)	DRO (µg/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	Naphthalene (ug/L)
MW-1	4/19/1995	49.80	19.59	NP	30.21	--	5200	420	51	230	340	--	--	--	--	--	--	--	--	--
	7/5/1995	49.80	19.61	NP	30.19	--	320	4.2	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	10/5/1995	49.80	24.40	NP	25.40	--	5800	1000	40	31	180	--	--	--	--	--	--	--	--	--
	1/12/1996	49.80	25.44	NP	24.36	--	370	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	4/22/1996	49.80	18.02	NP	31.78	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	7/2/1996	49.80	19.72	NP	30.08	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/3/1996	49.80	NG	NG	NG	--	<250	<2.5	<5	<5	<5	--	--	--	--	--	--	--	--	--
	11/8/1996	49.80	19.98	NP	29.82	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	1/3/1997	49.80	19.49	NP	30.31	--	<50	<0.5	14	<1	<1	--	--	--	--	--	--	--	--	--
	4/28/1997	49.80	20.20	NP	29.60	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	7/1/1997	49.80	22.53	NP	27.27	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	10/2/1997	49.80	24.27	NP	25.53	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	1/9/1998	49.80	21.07	NP	28.73	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	5/6/1998	49.80	14.94	NP	34.86	4000	60	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	7/21/1998	49.80	15.11	NP	34.69	--	70	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	--
	12/30/1998	49.80	19.95	NP	29.85	<50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/2/1999	49.80	19.12	NP	30.68	710	420	<1	<1	<1	<1	--	--	--	--	--	--	--	--	--
	5/10/1999	49.80	15.51	NP	34.29	60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/23/1999	49.80	21.65	NP	28.15	<50	440	49	<1	<1	<1	--	--	--	--	--	--	--	--	--
	12/23/1999	49.80	22.32	NP	27.48	<50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/27/2000	49.80	15.72	NP	34.08	--	2500	230	3	83	36	--	--	--	--	--	--	--	--	--
	5/22/2000	49.80	16.92	NP	32.88	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/2000	49.80	20.12	NP	29.68	--	1700	18	5.5	7.9	5	--	--	--	--	--	--	--	--	--
	12/11/2000	49.80	20.72	NP	29.08	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/20/2001	49.80	15.91	NP	33.89	--	880	38.2	<0.5	24.1	<1.5	--	--	--	--	--	--	--	--	--
	6/19/2001	49.80	18.38	NP	31.42	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	49.80	21.23	NP	28.57	--	3200	400	19.8	42	32.5	--	--	--	--	--	--	--	--	--
	12/27/2001	49.80	16.72	NP	33.08	--	750	70.1	0.536	4.74	3.76	--	--	--	--	--	--	--	--	--
	2/28/2002	49.80	15.25	NP	34.55	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	6/28/2002	49.80	16.57	NP	33.23	--	110	0.977	<0.5	0.818	<1	--	--	--	--	--	--	--	--	--
	9/12/2002	49.80	18.41	NP	31.39	--	98	2.7	1.5	1.5	5.4	--	--	--	--	--	--	--	--	--
	12/12/2002	49.80	20.26	NP	29.54	--	210	1.9	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	3/10/2003	49.80	16.22	NP	33.58	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	5/12/2003	49.80	14.30	NP	35.50	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	8/27/2003	49.80	18.15	NP	31.65	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--	--
	11/10/2003	49.80	19.24	NP	30.56	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--	--
	2/3/2004	49.80	14.84	NP	34.96	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	5/4/2004	49.80	14.67	NP	35.13	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	8/31/2004	49.80	17.75	NP	32.05	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	11/23/2004	49.80	16.03	NP	33.77	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1/18/2005	49.80	12.47	NP	37.33	--	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--	
6/29/2005	49.80	12.65	NP	37.15	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
9/1/2005	49.80	15.79	NP	34.01	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/3/2005	49.80	18.55	NP	31.25	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/14/2006	49.80	12.29	NP	37.51	--	51	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5	--	
5/30/2006	49.80	12.15	NP	37.65	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/29/2006	49.80	16.37	NP	33.43	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/29/2006	49.80	18.73	NP	31.07	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/20/2007	49.80	14.71	NP	35.09	--	110	<0.5	<0.5	0.58	<0.5	--	--	--	--	--	--	--	--	--	
5/25/2007	49.80	15.59	NP	34.21	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/9/2007	49.80	18.38	NP	31.42	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/9/2007	49.80	20.00	NP	29.80	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/14/2007	37.41	19.83	NP	17.58	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/12/2008	37.41	14.00	NP	23.41	--	100	<0.5	<0.5	0.55	<0.5	--	--	--	--	--	--	--	--	--	
5/22/2008	37.41	16.31	NP	21.10	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/25/2008	37.41	19.20	NP	18.21	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/17/2008	37.41	NG	NG	NG	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 3
GROUND WATER GAUGING AND ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA



Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft amsl)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Water Elevation* (ft amsl)	DRO (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	Naphthalene (ug/L)
MW-2	9/12/2002	49.95	19.52	NP	30.43	--	100000	13000	22000	3600	20000	--	--	--	--	--	--	--	--	--
	12/12/2002	49.95	21.08	NP	28.87	--	120000	13000	21000	4400	25000	--	--	--	--	--	--	--	--	--
	3/10/2003	49.95	17.84	NP	32.11	--	100000	17000	21000	3400	20000	--	--	--	--	--	--	--	--	--
	5/12/2003	49.95	16.66	NP	33.29	--	150000	16000	24000	3500	22000	--	--	--	--	--	--	--	--	--
	8/27/2003	49.95	19.65	NP	30.30	--	120000	14000	12000	3900	20000	--	<120	<120	140	<5000	<25000	--	--	--
	11/10/2003	49.95	20.80	NP	29.15	--	97000	12000	9500	3600	15000	--	<250	<250	<250	<10000	<50000	--	--	--
	2/3/2004	49.95	16.82	NP	33.13	--	130000	14000	19000	3400	20000	--	--	--	--	--	--	--	--	--
	5/4/2004	49.95	16.19	NP	33.76	--	120000	12000	16000	3700	22000	--	<250	<250	<250	<10000	<50000	<250	<250	--
	8/31/2004	49.95	19.50	NP	30.45	--	99000	10000	13000	3700	18000	--	--	--	--	--	--	--	--	--
	11/23/2004	49.95	18.20	NP	31.75	--	110000	8200	17000	4000	23000	--	<250	<250	<250	<10000	<50000	<250	<250	--
	1/18/2005	49.95	14.91	NP	35.04	--	96000	6500	14000	3500	21000	--	<100	<100	<100	<4000	<20000	<100	<100	--
	6/29/2005	49.95	13.98	NP	35.97	--	54000	6200	4900	3300	12000	--	--	--	--	--	--	--	--	--
	9/1/2005	49.95	17.00	NP	32.95	--	58000	6300	6000	3300	15000	--	<100	<100	100	<4000	<20000	<100	<100	--
	11/3/2005	49.95	20.25	NP	29.70	--	63000	7400	3700	3300	10000	--	<100	<100	100	<4000	<20000	<100	<100	--
	2/14/2006	49.95	13.72	NP	36.23	--	97000	7500	11000	4300	16000	--	<100	<100	<100	<4000	<60000	<100	<100	--
	5/30/2006	49.95	13.50	NP	36.45	--	28000	5200	2500	1500	3300	--	<100	<100	<100	<4000	<60000	<100	<100	--
	8/29/2006	49.95	18.16	NP	31.79	--	65000	7200	4500	3200	11000	--	<100	<100	100	<4000	<60000	<100	<100	--
	11/29/2006	49.95	20.06	NP	29.89	--	46000	8500	4600	3300	10000	--	<120	<120	120	<5000	<75000	<120	<120	--
2/20/2007	49.95	16.43	NP	33.52	--	78000	9700	12000	4100	16000	--	<100	<100	<100	<4000	<60000	<100	<100	--	
5/25/2007	49.95	16.80	NP	33.15	--	62000	7400	9500	4100	15000	--	<200	<200	<200	<8000	<120000	<200	<200	--	
8/9/2007	49.95	19.55	NP	30.40	--	58000	7400	5000	3800	12000	--	<100	<100	<100	<4000	<60000	<100	<100	--	
11/9/2007	49.95	21.53	NP	28.42	--	49000	6300	3300	2900	8300	--	<100	<100	<100	<4000	<60000	<100	<100	--	
MW-3	1/5/1992	43.27	33.69	NP	9.58	--	7400	790	23	210	40	--	--	--	--	--	--	--	--	
	1/10/1992	43.27	33.74	NP	9.53	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/5/1992	43.27	29.65	NP	13.62	--	0	130	5.3	93	20	--	--	--	--	--	--	--	--	
	7/24/1992	43.27	30.14	NP	13.13	<50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	7/27/1992	43.27	30.14	NP	13.13	<50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	9/15/1992	43.27	31.07	NP	12.20	<50	450	55	3.1	34	7.1	--	--	--	--	--	--	--	--	
	12/15/1992	43.27	31.93	NP	11.34	<50	12000	940	<50	310	120	--	--	--	--	--	--	--	--	
	3/15/1993	43.27	25.71	NP	17.56	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	
	6/7/1993	43.27	25.80	NP	17.47	--	150	3.6	<0.5	0.9	1.3	--	--	--	--	--	--	--	--	
	9/23/1993	43.27	29.18	NP	14.09	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	9/24/1993	43.27	NG	NG	NG	--	160	8.4	<0.5	3.7	1.3	--	--	--	--	--	--	--	--	
	12/27/1993	43.27	29.25	NP	14.02	--	9400	1100	48	530	120	--	--	--	--	--	--	--	--	
	4/5/1994	43.27	26.84	NP	16.43	--	7000	860	19	330	52	--	--	--	--	--	--	--	--	
	7/22/1994	43.27	26.90	NP	16.37	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	
	10/13/1994	43.27	27.83	NP	15.44	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	
	1/25/1995	51.40	21.65	NP	29.75	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	4/19/1995	51.40	19.33	NP	32.07	--	2400	170	8	130	27	--	--	--	--	--	--	--	--	
	7/5/1995	51.40	20.27	NP	31.13	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	10/5/1995	51.40	23.73	NP	27.67	--	2300	210	3.1	10	5.1	--	--	--	--	--	--	--	--	
	1/12/1996	51.40	24.84	NP	26.56	--	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	4/22/1996	51.40	18.60	NP	32.80	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	7/2/1996	51.40	18.88	NP	32.52	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	11/8/1996	51.40	19.14	NP	32.26	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	1/3/1997	51.40	18.72	NP	32.68	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	4/28/1997	51.40	19.38	NP	32.02	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	7/1/1997	51.40	21.65	NP	29.75	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	10/2/1997	51.40	23.45	NP	27.95	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	1/9/1998	51.40	20.10	NP	31.30	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
5/6/1998	51.40	15.57	NP	35.83	--	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--		
7/21/1998	51.40	15.88	NP	35.52	--	51	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--		
12/30/1998	51.40	20.30	NP	31.10	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
2/2/1999	51.40	19.75	NP	31.65	--	<50	<1	<1	<1	<1	--	--	--	--	--	--	--	--		
5/10/1999	51.40	16.17	NP	35.23	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
9/23/1999	51.40	22.05	NP	29.35	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
12/23/1999	51.40	22.55	NP	28.85	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE 3
GROUND WATER GAUGING AND ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA



Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA														
		TOC Elevation (ft amsl)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Water Elevation* (ft amsl)	DRO (µg/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	Naphthalene (ug/L)
MW-6	3/20/2001	51.05	16.97	NP	34.08	3300	3300	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--
	6/19/2001	51.05	19.30	NP	31.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/20/2001	51.05	22.00	NP	29.05	2200	2200	2.04	8.1	3.62	13.7	--	--	--	--	--	--	--	--	--
	12/27/2001	51.05	17.85	NP	33.20	830	830	0.59	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	2/28/2002	51.05	16.31	NP	34.74	1100	1100	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	6/28/2002	51.05	17.57	NP	33.48	<50	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	--
	9/12/2002	51.05	19.27	NP	31.78	190	190	1.9	4.6	1	7.3	--	--	--	--	--	--	--	--	--
	12/12/2002	51.05	20.94	NP	30.11	270	270	<2.5	<2.5	<2.5	<2.5	--	--	--	--	--	--	--	--	--
	3/10/2003	51.05	17.11	NP	33.94	110	110	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	5/12/2003	51.05	15.18	NP	35.87	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--
	8/27/2003	51.05	18.90	NP	32.15	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--	--
	11/10/2003	51.05	20.13	NP	30.92	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	--	--	--
	2/3/2004	51.05	15.83	NP	35.22	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	5/4/2004	51.05	15.62	NP	35.43	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	8/31/2004	51.05	18.56	NP	32.49	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	11/23/2004	51.05	16.95	NP	34.10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/18/2005	51.05	13.61	NP	37.44	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<100	<0.5	<0.5	--
	6/29/2005	51.05	13.55	NP	37.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/1/2005	51.05	16.52	NP	34.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/3/2005	51.05	19.28	NP	31.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/14/2006	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2006	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/29/2006	51.05	17.15	NP	33.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/29/2006	51.05	19.50	NP	31.55	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2007	51.05	15.81	NP	35.24	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<20	<300	<0.5	<0.5	--
	5/25/2007	51.05	16.38	NP	34.67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/9/2007	51.05	19.15	NP	31.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/9/2007	51.05	20.70	NP	30.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/14/2007	51.05	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/11/2008	51.05	15.08	NP	35.97	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<100	<0.5	<0.5	--
5/22/2008	51.05	17.07	NP	33.98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8/25/2008	51.05	19.82	NP	31.23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/17/2008	51.05	21.58	NP	29.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
2/25/2009	51.05	17.34	NP	33.71	120	120	<0.50	<0.50	<0.50	<0.50	13	--	--	--	--	--	--	--	--	
5/21/2009	51.05	16.85	NP	34.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
8/14/2009	51.05	20.03	NP	31.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2/10/2010	51.05	15.31	NP	35.74	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
8/20/2010	51.05	16.60	NP	34.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2/7/2011	51.05	14.86	NP	36.19	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
8/15/2011	51.05	16.07	NP	34.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2/20/2012	43.64	17.83	NP	25.81	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	0.66	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
8/31/2012	43.64	18.82	NP	24.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2/5/2013	43.64	15.53	NP	28.11	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	--	
8/14/2013	43.64	19.93	NP	23.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2/4/2014	43.64	21.80	NP	21.84	--	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50	
MW-7	1/25/1995	51.40	21.67	NP	29.73	<50	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	4/19/1995	51.40	25.27	NP	26.13	<50	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	7/5/1995	51.40	24.63	NP	26.77	<50	<50	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	10/5/1995	51.40	28.21	NP	23.19	83	83	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	1/12/1996	51.40	29.29	NP	22.11	63	63	<0.5	<0.5	<0.5	<1	--	--	--	--	--	--	--	--	
	4/22/1996	51.40	23.11	NP	28.29	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	7/2/1996	51.40	23.56	NP	27.84	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	11/8/1996	51.40	20.06	NP	31.34	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	1/3/1997	51.40	23.42	NP	27.98	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	4/28/1997	51.40	24.12	NP	27.28	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
	7/1/1997	51.40	26.40	NP	25.00	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--	
10/2/1997	51.40	28.14	NP	23.26	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--		
1/9/1998	51.40	24.02	NP	27.38	<50	<50	<0.5	<1	<1	<1	--	--	--	--	--	--	--	--		

TABLE 3
GROUND WATER GAUGING AND ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA



Well I.D.	Date	GROUNDWATER GAUGING DATA				GROUNDWATER ANALYTICAL DATA															
		TOC Elevation (ft amsl)	Depth to Water (ft btoc)	LNAPL Thickness (ft)	Water Elevation* (ft amsl)	DRO (µg/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	1,2-Dibromoethane (EDB) (ug/L)	1,2-Dichloroethane (ug/L)	Naphthalene (ug/L)	
MW-10	8/9/2007	46.17	20.83	NP	25.34	970	970	<10	<10	<10	<10	--	<10	<10	<10	<400	<6000	<10	<10	--	
	11/9/2007	46.17	22.53	NP	23.64	1100	1100	<10	<10	<10	13	--	<10	<10	<10	<400	<6000	<10	<10	--	
	12/14/2007	40.45	22.62	NP	17.83	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--
	2/11/2008	40.45	17.86	NP	22.59	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	2.6	<10	<100	<0.5	<0.5	--	
	5/22/2008	40.45	19.05	NP	21.40	81	81	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5	--	
	8/25/2008	40.45	21.88	NP	18.57	<50	<50	<0.5	1	<0.5	0.98	--	<0.5	<0.5	2.2	<10	<300	<0.5	<0.5	--	
	12/17/2008	40.45	23.32	NP	17.13	<50	<50	<20	<20	<20	<20	--	<20	<20	<20	<400	<12000	<20	<20	--	
	2/25/2009	40.45	20.07	NP	20.38	84	84	<5.0	<5.0	<5.0	<5.0	290	--	--	--	--	--	--	--	--	
	5/21/2009	40.45	18.80	NP	21.65	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--
	8/14/2009	40.45	21.76	NP	18.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	40.45	17.80	NP	22.65	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	21.9	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	8/20/2010	40.45	18.64	NP	21.81	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	2/7/2011	40.45	17.02	NP	23.43	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	0.53	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	8/15/2011	40.45	17.76	NP	22.69	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	13.8	<0.50	<0.50	<0.50	13.1	<250	<1.0	<1.0	--	
	2/20/2012	46.17	20.00	NP	26.17	<50.0	<50.0	<0.50	<0.50	<0.50	<1.5	65.1	<0.50	<0.50	<0.50	5.3	<250	<1.0	<1.0	--	
	8/31/2012	46.17	20.79	NP	25.38	<50	<50	<0.50	<0.50	<0.50	<0.50	57	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	--	
2/5/2013	46.17	17.59	NP	28.58	--	<50	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	--		
8/14/2013	46.17	21.70	NP	24.47	--	<50	<0.50	<0.50	<0.50	<0.50	100	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	--		
2/4/2014	46.17	23.80	NP	22.37	--	<50	<0.50	<0.50	<0.50	<0.50	80	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	<0.50		
MW-11	12/14/2007	37.64	20.16	NP	17.48	8000	8000	<10	72	230	760	--	<10	<10	<10	<400	<6000	<10	<10	--	
	2/12/2008	37.64	14.35	NP	23.29	5500	5500	46	13	220	160	--	<2.5	<2.5	<2.5	<50	<500	<2.5	<2.5	--	
	5/22/2008	37.64	16.63	NP	21.01	5700	5700	80	21	320	150	--	<5	<5	<5	<100	<3000	<5	<5	--	
	8/25/2008	37.64	19.48	NP	18.16	5300	5300	<5	20	120	320	--	<5	<5	<5	<100	<3000	<5	<5	--	
	12/17/2008	37.64	21.26	NP	16.38	12000	12000	2.4	2.6	30	54	--	<0.5	<0.5	<0.5	<10	<300	<0.5	<0.5	--	
	2/25/2009	37.64	16.38	NP	21.26	6800	6800	0.86	20	150	390	<0.50	--	--	--	--	--	--	--	--	
	5/21/2009	37.64	16.16	NP	21.48	2500	2500	1.5	4.4	36	82	1.5	--	--	--	--	--	--	--	--	
	8/14/2009	37.64	19.27	NP	18.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/10/2010	37.64	13.35	NP	24.29	820	820	0.53	0.86	9.0	15.4	1.4	<0.50	<0.50	<0.50	6.1	<250	<1.0	<1.0	--	
	8/20/2010	37.64	15.66	NP	21.98	1740	1740	0.52	1.4	16.5	26.1	1.2	<0.50	<0.50	<0.50	8.2	<250	<1.0	<1.0	--	
	2/7/2011	37.64	13.55	NP	24.09	1530	1530	<0.50	1.3	14.3	24.1	1.1	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	8/15/2011	37.64	14.58	NP	23.06	1530	1530	<0.50	0.80	9.2	8.0	<0.50	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	2/20/2012	43.34	16.24	NP	27.10	2180	2180	0.65	3.5	48.9	70.6	0.73	<0.50	<0.50	<0.50	<5.0	<250	<1.0	<1.0	--	
	6/27/2012	43.34	15.40	NP	27.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/2012	43.34	17.61	NP	25.73	1800	1800	<0.50	2.3	40	46	0.58	<0.50	<0.50	<0.50	5.1	<5.0	<0.50	<0.50	--	
	9/27/2012	43.34	18.45	NP	24.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/5/2013	43.34	14.30	NP	29.04	--	870	<0.50	<0.50	8.5	8.4	<0.50	<0.50	<0.50	<0.50	<5.0	<8.0	<0.50	<0.50	--		
8/14/2013	43.34	18.35	NP	24.99	--	2,200	<0.50	3.4	68	61	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	--		
2/4/2014	43.34	20.85	NP	22.49	--	4,700	0.52	8.2	110	130	<0.50	<0.50	<0.50	<0.50	<5.0	<5.0	<0.50	<0.50	56		

Gauging Notes:

TOC - Top of Casing
Well Screen Interval - Top of Screen to Bottom of Screen
ft - Feet
NP - LNAPL not present
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
NG - Not gauged
VO - Vehicle Obstruction
NSVD - Not surveyed
-- - No information available

Analytical Notes:

-- - No information available
< - Below the laboratory's indicated reporting limit
NS - Well not sampled.
µg/L - micrograms/liter
DRO - Diesel range organics
TPHg - Total petroleum hydrocarbons as gasoline
MTBE - Methyl tert-butyl ether
DIPE - Di-isopropyl ether
ETBE - Ethyl tert-butyl ether
TAME - Tert-amyl methyl ether
TBA - Tert-butyl alcohol
Bold - Above the laboratory's indicated reporting limit

TABLE 3a
 ADDITIONAL HISTORICAL GROUNDWATER ANALYTICAL DATA
 76 (FORMERLY BP) STATION NO. 111117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA



Well I.D.	Date	GROUNDWATER ANALYTICAL DATA																	
		Alkalinity, Total as CaCO3 (mg/L)	Biochemical Oxygen Demand (ug/L)	Chemical Oxygen Demand (ug/L)	Chloride (ug/L)	Chromium (ug/L)	Chromium, Hexavalent (ug/L)	Iron SW6010 T (ug/L)	Iron SW6010B T (mg/L)	Iron, Ferric (ug/L)	Iron, Ferrous (ug/L)	Methane (ug/L)	Nitrate as N (ug/L)	Nitrite as N (ug/L)	Nitrogen (ug/L)	Nitrogen, Ammonia (ug/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, NO2 plus NO3 (ug/L)	
DPE-1	8/15/2011	--	4560	27900	25200	0.66	<0.2	11100	--	9490	1600	1500	108	13.1	<1000	<100	--	121	
DPE-4	8/15/2011	--	55000	113000	26400	4	<0.2	10800	--	3230	7600	16100	<50.0	39.6	1770	<100	--	62.1	
DPE-5	12/14/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/12/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	5/22/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/25/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/17/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	2/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/15/2011	--	21200	53900	32100	28	<0.2	20500	--	14000	6500	13900	<50.0	28.8	1320	<100	--	<50.0	
EX-1	8/15/2011	--	8680	29800	19100	2.9	<0.2	1420	--	<100	1400	5040	52.9	<10.0	1120	185	--	59.7	
	2/20/2012	--	--	--	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
	8/31/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/27/2012	--	--	--	--	--	--	0.77	--	<100	1670	--	--	--	--	--	<0.10	--	
	2/5/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
EX-2	8/15/2011	--	579000	7420	17100	2.2	<0.2	932	--	932	<100	208	12100	<10.0	<1000	<100	--	12100	
	2/20/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/27/2012	--	--	--	--	--	--	<0.10	--	<100	<1.00	--	--	--	--	--	43	--	
	2/5/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/7/2012	525	--	63000	--	--	--	2.08	4.55	--	--	5870	--	--	--	--	--	--	
	3/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	4/27/2012	742	--	120000	--	--	--	2.23	4.89	--	--	5020	--	--	--	--	<0.10	--	
	5/29/2012	496	--	100000	--	--	--	3.88	5.62	--	--	4300	--	--	--	--	<0.10	--	
	6/27/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	8/31/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	9/27/2012	556	--	520000	--	--	--	6.57	27.1	--	--	4340	--	--	--	--	<0.10	--	
	2/5/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	9/27/2012	--	--	--	--	--	--	<0.10	--	--	<100	38.6	--	--	--	--	3.0	--	
	2/5/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	9/27/2012	--	--	--	--	--	--	1.6	--	--	1800	1770	--	--	--	--	<0.10	--	
	2/5/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Analytical Notes:

- - No information available
- < - Below the laboratory's indicated reporting limit
- µg/L - micrograms/liter
- mg/L - milligrams/liter
- Bold** - Above the laboratory's indicated reporting limit

TABLE 3a CONTINUED
ADDITIONAL HISTORICAL GROUNDWATER ANALYTICAL DATA
76 (FORMERLY BP) STATION NO. 111117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA



Well I.D.	Date	GROUND WATER ANALYTICAL DATA					
		Phosphate, Ortho (ug/L)	Phosphorous (ug/L)	Sulfate E300 (ug/L)	Sulfide SM4500 (ug/L)	Total Organic Carbon A5310 (mg/L)	Total Organic Carbon A5310C (ug/L)
DPE-1	8/15/2011	219	236	14300	1040	--	3640
DPE-4	8/15/2011	502	732	<1000	1080	--	14000
DPE-5	8/15/2011	240	134	<1000	1600	--	9360
EX-1	8/15/2011	148	107	3830	1080	--	11600
	2/20/2012	--	--	--	--	--	--
	8/31/2012	--	--	--	--	--	--
	9/27/2012	--	--	<0.50	--	--	--
	2/5/2013	--	--	--	--	--	--
EX-2	8/15/2011	162	106	17600	760	--	2010
	2/20/2012	--	--	--	--	--	--
	8/31/2012	--	--	--	--	--	--
	9/27/2012	--	--	28	--	--	--
	2/5/2013	--	--	--	--	--	--
	3/7/2012	--	--	--	<0.050	--	7.8
	3/19/2012	--	--	--	--	--	--
	4/27/2012	--	--	13	0.20	--	25
MW-4	5/29/2012	--	--	<1.0	0.25	63	63
	6/27/2012	--	--	--	--	--	--
	8/31/2012	--	--	--	--	--	--
	9/27/2012	--	--	<1.0	0.20	73	73
	2/5/2013	--	--	--	--	--	--
MW-9	9/27/2012	--	--	38	--	--	--
	2/5/2013	--	--	--	--	--	--
MW-11	9/27/2012	--	--	11	--	--	--
	2/5/2013	--	--	--	--	--	--

Analytical Notes:

-- - No information available

< - Below the laboratory's indicated reporting limit

µg/L - micrograms/liter

Bold - Above the laboratory's indicated reporting limit

Semi-Annual Summary Report, October 2013 through March 2014
76 (Former BP) Station No. 11117
7210 Bancroft Avenue, Oakland, California USA
Antea Group Project No. I42611117



Appendix A

Site Details and Summary of Previous Environmental Investigations

SITE LOCATION AND BACKGROUND

The Site is an active 76-brand gasoline retail outlet located on the northern corner of Bancroft Avenue and 73rd Avenue at 7210 Bancroft Avenue in Oakland, Alameda County, California (**Figure 1**). The site consists of a service station building, three 12,000-gallon gasoline underground storage tanks (USTs), and one 10,000-gallon diesel UST with associated piping and dispensers. The site is covered with asphalt or concrete surfacing except for planters along the southeastern and southwestern property boundaries and at the north corner of the property.

Land use in the immediate vicinity of the site is mixed commercial and residential. BP acquired the facility from Mobil Oil Corporation in 1989. In January 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

1984 UST Replacement: In 1984, the pre-existing USTs at the site were removed and three single-walled fiberglass gasoline underground storage tanks (USTs) (6,000-gallon, 10,000-gallon, and 12,000-gallon) and one 6,000-gallon diesel UST were installed in a cavity immediately to the northeast of the former USTs. A UST removal/installation report is not on file, and it is unknown if one was ever prepared. No documentation was reportedly found referencing the conditions of the removed USTs or reporting evidence of the hydrocarbon impacts in the soil and groundwater, if any, at the time of the UST removal.

1989 Phase II Environmental Audit: In December 1989, Hunter Environmental Services, Inc. (Hunter) performed a Phase II Environmental Audit on the adjacent Eastmont Town Center site located to the north and northwest of the former BP Site. Part of the Phase II study included the installation monitoring well MW-3 near the western boundary of the former BP Site. Soil samples collected from 10 and 20 feet below ground surface (bgs) from MW-3 were analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, and total xylenes (BTEX), and oil and grease. No analytes were reported above their respective laboratory reporting limits (LRLs). A groundwater sample collected from MW-3 was reported to contain TPH and benzene at concentrations of 2,700 micrograms per liter ($\mu\text{g/L}$) and 530 $\mu\text{g/L}$, respectively (Hunter, 1989).

1991 Phase I Subsurface Investigation: In December 1991, Hydro Environmental Technologies, Inc. (Hydro) drilled two on-site soil borings (MW-1 and MW-2) to total depths of 40 feet bgs, and soil samples were collected at 10-foot intervals between 5 and 25 feet bgs. First groundwater was encountered at approximately 30 feet bgs. The analytical results of the soil samples from MW-1 and MW-2 reported total petroleum hydrocarbons as gasoline (TPH-g) and BTEX at concentrations below their respective LRLs (Hydro, 1991).

1992 Phase I Subsurface Investigation: In July 1992, Hydro advanced boring MW-4 and MW-6 to total depths of 40 feet bgs, and boring B-5 was advanced to 50 feet bgs, First groundwater was encountered at approximately 30 feet bgs in borings MW-4 and MW-6, and no free water was encountered in boring B-5. The analytical results of soil samples collected at 30 feet bgs from B-5 and MW-6 reported TPH-g and BTEX at concentrations below their respective LRLs. The maximum TPH-g and BTEX concentrations in soil reported in MW-4 were 6,000 milligrams per kilogram (mg/kg) and 34 mg/kg, respectively, from a depth of 20 feet bgs. Borings MW-4 and MW-6 were subsequently converted into monitoring wells (Hydro, 1992).

1994 Baseline Assessment Report: In September 1994, EMCON performed a Supplemental Site Assessment at the site. Four exploratory soil borings (THP-1, TB-2, TB-3, TB-4) were advanced to a maximum depth of 45 feet bgs north of the former and existing UST complexes (THP-1), at the former service bays (TB-2), north of the northern pump island (TB-3), and at a former pump island (TB-4). Additionally, one soil sample was collected from beneath each of the five dispensers (TD-1 through TD-5). Groundwater was encountered in TB-2 and TB-3 at approximately 33 to 36 feet bgs and groundwater samples were collected from TB-2 and TB-3 via temporarily well points. Maximum concentrations of 16 mg/kg TPH-g (TD-3), TPH as diesel (TPH-d) at concentrations ranging from 110 mg/kg to 5,000 mg/kg (TD-1 through TD-5), and benzene at concentrations below LRLs were reported in soil samples. TPHg was not reported above the LRLs and a maximum concentration of 0.7 µg/L benzene (TB-3) was reported in groundwater samples (EMCON, 1994).

1994 Well Installation: In October 1994, Hydro advanced boring MW-7 to a total depth of 45 feet bgs, and borings MW-8 and MW-9 were advanced to total depths of 40 feet bgs. First encountered groundwater was at approximately 27 feet bgs to 32 feet bgs. TPH-g and BTEX were not detected above their respective LRLs in soil samples collected from 25 feet bgs in each boring. The three borings were subsequently converted into monitoring wells MW-7 through MW-9 (Hydro, 1995).

1997 Offsite Well Installation: In July 1997, Pacific Environmental Group (PEG) drilled one boring (MW-10) offsite to a depth of approximately 37.5 feet bgs. Soil samples were collected and the boring was subsequently converted into a monitoring well. First groundwater was encountered at approximately 26 feet bgs. No TPH-g, BTEX or methyl tertiary butyl ether (MTBE) was detected in soil samples at concentrations above their respective LRLs in MW-10. TPH-g and BTEX were not detected in the groundwater sample from MW-10 at concentrations above their respective LRLs. However, MTBE was detected at concentration of 13 µg/L using EPA Method 8020 (PEG, 1997).

1998 UST and Associated Piping and Dispenser Removal: In August 1998, Environmental Resolutions, Inc. (ERI) removed the three gasoline USTs (6,000-gallon, 10,000-gallon, and 12,000-gallon), one 6,000-gallon diesel UST, and associated dispensers and piping from the site. There was no visible evidence of leakage from the USTs removed. A total of eight native soil samples were collected from beneath each end of the removed USTs (denoted as A through H on **Figure 2**) at depths of 14 to 16 feet bgs, and a total of 18 soil samples (denoted as I through Z on **Figure 2**) were collected from the former dispenser locations and from beneath the associated product lines at three feet bgs (ERI, 1998).

