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Groundwater Monitoring Report for the Period January 1 through March 31, 2011

Former Pacific Electric Motors Site
1009 66th Avenue, Oakland, California
(Fuel Leak Case Number RO0000411)

May 16, 2011

ARCADIS

Ron Goloubow, P.G.
Principal Geologist

Groundwater Monitoring Report for the Period January 1 through March 31, 2011

Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California

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Our Ref.:
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Date:
May 16, 2011

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May 16, 2011

Mr. Paresh Khatri
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

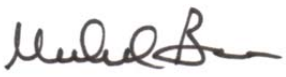
Subject: Groundwater Monitoring Report for the Period January 1 through March 31, 2011, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411)

Dear Mr. Khatri:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments, please call Michael Rueda at 626-113-6489, Ron Goloubow of ARCADIS at 510-596-9550, or me at 510-434-5000.

Sincerely,



Michael Barr
College for Certain, LLC

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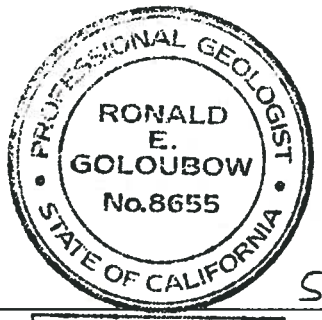
Certification

All hydrogeologic and geologic information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by an ARCADIS U.S., Inc., California Professional Geologist.*



5/16/11

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Expires Nov. 30, 2011

Date

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1. Introduction

ARCADIS U.S., Inc. (ARCADIS) has prepared this periodic groundwater monitoring report on behalf of College for Certain, LLC (CFC). This report provides a summary of activities conducted during the monitoring period from January 1 through March 31, 2011 ("the reporting quarter") at the former Pacific Electric Motors (PEM) site located at 1009 66th Avenue, Oakland, California ("the Site"; Alameda County Environmental Health [ACEH] Fuel Leak Case Number RO0000411; Figures 1 and 2). During the reporting quarter, the following activities were conducted at the Site:

- Groundwater monitoring
- Redevelopment of the Site for construction of the CFC school

1.1 Purpose of the Report

The purpose of the periodic groundwater monitoring report is to provide data that will be used to assess the groundwater quality over time and the effectiveness of the groundwater remediation that was previously conducted at the Site.

During this monitoring period, ARCADIS conducted quarterly groundwater sampling with slight modifications relative to the site-specific "Groundwater Monitoring Plan for the Former Pacific Electric Motors Site located at 1009 66th Avenue, Oakland, California, Fuel Leak Case Number RO0000411," dated March 4, 2009 ("Groundwater Monitoring Plan"; LFR 2009a). As presented in the "Revised Corrective Action Plan, Proposed Aspire School Site, 1009 66th Avenue, Oakland, California," dated July 17, 2009 (" the Revised CAP"; LFR 2009c), chemicals of concern (COCs) in groundwater at the Site include total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds), methyl tertiary-butyl ether (MTBE), and tertiary-butyl alcohol (TBA).

The purpose of the groundwater monitoring being conducted at the Site is to assess the effectiveness of the remedial activities conducted at the Site. Remedial activities conducted at the Site included completion of the excavation activities as presented in the Revised CAP (LFR 2009c), and the operation of the soil-vapor extraction/air sparging (SVE/AS) system.

1.2 Background

The Site is located on the northwestern side of 66th Avenue between East 14th Street and San Leandro Street (Figures 1 and 2). The area around the Site is developed with a mixture of commercial, industrial, government, and multi-family residential buildings. The Site is currently owned by CFC. Additional historical land use information for the Site was presented in the Revised CAP (LFR 2009c).

The first industrial development of the property was in about 1948 when the two buildings were constructed by PEM. PEM occupied the Site from 1948 to 2001. Activities conducted at the Site by PEM included manufacturing specialty magnets, power supplies, and components, and repairing motors, generators, transformers, and magnets. A 2,000-gallon gasoline underground storage tank (UST) was reportedly installed at the Site by PEM in 1975. In addition, the gasoline shed in the fueling area may have stored vehicle lubricants and oil for vehicle maintenance.

The structures that were on the property were demolished between November 2009 and February 2010. The Site is currently relatively flat, unpaved, and vacant, and site redevelopment activities are commencing.

1.2.1 UST Removal and Remediation Activities

PEM removed the 2,000-gallon gasoline UST and associated pump island, piping, storage shed, and appurtenances in 1995. The UST was reportedly in good condition with no holes evident; however, free-phase gasoline product was observed on the water surface in the tank excavation (W.A. Craig, Inc. 1997). Approximately 1,500 cubic yards of soil were removed in two excavation iterations completed during 1995 and stockpiled on the northern portion of the Site. Approximately 116,000 gallons of petroleum hydrocarbon-affected groundwater were pumped from the excavation. Site investigation work during this time also included drilling GeoProbe borings (between excavation iterations) in an attempt to define the lateral and vertical extent of gasoline constituents. A dewatering sump used during soil excavation was later converted to an 8-inch-diameter well (thought to be WAC-1) during backfilling operations. Backfill reportedly consisted of clean, imported fill material. Reports indicate that the stockpiled excavated soils were disposed of in 1997 (W.A. Craig, Inc. 1995a, 1995b, 1995c, 1997).

A 30-foot-wide by 70-foot-long by 9-foot-deep excavation for the remediation of petroleum hydrocarbon-affected soils was completed in April 2002 to the south of the

original UST remedial excavation (Decon 2002a, 2002b; Figure 2). Approximately 65,000 gallons of petroleum hydrocarbon-affected groundwater were removed from the excavation. Additional over-excavation was performed southeast of the 30-foot by 70-foot excavation. During backfill operations, an 8-inch-diameter extraction well was installed (EW-1). The excavation was backfilled with an unspecified depth of drain rock. Approximately 250 pounds of oxygen-releasing compound (ORC) slurry were mixed into the gravel fill. Clean, excavated native soil and imported Class II base rock comprised the balance of the backfill. Approximately 219 tons of petroleum hydrocarbon-affected soil were disposed of at an off-site facility (Decon 2002a, 2002b).

In addition, in June 2002, a total of 25 soil borings was advanced to a depth of 13 feet below ground surface (bgs) in the area of the former gasoline UST. Each of these borings was backfilled with 8 pounds of ORC followed by neat cement. ORC socks were also installed in wells MW-1 and WAC-1 (Decon 2002a, 2002b).

1.3 Previous Investigations

Several phases of investigations have been completed at the Site. According to descriptions of soil samples collected during the drilling of soil borings for groundwater monitoring wells installed at the Site, three groundwater-bearing zones designated as the “shallow zone,” “intermediate zone,” and “deep zone” have been identified at the Site (LFR 2008a).

The sediments from the ground surface to approximately 8 feet bgs consist of an interval of fine-grained sediment (silt and clay) with relatively thin intervals of coarser grained sediments (sand, less than 1 foot thick). These coarser grained sediments represent the interval of “shallow zone.” This is the interval in which the soil-vapor system was operated.

Discontinuous intervals of relatively thin, more permeable fine- to coarse-grained sand and gravels have generally been encountered between approximately 12 and 17 feet bgs. This interval of sediments contains the first groundwater at the Site, and represents the interval of “intermediate-zone” groundwater at the Site. Some of the highest concentrations of TPHg and related compounds have been detected in groundwater samples collected from this interval of saturated sediments.

An interval of poorly graded, coarser grained sediments comprised of fine sand and gravel was consistently encountered from approximately 21 to 34 feet bgs. This interval of coarser grained sediments contains groundwater and represents the “deep zone.”

The investigations conducted at the Site have also included the following:

- Collection of approximately 280 soil samples throughout the Site. The majority of these samples were collected from 0.5 or 5 feet bgs and analyzed for petroleum hydrocarbons, semivolatile organic compounds, polychlorinated biphenyls (PCBs), and/or metals.

- Installation and monitoring of four groundwater monitoring wells (MW-1 through MW-4) and three shallow/intermediate/deep monitoring well clusters (nested wells NW-1 through NW-3), and collection of grab groundwater samples from 20 soil borings. Monitoring of wells MW-1 through MW-4 has been performed intermittently since 1997.

- Completion of two investigations to assess soil-gas quality at the Site in March and August 2008. The results of these investigations were presented in the Revised CAP (LFR 2009c).

- Completion of an SVE/AS pilot test at the Site in accordance with LFR's "Work Plan to Conduct an Air Injection and Soil-Vapor Extraction Pilot Test," dated September 23, 2008 (LFR 2008a).

- Installation of seven SVE wells (SVE-2 through SVE-8), seven intermediate-zone AS wells (AS-2I through AS-8I), seven deep-zone AS wells (AS-2D through AS-8D), three SVE monitoring wells (SVMW-3 through SVMW-5), three intermediate-zone AS monitoring wells (ASMW-3I through ASMW-5I), and three deep-zone AS monitoring wells (ASMW-3D through ASMW-5D), from December 29, 2008 to January 9, 2009.

- Initial start-up of the SVE/AS extended pilot test system occurred on August 17, 2009. The system operated until October 27, 2009, at which time operations were ceased to allow for implementation of the Revised CAP, which required remedial soil excavation. The SVE/AS system operated a total of 52 days, from August 17, 2009 to October 27, 2009, and removed approximately 480 pounds of mass quantified as TPHg. For additional information and system design and start-up of the SVE/AS system, please refer to the quarterly "Groundwater Monitoring Report and Soil-Vapor Extraction/Air Sparging System Construction and Initial Operation Report for the Period July 1 through September 30, 2009" prepared for this project (LFR 2009e).

1.4 Revised Corrective Action Plan

LFR prepared the Revised CAP for the implementation of site remedies (LFR 2009c). The Revised CAP summarized the results of previous investigations, presented the site conceptual model, quantified the baseline risk of COCs, developed site-specific risk-based cleanup goals, evaluated potential remedies, and presented an implementation plan for the selected remedies.

The Revised CAP recommended excavation and off-site disposal of affected shallow soils with SVE/AS to remediate affected soil, groundwater, and soil vapors (LFR 2009c). The Revised CAP also recommended conducting an extended SVE/AS pilot test including ozone injection, if appropriate.

1.4.1 Soil Excavation and Removal

As of June 30, 2010, a total of approximately 8,662 tons of affected soil has been removed from the Site and transported to either Waste Management's Kettleman Hills Class I Landfill located in Kettleman City, California, or Republic Waste's Vasco Road Class II Landfill located in Livermore, California. The implementation of the CAP was reported to ACEH in the report titled "Soil Removal Action Completion Report, College for Certain, LLC, Former Pacific Electric Motors, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411)," dated September 15, 2010 (ARCADIS 2010d). The removal of PCB-affected soil was reported to ACEH and the U.S. Environmental Protection Agency (U.S. EPA) in a letter report titled "Implementation of the Toxic Substances Control Act Self-Implementing Cleanup Notification at the Former Pacific Electric Motors Facility, 1009 66th Avenue, Oakland, California," dated August 13, 2010 (ARCADIS 2010c).

1.4.2 Air Injection and Soil-Vapor Extraction

This section provides a summary of the operation and demobilization of the two phases of SVE/AS extended pilot test system that operated at the Site. The overall objective of the extended pilot test was to evaluate the effectiveness of SVE/AS in reducing concentrations of TPHg, BTEX, TBA, and MTBE in groundwater, soil, and soil gas.

ARCADIS operated an SVE/AS pilot test system in two phases. The first phase of SVE/AS operation was from August 13 to October 27, 2009, before soil excavation and site demolition activities began. The second phase of SVE/AS operation, from

June 16 to September 13, 2010, took place after completion of excavation and site demolition activities. SVE/AS operation was shut down for 232 days between phases of operation. Groundwater sampling to evaluate SVE/AS system performance was conducted during both phases of SVE/AS system operation. In addition, groundwater samples were collected before restarting the SVE/AS system for the second phase of operation to evaluate potential rebound of contaminants in groundwater during the period of SVE/AS system shutdown.

1.5 Initial Phase SVE/AS System

The initial phase SVE/AS extended pilot test system operated from August 17 to October 27, 2009. The initial phase SVE/AS system was shut down on October 27, 2009 to be demobilized from the Site during building demolition and soil excavation activities in accordance with the Revised CAP (LFR 2009c). Details regarding the operation of the system before demobilization were provided in the "Groundwater Monitoring Report and Soil-Vapor Extraction/Air Sparging System Construction and Initial Operation Report" submitted on November 13, 2009 (LFR 2009e). Operation of the SVE/AS extended pilot test system was restarted on June 16, 2010.

1.6 Second Phase SVE/AS System

The second phase SVE/AS extended pilot test system operated from June 16 to September 13, 2010. Shortly after September 13, 2010, the SVE/AS system was demobilized to allow for the redevelopment of the Site.

Based on photoionization detector (PID) monitoring of the total SVE system influent vapor stream concentrations, the SVE/AS system extracted approximately 159 pounds of fuel vapors during the second phase of SVE/AS system operations from June 16 to September 13, 2010. When added to the yield from the operation of the initial phase from August 17 to October 27, 2009, approximately 639 pounds of fuel vapors were recovered from the Site in approximately 141 days of operation.

2. Groundwater Monitoring

Groundwater monitoring was performed at the Site with slight modifications relative to the Groundwater Monitoring Plan and the Revised CAP (LFR 2009c). During this reporting period, groundwater samples were collected on March 15, 2011, approximately six months after the SVE/AS system was shut down. The following sections describe the groundwater monitoring activities for this reporting quarter.

2.1 Groundwater Monitoring Scope of Work

The following groundwater monitoring activities were performed during the reporting quarter:

- Measured depth to groundwater in seven monitoring wells during the March sampling event.
- Collected groundwater samples from seven wells on March 15, 2011.
- Submitted groundwater samples for laboratory analyses.

2.2 Groundwater Monitoring Wells

The groundwater monitoring well network at the Site included 21 groundwater monitoring wells prior to abandonment of 15 monitoring wells and 16 soil-vapor and air sparging wells on September 13, October 15, and November 15, 2010 (Figure 2). During the August 18, 2010 meeting between representatives of CFC, ARCADIS, and ACEH, the proposed multi-purpose building was shifted approximately 15 feet to the north-northwest to allow wells AS-1I and AS-3I to remain in place as future groundwater monitoring wells (Figure 2).

Based on observations by ARCADIS personnel during the March 2011 sampling event, wells AS-1I, AS-31, and AS-4I were inadvertently buried under a stockpile of soil generated during the redevelopment of the Site and thus the wells were not included in this round of groundwater monitoring . Well ASMW4I was inadvertently destroyed during the cement treatment of soil at the Site. ARCADIS personnel are coordinating the removal of the soil pile with the construction contractor to determine if wells AS-1I, AS-31, and AS-4I can be used in future monitoring events.

- One groundwater monitoring well (MW-4) is screened from approximately 5 to 20 feet bgs.
- One shallow-zone groundwater monitoring well (NW-2S; part of the triple-nested groundwater monitoring well) is screened from approximately 3 to 5 feet bgs.
- One intermediate-zone groundwater monitoring well (ASMW-5I) is screened from approximately 10 to 17 feet bgs.

- One intermediate-zone groundwater monitoring well (NW-2I; part of the triple-nested groundwater monitoring well) is screened from approximately 15 to 18 feet bgs.

- One deep-zone groundwater monitoring well (ASMW-5D) is screened from approximately 19 to 27 feet bgs.

- One deep-zone groundwater monitoring well (NW-2D; part of the triple-nested groundwater monitoring well) is completed with a screen at approximately 25 to 30 feet bgs.

- One intermediate-zone AS well (AS-6I) with 3-foot screen with bottom set at a depth ranging from approximately 13.5 to 19 feet bgs.

2.3 Groundwater Elevations

Groundwater elevations were measured on March 15, 2011. The depth to groundwater was measured in seven monitoring wells using an electronic water-level indicator. The water-level indicator was lowered into each well until a tone signaled that the indicator had contacted water. The depth to groundwater was measured to the surveyed elevation mark on the top of the casing of the monitoring well. The groundwater elevation in each well was calculated by subtracting the depth to water from the surveyed top-of-casing elevation.

During the redevelopment activities, the top of the casing for well AS-6I was damaged, altering the top-of-casing elevation. Therefore, this well was not used on the water-level elevation contour maps.

The groundwater elevation results are summarized in Table 1. Groundwater elevation data and contours for the intermediate and deep groundwater zones for the March event are presented on Figures 3 and 4, respectively.

March 2011 groundwater elevations in the intermediate zone ranged from 8.95 to 9.89 feet above mean sea level (msl). Intermediate-zone groundwater elevation contours for the March event are shown on Figure 3. The groundwater elevation contours indicate that the groundwater flow direction for the intermediate-zone groundwater was generally toward the north on March 15, 2011 with a horizontal groundwater gradient of approximately 0.02 foot per foot measured between wells NW-2I and ASMW-5I.

March groundwater elevations in the deep zone ranged from 8.89 to 10.09 feet above msl. Deep-zone groundwater elevation contours for the March event are shown on Figure 4. The groundwater elevation contours indicate that the groundwater flow direction for the deep-zone groundwater was generally toward the east on March 15, 2011 with a horizontal groundwater gradient of approximately 0.001 foot per foot measured between wells ASMW5D and NW-2D.

2.4 Groundwater Sampling

Ongoing monitoring and analysis of groundwater samples for TPHg, BTEX, TBA, and MTBE were conducted to assess the quality of groundwater affected by these COCs and the effectiveness of the SVE/AS system. One groundwater sampling event was conducted during the reporting quarter. Groundwater samples were collected from seven groundwater monitoring and AS wells during the March 15, 2011 event.

The samples were collected using low-flow groundwater sampling techniques (Puls and Barcelona 1996). The intake of the low-flow pump was placed in the middle of the screened interval and purged continuously until groundwater parameters (pH, conductivity, temperature, oxidation-reduction potential, and dissolved oxygen) stabilized, or until the well had been purged for approximately 30 minutes or of two gallons. Wells that purged dry were allowed to recharge to approximately 80% of original depth to groundwater before samples were collected.

Groundwater samples were collected directly from the hose of the pump and conveyed into laboratory-supplied sample containers. The containers were labeled with the well identification number, the time and date of collection, the analysis requested, and the initials of the sampler. The samples were stored in an ice-chilled cooler and maintained under strict chain-of-custody protocols as they were submitted to the laboratory for analysis.

The groundwater samples were submitted to TestAmerica Laboratories, a state-certified laboratory located in Pleasanton, California, for the following analyses:

- TPHg by U.S. EPA Method 8260B
- BTEX, TBA, and MTBE by U.S. EPA Method 8260B

Results for TPHg, BTEX, and MTBE analyses are summarized in Table 2. Table 3 summarizes the groundwater monitoring parameters measured during the collection of

the groundwater samples. Figures 5, 6, and 7 present the analytical results of TPHg, BTEX, and MTBE in the shallow, intermediate, and deep groundwater zones, respectively. Copies of the laboratory data sheets and chain-of-custody documents are presented in Appendix A. Copies of the monitoring well purge and sampling forms are presented in Appendix B.

2.5 Analytical Results of Groundwater Samples and Discussion

Groundwater samples were collected in March 2011 to provide data to evaluate the effectiveness of the SVE/AS system and to monitor for potential contaminant rebound. The results of the March sampling event were compared to results of baseline groundwater samples previously collected in March, May, and August 2009, before the SVE/AS system was operated. The following sections summarize the analytical results of the groundwater samples collected during the current monitoring event, and compare current results to baseline results.

2.5.1 Analytical Results for TPHg, BTEX, TBA, and MTBE

The wells selected include wells being sampled in accordance with the Groundwater Monitoring Plan, as well as wells recently installed to monitor the SVE/AS system. The wells selected include wells screened in the shallow, intermediate, and deep groundwater zones (Table 2).

The analytical results of the baseline groundwater samples and samples collected before and after demobilization of the SVE/AS system are summarized in Table 2. The analytical results of groundwater samples collected for TPHg, BTEX, and fuel oxygenates during this monitoring period are summarized in the following sections.

2.5.1.1 Shallow Zone

Groundwater samples were collected from one shallow-zone well during the current reporting quarter. The analytical results for TPHg, BTEX, TBA, and MTBE are summarized in Table 2 and posted on Figure 5. Prior to operation of the SVE/AS system, elevated concentrations of TPHg, BTEX, MTBE, and/or TBA had been detected in NW-2S. The analytical results of the groundwater samples collected in March 2011 from NW-2S indicate TPHg and benzene concentrations were significantly reduced by approximately 96.3% and 99.0%, respectively, relative to the concentrations of TPHg and benzene detected in samples collected prior to the operation of the SVE/AS system.

Intermediate Zone

Groundwater samples were collected from three intermediate-zone wells. The analytical results for TPHg, BTEX, TBA, and MTBE are summarized in Table 2, and analytical results for intermediate-zone wells are posted on Figure 6. Prior to operation of the SVE/AS system, elevated concentrations of TPHg, BTEX, MTBE, and/or TBA had been detected in groundwater samples previously collected from intermediate-zone wells at the Site. The baseline concentrations of fuel-related compounds detected in the samples collected from wells NW-2I, ASMW-2I, and ASMW 5I, located hydraulically downgradient from the former UST, have been some of the highest concentrations of fuel-related compounds detected in groundwater samples collected at the Site. The analytical results of the groundwater samples collected in March 2011 from NW-2I and ASMW 5I after 232 days of total SVE/AS system operation and 182 days after demobilization indicate that TPHg concentrations were significantly reduced by approximately 99.9% and 99.8%, respectively (Table 2 and Figure 6).

The data indicate that BTEX concentrations are significantly reduced in each of the samples collected from the intermediate-zone wells relative to concentrations detected prior to the operation of the SVE/AS system (Table 2 and Figure 6).

The following table summarizes the decreases in the percentages of benzene and TPHg that were detected in the samples collected in March 2011 relative to concentrations of benzene and TPHg that were detected prior to start-up of the SVE/AS system:

Percentage Decrease in Benzene and TPHg Concentrations Intermediate-Zone Groundwater Monitoring Wells *concentrations in micrograms per liter*			
Well ID	**Data**	**Benzene**	**TPHg**
ASMW-5I	11-Mar-09	11,000	72,000
	15-Mar-11	<0.50	150
	Percent Decrease:	>99%	>99%
NW-2I	13-Mar-09	18,000	49,000
	15-Mar-11	<0.50	<50
	Percent Decrease:	>99%	>99%
AS-6I	26-May-09	11,000	42,000
	15-Mar-11	3.6	700
	Percent Decrease:	>99%	>99%

Concentrations of MTBE and TBA detected in samples collected from intermediate-zone wells after the start-up of the SVE/AS system have also decreased relative to the concentrations of these compounds detected in the samples collected prior to the operation of the SVE/AS system (Table 2 and Figure 6).

2.5.1.2 Deep Zone

Groundwater samples were collected from three deep-zone wells. The analytical results for TPHg, BTEX, TBA, and MTBE are summarized in Table 2 and posted for deep-zone wells on Figure 7. Similar to the results of the samples collected from intermediate-zone wells, the analytical results indicated that the concentrations of fuel and fuel-related compounds decreased relative to the concentrations detected before the SVE/AS system began operation.

Concentrations of TPHg, BTEX compounds, and TBA in samples collected from two deep-zone wells during the March 2011 sampling event were below their respective laboratory method detection levels. TPHg and benzene was detected in one of three deep-zone wells at a concentration of 510 and 7.5 micrograms per liter (µg/l), respectively. The concentration of benzene has increased since the last monitoring event but is below the site-specific screening level for benzene of 66 µg/l.

2.6 Site-Specific Screening Levels for Benzene in Groundwater

A site-specific screening level for benzene in groundwater has been calculated with respect to the potential volatilization of benzene from groundwater to indoor air. Site conditions including shallow groundwater (less than 5 feet bgs) and disturbed vadose soils as a result of excavation and backfilling are not conducive to collecting representative soil-gas samples. Therefore, ARCADIS developed a site-specific screening level that is protective of benzene volatilizing to indoor air from groundwater to further evaluate the success of the SVE/AS system in reducing fuel and fuel constituents in groundwater. The following sections describe how the site-specific screening level was calculated and compares current groundwater concentrations to the screening level.

2.6.1 Calculation of Groundwater Benzene Concentration Protective of the Indoor Air Pathway

ARCADIS used the California Department of Toxic Substances Control (DTSC) version of the Johnson & Ettinger model (DTSC 2009) to estimate a benzene concentration in groundwater that would not pose a vapor intrusion concern under a commercial exposure scenario. The model first estimates an indoor air concentration based on a target health risk of 1×10^{-6}. Then it subsequently back-calculates a groundwater concentration associated with this vapor intrusion potential. The model itself generates a groundwater concentration that is not associated with a vapor intrusion health risk above the DTSC target level.

Default commercial exposure input parameters were used to calculate the benzene in groundwater concentration. These include a 25-year exposure duration, 250 days per years, and eight hours per day. Building-specific defaults such as slab thickness and ventilation exchange rates were incorporated into the modeling effort.

Based on the evaluation, a benzene concentration of 66 µg/l in groundwater would not be associated with a vapor intrusion health concern under the commercial exposure scenario. The exposure assumptions used under a commercial scenario are conservative for a school setting (especially a gymnasium), where exposures are expected to be significantly lower. Details concerning the vapor transport modeling are provided in Appendix C of the groundwater monitoring report for the period July 1 through September 30, 2010 (ARCADIS 2010e).

2.6.2 Comparison of March 2011 Groundwater Sampling Results to Site-Specific Screening Level for Benzene

Concentrations of benzene in the groundwater samples from seven wells during the March 2011 sampling event ranged from below the laboratory detection limit (<0.50 µg/l) in six wells to 7.5 µg/l in well NW-2D. The analytical results of the groundwater samples collected during the March sampling event indicate that current concentrations of benzene in groundwater are well below the 66 µg/l screening level concentration protective of the benzene volatilization from groundwater to indoor air exposure pathway (Table 2).

3. Conclusions

Based on the baseline analytical results of the groundwater samples collected at the Site, the highest concentrations of COCs were initially detected in samples collected from wells constructed in the intermediate zone located closest to the former UST (Figures 5 through 7).

Analytical results of groundwater samples collected on March 15, 2011, 182 days (approximately 6 months) after system shutdown, indicate a slight increase of concentrations of TPHg and benzene. Concentrations of TPHg increased in three of the seven groundwater samples collected, while concentrations of benzene increased in two of the seven samples. However, the current concentrations of benzene detected in the samples collected at the Site are significantly below the screening level of 66 µg/l with the highest concentration at 7.5 µg/l detected in the sample collected from well NW-2D. This concentration indicates an increase of approximately 6% when compared to baseline concentrations. The highest increase in TPHg detected at the Site was in the sample collected from the same well (NW-2D at 510 µg/l), which indicates a significant increase when compared to the baseline concentration of nondetect (<250 µg/l). All other increases in TPHg or benzene in samples collected during the current reporting quarter were less than 4% (see Table 2 and Figures 5, 6, and 7). Comparison of analytical results of groundwater samples collected 182 days after SVE/AS system shutdown to the calculated 66 µg/l groundwater concentration of benzene protective of volatilization to indoor air exposure pathway shows that current groundwater conditions do not pose a risk of volatilization to indoor air. These trends will be assessed during future groundwater monitoring events.

4. Recommendations

ARCADIS recommends the collection of additional groundwater samples scheduled to take place quarterly for one year after the shutdown of the SVE/AS system (until September 2011). These data will be used to further evaluate the effectiveness of the SVE/AS system pilot testing in the long-term reduction of fuel and fuel-related constituents in groundwater and soil gas.

The current development plan for the Site includes the construction of a multi-purpose gymnasium building near the area where the SVE/AS system operated. This building will be equipped with vapor mitigation measures that are compliant with the DTSC "Vapor Intrusion Mitigation Advisory" (DTSC 2009). In accordance with the Revised CAP and the DTSC document, it is anticipated that the vapor mitigation measures for the multi-purpose building will include a sub-slab depressurization system and a vapor barrier. These vapor mitigation measures are being designed and will be presented to ACEH under separate cover.

5. Confirmation Sampling Plan

Based on the success of the SVE/AS system operation in reducing fuel and fuel constituent concentrations in groundwater, ARCADIS proposes the following confirmation sampling plan to evaluate if there is any long-term rebound in groundwater concentrations from the SVE/AS system operations. The confirmation sampling plan addresses different possible results and presents mitigation measures, if necessary.

The confirmation sampling plan includes collection of groundwater samples on a quarterly basis for one year:

- If concentrations of benzene in the confirmation groundwater samples remain below the site-specific screening level of 66 µg/l during that year, then ARCADIS will request a letter from ACEH indicating that no further action (NFA) is required at the Site with respect to groundwater monitoring or remediation.

- If the groundwater sample results indicate concentrations appear to be increasing, but are below volatile screening levels, then further periodic groundwater monitoring and reporting will be conducted until concentrations of TPHg and/or BTEX compounds stabilize.

- If the groundwater sample results indicate concentrations of benzene are increasing above the volatilization screening level, then a vapor sampling plan will be prepared and implemented for the gymnasium building.

If vapor sampling becomes necessary, one of the three following outcomes will likely occur:

- If the concentrations of benzene in the sub-slab vapor samples remain below Environmental Screening Levels (ESLs) as provided in Table E-2 for Evaluation of Potential Indoor Air Concerns published by the Regional Water Quality Control Board (RWQCB 2008), then groundwater and vapor sampling will continue until a change is observed.

- If the concentrations of benzene in the sub-slab vapor samples are slightly above acceptable limits, then the sub-slab depressurization vapor mitigation system will become "active" (i.e., a blower will be attached to the depressurization system) and sub-slab vapor monitoring will continue.

- If the concentrations of benzene in sub-slab vapor samples are considerably above ESLs, then the sub-slab depressurization vapor mitigation system will become active, and, in addition, an oxygen compound will be injected into the shallow- and intermediate-zone groundwater until concentrations of benzene in groundwater samples collected at the Site decrease over time.

6. Schedule

Collection of groundwater confirmation samples will occur quarterly from the fourth quarter of 2010 through the third quarter of 2011. The next periodic groundwater monitoring event is scheduled for June 2011.

7. Limitations

The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ARCADIS and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, expressed or implied, is

intended or given. To the extent that ARCADIS relied upon any information prepared by other parties not under contract to ARCADIS, ARCADIS makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when ARCADIS' investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the Site may vary from those at the locations where data were collected. ARCADIS' ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

ARCADIS, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

8. References

ARCADIS. 2010a. Groundwater Monitoring Report and Soil-Vapor Extraction/Air Sparging System Construction for the Period October 1 through December 31, 2009, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). February 12.

ARCADIS. 2010b. Groundwater Monitoring Report for the Period from January 1 through March 30, 2010, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). July 19.

ARCADIS. 2010c. Implementation of the Toxic Substances Control Act Self-Implementing Cleanup Notification at the Former Pacific Electric Motors Facility, 1009 66th Avenue, Oakland, California. August 13.

ARCADIS. 2010d. Soil Removal Action Completion Report, College for Certain, LLC, Former Pacific Electric Motors, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411). September 15.

ARCADIS. 2010e. Groundwater Monitoring Soil-Vapor Extraction/Air Sparging System Operation Report for the Period July 1 through September 30, 2010, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). November 15.

Decon Environmental Services, Inc. (Decon). 2002a. Remediation Project Report for Pacific Electric Motor Co., 1009 66th Avenue, Oakland, CA 94612. July 9.

Decon. 2002b. Remediation Project Report – Addendum for Pacific Electric Motor Co., 1009 66th Avenue, Oakland, CA 94612. October 2.

Department of Toxic Substances Control (DTSC). 2009. Vapor Intrusion Mitigation Advisory. April. Section 6.3.4 revised May 8.