TPH-g was reported in five of the eight UST excavation samples at concentrations ranging from 3.7 mg/kg (S-15-T2S) to 5,300 mg/kg (S-15-T1S). TPH-d was detected at 630 mg/kg (S-15-T1N) and 800mg/kg (S-15 T1S) into two samples, benzene concentrations ranged between 0.40 mg/kg (S-15-T1N) to 0.95 mg/kg (S-16-T3N) in three samples, MTBE concentrations ranged between 0.028 mg/kg (S-14-T4S) to 5.3 mg/kg (S-16-T3N) in seven samples, and lead was not reported in the sample analyzed for lead. TPH-g was reported in nine of the eighteen dispenser and product line samples with concentrations ranging between 1.4 mg/kg (S-3-PL12) to 7,200 mg/kg (S-3-D4). TPH-d was detected between 4.8 mg/kg (S-3-PL12) to 190 mg/kg (S-3-PL11) in five samples, benzene was detected between 0.0089 mg/kg (S-3-PL12) to 22 mg/kg (S-3-D4) in three samples and MTBE was detected between 0.048 mg/kg (S-3-PL12) to 15 mg/kg (S-3-PL1) in ten samples (ERI, 1998).

During the 1998 UST replacement activities, approximately 389 tons of soil and backfill were transported off-site disposal. The existing 10,000-gallon diesel and three 12,000-gallon gasoline USTs were installed as replacements (ERI, 1998).

1999 Groundwater Recovery Test: In April 1999, Alisto Engineering Group (Alisto) conducted groundwater recovery tests on wells MW-1 through MW-4, MW-6, MW-7 and MW-10 to assess the spatial variation in hydraulic conductivity in the shallow water-bearing zone across the Site. Testing by the Bouwer-Rice method yielded hydraulic conductivities of 2.46×10^{-2} ft/min for MW-1, 2.42×10^{-4} ft/min for MW-2, 3.82×10^{-4} ft/min for MW-3, 5.75×10^{-4} ft/min for MW-4, 1.99×10^{-2} ft/min for MW-6, 1.09×10^{-4} ft/min for MW-7 and 8.78×10^{-5} ft/min for MW-10. The geometric mean of the hydraulic conductivity and flow velocity values were calculated to be 1.37×10^{-5} feet per second and 73.85 feet per year, respectively (Alisto, 1999).

1999 Extraction Well Installation: In November 1999, Cambria Environmental Technology, Inc. (Cambria) installed two 4-inch diameter wells (EX-1 and EX-2) on-site to facilitate potential remedial activities at the site. Well EX-1 was drilled to 39.5 feet bgs and EX-2 was drilled to 36.5 feet bgs. Groundwater was first encountered at 26 feet bgs. No TPH-G or BTEX, and relatively low MTBE concentrations (below 0.012 mg/kg) were reported in soil samples collected from EX-1 and EX-2 (Cambria, 2000).

2000 Interim Remedial Action and Recovery Testing: Between March 16 and April 30, 2000, Cambria conducted interim remedial activities at the site to evaluate the effectiveness of hydrocarbon and MTBE reduction using short-term groundwater extraction. During eight extraction events, approximately 10,900 gallons of groundwater was extracted from wells EX-1, EX-2 and MW-2. During the extraction events, stable to slightly decreasing hydrocarbon and MTBE concentration trends were reported in samples collected from wells MW-2 and EX-1, located immediately southwest of the existing USTs. Samples from well EX-2, located north of the existing USTs, exhibited lower hydrocarbon and MTBE concentrations than MW-2 and EX-1. In April 2000, during the batch extraction events, recovery tests were conducted on wells EX-1, EX-2 and MW-2. Based on the recovery test measurements, the calculated hydraulic conductivity values ranged from 1.85×10^{-4} ft/min to 8.33×10^{-4} ft/min with resulting flow velocities of 16 ft/year to 73 ft/year at well MW-2 (Cambria, 2000).

The calculated hydraulic conductivity values ranged from 2.02×10^{-5} ft/min to 3.85×10^{-5} ft/min for well EX-1 with resulting flow velocities of 1.8 to 3.4 Ft/yr. And a well EX-2, the calculated hydraulic conductivity values ranged from 3.04×10^{-4} ft/min to 2.13×10^{-3} ft/min for resulting flow velocities of 27 ft/year to 187 ft/year. The geometric mean of these values is a hydraulic conductivity of 3.0×10^{-4} ft/min and resulting flow velocity of 26 ft/year (Cambria, 2000).

2001 Dual-Phase Extraction Pilot Test: From October 29, through November 2, 2001, Cambria performed a dual phase soil vapor and groundwater extraction (DPE) pilot test on the monitoring wells with the highest historical hydrocarbon concentrations (i.e., MW-2 and MW-4) and the extraction wells (EX-1 and EX-2) at the site. The DPE test results indicated that the vacuum influence was limited to within 18 to 28 feet of the extraction well. Water levels typically decreased several feet in the extraction wells and had a varied response in the observation wells. Estimated vapor-phase removal rates were approximately 200-pounds of hydrocarbon per day in wells MW-4 and EX-1, and less than 5-pounds of hydrocarbon per day in wells MW-2 and EX-2 (Cambria 2002).

Soil vapor concentrations showed a decreasing trend in wells MW-4 and EX-1 during the short-term pilot tests. Grab water samples collected before and after the pilot tests remained the same order of magnitude. A total of 6,500 gallons of water was extracted during the DPE pilot test and appropriately disposed off-site. Overall, the test results indicated that DPE is a feasible remedial alternative for the site (Cambria, 2002). Alameda County Environmental Health (ACEH) approved Cambria's August 8, 2002, *Dual Phase Extraction Pilot Test Report* as a Corrective Action Plan (CAP).

2005 Soil and Water Investigation: In Fall 2005, URS completed nine Geoprobe soil borings with co-located Hydropunch borings. The first phase of work was on-site source area characterization: five boring locations (A-1 through A-5) were advanced in the vicinity of the possible hydrocarbons source areas such as locations of former and current USTs, products dispensers, and in the vicinity of MW-4 to adequately characterize the lateral and vertical extent of petroleum hydrocarbons in soils in the identified source areas. An off-site assessment was completed during the second phase of work (borings A-7 through A-10) to further define the downgradient, cross-gradient, and up-gradient extent of the groundwater plume (soil boring A-6 was unable to be advanced due to close proximity to electric lines and product piping). Maximum concentrations of gasoline range organics (GRO), benzene, and MTBE were detected in soil at concentrations of 490 mg/kg [A-4 (23.5-24')], 0.11 mg/kg [A-5 (35-35.5')], and 0.84 mg/kg [A-1 (46-46.5')], respectively. Maximum concentrations of GRO, benzene, and MTBE were detected in ground water at concentrations of 510,000 µg/L [A-2 (21.3')], 11,000 µg/L [A-4 (34-36')], and 39,000 µg/L [A-4 (34-36')], respectively (URS, 2005).

The cross-gradient and downgradient lateral extents of the dissolved hydrocarbon plume were characterized during the last investigation. However, the vertical extent of the dissolved-phase hydrocarbons on the southern portion of the site was not defined. Specifically, significantly elevated concentrations were detected in Hydropunch groundwater samples collected from the bottom depths of soil borings A-2, A-3 and A-4. The bottom Hydropunch sample from boring A-2 (40-42 ft bgs) contained concentrations of GRO, benzene, and MTBE at 36,000 µg/L, 1,800 µg/L, and 110 µg/L, respectively. The bottom Hydropunch sample from boring A-3 (34-36 ft bgs) contained concentrations of GRO, benzene, and MTBE at 12,000µg/L, 21µg/L, and 8.3µg/L respectively. The bottom Hydropunch sample from boring A-4 (34-36 ft bgs) contained GRO, benzene, and MTBE concentrations of 120,000µg/L, 11,000µg/L and 39,000 µg/L respectively (URS, 2005).

Therefore, the vertical extent of dissolved phase petroleum hydrocarbon contamination remains unknown in this southern area of the site (URS, 2005). A work plan for soil and water investigation to delineate the vertical extent of contamination in the southern portion of the site was submitted to ACEH in October 2006.

2007 Soil and Groundwater Investigation: In April 2007, Stratus Environmental, Inc. (Stratus) advanced cone penetrometer test (CPT) borings in three locations onsite (CPT-1 through CPT-3) to maximum depths of 60 feet bgs. CPT-1 was advanced southwest of the dispenser islands and southeast of monitoring well MW-1; CPT-2 was advanced south of the dispenser islands and southwest of monitoring well MW-4; CPT-3 was advanced in the eastern corner of the side as requested by the ACEH. An Ultraviolet Induced Fluorescence (UVIF) module was used at each CPT boring location, analyzing the vertical extent of petroleum hydrocarbons in addition to providing soil profiling data. Groundwater samples were collected from multiple depths at each boring locations; physical soil samples were not collected during this investigation.

- GRO was detected above laboratory reporting limits in five of the seven groundwater samples, ranging from 170 µg/L (CPT-3-28-32') to 170,000 µg/L (CPT-1-37-41').
- Benzene was detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 0.51 µg/L (CPT-3-23-27') to 7,700 µg/L (CPT-2-37-41').
- Toluene was detected above laboratory reporting limits in three of the seven groundwater samples, ranging from 57 µg/L (CPT-1-30-34') to 670 µg/L (CPT-2-28-32').

- Ethylbenzene was detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 530 µg/L (CPT-2-37-41') to 2,600 µg/L (CPT-1-37-41').
- Total xylenes were detected above laboratory reporting limits in four of the seven groundwater samples, ranging from 290 µg/L (CPT-2-37-41') to 9,600 µg/L (CPT-1-37-41').
- MTBE was detected above laboratory reporting limits in five of the seven groundwater samples, ranging from 4.4 µg/L (CPT-3-56-60') to 6,500 µg/L (CPT-2-37-41').
- TBA was detected above laboratory reporting limits in groundwater sample CPT-2-37-41' at 2,400 µg/L.

2007-2008 DPE System Installation: Construction of the DPE system was started by Broadbent & Associates, Inc (BAI) and Stratus in late 2007. The system consists of a thermal/catalytic oxidizer with a 25 horsepower liquid ring blower designed to extract water and vapor from six on-site extraction wells. Extracted vapor were to be treated by thermal/catalytic oxidation and discharged to the atmosphere under the oversight of the Bay Area Air Quality Management District. Extracted groundwater was to be treated by a sediment filter and three 1,000 pounds carbon vessels before being discharged into the City of Oakland sanitary sewer system. DPE wells DPE-1 through DPE-5 were installed at the site to total depths ranging from 35 feet to 40 feet bgs. Well MW-2 was overdrilled and destroyed to allow DPE-4 to be installed in the same borehole. The system is currently connected to six wells (DPE-1 through DPE-5 and EX-1) (BAI, 2008a).

As of the end of the fourth quarter 2008 the system had not been started. BAI and Stratus were still coordinating with Pacific Gas & Electric (PG&E) to install electrical service to the system. Natural gas was completed to the site and system in third quarter 2008 (BAI, 2008a).

During DPE construction activities, on-site groundwater monitoring well MW-11 was installed to a total depth of 40 feet bgs on the southern corner of the site. Soil samples collected at 20 feet and 30 feet bgs reported maximum concentrations of 1.9 mg/kg GRO and 0.0089 mg/kg benzene. MTBE was not reported above the LRL in either of the soil samples (BAI, 2008a).

2009-2011 DPE System Startup Efforts: In 2009, Antea Group (formerly Delta Consultants) began coordinating with nearby businesses (Eastmont Mall and Burger King) for the 3-phase power source. Due to financial consideration, Antea Group also explored another alternative for the startup of the DPE system, which included reconfiguring the current system for single phase power.

2011-2012 Remedial Action Site Investigation: Antea Group submitted the *Remedial Action Investigation Work Plan*, dated August 03, 2011 to the ACEH. The ACEH approved the proposed scope of work in an agency letter to Antea Group dated September 1, 2011. In October 2011, Antea Group and subcontractors advanced borings C-1 through C-5, and advanced and installed remedial wells SVE-1 and AS-1 per the August 2011 Work Plan. Antea Group submitted a *Remedial Investigation Work Plan Addendum*, dated December 13, 2011 which proposes a postponement of the AS/SVE pilot test described in the August 3, 2011 *Remedial Action Investigation Work Plan* to utilize a new remedial strategy called Plume Stop, a product created by Regenesis. Between March 26 and 30, 2012, Antea Group and Regenesis oversaw subcontractor Vironex inject Plume Stop at nine soil boring locations using direct push technology. Antea Group is currently conducting post injection groundwater monitoring events as outlined in the December 2011 Work Plan Addendum.

2013 Site Investigation: Antea Group conducted a site investigation on October 14 through 18, 2013 including the advancement of nine CPT borings (CPT-4 through CPT-12). The borings were advanced in the vicinity of monitoring well MW-4 in an attempt to evaluate soil contamination in the area in preparation for a feasibility study/corrective action plan. Results of the investigation were reported in the *Site Investigation Report*, dated January 24, 2014.

FREE PRODUCT RECOVERY DURING GROUNDWATER MONITORING EVENTS

Free product was observed in groundwater monitoring well MW-2 between the 1993 and 1998, at thicknesses ranging from 2.60 feet (3/30/1994) to less than 0.01 feet (10/2/1997 to 7/21/1998). When free product was observed in the well, it was removed by bailer. Between 1993 and 1998, a cumulative total of 24.90 gallons of free product had been removed from the well (Alisto, 1998).

Free product was also observed in well MW-4 during the third quarter 2001 (0.03 inches), fourth quarter 2006 (0.11 inches), first quarter 2008 (0.01 inches), and third quarter 2008 (0.05 inches); and in EX-2 during the second quarter 2007 (0.01 inch). With the exception of 1.5 gallons of a free product/water mixture recovered from MW-4 during the third quarter 2008 (BAI, 2008b), free product was not recovered from these wells when observed.

SENSITIVE RECEPTORS

2000 Potential Receptor Survey, Expanded Site Plan and Well Search: In October 2000, Alisto completed a potential receptor survey, prepared an expanded site plan with neighboring property parcel information and underground utilities mapped, and identified wells in the vicinity of the site. A review of the files of the California Department of Water Resources (DWR) was performed to identify all known wells within one-half mile radius of the site. The results of the well search revealed that there were 17 wells other than the on-site monitoring wells. Of these, 11 were offsite monitoring wells; four were cathodic protection wells, one an industrial well, and one an irrigation well for a nearby cemetery. No domestic/municipal water supply wells were identified from review of the DWR files (Alisto, 2000).

2010 Sensitive Receptor Survey: Delta Consultants (Delta) submitted a *Sensitive Receptor Survey* in October 2010. As part of that receptor survey, Delta conducted a records review (environmental database search), a well radius search, and a search for other sensitive receptors which have the potential to be affected by the petroleum hydrocarbon release at the site. Delta's review of the historical aerial photographs indicated that the site in 1939 was primarily used for agricultural purposes with small family residences. In general, the site was developed to the current conditions with the station building in 1974. The historical topographic maps support the indication of residential houses and agriculture in the site region as early as 1915 to 1948. The well search indicated that 10 wells were within a one-mile radius of the site. DWR indicated the presence of 7 wells within a one-mile radius of the site. However, no records were found for the status of these wells as being active or abandoned. The main surface water bodies were Lake Merritt located northwest of the site and San Leandro Bay located west of the site. Several churches, schools and day care centers were located within a one-mile radius of the site. Based on the above identified receptors' distances from the site, directions from the site, and extent of hydrocarbon impact at the site, they were not anticipated to be affected by the petroleum hydrocarbon release at the site.

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7210 Bancroft Avenue, Oakland, California USA
Antea Group Project No. I42611117



Appendix B

Blaine Tech Services Groundwater Sampling Procedures

BLAINE TECH SERVICES, INC. METHODS AND PROCEDURES FOR THE ROUTINE MONITORING OF GROUNDWATER WELLS

SAMPLING PROCEDURES OVERVIEW

SAFETY

All groundwater monitoring assignments performed for DELTA comply with safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40 hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any DELTA COP/ELT site.

INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic sounders which are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of Immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing free product.

EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well. Small volumes of purgewater are often removed by hand bailing with a disposable bailer.

PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less

than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewateres and does not recharge.

Wells known to dewater are evacuated as early as possible during each site visit in order to allow for the greatest amount of recovering. Any well that does not recharge to 80% of its original volume will be sampled prior to the departure of our personnel from the site in order to eliminate the need of a return visit.

In jurisdictions where a certain percentage of recovery is included in the local completion standard, our personnel follow the regulatory expectation.

PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non hazardous purgewater is transported under standard Bill of Lading or Non-Hazardous manifest to a Blaine Tech Services, Inc. facility before being transported to an approved disposal facility.

SAMPLE COLLECTION DEVICES

All samples are collected using disposable bailers.

SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory which will analyze the samples. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

TRIP BLANKS

Upon request, a Trip Blank is carried to each site and is kept inside the cooler for the duration of the sampling event. It is turned over to the laboratory for analysis with the samples from that site.