LFR Inc. (LFR). 2008a. Work Plan to Conduct an Air Injection and Soil-Vapor Extraction Pilot Test at the Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411). September 23.

LFR. 2008b. Air Sparging and Soil-Vapor Extraction Pilot Test Completion Report at the Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411). November 21.

LFR Inc. an ARCADIS Company (LFR). 2009a. Groundwater Monitoring Plan for the Former Pacific Electric Motors Site located at 1009 66th Avenue, Oakland, California, Fuel Leak Case Number RO0000411. March 4.

LFR. 2009b. Groundwater Monitoring Report for the Period from January 1 through March 31, 2009, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). May 15.

LFR. 2009c. Revised Corrective Action Plan, Proposed Aspire School Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case No. RO0000411). July 17.

LFR. 2009d. Groundwater Monitoring Report for the Period from April 1 through June 30, 2009, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). August 14.

LFR. 2009e. Groundwater Monitoring Report and Soil-Vapor Extraction/Air Sparging System Construction and Initial Operation Report for the Period July 1 through September 30, 2009, Former Pacific Electric Motors Site, 1009 66th Avenue, Oakland, California (Fuel Leak Case Number RO0000411). November 13.

Puls, Robert W., and Michael J. Barcelona. 1996. Ground Water Issue Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures. EPA/540/S-95/504.

Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (Interim Final – November 2007); Environmental Screening Levels ("ESLs"). Technical Document. May.

W.A. Craig, Inc. 1995a. Final Closure Plan for Underground Storage Tank Removal for Pacific Electric Motor Co., 1009 66th Avenue, Oakland, CA 94621. March 14.

W.A. Craig, Inc. 1995b. Correspondence to ACDEH via facsimile. Attached soil and water sample results, and next phase of work due to contamination in the soil and pit water. March 31.

W.A. Craig, Inc. 1995c. Subsurface Environmental Investigation for Pacific Motor Co., 1009 66th Avenue, Oakland, CA 94621. May 16.

W.A. Craig, Inc. 1997. Excavation and Sampling Report for Pacific Electric Motor Co., 1009 66th Avenue, Oakland, CA 94621. May 12.

Table 1
Groundwater Elevations
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Top-of-Casing Elevation [(1)]	Depth to Groundwater [(2)]	Groundwater Elevation [(1)]
Shallow-Zone Groundwater Monitoring Wells				
NW-2S	11-Mar-09	13.77	3.77	10.00
	26-May-09		3.63	10.14
	21-Sep-09		3.98	9.79
	27-Jul-10		5.09	8.68
	14-Sep-10		3.92	9.85
	14-Dec-10		3.23	10.54
	15-Mar-11		2.25	11.52
Intermediate-Zone Groundwater Monitoring Wells[1]				
NW-2I[1]	11-Mar-09	13.80	5.86	7.94
	26-May-09		4.08	9.72
	10-Aug-09		5.96	7.84
	21-Sep-09		5.21	8.59
	21-Oct-09		8.54	5.26
	24-May-10		4.18	9.62
	27-Jul-10		2.77	11.03
	14-Sep-10		6.25	7.55
	14-Dec-10		4.31	9.49
	15-Mar-11		4.85	8.95
ASMW-4I	11-Mar-09	13.09	2.06	11.03
	26-May-09		3.22	9.87
	10-Aug-09		3.96	9.13
	21-Sep-09		4.44	8.65
	21-Oct-09		3.58	9.51
	24-May-10		NM	NM
	27-Jul-10		4.32	8.77
	14-Sep-10		4.68	8.41
	15-Dec-10		2.71	10.38
ASMW-5I	11-Mar-09	13.16	2.14	11.02
	26-May-09		3.26	9.90
	10-Aug-09		3.95	9.21
	21-Sep-09		4.43	8.73
	21-Oct-09		6.86	6.30
	24-May-10		4.54	8.62
	27-Jul-10	13.83	5.03	8.80
	14-Sep-10		5.93	7.90
	14-Dec-10		2.95	10.88
	15-Mar-11		3.94	9.89
AS-1I	26-May-09	NS	3.87	--
	24-May-10		4.91	--
	27-Jul-10	14.02	5.61	8.41
	14-Dec-10		3.20	10.82
AS-3I	26-May-09	14.10	4.07	10.03
	24-May-10		4.10	10.00
	27-Jul-10	13.91	7.35	6.56
	14-Sep-10		6.12	7.79
	14-Dec-10		3.22	10.69

Table 1
Groundwater Elevations
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Top-of-Casing Elevation [1]	Depth to Groundwater [2]	Groundwater Elevation [1]
AS-4I	26-May-09	13.52	3.68	9.84
	24-May-10		2.05	11.47
	27-Jul-10	14.04	6.92	7.12
	14-Sep-10		7.12	6.92
	14-Dec-10		3.23	10.81
AS-6I	26-May-09	13.10	3.14	9.96
	21-Sep-09	(*)	3.96	9.14
	24-May-10	(**)	NM	NM
	27-Jul-10	14.01	4.82	9.19
	14-Sep-10		5.59	8.42
	14-Dec-10		2.16	11.85
	15-Mar-11		4.50	9.51
Deep-Zone Groundwater Monitoring Wells				
MW-4	11-Mar-09	13.78	2.63	11.15
	26-May-09		3.91	9.87
	10-Aug-09		4.71	9.07
	21-Sep-09		5.18	8.60
	21-Oct-09		6.28	7.50
	27-Jul-10	13.94	4.89	9.05
	14-Sep-10		5.14	8.80
	14-Dec-10		3.11	10.83
	15-Mar-11		3.85	10.09
NW-2D	11-Mar-09	13.79	2.68	11.11
	26-May-09		3.97	9.82
	10-Aug-09		4.73	9.06
	21-Sep-09		5.13	8.66
	21-Oct-09		4.13	9.66
	24-May-10		4.05	9.74
	27-Jul-10		4.75	9.04
	14-Sep-10		6.11	7.68
	14-Dec-10		4.32	9.47
	15-Mar-11		4.90	8.89
ASMW-5D	11-Mar-09	13.01	1.88	11.13
	26-May-09		3.16	9.85
	10-Aug-09		3.93	9.08
	21-Sep-09		4.30	8.71
	21-Oct-09		3.56	9.45
	24-May-10		3.24	9.77
	27-Jul-10	13.63	4.50	9.13
	14-Sep-10		4.81	8.82
	14-Dec-10		2.95	10.68
	15-Mar-11		3.57	10.06

Notes:

NM = water level not measured

NS = not surveyed

Table 1
Groundwater Elevations
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Top-of-Casing Elevation [1]	Depth to Groundwater [2]	Groundwater Elevation [1]

(*) Top of casing obscured by sparge/extraction fitting; top-of-casing value estimated.

(**) Top of the casing was destroyed during excavation activities; top-of-casing elevation is inaccurate.

(1) Top-of-casing elevation surveyed by Tronoff & Associates licensed land surveyor number 6415; top-of-casing and groundwater elevations are in North American Vertical Datum 1988 (feet)

(2) feet below the top of well casing

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
Shallow-Zone Groundwater Monitoring Wells											
NW-1S	27-Dec-05		<50	NA	0.55	<0.50	<0.50	<0.50	NA	NA	<0.50
	13-Mar-09		<50	<10	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	23-Sep-09		<50	<10	<0.50	<0.50	0.69	<0.50	0.59	<0.50	0.59
NW-2S	27-Dec-05		7,100	NA	1,600	570	570	62	NA	NA	1,530
	13-Mar-09		1,800	1,900	130	520	<4.2	120	20	<4.2	20
	23-Sep-09		15,000	5,100	11,000	610	800	41	1,500	2,300	3,800
	28-Jul-10		1,000	100	34	34	30	24	NA	NA	170
	14-Sep-10		69	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	2.1
	17-Dec-10		<50	21	4.7	<0.50	<0.50	<0.50	NA	NA	<1.0
	15-Mar-11		66	400	30.0	5	<0.50	5.7	NA	NA	<1.0
NW-3S	26-May-09		<50	<10	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	21-Sep-09		<50	<10	4.1	<0.50	0.58	<0.50	<0.50	<0.50	<0.50
	15-Sep-10		<50	<4	2.4	<0.50	<0.50	<0.50	NA	NA	<1.0
Intermediate-Zone Groundwater Monitoring Wells											
ASMW-2I	13-Mar-09		49,000	3,200	1,100	18,000	17,000	1,600	5,100	3,100	8,200
	23-Sep-09		<1,000	13,000	290	<10	13	<10	39	31	70
	22-Oct-09		<50	370	290	<0.50	4.6	<0.50	9	11	20
	25-May-10		2,000	330	98	280	50	170	NA	NA	350
	14-Sep-10		<50	<4	0.51	<0.50	<0.50	<0.50	NA	NA	<1.0
	27-Jul-10		<50	<4.0	20	<0.50	0.80	<0.50	NA	NA	4.5
ASMW-3I	11-Mar-09		<50	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	22-Sep-09		<50	<10	3.4	<0.50	1.4	<0.50	<0.50	<0.50	<0.50
	22-Oct-09		<50	<10	6.9	<0.50	1.4	<0.50	<0.50	<0.50	<0.50
ASMW-4I	11-Mar-09		9,200	<130	<6.3	38	<6.3	570	1,800	230	2,030
	23-Sep-09		1,900	<130	<6.3	8.1	<6.3	130	120	26	146
	22-Oct-09		1,900	<10	<0.50	4.0	1	75	110	23	133
	26-May-10		1,800	<4	<0.50	4.6	<0.50	86	NA	NA	90
	27-Jul-10		940	<4.0	<0.50	2.9	<0.50	68	NA	NA	35
	14-Sep-10		460	<4	<0.50	1.3	<0.50	14	NA	NA	5
	17-Dec-10		1,000	<4	<0.50	2.2	<0.50	43	NA	NA	110
ASMW-5I	11-Mar-09		72,000	<1,400	76	11,000	3,600	3,800	13,000	5,400	18,400
	10-Aug-09		59,000	<1400	91	9,100	1,800	2,400	8,300	3,900	12,200

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
	22-Sep-09		15,000	210	78	1,100	250	280	2,000	1,200	3,200
	22-Oct-09		22,000	330	110	560	330	240	3,000	1,600	4,600
	24-May-10		48,000	310	120	2,300	150	2,000	NA	NA	12,000
duplicate	24-May-10		46,000	290	120	2,200	170	2,000	NA	NA	12,000
	27-Jul-10		110	28	1.6	<0.50	<0.50	0.80	NA	NA	20
	14-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	17-Dec-10		110	680	65	0.62	<0.50	1.6	NA	NA	<1.0
	15-Mar-11		150	750	47	<0.50	<0.50	<0.50	NA	NA	<1.0
NW-1I	14-Sep-10		<50	250	1.9	<0.50	<0.50	<0.50	NA	NA	<1.0
NW-2I	27-Dec-05		120,000	NA	120,000	22,000	24,000	2,100	NA	NA	12,800
	13-Mar-09		49,000	NA	1,100	18,000	17,000	1,600	NA	NA	8,200
	23-Sep-09		12,000	5,500	3,000	980	820	220	1,200	660	1,860
	22-Oct-09		4,200	3,300	330	110	110	5.8	400	250	650
	25-May-10		8,600	17,000	770	360	35	400	NA	NA	8,600
	28-Jul-10		130	300	71	0.67	<0.50	<0.50	NA	NA	8.2
	14-Sep-10		<50	6	<0.50	<0.50	<0.50	0.6	NA	NA	4.8
	17-Dec-10		920	580	15	14	<0.50	89	NA	NA	11
	15-Mar-11		<50	<4.0	0.55	<0.50	<0.50	<0.50	NA	NA	<1.0
duplicate	15-Mar-11		<50	<4.0	0.57	<0.50	<0.50	<0.50	NA	NA	<1.0
NW-3I	27-Dec-05		<50	NA	<2.0	<0.50	<0.50	<0.50	NA	NA	<0.50
	15-Feb-06		<50	NA	<2.0	<0.50	<0.50	<0.50	NA	NA	<0.50
	15-Feb-06		<50	NA	<2.0	<0.50	<0.50	<0.50	NA	NA	<0.50
	16-Feb-06		<50	NA	<2.0	<0.50	<0.50	<0.50	NA	NA	<0.50
	21-Sep-09		<50	<10	1.3	<0.50	0.54	<0.50	<0.50	<0.50	<0.50
	25-May-10		<50	<4	1.2	<0.50	<0.50	<0.50	NA	NA	1.7
	15-Sep-10		<50	<4	0.85	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-1I	17-Dec-10		<50	<4	8.8	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-2I	22-Sep-09		<8,300	2,900	11,000	460	120	<83	130	<83	130
	25-May-10		6,800	5,600	8,000	76	<25	220	NA	NA	<50
	28-Jul-10		<5,000	8,700	1,200	<50	<50	<50	NA	NA	<100
	15-Sep-10		<1000	<80	380	<10	<10	<10	NA	NA	<20
AS-3I	14-Sep-10		<500	6.5	530	<0.50	<0.50	<0.50	NA	NA	14
	17-Dec-10		<50	52	200	<0.50	<0.50	<0.50	NA	NA	<1.0

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Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
AS-4I	25-May-10		310	1,500	110	2.7	<0.50	<0.50	NA	NA	<1.0
	14-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	17-Dec-10		<50	260	36	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0
Duplicate	17-Dec-10		<50	250	37	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-5I	25-May-10		<50	130	10	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-6I	26-May-09		42,000	<1,000	170	11,000	780	2,400	7,300	2,900	10,200
	23-Sep-09		26,000	330	1,600	1,000	400	230	4,000	1,300	5,300
	25-May-10		840	210	25	23	<0.50	14	NA	NA	1.5
	28-Jul-10		58	450	45	<0.50	1.9	2.7	NA	NA	8.1
	14-Sep-10		<50	57	8.6	<0.50	<0.50	1.1	NA	NA	<1.0
duplicate	14-Sep-10		<50	63	10	<0.50	<0.50	1.2	NA	NA	<1.0
	17-Dec-10		700	2,000	80	3.6	1.5	21.0	NA	NA	15.0
	15-Mar-11		<50	480	5.2	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-7I	26-May-09		<50	35	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	23-Sep-09		<50	<10	0.8	<0.50	0.95	<0.50	<0.50	<0.50	<0.50
	26-May-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	15-Sep-10		790	<4	1.1	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-8I	23-Sep-09		<50	<10	1.0	<0.50	1.6	<0.50	<0.50	<0.50	<0.50
Deep-Zone Groundwater Monitoring Wells											
ASMW-2D	11-Mar-09		1,300	1,900	1,300	13	<13	<13	<13	<13	<13
	23-Sep-09		<360	<71	460	<3.6	<3.6	<3.6	5.7	4.7	10.4
	22-Oct-09		<50	<10	1.9	<0.50	1.4	<0.50	1.9	2.1	4
	25-May-10		<50	<4	8.3	<0.50	<0.50	<0.50	NA	NA	<1.0
ASMW-3D	11-Mar-09		<50	34	91	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	22-Sep-09	(4)	<50	28	280	<0.50	1.1	<0.50	0.68	0.87	1.55
	22-Oct-09		<50	<10	310	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
ASMW-4D	11-Mar-09		<50	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	21-Sep-09	(1)	<50	<10	5.4	<0.50	1.5	<0.50	<0.50	<0.50	<0.50
	22-Oct-09		<50	<10	6.1	<0.50	0.5	<0.50	<0.50	<0.50	<0.50
ASMW-5D	11-Mar-09	(2)	87	1,700	<0.50	84	<0.50	5.2	5.9	1.5	7.4
	21-Sep-09		<50	<10	72	<0.50	2.8	<0.50	<0.50	<0.50	<0.50
	22-Oct-09		<50	<10	76	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
duplicate	22-Oct-09		<50	<10	5.1	<0.50	0.8	<0.50	<0.50	<0.50	<0.50

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
	24-May-10		<250	3,900	14	<2.5	<2.5	<2.5	NA	NA	6.3
	27-Jul-10		<50	<4.0	2.6	<0.50	<0.50	<0.50	NA	NA	<1.0
	14-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	17-Dec-10		<50	<4.0	0.52	<0.50	<0.50	<0.50	NA	NA	<1.0
	15-Mar-11		<50	<4.0	0.68	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-2D	22-Sep-09		<50	<10	13	<0.50	0.8	<0.50	<0.50	<0.50	<0.50
	15-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
duplicate	15-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-3D	14-Sep-10		<50	<4	0.71	<0.50	<0.50	<0.50	NA	NA	<1.0
AS-4D	14-Sep-10		<50	<4	0.92	<0.50	<0.50	<0.50	NA	NA	<1.0
NW-1D	27-Dec-05		<50	NA	37	<0.50	<0.50	<0.50	NA	NA	<0.50
	13-Mar-09		<50	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
NW-2D	27-Dec-05		1,400	NA	1,600	300	13	<2.5	NA	NA	178
	13-Mar-09		<250	17,000	310	120	<2.5	<2.5	<2.5	<2.5	<2.5
	22-Sep-09	(3)	<50	<10	9.8	0.5	2.5	<0.50	2.0	2.1	4.1
duplicate	22-Sep-09		<50	<10	12	<0.50	1.4	<0.50	1.9	1.3	3.2
	22-Oct-09		<50	<10	<0.50	<0.50	0.8	<0.50	<0.50	<0.50	<0.50
	28-Jul-10		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	14-Sep-10		<50	<4	0.52	<0.50	<0.50	<0.50	NA	NA	<1.0
	17-Dec-10		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	15-Mar-11		510	320	11	7.5	<0.50	47	NA	NA	18
NW-3D	27-Dec-05		<50	NA	<2.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Feb-06		<50	NA	<2.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Feb-06		<50	NA	2.1	<0.5	<0.5	<0.5	NA	NA	<0.5
	16-Feb-06		<50	NA	<2.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	21-Sep-09		<50	<10	1.0	<0.50	0.67	<0.50	<0.50	<0.50	<0.50
	15-Sep-10		<50	<4	1.2	<0.50	<0.50	<0.50	NA	NA	<1.0
MW-1	19-Jun-97		18,000	NA	4,900	3,300	200.0	1,100	NA	NA	<250
	29-Sep-97		29,000	NA	3,500	4,800	<25	2,000	NA	NA	<250
	16-Dec-97		<0.050	NA	0.7	1.3	<0.5	0.6	NA	NA	<5.0
	10-Mar-98		190	NA	1.7	2	<0.5	5.7	NA	NA	<5.0
	19-Jan-99		100	NA	68.0	40	<0.5	18.0	NA	NA	8.3
	15-Apr-99		<0.050	NA	0.87	0.92	0.9	0.7	NA	NA	<5.0

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
	30-Jul-99		1,400	NA	120	60	<0.5	63	NA	NA	13.0
	15-Nov-99		3,600	NA	620	120	<0.5	150	NA	NA	<5.0
	24-Mar-00		<0.050	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	<5.0
	18-May-00		1,300	NA	130.0	10	1.2	38.0	NA	NA	8.6
	26-Jul-00		6,400	NA	680	100	7.4	260	NA	NA	<5.0
	30-Oct-00		600	NA	950	130	14	330	NA	NA	<100
	24-Jul-01		1,200	NA	39	13	<0.5	70	NA	NA	13
	28-Nov-01		1,800	NA	160	27	0.93	72	NA	NA	<5.0
	18-Feb-02		2,400	NA	200	18	<2.5	89	NA	NA	<25
	11-Dec-02		8,400	NA	640	83	9.2	320	NA	NA	<0.5
	26-Feb-03		8,300	NA	720	12	<10	240	NA	NA	<10
	16-May-03		5,600	NA	490	22	<5.0	240	NA	NA	<5.0
	8-Mar-05		230	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	<5.0
	13-Mar-09		<50	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	26-May-09		<50	<10	<0.50	<0.50	0.67	<0.50	<0.50	<0.50	<0.50
duplicate	26-May-09		<50	<10	<0.50	<0.50	0.62	<0.50	<0.50	<0.50	<0.50
	14-Sep-10		<50	<4	3.4	<0.50	<0.50	<0.50	NA	NA	<1.0
MW-2	19-Jun-97		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	29-Sep-97		--	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	16-Dec-97		--	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	10-Mar-98		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	19-Jan-99		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Apr-99		<50	NA	<5.0	0.75	0.64	<0.5	NA	NA	0.74
	30-Jul-99		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Nov-99		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	24-Mar-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	18-May-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	26-Jul-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	30-Oct-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	24-Jul-01		<50	NA	7.6	<0.5	<0.5	<0.5	NA	NA	<0.5
	28-Nov-01		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	18-Feb-02		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	11-Dec-02		<50	NA	5.8	<0.5	<0.5	<0.5	NA	NA	<1.0

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
	26-Feb-03		<50	NA	10	<0.5	<0.5	<0.5	NA	NA	<1.0
	16-May-03		<50	NA	16	<0.5	<0.5	<0.5	NA	NA	<1.0
	9-Mar-05		<50	NA	15	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Feb-06		<50	NA	19	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Feb-06		<50	NA	6.8	<0.5	<0.5	<0.5	NA	NA	<0.5
	16-Feb-06		<50	NA	5.6	<0.5	<0.5	<0.5	NA	NA	<0.5
	13-Mar-09		<50	<10	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	26-May-09		<50	<10	3.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	21-Sep-09		<50	<10	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3	19-Jun-97		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	29-Sep-97		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	16-Dec-97		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	10-Mar-98		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	19-Jan-99		<50	NA	8.7	0.78	<0.5	<0.5	NA	NA	<0.5
	15-Apr-99		<50	NA	23	5.4	3.9	1.7	NA	NA	5.6
	30-Jul-99		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	15-Nov-99		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	24-Mar-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	18-May-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	26-Jul-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	30-Oct-00		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	24-Jul-01		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	28-Nov-01		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	18-Feb-02		<50	NA	<5.0	<0.5	<0.5	<0.5	NA	NA	<0.5
	11-Dec-02		<50	NA	0.78	<0.5	<0.5	<0.5	NA	NA	<1.0
	26-Feb-03		<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	<1.0
	16-May-03		<50	NA	2.6	<0.5	<0.5	<0.5	NA	NA	<1.0
	8-Mar-05		<50	NA	<2	<0.5	<0.5	<0.5	NA	NA	<0.5
	13-Mar-09		<50	<10	<0.50	<0.50	<0.50	<0.50	0.97	<0.50	0.97
	22-Sep-09		<50	<10	0.89	<0.50	1.1	<0.5	<0.5	<0.50	<0.50
MW-4	15-Sep-98		170,000	NA	26,000	26,000	32,000	2,900	NA	NA	18,000
	19-Jan-99		2,600	NA	13,000	1,700	3.8	25	NA	NA	29
	15-Apr-99		210,000	NA	52,000	28,000	15,000	3,700	NA	NA	19,000
	30-Jul-99		91,000	NA	68,000	16,000	7,500	2,300	NA	NA	8,500
	15-Nov-99		63,000	NA	57,000	8,500	2,400	1,400	NA	NA	4,000

Table 2
Analytical Results for Volatile Organic Compounds
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California
(concentrations in micrograms per liter [µg/L])

Sample Location	Date Collected	Notes	TPHg	TBA	MTBE	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	Total Xylenes
	24-Mar-00		95,000	NA	44,000	16,000	13,000	2,500	NA	NA	12,000
	18-May-00		91,000	NA	64,000	15,000	10,000	2,200	NA	NA	9,600
	26-Jul-00		130,000	NA	80,000	11,000	6,400	1,700	NA	NA	6,500
	30-Oct-00		59,000	NA	68,000	6,700	2,200	750	NA	NA	3,100
	24-Jul-01		180,000	NA	44,000	25,000	23,000	3,500	NA	NA	20,000
	28-Nov-01		67,000	NA	57,000	8,100	3,300	1,400	NA	NA	5,600
	18-Feb-02		98,000	NA	47,000	20,000	12,000	2,300	NA	NA	15,000
	11-Dec-02		200,000	NA	17,000	340	<5.00	590	NA	NA	1,000
	26-Feb-03		63,000	NA	30,000	8,100	4,400	1,900	NA	NA	8,200
	16-May-03		530,000	NA	42,000	24,000	20,000	12,000	NA	NA	63,000
	9-Mar-05		152,237	NA	5,841	22,053	17,310	3,981	NA	NA	13,969
	9-Mar-05		162,863	NA	6,026	21,536	16,547	3,900	NA	NA	13,786
	13-Mar-09		55,000	<1,400	950	19,000	7,200	2,300	8,500	3,500	12,000
	23-Sep-09		250	730	49	51	3.7	8.6	37	16	53
	22-Oct-09		<50	<10	3.7	<.50	1.3	<0.50	<0.50	<0.50	<0.50
	24-May-10		250	180	21	11	<0.50	3.6	NA	NA	7.1
	28-Jul-10		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
duplicate	28-Jul-10		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	14-Sep-10		<50	<4	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	17-Dec-10		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	15-Mar-11		<50	<4.0	0.61	<0.50	<0.50	<0.50	NA	NA	<1.0

Notes:
NA = not analyzed
TPHg = total petroleum hydrocarbons as gasoline
TBA = tertiary-butyl alcohol
MTBE = methyl tertiary-butyl ether
1,2-DCA = 1,2-dichloroethane
"<" = not detected above the laboratory reporting limit given
Samples collected in March 2009 were analyzed by Curtis & Tompkins, Ltd.

(1) 1,2-DCA results = 0.79 µg/L
(2) 1,2-DCA results = 0.88 µg/L
(3) 1,2-DCA results = 0.58 µg/L
(4) 1,2-DCA results = 0.77 µg/L

Table 3
Field Parameters
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Temperature (degrees Celsius)	Conductivity (mmhos/cm)	pH (units)	ORP (mV)	Dissolved Oxygen (mg/L)
Shallow-Zone Groundwater Monitoring Wells						
NW-2S	23-Sep-09	25.55	1,696	6.67	-30.1	0.20
	28-Jul-10	20.88	1,206	7.57	110.8	1.78
	14-Sep-10	22.95	959	7.53	66.7	4.62
	14-Dec-10	15.51	716	7.20	-53.0	0.95
	15-Mar-11	14.11	809	6.62	103.0	0.87
Intermediate-Zone Groundwater Monitoring Wells						
ASMW-4I	11-Aug-09	21.11	939	6.79	-95.2	0.19
	23-Sep-98	21.82	969	6.76	-127.1	0.19
	22-Oct-09	21.74	910	6.74	-59.3	0.14
	26-May-10	16.89	1,556	6.85	-358.0	0.20
	27-Jul-10	19.30	1,022	6.84	-47.6	0.11
	14-Sep-10	19.46	889	6.88	-118.5	0.63
	15-Dec-10	15.10	931	6.86	-132.0	0.24
ASMW-5I	10-Aug-09	24.39	1,296	6.59	-74.7	0.38
	21-Sep-09	23.46	1,183	6.71	-3.1	0.11
	22-Oct-09	23.33	951	6.85	-6.6	0.46
	24-May-10	17.96	1,941	6.75	-369.1	0.05
	27-Jul-10	20.37	790	7.24	-13.1	4.95
	14-Sep-10	20.42	899	6.97	163.4	6.33
	15-Dec-10	18.03	864	6.54	-77.0	0.64
	15-Mar-11	15.59	729	6.69	-97.9	0.24
AS-1I	15-Dec-10	18.92	2,720	7.03	-11.0	0.61
AS-3I	14-Sep-10	23.00	12,692	6.97	174.0	5.20
	15-Dec-10	18.54	12,370	6.64	40.0	0.26
AS-4I	25-May-10	17.63	1,518	7.18	-266.8	0.32
	14-Sep-10	21.09	947	7.59	110.6	8.17

Table 3
Field Parameters
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Temperature (degrees Celsius)	Conductivity (mmhos/cm)	pH (units)	ORP (mV)	Dissolved Oxygen (mg/L)
	14-Jan-10	18.69	1,024	7.37	49.0	6.11
AS-6I	23-Sep-09	23.21	872	7.09	16.7	0.16
	25-May-10	17.06	834	7.53	-469.0	0.15
	28-Jul-10	20.29	908	7.93	83.5	5.36
	14-Sep-10	20.26	690	8.17	62.5	8.10
	14-Dec-10	19.01	1,184	6.99	-58.0	0.22
	15-Mar-11	16.33	733	7.07	-61.6	0.35
NW-2I	11-Aug-09	23.63	2,800	6.43	-73.0	0.38
	23-Sep-09	23.92	1,511	7.44	-34.7	0.38
	22-Oct-09	23.54	1,336	7.65	193.9	3.45
	25-May-10	17.89	2,773	6.88	-179.0	0.15
	28-Jul-10	21.81	1,380	6.77	78.3	0.39
	14-Sep-10	21.06	920	7.94	78.0	4.34
	14-Dec-10	18.97	1,530	7.13	-120.0	0.23
	15-Mar-11	16.68	615	6.81	109.1	5.64
Deep-Zone Groundwater Monitoring Wells						
ASMW-5D	11-Aug-09	20.18	1,876	6.58	47.8	0.11
	21-Sep-09	21.74	1,751	6.70	133.4	2.85
	22-Oct-09	20.87	1,766	6.82	2,330.0	4.44
	24-May-10	17.75	2,664	6.88	84.6	0.42
	27-Jul-10	20.22	1,860	7.05	41.3	9.81
	14-Sep-10	19.25	1,563	6.93	170.0	8.64
	14-Dec-10	18.48	1,900	6.92	214.0	6.96
	15-Mar-11	17.71	1,514	6.86	133.4	6.56
NW-2D	10-Aug-09	22.06	1,179	6.37	93.2	0.22
	22-Sep-09	22.19	759	6.63	174.1	4.55
	22-Oct-09	21.48	199	6.70	175.0	6.40

Table 3
Field Parameters
Former Pacific Electric Motors Facility
1009 66th Avenue, Oakland, California

Sample Location	Date Collected	Temperature (degrees Celsius)	Conductivity (mmhos/cm)	pH (units)	ORP (mV)	Dissolved Oxygen (mg/L)
	28-Jul-10	19.67	769	6.69	127.6	4.48
	14-Sep-10	19.90	624	6.56	94.2	5.08
	14-Dec-10	19.09	683	6.64	40.0	0.77
	15-Mar-11	15.78	1,199	7.02	-107.8	0.19
MW-4	10-Aug-09	23.99	1,309	6.50	-82.4	0.28
	23-Sep-09	21.94	1,394	6.79	-36.7	0.41
	22-Oct-09	22.12	1,289	7.19	229.1	4.35
	24-May-10	19.50	1,995	7.03	-536.4	0.03
	28-Jul-10	20.17	1,176	7.05	100.2	3.02
	14-Sep-10	20.30	1,249	7.02	80.3	5.35
	14-Dec-10	19.50	1,467	6.99	-42.0	0.67
	15-Mar-11	17.10	934	7.01	40.4	0.45

Notes:
ORP = oxidation-reduction potential
mmhos/cm = milliohms per centimeter
mg/L = milligrams per liter
mV = millivolts