DUPLICATES

Upon request, one Duplicate sample is collected at each site. It is up to the Field Technician to choose the well at which the Duplicate is collected. Typically, a duplicate is collected from one of the most contaminated wells. The Duplicate sample is labeled DUP thus rendering the sample blind.

SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the analytical laboratory that will perform the intended analytical procedures. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

DOCUMENTATION CONVENTIONS

Each and every sample container has a label affixed to it. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time at which the sample was collected and the initials of the person collecting the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

DECONTAMINATION

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer which is then operated with high quality deionized water which is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps

and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, sounder etc.) that cannot be washed using the hot high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

EXAMPLE: The sounder is cleaned between wells using the non-phosphate soap and deionized water solution followed by deionized water rinses. The sounder is then washed with the steam cleaner between sites or as necessitated by use in a particularly contaminated well.

DISSOLVED OXYGEN READINGS

All Dissolved Oxygen readings are taken using YSI meters (e.g. YSI Model 550 meter). These meters are equipped with membrane probe that enables them to collect accurate in-situ readings.

The probe and reel is decontaminated between wells as described above. The meter is calibrated as per the instructions in the operating manual. The probe is lowered into the water column allowed to stabilize before use.

OXYIDATON REDUCTION POTENTIAL READINGS

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual. In use the probe is placed in a cup of freshly obtained monitoring well water and allowed to stabilize.

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Antea Group Project No. I42611117*



Appendix C

Blaine Tech Services Groundwater Sampling Field Data Sheets

Well-Head Inspection & Well Gauging Form

Antea Group Project No: 261117 Site Address: 7210 Bancroft Ave., Oakland CA
 Field Technician: Daniel Allen BZS Date: 2/4/14 Weather: cloudy
(Print Full Name & Company*)

Well Condition														
Sample Order	Field Point	Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time Gauged	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
4	MW-1	G	G	G	G	G	N	2	0828	21.10	36.50			
3	MW-3	G	G	G	G	G	N	2	0824	21.38	40.43			
12	MW-4	G	G	G	G	G	N	2	0820	21.85	38.78			
6	MW-6	G	G	G	G	G	N	2	0837	21.80	39.32			
5	MW-7	G	G	G	G	G	N	2	0832	22.20	44.28			
1	MW-8	P	P	P	G	G	N	2	0816	21.38	39.20			
8	MW-9	G	G	G	G	G	N	2	0847	21.69	38.70			
7	MW-10	G	G	G	G	G	N	2	0842	23.80	35.33			
10	MW-11	G	G	G	G	G	N	4	0859	20.85	37.00			
11	EX-1	G	G	G	G	G	N	4	0905	21.96	37.45			
2	EX-2	G	G	G	G	G	N	4	0820	23.20	35.00			
9	DPE-1	G	G	G	G	G	N	4	0853	22.25	39.52			

Notes: MW-10 1/2 tabs broken, MW-8 lid missing

** All well caps opened at least 15 minutes or longer before gauging wells:
CIRCLE ONE: YES or NO**



*Form provided by Antea Group

Note: Use G=good and P=poor for well condition

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave, Carlsbad CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-1	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.10	Well Diameter (in):	2 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	36.50	Water Column Height (ft):	15.40

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): 15.40 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 2.6 Casing Volume (gal): 2.6 X Specified Volumes: 3 = Calculated Purge (gal): 7.8		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1059	19.15	7.00	506	-65.4	71000	0.63	1.3		
1100	19.39	7.00	498	-120.0	71000	0.31	2.6		
1101	19.42	7.00	492	-157.9	71000	0.28	3.9		
1102	19.45	7.00	488	-162.2	531	0.26	5.2		
1103	19.48	6.99	487	-159.6	452	0.25	6.5		
1104	19.54	6.99	485	-158.3	397	0.24	7.8		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 7.8

Other Comments: 80% = 24.18 DTW = 22.35 *purge through flow cell

Sample Info:

Sample ID: MW-1-20140228 Sample Date and Time: 2/4/14 @ 1110

Selected Analysis: SEE COC

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: *[Signature]* Date: 2/4/14

Groundwater Sampling Form

Site Address: 7210 Bancroft Ave, Oakland CA	
Project No: 261117	Field Technician: DW
Field Point: MW-3	Date: 2/24/14
Depth to Water (DTW) (ft bgs): 21.38	Well Diameter (in): ② 4 6 8
Depth to LNAPL (ft bgs):	Thickness of LNAPL (ft):
Total Depth of Well (ft bgs): 40.43	Water Column Height (ft): 19.05

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
---	---	--

Water Column Height (ft): 19.05 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 3.2
 Casing Volume (gal): 3.2 X Specified Volumes: 3 = Calculated Purge (gal): 9.6

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius² * 0.163

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1038	19.65	7.13	461	-19.6	71000	1.10	1.6		
1039	19.98	6.99	459	-31.2	274	0.94	3.2		
1040	20.08	6.96	458	-37.5	126	0.90	4.8		
1041	20.14	6.95	458	-41.2	85	0.88	6.4		
1042	20.18	6.95	459	-43.3	76	0.87	8.0		
1043	20.25	6.95	459	-45.0	65	0.85	9.6		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 9.6

Other Comments: 80% = 25.19 * purge through flow cell
DTW = 21.48

Sample Info:	
Sample ID: MW-3-20140228	Sample Date and Time: 2/24/14 @ 1045
Selected Analysis: SEE COC	

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/24/14



LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen
 gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave., Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-4	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.85	Well Diameter (in):	2 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	38.78	Water Column Height (ft):	16.93

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): <u>16.93</u> X Conversion Factor (gal/ft): <u>0.17</u> = Casing Volume (gal): <u>2.8</u> Casing Volume (gal): <u>2.8</u> X Specified Volumes: <u>3</u> = Calculated Purge (gal): <u>8.4</u>		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1421	20.74	6.69	1127	-118.6	71000	0.34	1.4		
1422	21.01	6.68	1094	-122.5	683	0.28	2.8		
1423	21.07	6.69	1086	-124.1	421	0.30	4.2		
1424	21.14	6.68	1084	-125.6	308	0.34	5.6		
1425	21.21	6.68	1081	-127.0	184	0.38	7.0		
1426	21.29	6.68	1079	-128.6	102	0.40	8.4		
Post-Purge									

Did Well dewater?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Total Purge volume (gal):	8.4
Other Comments:	80% = 25.24 DTW = 23.09 F01-20140228 @ 1435 * Purge through Flow Cell		

Sample Info:	
Sample ID: MW-4-20140228	Sample Date and Time: 2/4/14 @ 1430
Selected Analysis:	SBE COC

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave, Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-6	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.80	Well Diameter (in):	② 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	39.32	Water Column Height (ft):	17.52

Purging Info and Calculations:

Purge Method: <u>Low-Flow</u> <u>3 casing volumes</u> Other: _____	Purge Equipment: <u>Disposable Bailer</u> <u>Electric Submersible</u> Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: <u>Disposable Bailer</u> Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): <u>17.52</u> X Conversion Factor (gal/ft): <u>0.17</u> = Casing Volume (gal): <u>3.0</u> Casing Volume (gal): <u>3.0</u> X Specified Volumes: <u>3</u> = Calculated Purge (gal): <u>9.0</u>		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1157	21.02	7.21	687	-102.4	71000	0.37	1.5		
1158	21.20	7.11	670	-100.9	685	0.36	3.0		
1159	21.31	7.03	691	-100.2	352	0.30	4.5		
1200	21.37	7.00	698	-101.6	209	0.28	6.0		
1201	21.41	6.99	704	-103.0	152	0.27	7.5		
1202	21.45	6.97	707	-105.2	117	0.27	9.0		
Post-Purge									

Did Well dewater?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Total Purge volume (gal):	<u>9.0</u>
Other Comments:	SO ₄ = 25.30 * purge through DTW = 21.90 flow cell		

Sample Info:	
Sample ID:	MW-6-20140228
Sample Date and Time:	2/4/14 @ 1205
Selected Analysis:	SEE COC

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14



LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen

gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave., Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-7	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	22.20	Well Diameter (in):	② 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	44.28	Water Column Height (ft):	22.08

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailer <u>Electric Submersible</u> Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: <u>Disposable Bailer</u> Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): 22.08	X Conversion Factor (gal/ft): 0.17	= Casing Volume (gal): 3.8
Casing Volume (gal): 3.8	X Specified Volumes: 3	= Calculated Purge (gal): 11.4

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius² * 0.163

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1121	19.52	6.87	502	-189.6	50	0.89	1.9		
1122	19.68	6.81	485	-197.8	37	0.63	3.8		
1123	19.79	6.78	480	-209.5	25	0.57	5.7		
1124	19.82	6.77	478	-214.2	20	0.51	7.6		
1125	19.84	6.75	477	-217.8	17	0.49	9.5		
1126	19.88	6.75	475	-219.0	12	0.48	11.4		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 11.4

Other Comments: 80% = 26.62 *purge through flow cell
 DTW = 26.58

Sample Info:

Sample ID: MW-7-20140228	Sample Date and Time: 2/4/14 @ 1140
Selected Analysis: SEE COC	

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave, Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-8	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.38	Well Diameter (in):	② 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	39.20	Water Column Height (ft):	17.82

Purging Info and Calculations:

Purge Method: Low-Flow <u>3 casing volumes</u> Other: _____	Purge Equipment: <u>Disposable Bailer</u> Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: <u>Disposable Bailer</u> Extraction Port Dedicated Tubing Disposable Tubing Other: _____
---	---	--

Water Column Height (ft): 17.82 X Conversion Factor (gal/ft): 0.17 = Casing Volume (gal): 3.0
 Casing Volume (gal): 3.0 X Specified Volumes: 3 = Calculated Purge (gal): 9.0

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius² * 0.163

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
0935	14.5	6.72	421	142	87	1.97	3.0		
0937	14.7	6.78	402	145	72	1.95	6.0		
0940	14.8	6.80	397	148	76	1.92	9.0		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 9.0

Other Comments: 80% = 24.94
DTW = 21.56

Sample Info:

Sample ID:	MW-8-20140228	Sample Date and Time:	2/4/14 @ 0945
Selected Analysis:	SFE COC		

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14



LNAPL = light non-aqueous phase liquids gal = gallon/s
 bgs = below ground surface temp = temperature
 ORP = Oxidation-Reduction Potential NTU = Nephelometric Turbidity Units
 D.O. = dissolved oxygen mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave, Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	MW-9	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.69	Well Diameter (in):	2 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	38.70	Water Column Height (ft):	17.01

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): <u>17.01</u> X Conversion Factor (gal/ft): <u>0.17</u> = Casing Volume (gal): <u>2.8</u> Casing Volume (gal): <u>2.8</u> X Specified Volumes: <u>3</u> = Calculated Purge (gal): <u>8.4</u>		

Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius² * 0.163

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1244	20.91	7.04	584	-96.2	71000	1.85	1.4		
1245	21.05	6.99	562	-104.3	71000	1.32	2.8		
1246	21.16	6.93	558	-112.6	71000	1.17	4.2		
1247	21.23	6.90	553	-118.5	533	1.09	5.6		
1248	21.28	6.90	550	-123.1	399	1.07	7.0		
1249	21.32	6.89	554	-126.0	315	1.06	8.4		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 8.4

Other Comments: 80% = 25.09 * purge through flow cell
 DTW = 21.85

Sample Info:	
Sample ID: MW-9-20140228	Sample Date and Time: 2/4/14 @ 1255
Selected Analysis: SEE COC	

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14



LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen

gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Benecroft Ave., Oakland CA		
Project No:	261117	Field Technician:	BW
Field Point:	MW-10	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	23.80	Well Diameter (in):	② 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	35.33	Water Column Height (ft):	11.53

Purging Info and Calculations:

Purge Method: Low-Flow <u>3 casing volumes</u> Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: <u>Disposable Bailer</u> Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): <u>11.53</u> X Conversion Factor (gal/ft): <u>0.17</u> = Casing Volume (gal): <u>2.0</u> Casing Volume (gal): <u>2.0</u> X Specified Volumes: <u>3</u> = Calculated Purge (gal): <u>6.0</u>		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1217	21.24	7.07	1018	-75.9	71000	0.47	6.0		
1218	22.17	6.94	1006	-78.8	71000	0.39	2.0		
1219	22.27	6.92	1025	-81.5	71000	0.28	3.0		
1220	22.36	6.92	1020	-86.6	71000	0.26	4.0		
1221	22.40	6.91	1017	-88.4	71000	0.25	5.0		
1222	22.44	6.91	1015	-90.2	71000	0.25	6.0		
Post-Purge									
Did Well dewater?		Yes	<input checked="" type="radio"/> No	Total Purge volume (gal): <u>6.0</u>					

Other Comments: 80% = 26.11 DTW = 26.03 *purge through flow cell

Sample Info:	
Sample ID: MW-10-20140228	Sample Date and Time: 2/4/14 @ 1230
Selected Analysis: SEE COC	

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave. Oakland CA		
Project No:	261117	Field Technician:	PLW
Field Point:	MW-11	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	20.85	Well Diameter (in):	2 4 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	37.00	Water Column Height (ft):	16.15

Purging Info and Calculations:

Purge Method: Low-Flow casing volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): 16.15 X Conversion Factor (gal/ft): 0.66 = Casing Volume (gal): 10.6 Casing Volume (gal): 10.6 X Specified Volumes: 3 = Calculated Purge (gal): 31.8		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1335	20.84	7.14	357	-169.3	80	0.21	5.3		
1337	20.88	7.11	357	-170.2	172	0.21	10.6		
1339	20.93	7.08	358	-171.3	266	0.22	15.9		
1341	21.20	7.05	362	-173.6	381	0.20	21.2		
1343	21.28	7.04	364	-175.2	443	0.18	26.5		
1345	21.33	7.02	364	-177.6	501	0.17	31.8		
Post-Purge									

Did Well dewater?	Yes	<input checked="" type="radio"/> No	Total Purge volume (gal):	31.8
Other Comments:	80% = 24.08 RTW = 23.86 purge through flow cell			

Sample Info:	
Sample ID:	MW-11-20140228
Sample Date and Time:	2/4/14 @ 1350
Selected Analysis:	SEE COC

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Ailen , an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave, Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	EX-1	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	21.94	Well Diameter (in):	2 (4) 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	37.45	Water Column Height (ft):	15.49

Purging Info and Calculations:

Purge Method: Low-Flow 3 casing volumes Other: _____	Purge Equipment: Disposable Bailor Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailor Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): 15.49	X Conversion Factor (gal/ft): 0.166	= Casing Volume (gal): 10.2
Casing Volume (gal): 10.2	X Specified Volumes: 3	= Calculated Purge (gal): 30.6
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1401	21.67	6.72	495	-156.8	42	0.46	3.1		
1403	21.74	6.65	472	-161.2	36	0.40	10.2		
1405	21.82	6.50	451	-165.5	31	0.37	15.3		
well dewatered @ 18.0 gals									
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 18.0

Other Comments: 80% = 25.06 * purge through flow cell
DTW = 24.89

Sample Info:

Sample ID:	EX-1-20140228	Sample Date and Time:	2/4/14 @ 1535
Selected Analysis:	SEE COC		

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen , an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14



LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen
 gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave., Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	EX-2	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	23.20	Well Diameter (in):	2 (4) 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	35.00	Water Column Height (ft):	11.80

Purging Info and Calculations:

Purge Method: Low-Flow <u>3 casing volumes</u> Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): <u>11.80</u>	X Conversion Factor (gal/ft): <u>0.66</u>	= Casing Volume (gal): <u>7.8</u>
Casing Volume (gal): <u>7.8</u>	X Specified Volumes: <u>3</u>	= Calculated Purge (gal): <u>23.4</u>
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1004	21.19	7.44	411	-31.0	36	1.11	3.9		
1006	21.62	7.00	411	-55.7	27	1.02	7.8		
1007	21.68	6.92	414	-66.8	25	0.95	11.7		
1009	21.66	6.83	406	-73.2	20	0.90	15.6		
1010	21.64	6.80	404	-79.8	23	0.88	19.5		
1012	21.61	6.78	405	-82.2	19	0.87	23.4		
Post-Purge									

Did Well dewater? Yes No Total Purge volume (gal): 23.4

Other Comments: 80% = 25.56 *purge through flow cell
 DTW = 25.48

Sample Info:

Sample ID:	EX-2-20140228	Sample Date and Time:	2/4/14 @ 1025
Selected Analysis:	SEE COC		

This form was provided by Antea Group and completed by: (Print Full Name) Denise Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14



LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen
 gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Groundwater Sampling Form

Site Address:	7210 Bancroft Ave. Oakland CA		
Project No:	261117	Field Technician:	DW
Field Point:	DPE-1	Date:	2/4/14
Depth to Water (DTW) (ft bgs):	22.25	Well Diameter (in):	2 ④ 6 8
Depth to LNAPL (ft bgs):		Thickness of LNAPL (ft):	
Total Depth of Well (ft bgs):	39.52	Water Column Height (ft):	17.27

Purging Info and Calculations:

Purge Method: Low-Flow casing-volumes Other: _____	Purge Equipment: Disposable Bailer Electric Submersible Peristaltic Pump Bladder Pump Other: _____	Sample Collection Method: Disposable Bailer Extraction Port Dedicated Tubing Disposable Tubing Other: _____
Water Column Height (ft): 17.27 X Conversion Factor (gal/ft): 0.66 = Casing Volume (gal): 11.4 Casing Volume (gal): 11.4 X Specified Volumes: 3 = Calculated Purge (gal): 34.2		
Conversion Factors (gal/ft): 2" = 0.17 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163		

Purge:		Start Time:		Stop Time:					
Time	Temp (°C)	pH	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge									
1307	21.80	6.97	696	-157.3	41	0.25	5.7		
1309	22.25	6.86	694	-149.8	36	0.32	11.4		
1311	22.45	6.85	707	-146.6	34	0.31	17.1		
1313	22.40	6.88	685	-139.2	24	0.30	22.8		
1315	22.34	6.88	680	-135.2	21	0.30	28.5		
1317	22.31	6.89	678	-133.0	17	0.30	34.2		
Post-Purge									
Did Well dewater?		Yes <input type="radio"/> No <input checked="" type="radio"/>		Total Purge volume (gal): 34.2					

Other Comments: 80% = 25.70 DTW = 25.55 *purse through flow cell

Sample Info:	
Sample ID:	DPE-1-20140228
Sample Date and Time:	2/4/14 @ 1320
Selected Analysis:	SEE COC

This form was provided by Antea Group and completed by: (Print Full Name) Daniel Allen, an employee of Blaine Tech Services, Inc.