MAP SOURCE: Copyright 1995, Thomas Bros. Map ALAMEDA COUNTY 2002 Edition

0 2,000 4,000 FEET

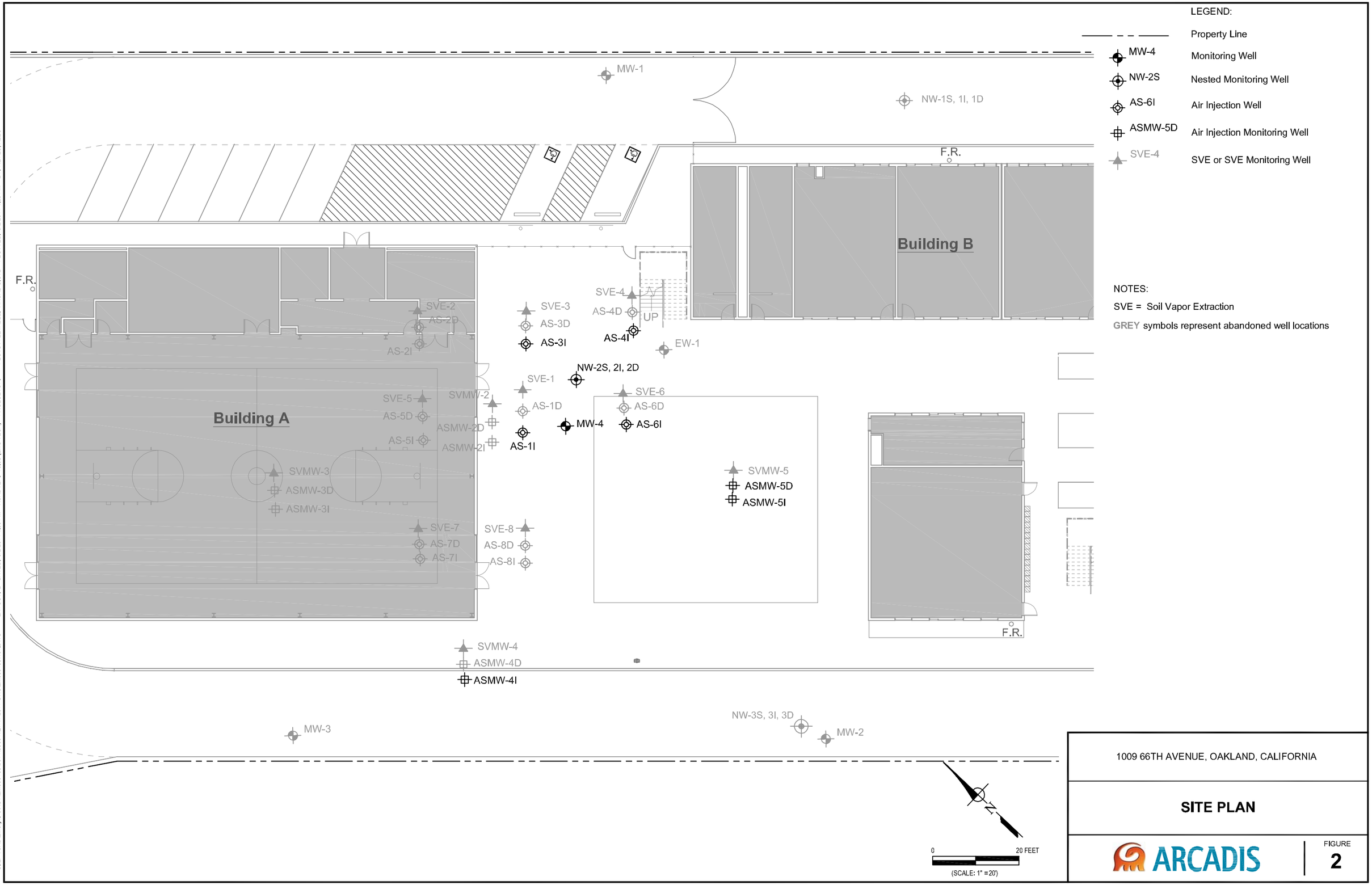
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE VICINITY MAP

ARCADIS

FIGURE 1

DESIGN\003\09155\Figure 1 Site Vicinity - 003-09155.cdr

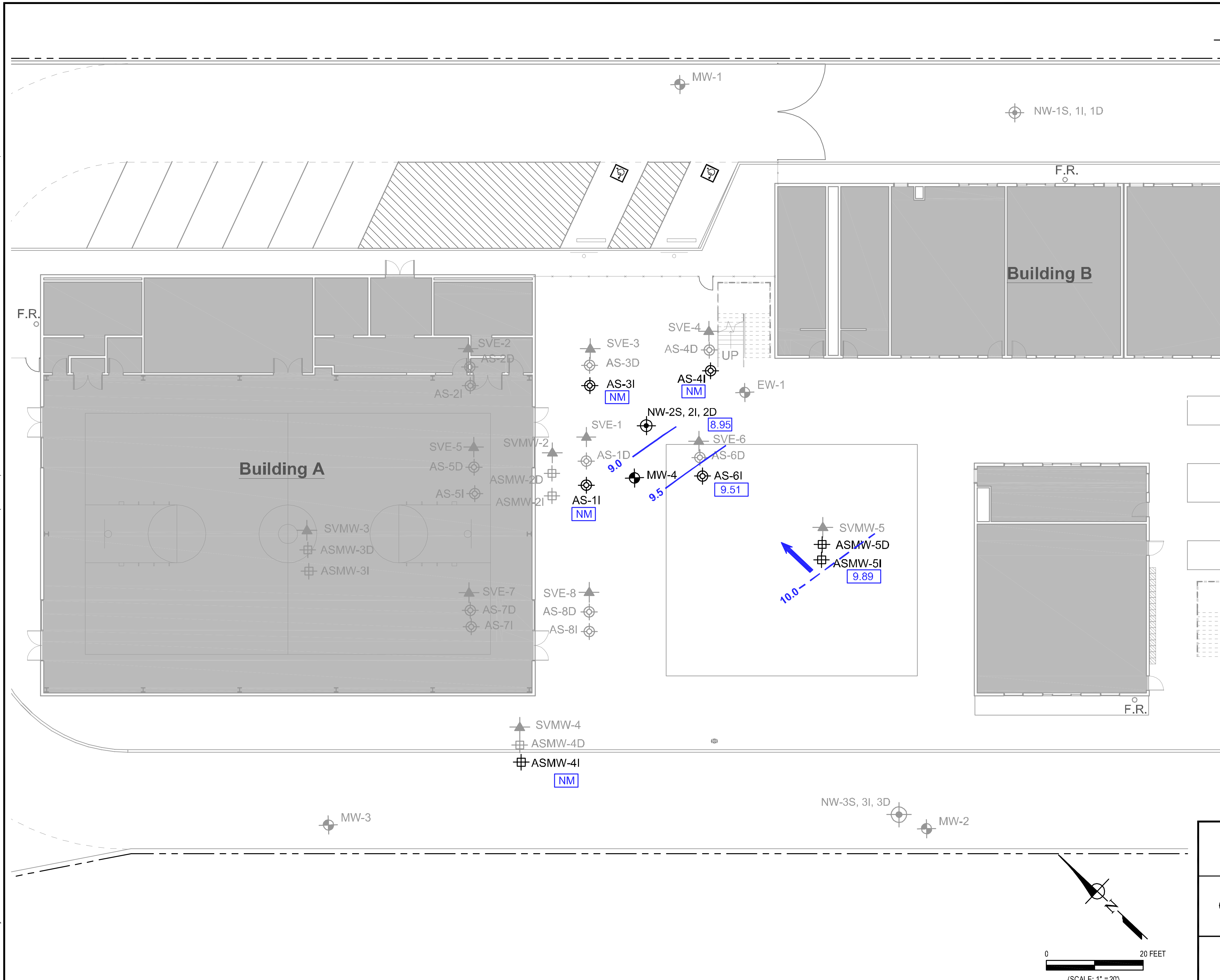


1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE
2



LEGEND:

- Property Line
- MW-4 Monitoring Well
- NW-2S Nested Monitoring Well
- AS-6I Air Injection Well
- ASMW-5D Air Injection Monitoring Well
- SVE-4 SVE or SVE Monitoring Well
- 10.81 Groundwater Elevation Data
- 10.00 Groundwater Elevation Contour (dashed where inferred)
- Direction of groundwater flow

NOTES:

SVE = Soil Vapor Extraction

GREY symbols represent abandoned well locations

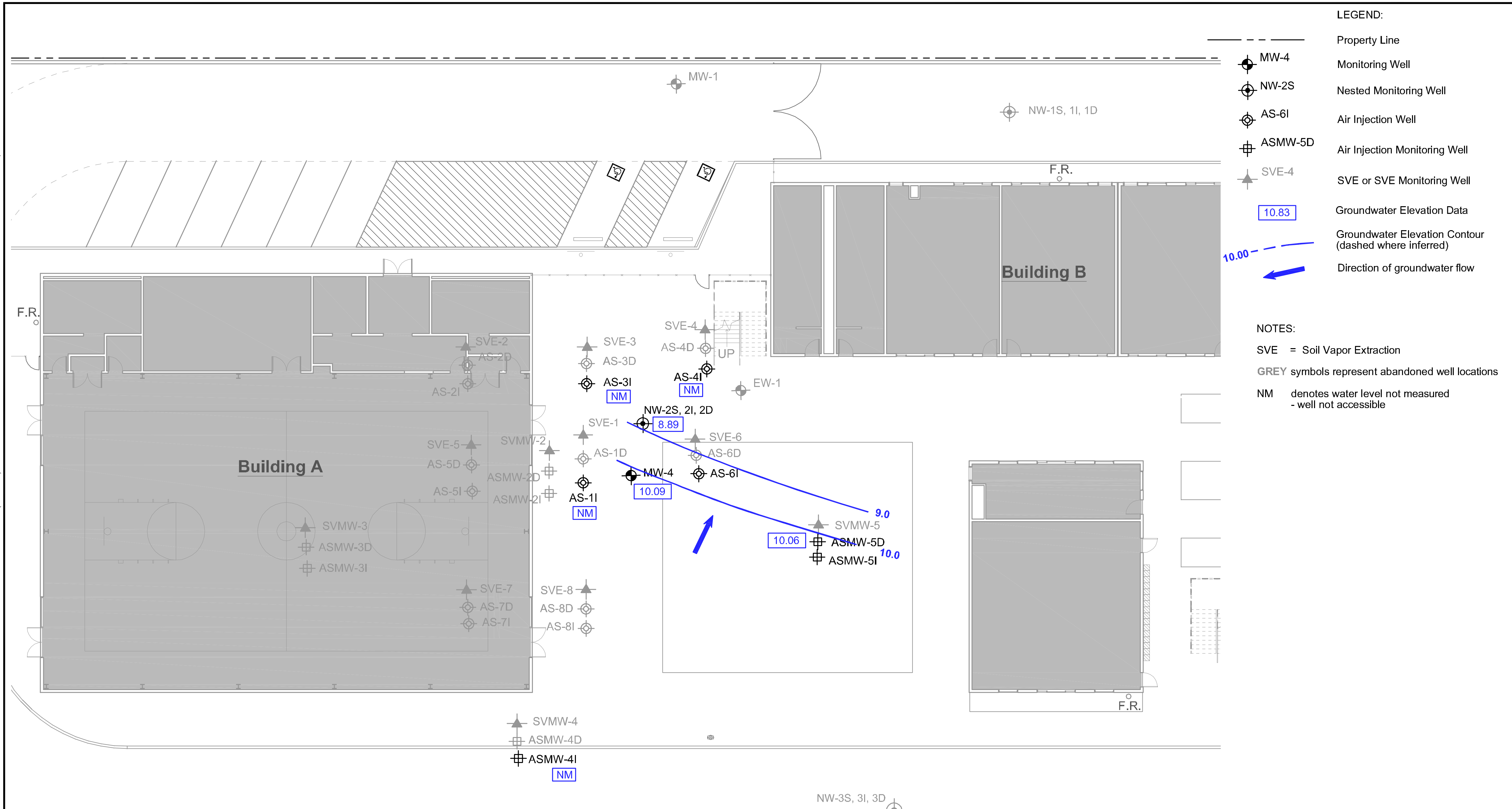
NM denotes water level not measured - well not accessible

1009 66TH AVENUE, OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP, INTERMEDIATE ZONE MARCH 2011

ARCADIS

FIGURE 3

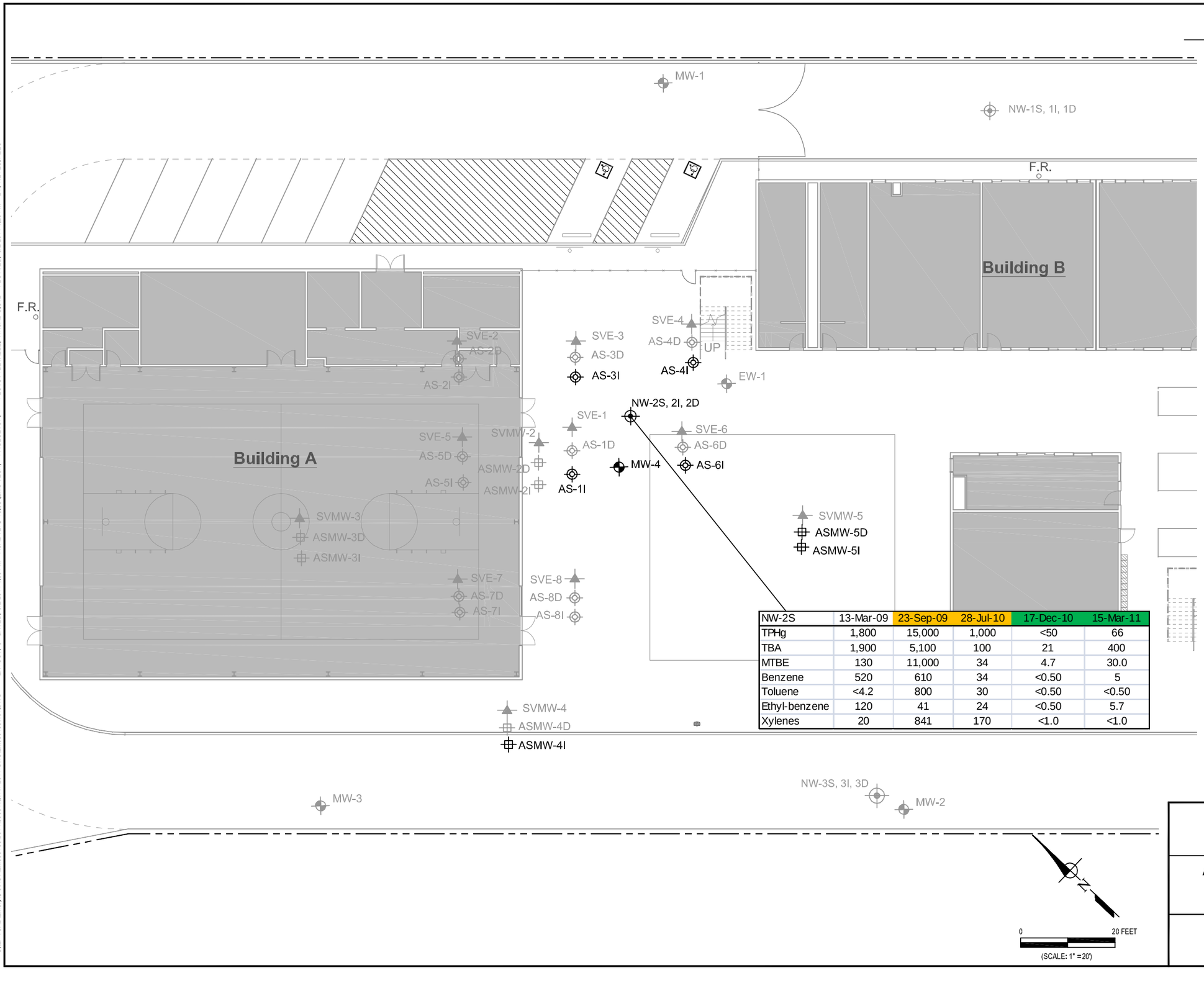


1009 66TH AVENUE, OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP, DEEP ZONE MARCH 2011

ARCADIS

FIGURE 4



NW-2S	13-Mar-09	23-Sep-09	28-Jul-10	17-Dec-10	15-Mar-11
TPHg	1,800	15,000	1,000	<50	66
TBA	1,900	5,100	100	21	400
MTBE	130	11,000	34	4.7	30.0
Benzene	520	610	34	<0.50	5
Toluene	<4.2	800	30	<0.50	<0.50
Ethyl-benzene	120	41	24	<0.50	5.7
Xylenes	20	841	170	<1.0	<1.0

LEGEND:

- Property Line
- MW-4 — Monitoring Well
- NW-2S — Nested Monitoring Well
- AS-6I — Air Injection Well
- ASMW-5D — Air Injection Monitoring Well
- SVE-4 — SVE or SVE Monitoring Well

NOTES:

TPHg = total petroleum hydrocarbons as gasoline
TBA = tertiary butyl alcohol
MTBE = methyl tertiary-butyl ether
"<" = not detected above the laboratory reporting limit given
VOCs = volatile organic compounds

SVE = Soil Vapor Extraction
GREY symbols represent abandoned well locations

22-Sept-09 — Denotes sample collected during operation of the soil-vapor extraction air sparging groundwater treatment system from August 13, 2009 to October 27, 2009 and June 16, 2010 to September 13, 2010

15-Ma4-11 — Denotes sample collected after the soil-vapor extraction air sparging groundwater treatment system temporary shutdown from October 27, 2009 to June 16, 2010 or after September 16, 2010 shutdown

Location ID	Date sample taken
NS-2S	25-Mar-11
TPHg	<50

Concentration in micrograms per liter
Chemical

1009 66TH AVENUE, OAKLAND, CALIFORNIA

ANALYTICAL RESULTS FOR TPHg AND VOCs IN SHALLOW-ZONE GROUNDWATER SAMPLES

ARCADIS

FIGURE 5

NW-2I	13-Mar-09	22-Oct-09	25-May-10	28-Jul-10	17-Dec-10	15-Mar-11	3/15/2011 (Dup.)
TPHg	49,000	4,200	8,600	130	920	<50	<50
TBA	NA	3,300	17,000	300	580	<4.0	<4.0
MTBE	1,100	330	770	71	15	0.55	0.57
Benzene	18,000	110	360	0.67	14	<0.50	<0.50
Toluene	17,000	110	35	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	1,600	5.8	400	<0.50	89	<0.50	<0.50
Xylenes	8200	650	8600	8.2	11	<1.0	<1.0

AS-6I	26-May-09	23-Sep-09	25-May-10	28-Jul-10	17-Dec-10	15-Mar-11
TPHg	42,000	26,000	840	58	700	<50
TBA	<1,000	330	210	450	2,000	480
MTBE	170	1,600	25	45	80	5.2
Benzene	11,000	1,000	23	<0.50	3.6	<0.50
Toluene	780	400	<0.50	1.9	1.5	<0.50
Ethyl-benzene	2,400	230	14	2.7	21	<0.50
Xylenes	3,180	630	1.5	8.1	15	<1.0

ASMW-5I	11-Mar-09	22-Oct-09	24-May-10	27-Jul-10	17-Dec-10	15-Mar-11
TPHg	72,000	22,000	48,000	110	110	150
TBA	<1,400	330	310	28	680	750
MTBE	76	110	120	1.6	65	47
Benzene	11,000	560	2,300	<0.50	0.62	<0.50
Toluene	3,600	330	150	<0.50	<0.50	<0.50
Ethyl-benzene	3,800	240	2,000	0.80	1.5	<0.50
Xylenes	18400	4600	12000	20	<1.0	<1.0

LEGEND:

- Property Line
- MW-4 — Monitoring Well
- NW-2S — Nested Monitoring Well
- AS-6I — Air Injection Well
- ASMW-5D — Air Injection Monitoring Well
- SVE-4 — SVE or SVE Monitoring Well

NOTES:

TPHg = total petroleum hydrocarbons as gasoline

TBA = tertiary butyl alcohol

MTBE = methyl tertiary-butyl ether

"<" = not detected above the laboratory reporting limit given

VOCs = volatile organic compounds

SVE = Soil Vapor Extraction

GREY symbols represent abandoned well locations

22-Sept-09 Denotes sample collected during operation of the soil-vapor extraction air sparging groundwater treatment system from August 13, 2009 to October 27, 2009 and June 16, 2010 to September 13, 2010

15-Mar-11 Denotes sample collected after the soil-vapor extraction air sparging groundwater treatment system temporary shutdown from October 27, 2009 to June 16, 2010 or after September 16, 2010 shutdown

Location ID

Date sample taken

AS-7I	15-Mar-11
TPHg	<50

Concentration in micrograms per liter

Chemical

MW-1 NW-1S, 1I, 1D F.R. Building B F.R. Building A SVE-2 AS-2D AS-2I SVE-3 AS-3D AS-3I SVE-4 AS-4D AS-4I UP EW-1 NW-2S, 2I, 2D SVE-1 AS-1D AS-1I SVE-5 AS-5D AS-5I SVMW-2 ASMW-2D ASMW-2I MW-4 SVE-6 AS-6D AS-6I SVMW-3 ASMW-3D ASMW-3I SVMW-5 ASMW-5D ASMW-5I SVE-7 AS-7D AS-7I SVE-8 AS-8D AS-8I SVMW-4 ASMW-4D ASMW-4I MW-3 NW-3S, 3I, 3D MW-2

0 20 FEET

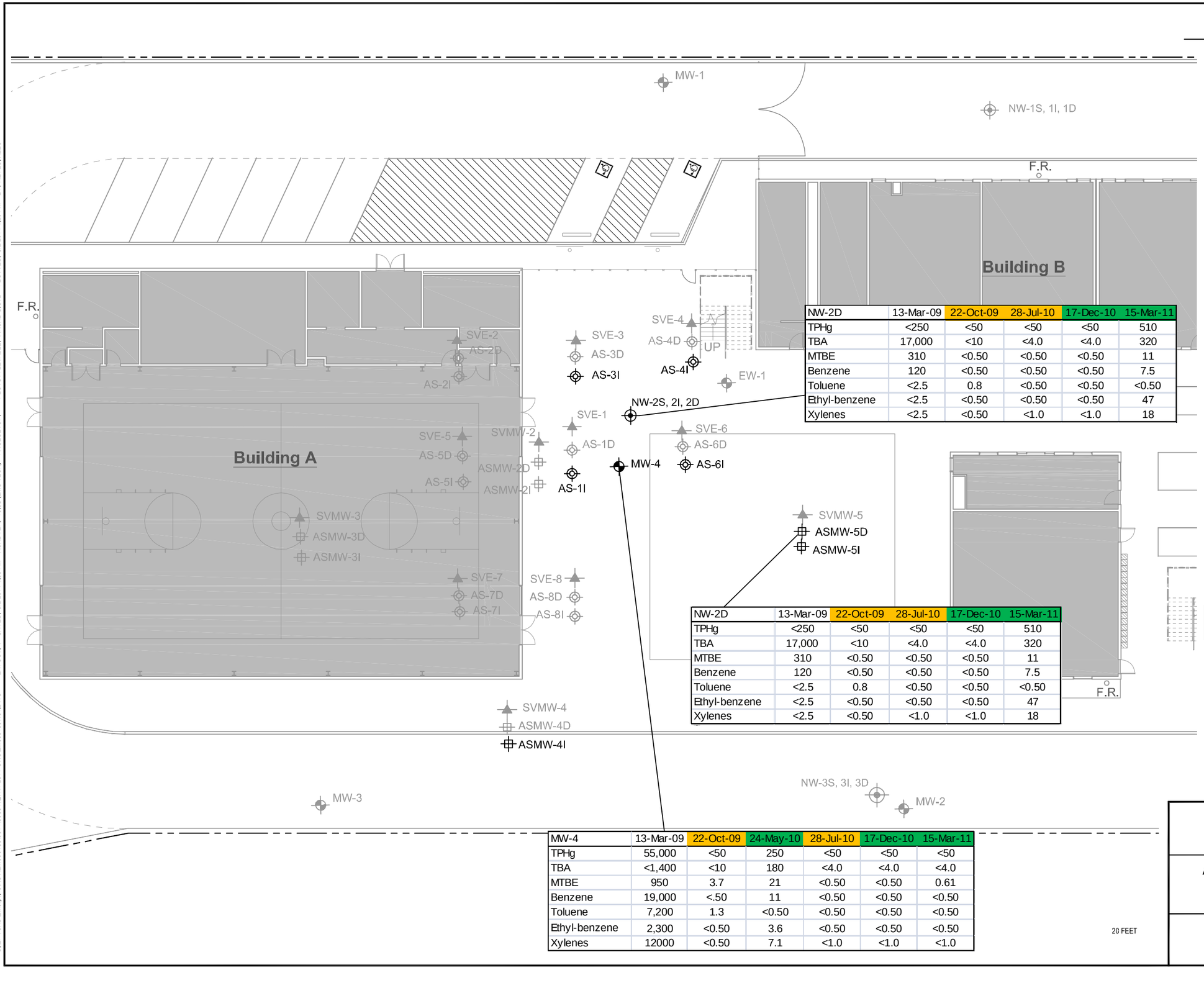
(SCALE: 1" = 20')

1009 66TH AVENUE, OAKLAND, CALIFORNIA

ANALYTICAL RESULTS FOR TPHg AND VOCs IN INTERMEDIATE-ZONE GROUNDWATER SAMPLES

ARCADIS

FIGURE 6



NW-2D	13-Mar-09	22-Oct-09	28-Jul-10	17-Dec-10	15-Mar-11
TPHg	<250	<50	<50	<50	510
TBA	17,000	<10	<4.0	<4.0	320
MTBE	310	<0.50	<0.50	<0.50	11
Benzene	120	<0.50	<0.50	<0.50	7.5
Toluene	<2.5	0.8	<0.50	<0.50	<0.50
Ethyl-benzene	<2.5	<0.50	<0.50	<0.50	47
Xylenes	<2.5	<0.50	<1.0	<1.0	18

NW-2D	13-Mar-09	22-Oct-09	28-Jul-10	17-Dec-10	15-Mar-11
TPHg	<250	<50	<50	<50	510
TBA	17,000	<10	<4.0	<4.0	320
MTBE	310	<0.50	<0.50	<0.50	11
Benzene	120	<0.50	<0.50	<0.50	7.5
Toluene	<2.5	0.8	<0.50	<0.50	<0.50
Ethyl-benzene	<2.5	<0.50	<0.50	<0.50	47
Xylenes	<2.5	<0.50	<1.0	<1.0	18

MW-4	13-Mar-09	22-Oct-09	24-May-10	28-Jul-10	17-Dec-10	15-Mar-11
TPHg	55,000	<50	250	<50	<50	<50
TBA	<1,400	<10	180	<4.0	<4.0	<4.0
MTBE	950	3.7	21	<0.50	<0.50	0.61
Benzene	19,000	<.50	11	<0.50	<0.50	<0.50
Toluene	7,200	1.3	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	2,300	<0.50	3.6	<0.50	<0.50	<0.50
Xylenes	12000	<0.50	7.1	<1.0	<1.0	<1.0

LEGEND:

- Property Line
- MW-4 — Monitoring Well
- NW-2S — Nested Monitoring Well
- AS-6I — Air Injection Well
- ASMW-5D — Air Injection Monitoring Well
- SVE-4 — SVE or SVE Monitoring Well

NOTES:

TPHg = total petroleum hydrocarbons as gasoline

TBA = tertiary butyl alcohol

MTBE = methyl tertiary-butyl ether

"<" = not detected above the laboratory reporting limit given

VOCs = volatile organic compounds

SVE = Soil Vapor Extraction

GREY symbols represent abandoned well locations

22-Sept-09 — Denotes sample collected during operation of the soil-vapor extraction air sparging groundwater treatment system from August 13, 2009 to October 27, 2009 and June 16, 2010 to September 13, 2010

25-Mar-11 — Denotes sample collected after the soil-vapor extraction air sparging groundwater treatment system temporary shutdown from October 27, 2009 to June 16, 2010 or after September 16, 2010 shutdown

AS-7I	15-Mar-11
TPHg	<50

Location ID

Date sample taken

Concentration in micrograms per liter

Chemical

1009 66TH AVENUE, OAKLAND, CALIFORNIA

ANALYTICAL RESULTS FOR TPHg AND VOCs IN DEEP-ZONE GROUNDWATER SAMPLES

ARCADIS

FIGURE 7

ARCADIS

Appendix **A**

Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 720-33921-1
Client Project/Site: Aspire Oakland

For:
ARCADIS U.S., Inc
1900 Powell St 12th Floor
Emeryville, California 94608-1827

Attn: Ron Goloubow

Authorized for release by:
03/23/2011 11:27:32 AM

Afsaneh Salimpour
Project Manager I
afsaneh.salimpour@testamericainc.com

Table of Contents

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Job ID: 720-33921-1

Laboratory: TestAmerica San Francisco

Narrative

Job Narrative
720-33921-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

Client Sample ID: TB031511 — Lab Sample ID: 720-33921-1

No Detections.

Client Sample ID: NW-2S — Lab Sample ID: 720-33921-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	30		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	5.0		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Ethylbenzene	5.7		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	66		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	400		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: NW-2I — Lab Sample ID: 720-33921-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.55		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: NW-2I-D — Lab Sample ID: 720-33921-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.57		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: NW-2D — Lab Sample ID: 720-33921-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	11		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	7.5		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Ethylbenzene	47		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	18		1.0		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	510		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	320		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 720-33921-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.61		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: AS-6I — Lab Sample ID: 720-33921-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	5.2		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	480		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: ASMW-5D — Lab Sample ID: 720-33921-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.68		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: ASMW-5I — Lab Sample ID: 720-33921-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	47		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	150		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	750		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: TB031511

Lab Sample ID: 720-33921-1

Date Collected: 03/15/11 00:00

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			03/17/11 13:34	1
Benzene	ND		0.50		ug/L			03/17/11 13:34	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 13:34	1
Toluene	ND		0.50		ug/L			03/17/11 13:34	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 13:34	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 13:34	1
TBA	ND		4.0		ug/L			03/17/11 13:34	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/17/11 13:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*67 - 130*		*03/17/11 13:34*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/17/11 13:34*	*1*

Client Sample ID: NW-2S

Lab Sample ID: 720-33921-2

Date Collected: 03/15/11 09:55

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**30**		0.50		ug/L			03/17/11 14:36	1
Benzene	**5.0**		0.50		ug/L			03/17/11 14:36	1
Ethylbenzene	**5.7**		0.50		ug/L			03/17/11 14:36	1
Toluene	ND		0.50		ug/L			03/17/11 14:36	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 14:36	1
Gasoline Range Organics (GRO) -C5-C12	**66**		50		ug/L			03/17/11 14:36	1
TBA	**400**		4.0		ug/L			03/17/11 14:36	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/17/11 14:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*		*03/17/11 14:36*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/17/11 14:36*	*1*

Client Sample ID: NW-2I

Lab Sample ID: 720-33921-3

Date Collected: 03/15/11 10:20

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.55**		0.50		ug/L			03/18/11 13:18	1
Benzene	ND		0.50		ug/L			03/18/11 13:18	1
Ethylbenzene	ND		0.50		ug/L			03/18/11 13:18	1
Toluene	ND		0.50		ug/L			03/18/11 13:18	1
Xylenes, Total	ND		1.0		ug/L			03/18/11 13:18	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/18/11 13:18	1
TBA	ND		4.0		ug/L			03/18/11 13:18	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*03/18/11 13:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*		*03/18/11 13:18*	*1*

Client Sample ID: NW-2I

Lab Sample ID: 720-33921-3

Date Collected: 03/15/11 10:20

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/18/11 13:18*	*1*

Client Sample ID: NW-2I-D

Lab Sample ID: 720-33921-4

Date Collected: 03/15/11 10:30

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.57**		0.50		ug/L			03/18/11 13:48	1
Benzene	ND		0.50		ug/L			03/18/11 13:48	1
Ethylbenzene	ND		0.50		ug/L			03/18/11 13:48	1
Toluene	ND		0.50		ug/L			03/18/11 13:48	1
Xylenes, Total	ND		1.0		ug/L			03/18/11 13:48	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/18/11 13:48	1
TBA	ND		4.0		ug/L			03/18/11 13:48	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*100*		*67 - 130*		*03/18/11 13:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*67 - 130*		*03/18/11 13:48*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/18/11 13:48*	*1*

Client Sample ID: NW-2D

Lab Sample ID: 720-33921-5

Date Collected: 03/15/11 11:10

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**11**		0.50		ug/L			03/17/11 17:08	1
Benzene	**7.5**		0.50		ug/L			03/17/11 17:08	1
Ethylbenzene	**47**		0.50		ug/L			03/17/11 17:08	1
Toluene	ND		0.50		ug/L			03/17/11 17:08	1
Xylenes, Total	**18**		1.0		ug/L			03/17/11 17:08	1
Gasoline Range Organics (GRO) -C5-C12	**510**		50		ug/L			03/17/11 17:08	1
TBA	**320**		4.0		ug/L			03/17/11 17:08	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*102*		*67 - 130*		*03/17/11 17:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*67 - 130*		*03/17/11 17:08*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/17/11 17:08*	*1*

Client Sample ID: MW-4

Lab Sample ID: 720-33921-6

Date Collected: 03/15/11 11:30

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.61**		0.50		ug/L			03/17/11 17:39	1
Benzene	ND		0.50		ug/L			03/17/11 17:39	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 17:39	1

Client Sample ID: MW-4

Lab Sample ID: 720-33921-6

Date Collected: 03/15/11 11:30

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.50		ug/L			03/17/11 17:39	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 17:39	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 17:39	1
TBA	ND		4.0		ug/L			03/17/11 17:39	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/17/11 17:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*67 - 130*		*03/17/11 17:39*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/17/11 17:39*	*1*

Client Sample ID: AS-6I

Lab Sample ID: 720-33921-7

Date Collected: 03/15/11 12:10

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**5.2**		0.50		ug/L			03/17/11 21:57	1
Benzene	ND		0.50		ug/L			03/17/11 21:57	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 21:57	1
Toluene	ND		0.50		ug/L			03/17/11 21:57	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 21:57	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 21:57	1
TBA	**480**		4.0		ug/L			03/17/11 21:57	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/17/11 21:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*67 - 130*		*03/17/11 21:57*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/17/11 21:57*	*1*

Client Sample ID: ASMW-5D

Lab Sample ID: 720-33921-8

Date Collected: 03/15/11 12:45

Matrix: Water

Date Received: 03/16/11 17:30

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.68**		0.50		ug/L			03/17/11 22:28	1
Benzene	ND		0.50		ug/L			03/17/11 22:28	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 22:28	1
Toluene	ND		0.50		ug/L			03/17/11 22:28	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 22:28	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 22:28	1
TBA	ND		4.0		ug/L			03/17/11 22:28	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*03/17/11 22:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*67 - 130*		*03/17/11 22:28*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/17/11 22:28*	*1*

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Client Sample ID: ASMW-5I
Date Collected: 03/15/11 13:30
Date Received: 03/16/11 17:30

Lab Sample ID: 720-33921-9
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	47		0.50		ug/L			03/17/11 22:58	1
Benzene	ND		0.50		ug/L			03/17/11 22:58	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 22:58	1
Toluene	ND		0.50		ug/L			03/17/11 22:58	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 22:58	1
Gasoline Range Organics (GRO) -C5-C12	150		50		ug/L			03/17/11 22:58	1
TBA	750		4.0		ug/L			03/17/11 22:58	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/17/11 22:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*		*03/17/11 22:58*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/17/11 22:58*	*1*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-87840/4
Matrix: Water
Analysis Batch: 87840

Client Sample ID: MB 720-87840/4
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			03/17/11 10:31	1
Benzene	ND		0.50		ug/L			03/17/11 10:31	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 10:31	1
Toluene	ND		0.50		ug/L			03/17/11 10:31	1
m-Xylene & p-Xylene	ND		1.0		ug/L			03/17/11 10:31	1
o-Xylene	ND		0.50		ug/L			03/17/11 10:31	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 10:31	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 10:31	1
TBA	ND		4.0		ug/L			03/17/11 10:31	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*03/17/11 10:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*		*03/17/11 10:31*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/17/11 10:31*	*1*

Lab Sample ID: LCS 720-87840/5
Matrix: Water
Analysis Batch: 87840

Client Sample ID: LCS 720-87840/5
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	25.0	24.8		ug/L		99	62 - 130
Benzene	25.0	26.8		ug/L		107	82 - 127
Ethylbenzene	25.0	26.7		ug/L		107	86 - 135
Toluene	25.0	26.4		ug/L		106	83 - 129
m-Xylene & p-Xylene	50.0	54.6		ug/L		109	70 - 142
o-Xylene	25.0	26.8		ug/L		107	89 - 136
TBA	500	495		ug/L		99	82 - 116

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

Lab Sample ID: LCS 720-87840/7
Matrix: Water
Analysis Batch: 87840

Client Sample ID: LCS 720-87840/7
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	511		ug/L		102	62 - 117

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*67 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-87840/6
Matrix: Water
Analysis Batch: 87840

Client Sample ID: LCSD 720-87840/6
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	25.5		ug/L		102	62 - 130	3	20
Benzene			25.0	26.6		ug/L		107	82 - 127	0	20
Ethylbenzene			25.0	27.3		ug/L		109	86 - 135	2	20
Toluene			25.0	26.7		ug/L		107	83 - 129	1	20
m-Xylene & p-Xylene			50.0	55.4		ug/L		111	70 - 142	1	20
o-Xylene			25.0	27.3		ug/L		109	89 - 136	2	20
TBA			500	493		ug/L		99	82 - 116	0	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-87840/8
Matrix: Water
Analysis Batch: 87840

Client Sample ID: LCSD 720-87840/8
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	489		ug/L		98	62 - 117	4	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: 720-33921-2 MS
Matrix: Water
Analysis Batch: 87840

Client Sample ID: NW-2S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	30		25.0	60.3		ug/L		123	60 - 138
Benzene	5.0		25.0	31.1		ug/L		105	60 - 140
Ethylbenzene	5.7		25.0	31.8		ug/L		104	60 - 140
Toluene	ND		25.0	26.0		ug/L		104	60 - 140
m-Xylene & p-Xylene	ND		50.0	54.1		ug/L		108	60 - 140
o-Xylene	ND		25.0	27.4		ug/L		108	60 - 140
TBA	400		500	907		ug/L		101	60 - 140

Surrogate	*MS % Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*104*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: 720-33921-2 MSD
Matrix: Water
Analysis Batch: 87840

Client Sample ID: NW-2S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	30		25.0	58.5		ug/L		116	60 - 138	3	20
Benzene	5.0		25.0	31.3		ug/L		105	60 - 140	0	20
Ethylbenzene	5.7		25.0	31.4		ug/L		103	60 - 140	1	20
Toluene	ND		25.0	25.8		ug/L		103	60 - 140	1	20
m-Xylene & p-Xylene	ND		50.0	54.0		ug/L		107	60 - 140	0	20
o-Xylene	ND		25.0	27.2		ug/L		108	60 - 140	1	20
TBA	400		500	887		ug/L		97	60 - 140	2	20

Surrogate	*MSD % Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: MB 720-87862/4
Matrix: Water
Analysis Batch: 87862

Client Sample ID: MB 720-87862/4
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			03/17/11 19:25	1
Benzene	ND		0.50		ug/L			03/17/11 19:25	1
Ethylbenzene	ND		0.50		ug/L			03/17/11 19:25	1
Toluene	ND		0.50		ug/L			03/17/11 19:25	1
m-Xylene & p-Xylene	ND		1.0		ug/L			03/17/11 19:25	1
o-Xylene	ND		0.50		ug/L			03/17/11 19:25	1
Xylenes, Total	ND		1.0		ug/L			03/17/11 19:25	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/17/11 19:25	1
TBA	ND		4.0		ug/L			03/17/11 19:25	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*67 - 130*		*03/17/11 19:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*		*03/17/11 19:25*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/17/11 19:25*	*1*

Lab Sample ID: LCS 720-87862/5
Matrix: Water
Analysis Batch: 87862

Client Sample ID: LCS 720-87862/5
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	25.0	25.8		ug/L		103	62 - 130
Benzene	25.0	25.8		ug/L		103	82 - 127
Ethylbenzene	25.0	25.1		ug/L		100	86 - 135
Toluene	25.0	24.6		ug/L		99	83 - 129
m-Xylene & p-Xylene	50.0	50.3		ug/L		101	70 - 142
o-Xylene	25.0	25.6		ug/L		102	89 - 136
TBA	500	490		ug/L		98	82 - 116

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*67 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-87862/5
Matrix: Water
Analysis Batch: 87862

Client Sample ID: LCS 720-87862/5
Prep Type: Total/NA

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCS 720-87862/7
Matrix: Water
Analysis Batch: 87862

Client Sample ID: LCS 720-87862/7
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	417		ug/L		83	62 - 117

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-87862/6
Matrix: Water
Analysis Batch: 87862

Client Sample ID: LCSD 720-87862/6
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	25.0	25.9		ug/L		104	62 - 130	0	20
Benzene	25.0	25.9		ug/L		104	82 - 127	0	20
Ethylbenzene	25.0	25.0		ug/L		100	86 - 135	0	20
Toluene	25.0	24.9		ug/L		100	83 - 129	1	20
m-Xylene & p-Xylene	50.0	50.5		ug/L		101	70 - 142	0	20
o-Xylene	25.0	25.7		ug/L		103	89 - 136	1	20
TBA	500	496		ug/L		99	82 - 116	1	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-87862/8
Matrix: Water
Analysis Batch: 87862

Client Sample ID: LCSD 720-87862/8
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12	500	417		ug/L		83	62 - 117	0	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-87889/6
Matrix: Water
Analysis Batch: 87889

Client Sample ID: MB 720-87889/6
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			03/18/11 10:02	1
Benzene	ND		0.50		ug/L			03/18/11 10:02	1
Ethylbenzene	ND		0.50		ug/L			03/18/11 10:02	1
Toluene	ND		0.50		ug/L			03/18/11 10:02	1
m-Xylene & p-Xylene	ND		1.0		ug/L			03/18/11 10:02	1
o-Xylene	ND		0.50		ug/L			03/18/11 10:02	1
Xylenes, Total	ND		1.0		ug/L			03/18/11 10:02	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			03/18/11 10:02	1
TBA	ND		4.0		ug/L			03/18/11 10:02	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/18/11 10:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*67 - 130*		*03/18/11 10:02*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/18/11 10:02*	*1*

Lab Sample ID: LCS 720-87889/7
Matrix: Water
Analysis Batch: 87889

Client Sample ID: LCS 720-87889/7
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	25.0	27.0		ug/L		108	62 - 130
Benzene	25.0	27.0		ug/L		108	82 - 127
Ethylbenzene	25.0	27.0		ug/L		108	86 - 135
Toluene	25.0	27.0		ug/L		108	83 - 129
m-Xylene & p-Xylene	50.0	55.5		ug/L		111	70 - 142
o-Xylene	25.0	27.4		ug/L		110	89 - 136
TBA	500	507		ug/L		101	82 - 116

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCS 720-87889/9
Matrix: Water
Analysis Batch: 87889

Client Sample ID: LCS 720-87889/9
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	503		ug/L		101	62 - 117

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*109*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-87889/10
Matrix: Water
Analysis Batch: 87889

Client Sample ID: LCSD 720-87889/10
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	504		ug/L		101	62 - 117	0	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*104*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-87889/8
Matrix: Water
Analysis Batch: 87889

Client Sample ID: LCSD 720-87889/8
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	26.7		ug/L		107	62 - 130	1	20
Benzene			25.0	26.0		ug/L		104	82 - 127	3	20
Ethylbenzene			25.0	26.4		ug/L		106	86 - 135	2	20
Toluene			25.0	26.0		ug/L		104	83 - 129	4	20
m-Xylene & p-Xylene			50.0	54.3		ug/L		109	70 - 142	2	20
o-Xylene			25.0	26.8		ug/L		107	89 - 136	2	20
TBA			500	481		ug/L		96	82 - 116	5	20

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*67 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: 720-33921-4 MS
Matrix: Water
Analysis Batch: 87889

Client Sample ID: NW-2I-D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	0.57		25.0	28.6		ug/L		112	60 - 138
Benzene	ND		25.0	27.0		ug/L		108	60 - 140
Ethylbenzene	ND		25.0	26.8		ug/L		107	60 - 140
Toluene	ND		25.0	26.6		ug/L		106	60 - 140
m-Xylene & p-Xylene	ND		50.0	55.2		ug/L		110	60 - 140
o-Xylene	ND		25.0	27.5		ug/L		110	60 - 140
TBA	ND		500	489		ug/L		98	60 - 140

Surrogate	*MS % Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*106*		*67 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: 720-33921-4 MSD
Matrix: Water
Analysis Batch: 87889

Client Sample ID: NW-2I-D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	0.57		25.0	28.1		ug/L		110	60 - 138	2	20
Benzene	ND		25.0	26.6		ug/L		106	60 - 140	2	20
Ethylbenzene	ND		25.0	26.6		ug/L		106	60 - 140	1	20
Toluene	ND		25.0	26.5		ug/L		106	60 - 140	0	20
m-Xylene & p-Xylene	ND		50.0	54.6		ug/L		109	60 - 140	1	20
o-Xylene	ND		25.0	27.3		ug/L		109	60 - 140	1	20
TBA	ND		500	472		ug/L		94	60 - 140	4	20

Surrogate	*MSD % Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*67 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

GC/MS VOA

Analysis Batch: 87840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-33921-1	TB031511	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-2	NW-2S	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-2 MS	NW-2S	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-2 MSD	NW-2S	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-5	NW-2D	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-6	MW-4	Total/NA	Water	8260B/CA_LUFTMS	
MB 720-87840/4	MB 720-87840/4	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87840/5	LCS 720-87840/5	Total/NA	Water	8260B/CA_LUFTMS	
LCSD 720-87840/6	LCSD 720-87840/6	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87840/7	LCS 720-87840/7	Total/NA	Water	8260B/CA_LUFTMS	
LCSD 720-87840/8	LCSD 720-87840/8	Total/NA	Water	8260B/CA_LUFTMS	

Analysis Batch: 87862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-33921-8	ASMW-5D	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-9	ASMW-5I	Total/NA	Water	8260B/CA_LUFTMS	
MB 720-87862/4	MB 720-87862/4	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87862/5	LCS 720-87862/5	Total/NA	Water	8260B/CA_LUFTMS	
LCSD 720-87862/6	LCSD 720-87862/6	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87862/7	LCS 720-87862/7	Total/NA	Water	8260B/CA_LUFTMS	
LCSD 720-87862/8	LCSD 720-87862/8	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-7	AS-6I	Total/NA	Water	8260B/CA_LUFTMS	

Analysis Batch: 87889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 720-87889/10	LCSD 720-87889/10	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-3	NW-2I	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-4	NW-2I-D	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-4 MS	NW-2I-D	Total/NA	Water	8260B/CA_LUFTMS	
720-33921-4 MSD	NW-2I-D	Total/NA	Water	8260B/CA_LUFTMS	
MB 720-87889/6	MB 720-87889/6	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87889/7	LCS 720-87889/7	Total/NA	Water	8260B/CA_LUFTMS	
LCSD 720-87889/8	LCSD 720-87889/8	Total/NA	Water	8260B/CA_LUFTMS	
LCS 720-87889/9	LCS 720-87889/9	Total/NA	Water	8260B/CA_LUFTMS	

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Client Sample ID: TB031511

Lab Sample ID: 720-33921-1
Matrix: Water
Date Collected: 03/15/11 00:00
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87840	03/17/11 13:34	LL	TestAmerica San Francisco

Client Sample ID: NW-2S

Lab Sample ID: 720-33921-2
Matrix: Water
Date Collected: 03/15/11 09:55
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87840	03/17/11 14:36	LL	TestAmerica San Francisco

Client Sample ID: NW-2I

Lab Sample ID: 720-33921-3
Matrix: Water
Date Collected: 03/15/11 10:20
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87889	03/18/11 13:18	YB	TestAmerica San Francisco

Client Sample ID: NW-2I-D

Lab Sample ID: 720-33921-4
Matrix: Water
Date Collected: 03/15/11 10:30
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87889	03/18/11 13:48	YB	TestAmerica San Francisco

Client Sample ID: NW-2D

Lab Sample ID: 720-33921-5
Matrix: Water
Date Collected: 03/15/11 11:10
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87840	03/17/11 17:08	LL	TestAmerica San Francisco

Client Sample ID: MW-4

Lab Sample ID: 720-33921-6
Matrix: Water
Date Collected: 03/15/11 11:30
Date Received: 03/16/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUF TMS		1	87840	03/17/11 17:39	LL	TestAmerica San Francisco

Lab Chronicle

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Client Sample ID: AS-6I
Date Collected: 03/15/11 12:10
Date Received: 03/16/11 17:30

Lab Sample ID: 720-33921-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	87862	03/17/11 21:57	YB	TestAmerica San Francisco

Client Sample ID: ASMW-5D
Date Collected: 03/15/11 12:45
Date Received: 03/16/11 17:30

Lab Sample ID: 720-33921-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	87862	03/17/11 22:28	YB	TestAmerica San Francisco

Client Sample ID: ASMW-5I
Date Collected: 03/15/11 13:30
Date Received: 03/16/11 17:30

Lab Sample ID: 720-33921-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	87862	03/17/11 22:58	YB	TestAmerica San Francisco

Certification Summary

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Laboratory	Authority	Program	EPA Region	Certification ID	* Expiration Date
TestAmerica San Francisco	California	State Program	9	2496	01/31/12

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.
* Any expired certifications in this list are currently pending renewal and are considered valid.