Signature: [Signature] Date: 2/4/14

anteagroup
 Antea™ Group, 1-800-477-7411
 LNAPL = light non-aqueous phase liquids
 bgs = below ground surface
 ORP = Oxidation-Reduction Potential
 D.O. = dissolved oxygen
 gal = gallon/s
 temp = temperature
 NTU = Nephelometric Turbidity Units
 mV = millivolts

Semi-Annual Summary Report, October 2013 through March 2014
76 (Former BP) Station No. 11117
7210 Bancroft Avenue, Oakland, California USA
Antea Group Project No. I42611117



Appendix D

Certified Laboratory Analytical Reports and Data Validation Forms

Is the Data Set Valid?

(circle)
Yes / No

Preservation Temperature

(if Known): 4.4 °C

Antea™ Group Laboratory Data Validation Sheet

Project/Client: 76 (Former BP) Station No. 11117 / COP-ELT

Project #: I42611117

Date of Validation: 3/24/14 **Date of Analysis:** 2/8/14 - 2/12/14

Sample Date: 2/4/14 **Completed By:** ETW

Signature: [Signature]

Circle
or
Highlight
Yes / No
(below)

Analytical Lab Used and Report # (if any): Kiff #: 87339

1. Were the analyses the ones requested?
2. Do the sample number(s) on the chain-of-custody (COC) match the one(s) that appear on the laboratory data sheet?
3. Were samples prepared (extracted, filtered, etc.) within EPA holding times?
4. Once prepared/extracted, were the samples analyzed within the EPA holding times?
5. Were Laboratory blanks performed, if so, were they non-detect?
6. Are the units correct? (i.e., soil samples in mg/kg or ug/g, water samples mg/L, ug/L, and air samples in volume mg/m³, etc.)
7. Were appropriate Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples included in the laboratory batch sample?
8. In lieu of MS/ MSD, were surrogate spike (SS) or surrogate spike duplicate (SSD) samples included in the laboratory batch samples?
9. Were MS/ MSD (or SS/SSD) within the acceptable range of % recovery (i.e., approximately 80-120%, depending on the analyte)?
10. Were MS/MSD (or SS/SSD) values used to calculate Relative Percent Difference (RPD)?
11. Were Relative Percent Difference values within the acceptable range (i.e. ±25%)?

Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No
Yes / No

If any answer is no, explain why and what corrective action was taken (use additional sheet(s), as necessary):

[Empty box for corrective action explanation]



Laboratory Results

Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Subject : 14 Water Samples
Project Name : 2611117
Project Number :

Dear Mr. Dettloff,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC.

Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab number 08263CA.

If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy Turpen



Report Number : 87339

Date : 02/13/2014

Subject : 14 Water Samples
Project Name : 2611117
Project Number :

Case Narrative

TPH as Gasoline was performed by EPA 8260B by client request.



Report Number : 87339

Date : 02/13/14

Analysis Summary

Attention : Dennis Dettloff
 Antea Group
 11050 White Rock Rd. Suite 110
 Rancho Cordova, CA 95670

Project Name :2611117

Project Number :

Sample Name			DPE-1_20140228		EX-1_20140228		EX-2_20140228		MW-1_20140228		MW-10_20140228		MW-11_20140228		MW-3_20140228	
Sample Date			02/04/14		02/04/14		02/04/14		02/04/14		02/04/14		02/04/14		02/04/14	
Analyte	Method	Units	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results
Benzene	EPA 8260B	ug/L	0.50	ND	3.0	800	0.50	ND	0.50	ND	0.50	ND	0.50	0.52	0.50	ND
Ethylbenzene	EPA 8260B	ug/L	0.50	ND	0.50	360	0.50	ND	0.50	ND	0.50	ND	0.50	110	0.50	ND
Toluene	EPA 8260B	ug/L	0.50	ND	0.50	120	0.50	ND	0.50	ND	0.50	ND	0.50	8.2	0.50	ND
Total Xylenes	EPA 8260B	ug/L	0.50	ND	3.0	910	0.50	ND	0.50	ND	0.50	ND	0.50	130	0.50	ND
Diisopropyl ether (DIPE)	EPA 8260B	ug/L	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Ethanol	EPA 8260B	ug/L	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	ug/L	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L	0.50	1.1	0.50	98	0.50	27	0.50	ND	0.50	80	0.50	ND	0.50	ND
Tert-Butanol	EPA 8260B	ug/L	5.0	48	5.0	200	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND
Tert-amyl methyl ether (TAME)	EPA 8260B	ug/L	0.50	ND	0.50	3.9	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
TPH as Gasoline	EPA 8260B	ug/L	50	53	300	8100	50	ND	50	ND	50	ND	50	4700	50	ND
1,2-Dibromoethane	EPA 8260B	ug/L	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
1,2-Dichloroethane	EPA 8260B	ug/L	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND
Naphthalene	EPA 8260B	ug/L	0.50	ND	0.50	120	0.50	ND	0.50	ND	0.50	ND	0.50	56	0.50	ND
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		102		98.9		105		104		102		101		98.9
4-Bromofluorobenzene (Surr)	EPA 8260B	%		94.9		104		101		99.8		99.3		104		99.8
Toluene - d8 (Surr)	EPA 8260B	%		101		94.1		97.8		97.4		97.1		96.0		101

MRL = Method Reporting Limit

ND = Not Detected



Analysis Summary

Report Number : 87339

Date : 02/13/14

Attention : Dennis Dettloff
 Antea Group
 11050 White Rock Rd. Suite 110
 Rancho Cordova, CA 95670

Project Name :2611117

Project Number :

Sample Name			MW-4_20140228	MW-6_20140228	MW-7_20140228	MW-8_20140228	MW-9_20140228	TB1_20140228	FD1_20140228							
Sample Date			02/04/14		02/04/14		02/04/14		02/04/14		02/04/14		02/04/14			
Analyte	Method	Units	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results	MRL	Results		
Benzene	EPA 8260B	ug/L	10	3200	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	2600
Ethylbenzene	EPA 8260B	ug/L	10	1800	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	1700
Toluene	EPA 8260B	ug/L	10	200	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	160
Total Xylenes	EPA 8260B	ug/L	10	6400	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	5900
Diisopropyl ether (DIPE)	EPA 8260B	ug/L	10	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	ND
Ethanol	EPA 8260B	ug/L	150	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	90	ND
Ethyl-t-butyl ether (ETBE)	EPA 8260B	ug/L	10	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	ND
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L	10	220	0.50	1.1	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	220
Tert-Butanol	EPA 8260B	ug/L	50	3000	5.0	ND	5.0	ND	5.0	ND	5.0	ND	5.0	ND	50	3100
Tert-amyl methyl ether (TAME)	EPA 8260B	ug/L	10	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	ND
TPH as Gasoline	EPA 8260B	ug/L	1000	90000	50	ND	50	ND	50	ND	50	ND	50	ND	900	65000
1,2-Dibromoethane	EPA 8260B	ug/L	10	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	ND
1,2-Dichloroethane	EPA 8260B	ug/L	10	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	ND
Naphthalene	EPA 8260B	ug/L	10	1700	0.50	ND	0.50	ND	0.50	ND	0.50	ND	0.50	ND	9.0	780
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		97.2		103		101		101		99.7		102		99.3
4-Bromofluorobenzene (Surr)	EPA 8260B	%		96.8		92.3		91.0		111		112		100		99.1
Toluene - d8 (Surr)	EPA 8260B	%		102		91.2		99.8		99.8		99.9		96.0		100

MRL = Method Reporting Limit

ND = Not Detected

Project Name : **2611117**

Project Number :

Sample : **DPE-1_20140228**

Matrix : Water

Lab Number : 87339-01

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Methyl-t-butyl ether (MTBE)	1.1	0.50	ug/L	EPA 8260B	02/11/14 13:47
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Tert-Butanol	48	5.0	ug/L	EPA 8260B	02/11/14 13:47
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14 10:21
TPH as Gasoline	53	50	ug/L	EPA 8260B	02/11/14 13:47
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 13:47
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	02/11/14 13:47
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	02/11/14 13:47
4-Bromofluorobenzene (Surr)	94.9		% Recovery	EPA 8260B	02/11/14 13:47

Project Name : **2611117**

Project Number :

Sample : **EX-1_20140228**

Matrix : Water

Lab Number : 87339-02

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	800	3.0	ug/L	EPA 8260B	02/08/14 03:49
Toluene	120	0.50	ug/L	EPA 8260B	02/10/14 15:37
Ethylbenzene	360	0.50	ug/L	EPA 8260B	02/10/14 15:37
Total Xylenes	910	3.0	ug/L	EPA 8260B	02/08/14 03:49
Methyl-t-butyl ether (MTBE)	98	0.50	ug/L	EPA 8260B	02/10/14 15:37
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 15:37
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 15:37
Tert-amyl methyl ether (TAME)	3.9	0.50	ug/L	EPA 8260B	02/10/14 15:37
Tert-Butanol	200	5.0	ug/L	EPA 8260B	02/10/14 15:37
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 15:37
TPH as Gasoline	8100	300	ug/L	EPA 8260B	02/08/14 03:49
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 15:37
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 15:37
Naphthalene	120	0.50	ug/L	EPA 8260B	02/10/14 15:37
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	02/10/14 15:37
Toluene - d8 (Surr)	94.1		% Recovery	EPA 8260B	02/10/14 15:37
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	02/10/14 15:37

Project Name : **2611117**

Project Number :

Sample : **EX-2_20140228**

Matrix : Water

Lab Number : 87339-03

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Methyl-t-butyl ether (MTBE)	27	0.50	ug/L	EPA 8260B	02/10/14 12:17
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 12:17
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 12:17
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 12:17
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:17
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	02/10/14 12:17
Toluene - d8 (Surr)	97.8		% Recovery	EPA 8260B	02/10/14 12:17
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	02/10/14 12:17

Project Name : **2611117**

Project Number :

Sample : **MW-1_20140228**

Matrix : Water

Lab Number : 87339-04

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 12:49
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 12:49
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 12:49
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 12:49
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	02/10/14 12:49
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	02/10/14 12:49
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	02/10/14 12:49

Project Name : **2611117**

Project Number :

Sample : **MW-10_20140228**

Matrix : Water

Lab Number : 87339-05

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Methyl-t-butyl ether (MTBE)	80	0.50	ug/L	EPA 8260B	02/10/14 13:22
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 13:22
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 13:22
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 13:22
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:22
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	02/10/14 13:22
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	02/10/14 13:22
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	02/10/14 13:22

Project Name : **2611117**

Project Number :

Sample : **MW-11_20140228**

Matrix : Water

Lab Number : 87339-06

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	0.52	0.50	ug/L	EPA 8260B	02/10/14 13:54
Toluene	8.2	0.50	ug/L	EPA 8260B	02/10/14 13:54
Ethylbenzene	110	0.50	ug/L	EPA 8260B	02/10/14 13:54
Total Xylenes	130	0.50	ug/L	EPA 8260B	02/10/14 13:54
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 13:54
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/08/14 00:14
TPH as Gasoline	4700	50	ug/L	EPA 8260B	02/10/14 13:54
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 13:54
Naphthalene	56	0.50	ug/L	EPA 8260B	02/10/14 13:54
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	02/10/14 13:54
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	02/10/14 13:54
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	02/10/14 13:54

Project Name : **2611117**

Project Number :

Sample : **MW-3_20140228**

Matrix : Water

Lab Number : 87339-07

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14 11:40
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14 11:40
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/11/14 11:40
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14 11:40
1,2-Dichloroethane-d4 (Surr)	98.9		% Recovery	EPA 8260B	02/11/14 11:40
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	02/11/14 11:40
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	02/11/14 11:40

Project Name : **2611117**

Project Number :

Sample : **MW-4_20140228**

Matrix : Water

Lab Number : 87339-08

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	3200	10	ug/L	EPA 8260B	02/12/14 01:47
Toluene	200	10	ug/L	EPA 8260B	02/12/14 01:47
Ethylbenzene	1800	10	ug/L	EPA 8260B	02/12/14 01:47
Total Xylenes	6400	10	ug/L	EPA 8260B	02/12/14 01:47
Methyl-t-butyl ether (MTBE)	220	10	ug/L	EPA 8260B	02/12/14 01:47
Diisopropyl ether (DIPE)	< 10	10	ug/L	EPA 8260B	02/12/14 01:47
Ethyl-t-butyl ether (ETBE)	< 10	10	ug/L	EPA 8260B	02/12/14 01:47
Tert-amyl methyl ether (TAME)	< 10	10	ug/L	EPA 8260B	02/12/14 01:47
Tert-Butanol	3000	50	ug/L	EPA 8260B	02/12/14 01:47
Ethanol	< 150	150	ug/L	EPA 8260B	02/10/14 15:21
TPH as Gasoline	90000	1000	ug/L	EPA 8260B	02/12/14 01:47
1,2-Dichloroethane	< 10	10	ug/L	EPA 8260B	02/12/14 01:47
1,2-Dibromoethane	< 10	10	ug/L	EPA 8260B	02/12/14 01:47
Naphthalene	1700	10	ug/L	EPA 8260B	02/12/14 01:47
1,2-Dichloroethane-d4 (Surr)	97.2		% Recovery	EPA 8260B	02/12/14 01:47
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	02/12/14 01:47
4-Bromofluorobenzene (Surr)	96.8		% Recovery	EPA 8260B	02/12/14 01:47

Project Name : **2611117**

Project Number :

Sample : **MW-6_20140228**

Matrix : Water

Lab Number : 87339-09

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Methyl-t-butyl ether (MTBE)	1.1	0.50	ug/L	EPA 8260B	02/10/14 16:08
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 16:08
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 16:08
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 16:08
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 16:08
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	02/10/14 16:08
Toluene - d8 (Surr)	91.2		% Recovery	EPA 8260B	02/10/14 16:08
4-Bromofluorobenzene (Surr)	92.3		% Recovery	EPA 8260B	02/10/14 16:08

Project Name : **2611117**

Project Number :

Sample : **MW-7_20140228**

Matrix : Water

Lab Number : 87339-10

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 09:37
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 09:37
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 09:37
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 09:37
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	02/10/14 09:37
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	02/10/14 09:37
4-Bromofluorobenzene (Surr)	91.0		% Recovery	EPA 8260B	02/10/14 09:37

Project Name : **2611117**

Project Number :

Sample : **MW-8_20140228**

Matrix : Water

Lab Number : 87339-11

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 21:14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/08/14 02:38
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 21:14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:14
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	02/10/14 21:14
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	02/10/14 21:14
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	02/10/14 21:14

Project Name : **2611117**

Project Number :

Sample : **MW-9_20140228**

Matrix : Water

Lab Number : 87339-12

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 21:49
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/08/14 03:13
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 21:49
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:49
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	02/10/14 21:49
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	02/10/14 21:49
4-Bromofluorobenzene (Surr)	112		% Recovery	EPA 8260B	02/10/14 21:49

Project Name : **2611117**

Project Number :

Sample : **TB1_20140228**

Matrix : Water

Lab Number : 87339-13

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 21:19
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14 21:19
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14 21:19
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14 21:19
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	02/10/14 21:19
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	02/10/14 21:19
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	02/10/14 21:19

Project Name : **2611117**

Project Number :

Sample : **FD1_20140228**

Matrix : Water

Lab Number : 87339-14

Sample Date :02/04/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	2600	9.0	ug/L	EPA 8260B	02/11/14 15:22
Toluene	160	9.0	ug/L	EPA 8260B	02/11/14 15:22
Ethylbenzene	1700	9.0	ug/L	EPA 8260B	02/11/14 15:22
Total Xylenes	5900	9.0	ug/L	EPA 8260B	02/11/14 15:22
Methyl-t-butyl ether (MTBE)	220	9.0	ug/L	EPA 8260B	02/11/14 15:22
Diisopropyl ether (DIPE)	< 9.0	9.0	ug/L	EPA 8260B	02/11/14 15:22
Ethyl-t-butyl ether (ETBE)	< 9.0	9.0	ug/L	EPA 8260B	02/11/14 15:22
Tert-amyl methyl ether (TAME)	< 9.0	9.0	ug/L	EPA 8260B	02/11/14 15:22
Tert-Butanol	3100	50	ug/L	EPA 8260B	02/11/14 15:22
Ethanol	< 90	90	ug/L	EPA 8260B	02/11/14 15:22
TPH as Gasoline	65000	900	ug/L	EPA 8260B	02/11/14 15:22
1,2-Dichloroethane	< 9.0	9.0	ug/L	EPA 8260B	02/11/14 15:22
1,2-Dibromoethane	< 9.0	9.0	ug/L	EPA 8260B	02/11/14 15:22
Naphthalene	780	9.0	ug/L	EPA 8260B	02/11/14 15:22
1,2-Dichloroethane-d4 (Surr)	99.3		% Recovery	EPA 8260B	02/11/14 15:22
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	02/11/14 15:22
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	02/11/14 15:22

QC Report : Method Blank Data

Project Name : **261117**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/07/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/07/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/07/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/07/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/11/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
1,2-Dichloroethane-d4 (Surr)	97.6		%	EPA 8260B	02/11/14
4-Bromofluorobenzene (Surr)	96.1		%	EPA 8260B	02/11/14
Toluene - d8 (Surr)	102		%	EPA 8260B	02/11/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/11/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/11/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/11/14
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	02/11/14
4-Bromofluorobenzene (Surr)	98.2		%	EPA 8260B	02/11/14
Toluene - d8 (Surr)	99.9		%	EPA 8260B	02/11/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	02/10/14

QC Report : Method Blank Data

Project Name : **261117**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
4-Bromofluorobenzene (Surr)	93.6		%	EPA 8260B	02/10/14
Toluene - d8 (Surr)	101		%	EPA 8260B	02/10/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane-d4 (Surr)	101		%	EPA 8260B	02/10/14
4-Bromofluorobenzene (Surr)	112		%	EPA 8260B	02/10/14
Toluene - d8 (Surr)	99.5		%	EPA 8260B	02/10/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	02/10/14
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	02/10/14
Toluene - d8 (Surr)	97.0		%	EPA 8260B	02/10/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Ethanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	02/10/14
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	02/10/14
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
Naphthalene	< 0.50	0.50	ug/L	EPA 8260B	02/10/14
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	02/10/14
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	02/10/14
Toluene - d8 (Surr)	96.1		%	EPA 8260B	02/10/14

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	87340-03	<0.50	40.0	39.7	40.6	40.6	ug/L	EPA 8260B	2/7/14	102	102	0.875	70.0-130	25
Ethanol	87340-03	<5.0	100	99.2	97.4	107	ug/L	EPA 8260B	2/7/14	97.4	108	10.4	55.0-150	25
P + M Xylene	87340-03	<0.50	40.0	39.7	39.1	38.6	ug/L	EPA 8260B	2/7/14	97.8	97.4	0.402	70.0-130	25
Ethanol	87339-01	<5.0	98.6	98.6	97.0	80.2	ug/L	EPA 8260B	2/11/14	98.4	81.3	19.0	55.0-150	25
1,2-Dibromoethane	87359-16	<0.50	40.1	39.7	40.2	42.2	ug/L	EPA 8260B	2/11/14	100	106	5.71	70.0-130	25
1,2-Dichloroethane	87359-16	<0.50	39.8	39.4	40.6	41.2	ug/L	EPA 8260B	2/11/14	102	105	2.37	70.0-130	25
Benzene	87359-16	<0.50	39.8	39.4	41.9	41.4	ug/L	EPA 8260B	2/11/14	105	105	0.124	70.0-130	25
Diisopropyl ether	87359-16	<0.50	39.8	39.4	42.4	42.0	ug/L	EPA 8260B	2/11/14	107	107	0.0132	70.0-130	25
Ethyl-tert-butyl ether	87359-16	<0.50	39.8	39.4	43.8	43.0	ug/L	EPA 8260B	2/11/14	110	109	0.854	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethylbenzene	87359-16	<0.50	39.8	39.4	37.7	36.5	ug/L	EPA 8260B	2/11/14	94.8	92.7	2.29	70.0-130	25
Methyl-t-butyl ether	87359-16	<0.50	39.6	39.2	40.6	40.7	ug/L	EPA 8260B	2/11/14	102	104	1.10	70.0-130	25
Naphthalene	87359-16	<0.50	39.8	39.4	36.8	39.4	ug/L	EPA 8260B	2/11/14	92.6	100	7.86	70.0-130	25
P + M Xylene	87359-16	<0.50	39.8	39.4	38.0	37.0	ug/L	EPA 8260B	2/11/14	95.5	93.9	1.71	70.0-130	25
Tert-Butanol	87359-16	<5.0	199	197	199	196	ug/L	EPA 8260B	2/11/14	100	99.8	0.188	70.0-130	25
Tert-amyl-methyl ether	87359-16	<0.50	39.8	39.4	43.5	42.9	ug/L	EPA 8260B	2/11/14	109	109	0.358	70.0-130	25
Toluene	87359-16	<0.50	39.8	39.4	41.6	40.8	ug/L	EPA 8260B	2/11/14	104	104	0.937	70.0-130	25
1,2-Dibromoethane	87352-09	<0.50	40.3	40.3	43.5	43.0	ug/L	EPA 8260B	2/11/14	108	106	1.29	70.0-130	25
1,2-Dichloroethane	87352-09	<0.50	40.0	40.0	42.4	41.3	ug/L	EPA 8260B	2/11/14	106	103	2.60	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	87352-09	<0.50	40.0	40.0	40.2	39.0	ug/L	EPA 8260B	2/11/14	100	97.6	2.99	70.0-130	25
Diisopropyl ether	87352-09	<0.50	40.0	40.0	42.6	41.9	ug/L	EPA 8260B	2/11/14	106	105	1.76	70.0-130	25
Ethanol	87352-09	<5.0	100	100	95.6	94.5	ug/L	EPA 8260B	2/11/14	95.6	94.5	1.17	55.0-150	25
Ethyl-tert-butyl ether	87352-09	<0.50	40.0	40.0	42.4	41.7	ug/L	EPA 8260B	2/11/14	106	104	1.59	70.0-130	25
Ethylbenzene	87352-09	<0.50	40.0	40.0	42.9	41.4	ug/L	EPA 8260B	2/11/14	107	103	3.54	70.0-130	25
Methyl-t-butyl ether	87352-09	2.8	39.9	39.9	45.0	44.2	ug/L	EPA 8260B	2/11/14	106	104	2.01	70.0-130	25
Naphthalene	87352-09	<0.50	40.0	40.0	42.4	41.7	ug/L	EPA 8260B	2/11/14	106	104	1.78	70.0-130	25
P + M Xylene	87352-09	<0.50	40.0	40.0	43.2	41.7	ug/L	EPA 8260B	2/11/14	108	104	3.54	70.0-130	25
Tert-Butanol	87352-09	<5.0	200	200	212	210	ug/L	EPA 8260B	2/11/14	106	105	0.740	70.0-130	25
Tert-amyl-methyl ether	87352-09	<0.50	40.0	40.0	43.5	41.3	ug/L	EPA 8260B	2/11/14	109	103	5.38	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	87352-09	<0.50	40.0	40.0	41.8	40.9	ug/L	EPA 8260B	2/11/14	104	102	2.22	70.0-130	25
1,2-Dibromoethane	87339-10	<0.50	40.3	40.3	39.8	36.7	ug/L	EPA 8260B	2/10/14	98.6	91.0	8.12	70.0-130	25
1,2-Dichloroethane	87339-10	<0.50	40.0	40.0	45.0	41.1	ug/L	EPA 8260B	2/10/14	112	103	8.93	70.0-130	25
Benzene	87339-10	<0.50	40.0	40.0	42.3	38.8	ug/L	EPA 8260B	2/10/14	106	96.9	8.84	70.0-130	25
Diisopropyl ether	87339-10	<0.50	40.0	40.0	42.5	39.4	ug/L	EPA 8260B	2/10/14	106	98.5	7.68	70.0-130	25
Ethanol	87339-10	<5.0	100	100	110	103	ug/L	EPA 8260B	2/10/14	110	103	5.77	55.0-150	25
Ethyl-tert-butyl ether	87339-10	<0.50	40.0	40.0	43.7	40.8	ug/L	EPA 8260B	2/10/14	109	102	6.90	70.0-130	25
Ethylbenzene	87339-10	<0.50	40.0	40.0	40.0	36.8	ug/L	EPA 8260B	2/10/14	100	92.0	8.35	70.0-130	25
Methyl-t-butyl ether	87339-10	<0.50	39.9	39.9	42.6	39.5	ug/L	EPA 8260B	2/10/14	107	99.0	7.68	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Naphthalene	87339-10	<0.50	40.0	40.0	45.4	41.1	ug/L	EPA 8260B	2/10/14	114	103	9.96	70.0-130	25
P + M Xylene	87339-10	<0.50	40.0	40.0	37.5	33.8	ug/L	EPA 8260B	2/10/14	93.8	84.5	10.4	70.0-130	25
Tert-Butanol	87339-10	<5.0	200	200	200	187	ug/L	EPA 8260B	2/10/14	100	93.4	7.08	70.0-130	25
Tert-amyl-methyl ether	87339-10	<0.50	40.0	40.0	44.1	41.0	ug/L	EPA 8260B	2/10/14	110	102	7.46	70.0-130	25
Toluene	87339-10	<0.50	40.0	40.0	41.4	37.9	ug/L	EPA 8260B	2/10/14	104	94.8	8.93	70.0-130	25
1,2-Dibromoethane	87361-03	<0.50	40.3	40.3	41.6	41.8	ug/L	EPA 8260B	2/10/14	103	104	0.529	70.0-130	25
1,2-Dichloroethane	87361-03	<0.50	40.0	40.0	38.4	38.0	ug/L	EPA 8260B	2/10/14	96.1	95.0	1.19	70.0-130	25
Benzene	87361-03	<0.50	40.0	40.0	40.0	40.0	ug/L	EPA 8260B	2/10/14	100	100	0.0423	70.0-130	25
Diisopropyl ether	87361-03	<0.50	40.0	40.0	41.9	41.8	ug/L	EPA 8260B	2/10/14	105	105	0.105	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Ethyl-tert-butyl ether	87361-03	<0.50	40.0	40.0	42.5	42.5	ug/L	EPA 8260B	2/10/14	106	106	0.00400	70.0-130	25
Ethylbenzene	87361-03	<0.50	40.0	40.0	42.7	42.2	ug/L	EPA 8260B	2/10/14	107	106	1.09	70.0-130	25
Methyl-t-butyl ether	87361-03	<0.50	39.9	39.9	41.6	41.5	ug/L	EPA 8260B	2/10/14	104	104	0.252	70.0-130	25
Naphthalene	87361-03	<0.50	40.0	40.0	40.9	41.0	ug/L	EPA 8260B	2/10/14	102	102	0.147	70.0-130	25
P + M Xylene	87361-03	<0.50	40.0	40.0	43.5	43.1	ug/L	EPA 8260B	2/10/14	109	108	0.920	70.0-130	25
Tert-Butanol	87361-03	<5.0	200	200	202	202	ug/L	EPA 8260B	2/10/14	101	101	0.205	70.0-130	25
Tert-amyl-methyl ether	87361-03	<0.50	40.0	40.0	41.1	41.0	ug/L	EPA 8260B	2/10/14	103	102	0.236	70.0-130	25
Toluene	87361-03	<0.50	40.0	40.0	41.0	41.0	ug/L	EPA 8260B	2/10/14	102	103	0.102	70.0-130	25
1,2-Dibromoethane	87330-11	<0.50	40.3	40.3	40.4	40.6	ug/L	EPA 8260B	2/10/14	100	101	0.442	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
1,2-Dichloroethane	87330-11	<0.50	40.0	40.0	39.8	39.9	ug/L	EPA 8260B	2/10/14	99.5	99.8	0.320	70.0-130	25
Benzene	87330-11	<0.50	40.0	40.0	42.2	41.4	ug/L	EPA 8260B	2/10/14	105	104	1.71	70.0-130	25
Diisopropyl ether	87330-11	<0.50	40.0	40.0	45.6	45.6	ug/L	EPA 8260B	2/10/14	114	114	0.0876	70.0-130	25
Ethanol	87330-11	<5.0	100	100	116	120	ug/L	EPA 8260B	2/10/14	116	120	3.91	55.0-150	25
Ethyl-tert-butyl ether	87330-11	<0.50	40.0	40.0	44.0	43.8	ug/L	EPA 8260B	2/10/14	110	109	0.482	70.0-130	25
Ethylbenzene	87330-11	<0.50	40.0	40.0	42.8	42.4	ug/L	EPA 8260B	2/10/14	107	106	1.08	70.0-130	25
Methyl-t-butyl ether	87330-11	26	39.9	39.9	69.1	68.8	ug/L	EPA 8260B	2/10/14	108	107	0.541	70.0-130	25
Naphthalene	87330-11	<0.50	40.0	40.0	41.0	41.5	ug/L	EPA 8260B	2/10/14	103	104	1.08	70.0-130	25
P + M Xylene	87330-11	<0.50	40.0	40.0	43.4	42.6	ug/L	EPA 8260B	2/10/14	108	106	1.89	70.0-130	25
Tert-Butanol	87330-11	<5.0	200	200	211	209	ug/L	EPA 8260B	2/10/14	106	105	0.946	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	87330-11	<0.50	40.0	40.0	43.3	43.3	ug/L	EPA 8260B	2/10/14	108	108	0.127	70.0-130	25
Toluene														
	87330-11	<0.50	40.0	40.0	41.6	41.1	ug/L	EPA 8260B	2/10/14	104	103	1.24	70.0-130	25
1,2-Dibromoethane														
	87361-01	<0.50	40.3	40.3	38.1	38.2	ug/L	EPA 8260B	2/10/14	94.5	94.7	0.200	70.0-130	25
1,2-Dichloroethane														
	87361-01	<0.50	40.0	40.0	37.5	37.3	ug/L	EPA 8260B	2/10/14	93.7	93.2	0.463	70.0-130	25
Benzene														
	87361-01	<0.50	40.0	40.0	39.9	39.4	ug/L	EPA 8260B	2/10/14	99.8	98.5	1.25	70.0-130	25
Diisopropyl ether														
	87361-01	<0.50	40.0	40.0	43.2	42.8	ug/L	EPA 8260B	2/10/14	108	107	0.888	70.0-130	25
Ethanol														
	87361-01	<5.0	100	100	120	118	ug/L	EPA 8260B	2/10/14	120	118	2.28	55.0-150	25
Ethyl-tert-butyl ether														
	87361-01	<0.50	40.0	40.0	42.0	41.9	ug/L	EPA 8260B	2/10/14	105	105	0.350	70.0-130	25
Ethylbenzene														
	87361-01	<0.50	40.0	40.0	41.7	41.3	ug/L	EPA 8260B	2/10/14	104	103	0.900	70.0-130	25

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 2611117

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Methyl-t-butyl ether	87361-01	<0.50	39.9	39.9	40.6	40.8	ug/L	EPA 8260B	2/10/14	102	102	0.407	70.0-130	25
Naphthalene	87361-01	<0.50	40.0	40.0	39.7	40.0	ug/L	EPA 8260B	2/10/14	99.3	100	0.680	70.0-130	25
P + M Xylene	87361-01	<0.50	40.0	40.0	42.4	41.9	ug/L	EPA 8260B	2/10/14	106	105	1.11	70.0-130	25
Tert-Butanol	87361-01	<5.0	200	200	205	202	ug/L	EPA 8260B	2/10/14	102	101	1.41	70.0-130	25
Tert-amyl-methyl ether	87361-01	<0.50	40.0	40.0	41.2	41.2	ug/L	EPA 8260B	2/10/14	103	103	0.0264	70.0-130	25
Toluene	87361-01	<0.50	40.0	40.0	39.4	38.9	ug/L	EPA 8260B	2/10/14	98.5	97.2	1.29	70.0-130	25