Method Summary

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFT MS	8260B / CA LUFT MS	SW846	TAL SF

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc
Project/Site: Aspire Oakland

TestAmerica Job ID: 720-33921-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-33921-1	TB031511	Water	03/15/11 00:00	03/16/11 17:30
720-33921-2	NW-2S	Water	03/15/11 09:55	03/16/11 17:30
720-33921-3	NW-2I	Water	03/15/11 10:20	03/16/11 17:30
720-33921-4	NW-2I-D	Water	03/15/11 10:30	03/16/11 17:30
720-33921-5	NW-2D	Water	03/15/11 11:10	03/16/11 17:30
720-33921-6	MW-4	Water	03/15/11 11:30	03/16/11 17:30
720-33921-7	AS-6I	Water	03/15/11 12:10	03/16/11 17:30
720-33921-8	ASMW-5D	Water	03/15/11 12:45	03/16/11 17:30
720-33921-9	ASMW-5I	Water	03/15/11 13:30	03/16/11 17:30

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

720-33921

TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: 130215

Date 3/15/11 Page 1 of 1

03/23/2011

Report To

Attn: Ron Goloubow
Company: Arcadis-US
Address: 1900 Powell St. 11th Floor
Phone: 510 596-9550 Email: Ron.Goloubow@arcadis.com
Bill To: Aspire EM009155.0011
Sampled By: Darrell Smolko
Attn: Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	TPH EPA ☐ 8015B ☐ Gas w/ ☐ BTEX ☐ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	EPA 8260B: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	TBA (8260)				Number of Containers
1 TB031511	03/15/11	—	W	HCl	X		X															X				2
2 MW-2S		955																								2
3 MW-2I		1020																								2
4 MW-2I-D		1030																								2
5 MW-2D		1110																								2
6 MW-4		1130																								2
7 AS-6I		1210																								2
8 ASMW-5D		1245																								2
9 ASMW-5I		1330																								2

Project Info.

Project Name: Aspire
Project#: EM009155.0011
PO#:
Credit Card#:

Sample Receipt

of Containers: 26
Head Space: N-A
Temp: 2.8°C
Conforms to record:

TAT: 5 Day | 3 Day | 2 Day | 1 Day
Other: Standard

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank
Fund EDF

Special Instructions / Comments: ☐ Global ID _____

Please Sample Only TBA & MTBE under Oxygenates

See Terms and Conditions on reverse
*TestAmerica SF reports 8015M from C_5-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

	1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature / Time	Darrell Smolko 1400	Ed Martinez 1730	
Printed Name / Date	Darrell Smolko 3/16/11	Ed Martinez 3-16-11	
Company	Arcadis-US	TA SF	

	1) Received by:	2) Received by:	3) Received by:
Signature / Time	Ed Martinez 1400	Dan Mullen 1730	
Printed Name / Date	Ed Martinez 3-16-11	Mullen 3-16-11	
Company	TA SF	TA SF	

Rev09/09

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc

Job Number: 720-33921-1

Login Number: 33921

List Number: 1

Creator: Mullen, Joan

List Source: TestAmerica San Francisco

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

ARCADIS

Appendix **B**

Field Logs

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	NW-25
Date	3/15/2011	Sampled By	Darrell Smolko		
Sampling Time	0955	Recorded By	Darrell Smolko		
Weather	Cloudy/Rain	Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method	Geopump		
Casing Diameter	2"	Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	2.25	Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
0918		2.25	–							Start Purge
0928	10	3.08	0.5	13.68	6.73	710	-81.5	0.87	Clear	
0931	13	3.33	0.7	13.74	6.72	716	-98.9	0.88	Clear	
0934	16	3.60	1.0	13.80	6.68	745	-111.9	0.89	Clear	
0937	19	3.85	1.3	13.80	6.65	769	-101.8	0.78	Clear	
0941	22	4.12	1.6	13.96	6.63	786	-103.9	0.78	Clear	
0945	25	4.30	1.9	14.04	6.62	801	-98.7	0.79	clear	
0948	28	4.40	2.2	14.11	6.62	809	103.0	0.87	Clear	
0955		Sampled								

Collected Sample Condition Color_____ Odor_____ Appearance_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	**Site Location**	Oakland California	**Well ID**	MW-2I
Date	3/15/2011	**Sampled By**	Darrell Smolko		
Sampling Time	1020	**Recorded By**	Darrell Smolko		
Weather	Cloudy	**Coded Replicate No.**			

Instrument Identification

Water Quality Meter(s) _____ **Serial #** _____

Casing Material		**Purge Method**	Geopump		
Casing Diameter	2"	**Screen Interval (ft bmp)**	**Top**		**Bottom**
Sounded Depth (ft bmp)		**Pump Intake Depth (ft bmp)**			
Depth to Water (ft bmp)	4.85	**Purge Time**	**Start**		**Finish**

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
0956		4.85								Start Purge
1006	10	4.87	0.5	16.31	6.83	615	93.7	5.51	Clear	
1009	13	4.88	0.8	16.56	6.81	617	101.5	5.57	Clear	
1012	16	4.88	1.1	16.63	6.82	615	105.8	5.63	Clear	
1015	19	4.88	1.4	16.68	6.81	615	109.1	5.64	Clear	
1020						Sampled				
1030				Duplicate		Sample				

Collected Sample Condition **Color**_____ **Odor**_____ **Appearance**_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project: Aspire
Project Number: EM009155.0011 | Site Location: Oakland California | Well ID: NW-2D
Date: 3/15/2011 | Sampled By: Darrell Smolko
Sampling Time: 1110 | Recorded By: Darrell Smolko
Weather: Cloudy | Coded Replicate No.:

Instrument Identification
Water Quality Meter(s): | Serial #:

Casing Material: | Purge Method: Geopump
Casing Diameter: 2" | Screen Interval (ft bmp) Top: | Bottom:
Sounded Depth (ft bmp): | Pump Intake Depth (ft bmp):
Depth to Water (ft bmp): 4.92 | Purge Time Start: | Finish:

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
1027	-	4.92								Start Purge
1037	10	7.92	0.6	15.35	7.13	1263	22.0	2.61	Clear	Turned Down Pump
1040	13	7.64	0.9	15.62	7.03	1296	-55.3	0.50	Clear	
1043	16	7.03	1.4	15.83	7.01	12.49	-86.4	0.02	Cloudy	
1048	21	6.83	1.7	15.81	7.02	1218	-98.2	0.17	Cloudy	
1051	24	6.72	2.0	15.63	7.03	1227	-100.2	0.37	Cloudy	
1054	27	6.61	2.3	15.78	7.03	1208	-102.2	0.24	Cloudy	
1057	30	6.61	2.5	15.81	7.02	1202	-106.9	0.18	Cloudy	
1100	33	6.61	2.6	15.78	7.02	1199	-107.8	0.19	Cloudy	
1110			Sample							

Collected Sample Condition | Color | Odor | Appearance

Parameter	Container	No.	Preservative

PID Reading:

Comments:

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	MW-4
Date	3/15/2011	Sampled By	Darrell Smolko		
Sampling Time	1130	Recorded By	Darrell Smolko		
Weather	Cloudy	Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method	Geopump		
Casing Diameter	2"	Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)		Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
1108	-	3.87								Start Purge
1118	10	5.86	0.5	17.01	7.02	935	43.5	0.55	Clear	
1121	13	5.96	0.7	17.08	7.02	934	43.6	0.50	Clear	
1124	16	6.03	0.9	17.10	7.01	934	40.4	0.45	Clear	
1130			Sampled							

Collected Sample Condition Color_____ Odor_____ Appearance_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	AS-GZ
Date	3/15/2011	Sampled By	Darrell Smolko		
Sampling Time	1210	Recorded By	Darrell Smolko		
Weather		Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method	Geopump		
Casing Diameter	2"	Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.51	Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
1139	–	4.51								Start Purge
1149	10	4.78	0.6	16.36	7.08	733	-63.2	0.42	Clear	
1152	13	4.82	0.8	16.31	7.08	732	-63.2	0.42	Clear	
1155	16	4.82	1.1	16.33	7.07	733	-61.6	0.35	Clear	
1210				Sampled						

Collected Sample Condition Color_____ Odor_____ Appearance_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	ASMW-5D
Date	3/15/2011	Sampled By	Darrell Smolko		
Sampling Time	1245	Recorded By	Darrell Smolko		
Weather	Cloudy	Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method	Geopump		
Casing Diameter	2"	Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.61	Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
1204	-	4.61								Start Purge
1214	10	4.77	0.5	17.24	6.82	1499	94.9	5.85	Clear	
1217	13	4.77	0.8	17.36	6.84	1518	106.9	6.00	Clear	
1221	17	4.77	1.1	17.37	6.85	1513	112.7	6.15	Clear	
1224	20	4.77	1.3	17.44	6.85	1510	118.9	6.37	Clear	
1227	23	4.77	1.5	17.44	6.86	1526	125.0	6.49	Clear	
1230	26	4.77	1.7	17.80	6.86	1519	128.4	6.46	Clear	
1233	29	4.77	1.9	17.71	6.86	1514	133.4	6.56	Clear	
1245				Sampled						

Collected Sample Condition Color _____ Odor _____ Appearance _____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	ASMW-5I
Date	3/15/2011	Sampled By	Darrell Smolko		
Sampling Time	1330	Recorded By	Darrell Smolko		
Weather		Coded Replicate No.			

Instrument Identification

Water Quality Meter(s) _____ Serial # _____

Casing Material		Purge Method	Geopump		
Casing Diameter	2"	Screen Interval (ft bmp)	Top	Bottom	
Sounded Depth (ft bmp)		Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	3.96	Purge Time	Start	Finish	

Field Parameter Measurements During Purging

Time	Minutes Elasped	Depth to Water (ft bmp)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (mS/cm) [1]	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1245	-	3.96							
1255	10	7.76	0.7	14.81	6.74	692	-11.9	0.29	Clear
1300	15	8.55	0.9	15.01	6.73	699	-34.0	0.13	Clear
1303	18	8.82	1.1	15.14	6.73	701	-41.7	0.17	Clear
1307	22	9.29	1.4	15.31	6.71	712	-63.1	0.16	Clear
1310	25	9.43	1.6	15.48	6.71	718	-67.6	0.16	Clear
1313	28	9.51	1.8	15.52	6.71	723	-77.6	0.41	Clear
1316	31	9.62	2.0	15.53	6.70	727	-83.3	0.31	Clear
1319	34	9.51	2.2	15.51	6.69	728	-90.0	0.22	Clear
1322	37	9.51	2.4	15.51	6.69	728	-98.1	0.23	Clear
1325	40	9.51	2.6	15.59	6.69	729	-97.9	0.24	Clear
1330				Sampled					

Collected Sample Condition Color_____ Odor_____ Appearance_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

ARCADIS

Water-Level Log

Project Name and No. Aspire

Site Location Oakland California

Prepared By Darrell Smolko

Date 15-Mar-11

Well (s)	Time	Depth to Water (ft)	Remarks
MW-2S	0910	2.25	
MW-2I	0911	4.85	
MW-2D	0912	4.90	
MW-4	0913	3.85	
AS-6I	0914	4.50	
ASMW-5I	0915	3.94	
ASMW-5D	0916	3.57	
ASMW-4I			D
AS-1I			
AS-3I			
AS-4I			

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: _____

Date 3/15/11 Page 1 of 1

Report To

Attn: Ron Goloubow
Company: Arcadis-US
Address: 1900 Powell St. 11th Floor
Phone: 510 596-9550 Email: Ron.Goloubow@arcadis.com
Bill To: Aspire EM009155.0011
Sampled By: Darrell Smolko
Attn: Phone:

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	TPH EPA - ☐ 8015B ☐ Gas w/ ☐ BTEX ☐ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other ___	EPA 8260B: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other: ___	Low Level Metals by EPA 200.8/6020 (ICP-MS): ___	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions : ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	TBA (8260)				Number of Containers
TB031511	03/15/11	—	W	HCl	X		X														X					
NW-2S		955																								
NW-2I		1030																								
NW-2I-D		1030																								
NW-2D		1110																								
MW-4		1130																								
AS-6I		1210																								
ASMW-5D		1245																								
ASMW-5I		1330																								

Project Info.

Project Name: Aspire
Project#: EM009155.0011
PO#:
Credit Card#:

Sample Receipt

of Containers: 26
Head Space: N-A
Temp:
Conforms to record:

TAT: 5 Day | 3 Day | 2 Day | 1 Day | Other: Standard

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF

Special Instructions / Comments: ☐ Global ID _____

Please Sample only TBA & MTBE under Oxygenates

See Terms and Conditions on reverse

*TestAmerica SF reports 8015M from C_8-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature Time	Signature Time	Signature Time
Printed Name Date	Printed Name Date	Printed Name Date
Company	Company	Company

1) Received by:	2) Received by:	3) Received by:
Signature Time	Signature Time	Signature Time
Printed Name Date	Printed Name Date	Printed Name Date
Company	Company	Company

Rev09/09

ARCADIS

Document Control Number:TGM - _____

TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Aspire			**Project Location:** Oakland Ca
Date: 3/15/11	**Time:** 0830	**Conducted by:** Darrell Smolko	**Signature/Title:**
Client: Aspire		**Client Contact:**	**Subcontractor companies:**

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Water Levels 3 _____ 5 _____

2 Well Sampling 4 _____ 6 _____

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☑ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☐ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☐ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☐ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☐ Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☐ Gravity (i.e., ladder, scaffold, trips) (L M H)	☑ Motion (i.e., traffic, moving water) (L (M) H) Site Construction	☐ Mechanical (i.e., augers, motors) (L M H)
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) ((L) M H)
☑ Chemical (i.e., fuel, acid, paint) (L M H) Site COCs	☑ Biological (i.e., ticks, poison ivy) ((L) M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☐ Sound (i.e., machinery, generators) (L M H)	☑ Personal (i.e. alone, night, not fit) ((L) M H) Alone	☑ Driving (i.e. car, ATV, boat, dozer) ((L) M H) Site Traffic, Driving

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒	**STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*				
☐	Elimination	☐	Substitution	☐	Isolation
☐	Engineering controls	☐	Administrative controls	☐	Monitoring
☐	General PPE Usage	☐	Hearing Conservation	☐	Respiratory Protection
☐	Personal Hygiene	☐	Exposure Guidelines	☐	Decon Procedures
☐	Emergency Action Plan (EAP)	☐	Fall Protection	☐	Work Zones/Site Control
☐	JLA to be developed/used ***(specify)***	☐	LPO conducted ***(specify job/JLA)***	☐	Traffic Control
☐		☐		☐	Other ***(specify)***
☐		☐		☐	

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Darrell Smolko / Arcadis / Darrell Smolko	DS 0900 3/05/11		DS

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304