QC Report : Laboratory Control Sample (LCS)

Project Name : 2611117

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	2/7/14	100	70.0-130
Ethanol	100	ug/L	EPA 8260B	2/7/14	92.3	55.0-150
P + M Xylene	40.0	ug/L	EPA 8260B	2/7/14	96.6	70.0-130
Ethanol	100	ug/L	EPA 8260B	2/11/14	95.4	55.0-150
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	2/11/14	104	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	2/11/14	104	70.0-130
Benzene	40.0	ug/L	EPA 8260B	2/11/14	105	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	2/11/14	107	70.0-130
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	2/11/14	107	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	2/11/14	94.4	70.0-130
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	2/11/14	102	70.0-130
Naphthalene	40.0	ug/L	EPA 8260B	2/11/14	96.8	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	2/11/14	95.1	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	2/11/14	101	70.0-130
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	2/11/14	107	70.0-130
Toluene	40.0	ug/L	EPA 8260B	2/11/14	105	70.0-130
1,2-Dibromoethane	40.5	ug/L	EPA 8260B	2/11/14	102	70.0-130
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	2/11/14	100	70.0-130
Benzene	40.2	ug/L	EPA 8260B	2/11/14	94.6	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : 2611117

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Diisopropyl ether	40.2	ug/L	EPA 8260B	2/11/14	101	70.0-130
Ethanol	100	ug/L	EPA 8260B	2/11/14	101	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	2/11/14	102	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	2/11/14	101	70.0-130
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	2/11/14	102	70.0-130
Naphthalene	40.2	ug/L	EPA 8260B	2/11/14	99.3	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	2/11/14	102	70.0-130
TPH as Gasoline	489	ug/L	EPA 8260B	2/11/14	103	70.0-130
Tert-Butanol	201	ug/L	EPA 8260B	2/11/14	101	70.0-130
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	2/11/14	100	70.0-130
Toluene	40.2	ug/L	EPA 8260B	2/11/14	98.9	70.0-130
1,2-Dibromoethane	40.5	ug/L	EPA 8260B	2/10/14	97.3	70.0-130
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	2/10/14	111	70.0-130
Benzene	40.2	ug/L	EPA 8260B	2/10/14	104	70.0-130
Diisopropyl ether	40.2	ug/L	EPA 8260B	2/10/14	104	70.0-130
Ethanol	100	ug/L	EPA 8260B	2/10/14	109	55.0-150
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	2/10/14	106	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	2/10/14	99.1	70.0-130
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	2/10/14	103	70.0-130
Naphthalene	40.2	ug/L	EPA 8260B	2/10/14	112	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	2/10/14	94.3	70.0-130
TPH as Gasoline	485	ug/L	EPA 8260B	2/10/14	101	70.0-130

QC Report : Laboratory Control Sample (LCS)

Project Name : 2611117

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Tert-Butanol	201	ug/L	EPA 8260B	2/10/14	100	70.0-130
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	2/10/14	109	70.0-130
Toluene	40.2	ug/L	EPA 8260B	2/10/14	102	70.0-130
1,2-Dibromoethane	40.5	ug/L	EPA 8260B	2/10/14	99.9	70.0-130
1,2-Dichloroethane	40.2	ug/L	EPA 8260B	2/10/14	94.8	70.0-130
Benzene	40.2	ug/L	EPA 8260B	2/10/14	97.3	70.0-130
Diisopropyl ether	40.2	ug/L	EPA 8260B	2/10/14	102	70.0-130
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	2/10/14	106	70.0-130
Ethylbenzene	40.2	ug/L	EPA 8260B	2/10/14	103	70.0-130
Methyl-t-butyl ether	40.1	ug/L	EPA 8260B	2/10/14	102	70.0-130
Naphthalene	40.2	ug/L	EPA 8260B	2/10/14	98.0	70.0-130
P + M Xylene	40.2	ug/L	EPA 8260B	2/10/14	104	70.0-130
TPH as Gasoline	488	ug/L	EPA 8260B	2/10/14	97.9	70.0-130
Tert-Butanol	201	ug/L	EPA 8260B	2/10/14	99.6	70.0-130
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	2/10/14	101	70.0-130
Toluene	40.2	ug/L	EPA 8260B	2/10/14	100	70.0-130
1,2-Dibromoethane	40.3	ug/L	EPA 8260B	2/10/14	97.8	70.0-130
1,2-Dichloroethane	40.0	ug/L	EPA 8260B	2/10/14	97.0	70.0-130
Benzene	40.0	ug/L	EPA 8260B	2/10/14	102	70.0-130
Diisopropyl ether	40.0	ug/L	EPA 8260B	2/10/14	112	70.0-130
Ethanol	100	ug/L	EPA 8260B	2/10/14	116	55.0-150

QC Report : Laboratory Control Sample (LCS)

Project Name : 2611117

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	2/10/14	109	70.0-130
Ethylbenzene	40.0	ug/L	EPA 8260B	2/10/14	105	70.0-130
Methyl-t-butyl ether	39.9	ug/L	EPA 8260B	2/10/14	107	70.0-130
Naphthalene	40.0	ug/L	EPA 8260B	2/10/14	101	70.0-130
P + M Xylene	40.0	ug/L	EPA 8260B	2/10/14	106	70.0-130
TPH as Gasoline	486	ug/L	EPA 8260B	2/10/14	110	70.0-130
Tert-Butanol	200	ug/L	EPA 8260B	2/10/14	101	70.0-130
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	2/10/14	107	70.0-130
Toluene	40.0	ug/L	EPA 8260B	2/10/14	102	70.0-130
1,2-Dibromoethane	40.1	ug/L	EPA 8260B	2/10/14	94.1	70.0-130
1,2-Dichloroethane	39.8	ug/L	EPA 8260B	2/10/14	93.6	70.0-130
Benzene	39.8	ug/L	EPA 8260B	2/10/14	100	70.0-130
Diisopropyl ether	39.8	ug/L	EPA 8260B	2/10/14	109	70.0-130
Ethanol	99.5	ug/L	EPA 8260B	2/10/14	112	55.0-150
Ethyl-tert-butyl ether	39.8	ug/L	EPA 8260B	2/10/14	106	70.0-130
Ethylbenzene	39.8	ug/L	EPA 8260B	2/10/14	105	70.0-130
Methyl-t-butyl ether	39.7	ug/L	EPA 8260B	2/10/14	103	70.0-130
Naphthalene	39.8	ug/L	EPA 8260B	2/10/14	100	70.0-130
P + M Xylene	39.8	ug/L	EPA 8260B	2/10/14	107	70.0-130
TPH as Gasoline	484	ug/L	EPA 8260B	2/10/14	110	70.0-130
Tert-Butanol	199	ug/L	EPA 8260B	2/10/14	101	70.0-130
Tert-amyl-methyl ether	39.8	ug/L	EPA 8260B	2/10/14	103	70.0-130

QC Report : Laboratory Control Sample (LCS)Project Name : **2611117**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	39.8	ug/L	EPA 8260B	2/10/14	98.5	70.0-130



COP ELT CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

87339 1Q14 GW Event

Required Lab Information:				Required Project Information:				Required Invoice Information:																																																												
Lab Name: Kiff Analytical				Site ID #: 2611117		Task: WG_Q_201402		Send Invoice to: Sandy Hayes																																																												
Address: 2795 Second Street #300				AnteaGrp proj#		Address: 11050 White Rock Road, Suite 110		Turn around time (days)		10																																																										
Davis, CA 95618				Site Address 7210 BANCROFT AVE		City/State		Rancho Cordova CA 95670		Phone #: 916-638-2085		QC level Required: Standard		Special <input type="checkbox"/> Mark one																																																						
Lab PM: Scott Forbes				City OAKLAND		State CA 94605		Reimbursement project?		Non-reimbursement project? Y		Mark one		NJ Reduced Deliverable Package?																																																						
Phone/Fax: P: 530-297-4800 F: 530-297-4808				AG PM Name: Dennis Dettloff		Send EDD to		Agdataview.us@anteagroup.com		MA MCP Cert?		CT RCP Cert?		Mark One																																																						
Lab PM email SForbes@kiffanalytical.com				Phone/Fax: P: 916-503-1261 F: 916-638-8385		CC Hardcopy report to				Lab Project ID (lab use)																																																										
Applicable Lab Quote #:				AG PM Email: Dennis.dettloff@anteagroup.com		CC Hardcopy report to				Requested Analyses		<table border="1"> <tr> <td>8015TPHUGRO</td> <td>8290B</td> <td>8290C</td> <td>8290D</td> <td>8290E</td> <td>8290F</td> <td>8290G</td> <td>8290H</td> <td>8290I</td> <td>8290J</td> <td>8290K</td> <td>8290L</td> <td>8290M</td> <td>8290N</td> <td>8290O</td> <td>8290P</td> <td>8290Q</td> <td>8290R</td> <td>8290S</td> <td>8290T</td> <td>8290U</td> <td>8290V</td> <td>8290W</td> <td>8290X</td> <td>8290Y</td> <td>8290Z</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				8015TPHUGRO	8290B	8290C	8290D	8290E	8290F	8290G	8290H	8290I	8290J	8290K	8290L	8290M	8290N	8290O	8290P	8290Q	8290R	8290S	8290T	8290U	8290V	8290W	8290X	8290Y	8290Z																											
8015TPHUGRO	8290B	8290C	8290D	8290E	8290F	8290G	8290H	8290I	8290J	8290K	8290L					8290M	8290N	8290O	8290P	8290Q	8290R	8290S	8290T	8290U	8290V	8290W	8290X	8290Y	8290Z																																							

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Samples IDs MUST BE UNIQUE	Valid Matrix Codes			MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N)	Preservatives												Requested Analyses	Comments/Lab Sample I.D.												
		MATRIX	MATRIX	MATRIX							Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O8	Methanol	Other	8015TPHUGRO	8290B	8290C	8290D			8290E	8290F	8290G	8290H	8290I	8290J	8290K	8290L	8290M	8290N	8290O	8290P
1	DPE-1_20140228				WG	G	2/4/14	1320	3														X	X	X	7 Oxy's = DIPE, TBA, TAME, ETBE, 1,2-DCA, EDB, and Ethanol										
2	EX-1_20140228				WG			1535															X	X	X											
3	EX-2_20140228				WG			1025															X	X	X											
4	MW-1_20140228				WG			1110															X	X	X											
5	MW-10_20140228				WG			1230															X	X	X											
6	MW-11_20140228				WG			1350															X	X	X											
7	MW-3_20140228				WG			1045															X	X	X											
8	MW-4_20140228				WG			1430															X	X	X											
9	MW-6_20140228				WG			1205															X	X	X											
10	MW-7_20140228				WG			1140															X	X	X											
11	MW-8_20140228				WG			0945															X	X	X											
12	MW-9_20140228				WG			1255															X	X	X											
13	TB1_20140228				W			0810	2														X	X	X											
14	FD1_20140228				W			1435	3														X	X	X											

Additional Comments/Special Instructions: Global ID: T0600100201	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Sample Receipt Conditions		
	<i>M. D. Clarke</i>	2/4/14	1650	<i>M. D. Clarke</i>	2/4/14	1650	Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N
				<i>9</i>	<i>with (signature)</i>	02/04/14	1021	Y/N	Y/N
	SHIPPING METHOD (mark all appropriate)	SAMPLER NAME AND SIGNATURE			Temp in °C	Samples on ice?	Sample intact?	Trip Blank?	
	UPS COURIER FEDEX <input checked="" type="checkbox"/>	<i>[Signature]</i>							
	US MAIL <input type="checkbox"/>	SIGNATURE of SAMPLER:			DATE Signed	Time:			

7 Oxy's = DIPE, TBA, TAME, ETBE, 1,2-DCA, EDB, and Ethanol





SAMPLE RECEIPT CHECKLIST

SRG #: 87339

Sample Receipt	Initials/Date: <i>SMF 020614</i>	Storage Time: <i>1021</i>	Sample Login	Initials/Date: <i>MAS 020614</i>
TAT: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush <input type="checkbox"/> Split <input type="checkbox"/> None			Method of Receipt: <input type="checkbox"/> Courier <input type="checkbox"/> Over-the-counter <input checked="" type="checkbox"/> Shipped	
Temp °C <i>4-4</i>	<input type="checkbox"/> N/A	Therm ID <i>IR1</i>	Time <i>1000</i>	Coolant present <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Water <input type="checkbox"/> Temp Excursion
For Shipments Only:		Cooler Receipt Initials/Date/Time: <i>SMF 020614 1000</i>		Custody Seals <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Intact <input type="checkbox"/> Broken

Chain-of-Custody:	Yes	No
Is COC present?	/	
Is COC signed by relinquisher?		/
Is COC dated by relinquisher?		//
Is the sampler's name on the COC?		//
Are there analyses or hold for all samples?	/	

Documented on	COC	Labels	Discrepancies:
Sample ID	X	X	
Project ID	X	X	
Sample Date	X	X	
Sample Time	X	X	
Does COC match project history?			<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Samples:	N/A	Yes	No
Are sample custody seals intact?	/		
Are sample containers intact?		/	
Is preservation documented?		/	
In-house Analysis:	N/A	Yes	No
Are preservatives acceptable?		/	
Are samples within holding time?		/	
Are sample container types correct?		/	
Is there adequate sample volume?		/	

Comments:

Matrix	Container Type	# of Containers
<i>WA</i>	<i>Voa</i>	<i>41</i>

CS Required:

Proceed With Analysis: YES NO Init/Date: *SMF 020614*

Client Communication: *TPHg historically done by 8260. Confirm through email SR. Confirmation + change note.*

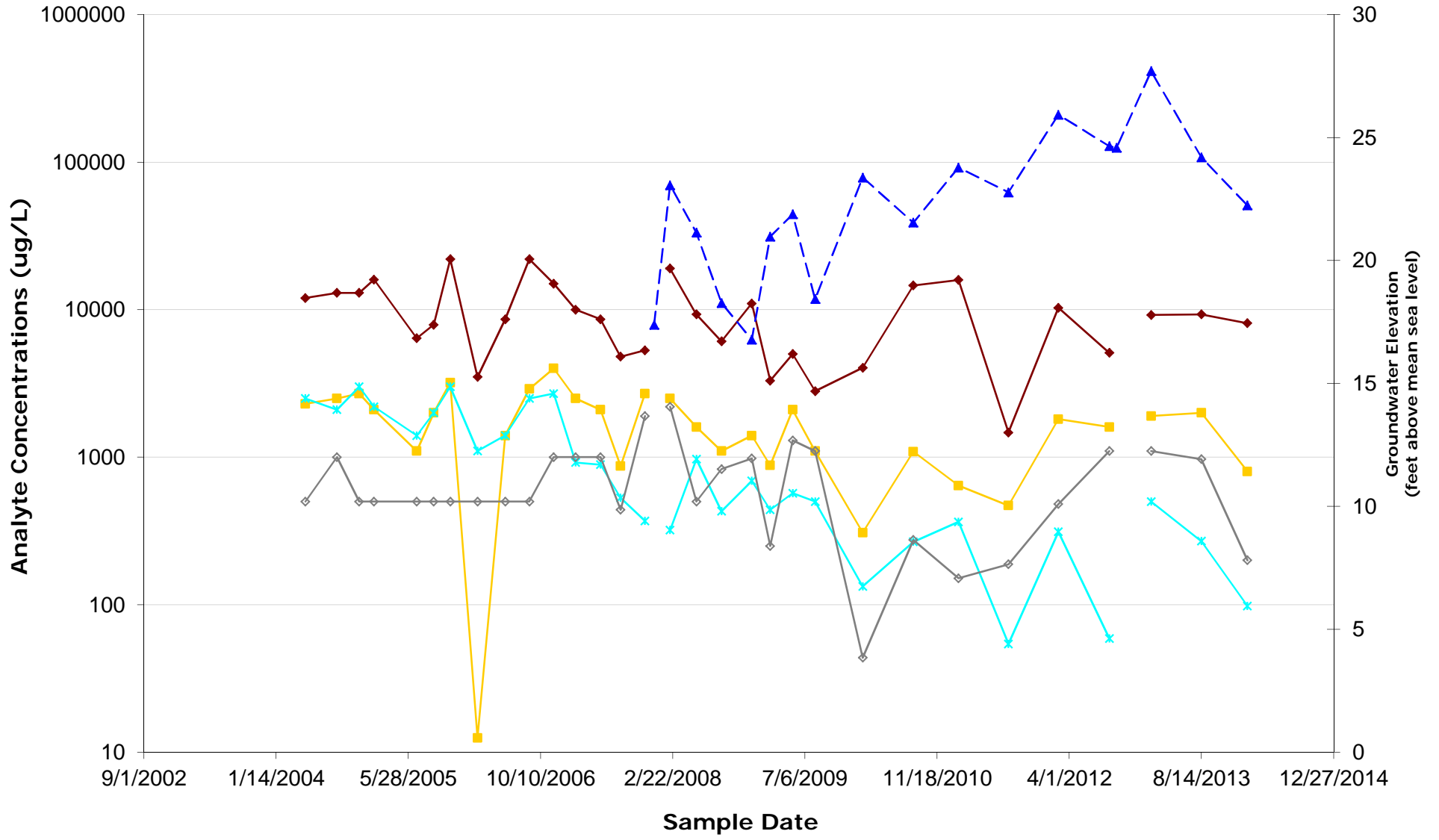
Semi-Annual Summary Report, October 2013 through March 2014
76 (Former BP) Station No. 11117
7210 Bancroft Avenue, Oakland, California USA
Antea Group Project No. I42611117



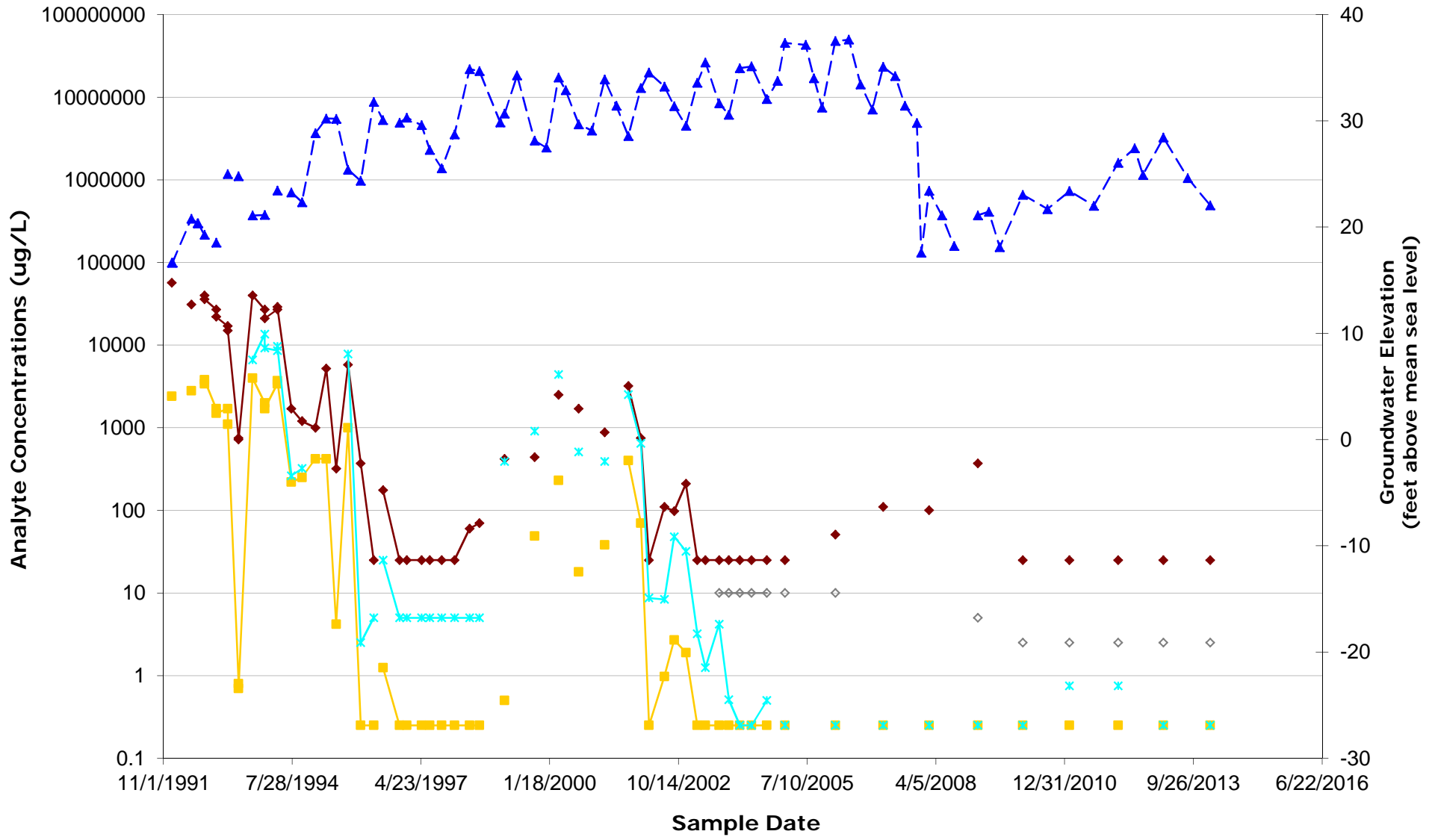
Appendix E

Time Series Graphs

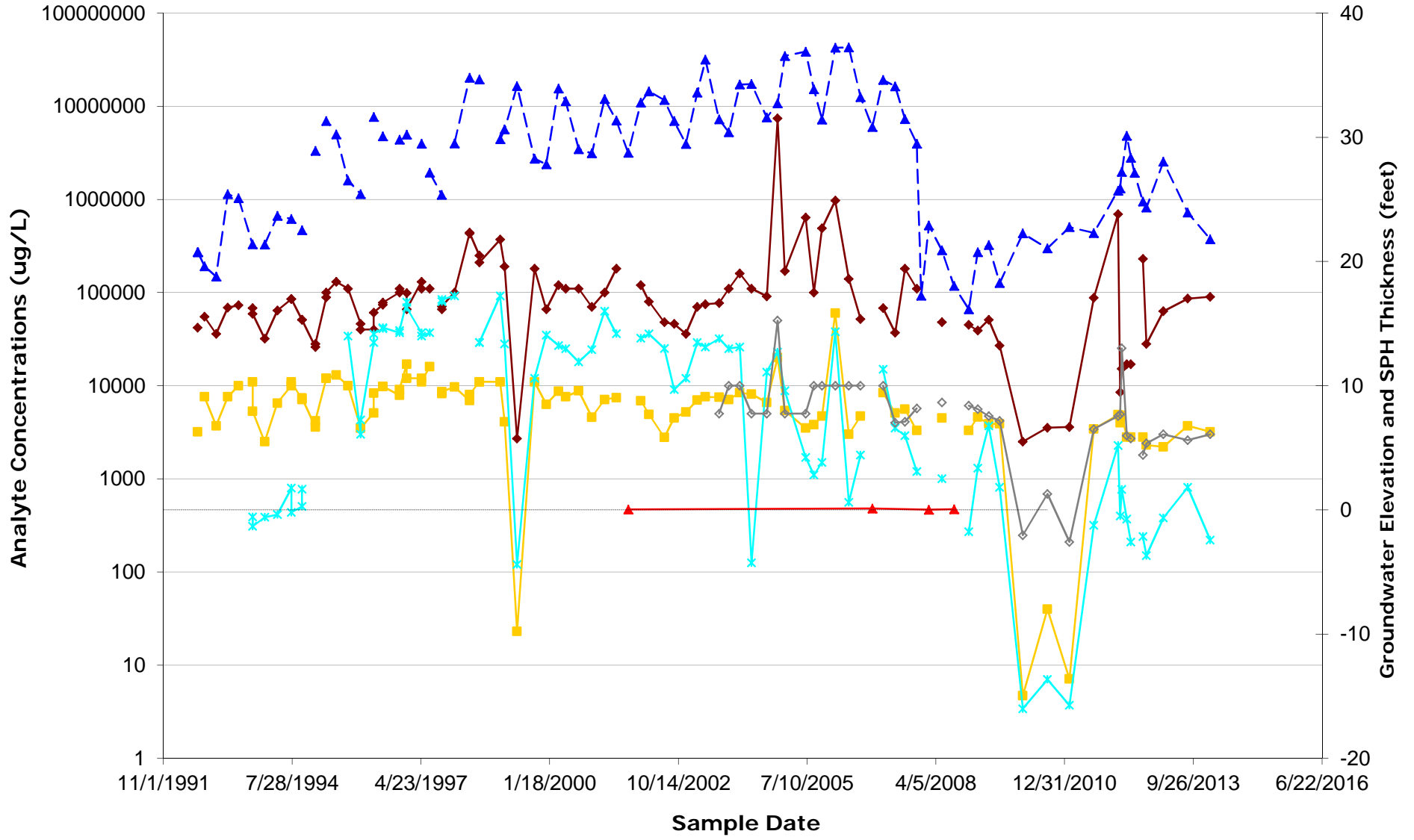
Well EX-1
Groundwater Elevation, TPHg, Benzene, MTBE and TBA Concentraitons Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California



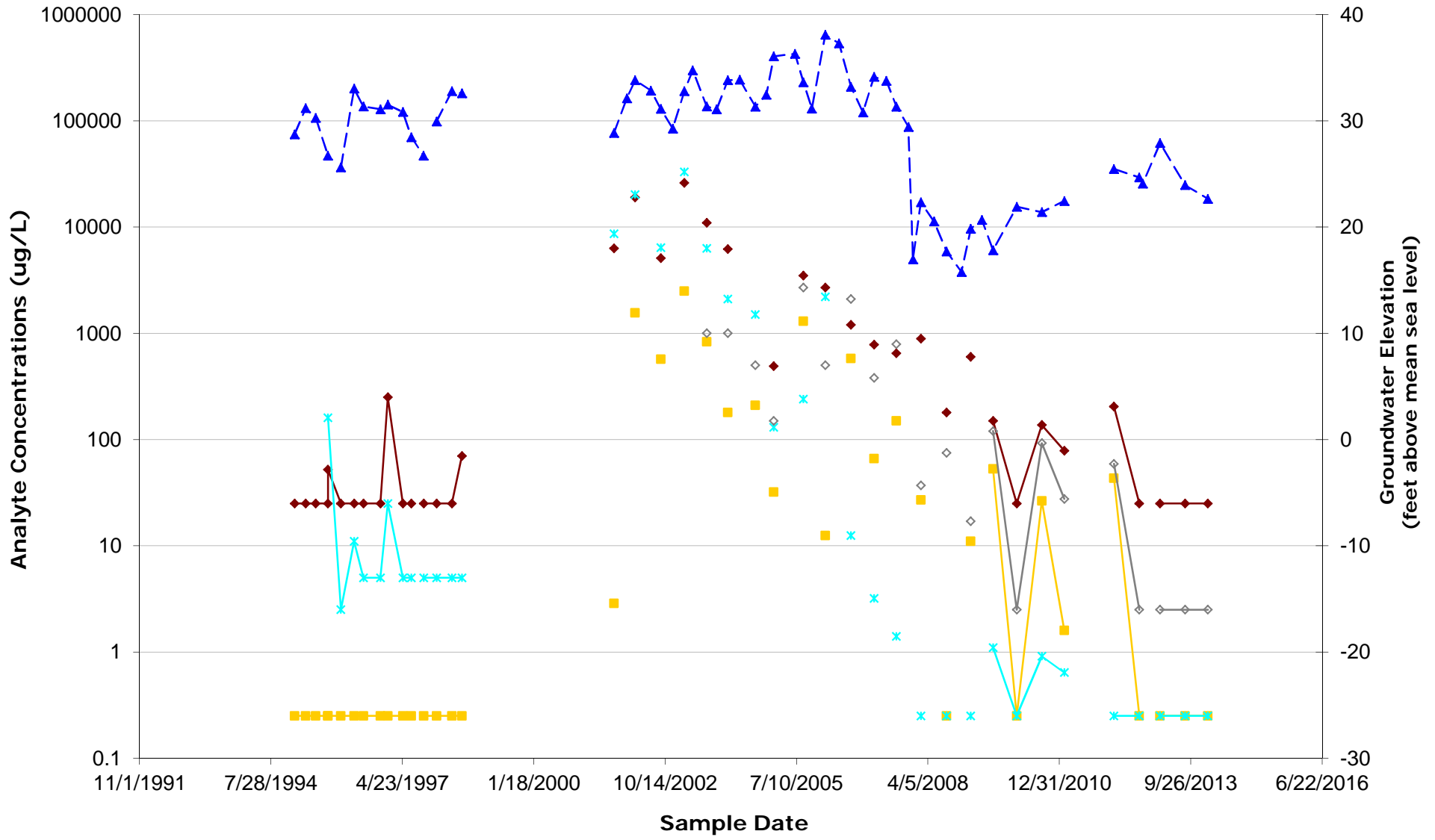
Well MW-1
Groundwater Elevation, TPHg, Benzene, MTBE and TBA Concentraitons Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California



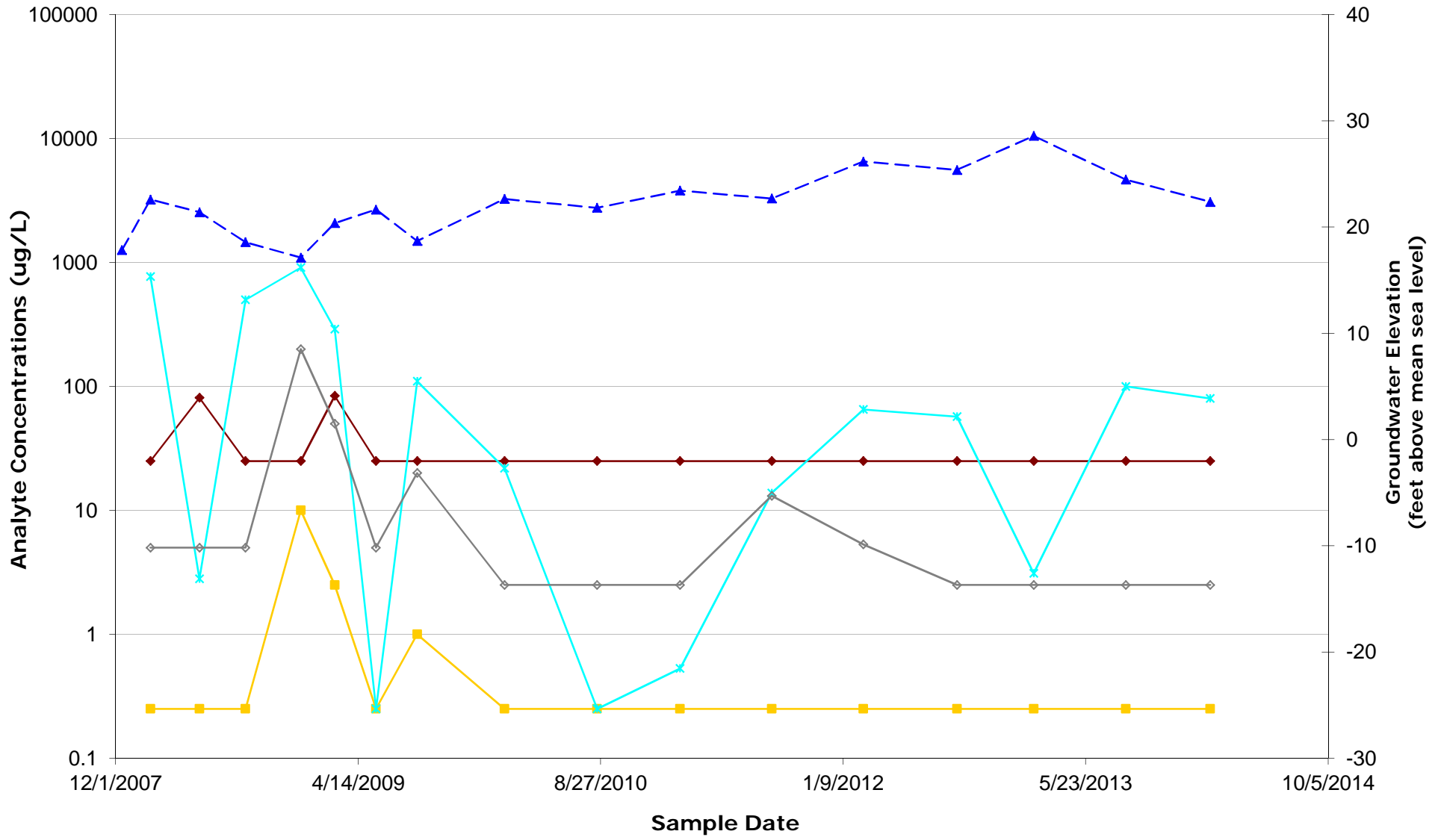
Well MW-4
Groundwater Elevation, TPHg, Benzene, MTBE, TBA Concentrations
and SPH Thickness Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California



Well MW-9
Groundwater Elevation, TPHg, Benzene, MTBE and TBA Concentraitons Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California



Well MW-10
Groundwater Elevation, TPHg, Benzene, MTBE and TBA Concentraitons Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California



Well MW-11
Groundwater Elevation, TPHg, Benzene, MTBE and TBA Concentraitons Versus Time
 76 (Former BP) Station No. 11117
 7210 Bancroft Ave
 Oakland, California

