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Groundwater Monitoring Report for the Period July 1 through September 30, 2011

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

November 15, 2011

ARCADIS

Ron Goloubow, P.G.
Principal Geologist

Groundwater Monitoring Report for the Period July 1 through September 30, 2011

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

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Date:
November 15, 2011

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November 15, 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 July 1 through September 30, 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 Kahlmus Estman at 323-983-1112, Ron Goloubow of ARCADIS at 510-596-9550, or me at 510-434-5000.

Sincerely,

Wayne Hilty
President, College for Certain, LLC

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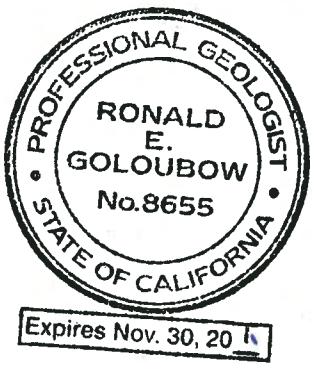
Certification

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 .*

11/15/11

Ron Goloubow, P.G.
Principal Geologist
California Professional Geologist (8655)

Date



* A professional geologist's certification of conditions comprises a declaration of his or her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, and ordinances.

1. Introduction

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 July 1 through September 30, 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

As provided in this report, the analytical results for groundwater samples collected at the Site have indicated a decreasing concentration trend for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary-butyl ether (MTBE) over time. This decreasing trend in concentrations is likely the direct result of the excavation and off-site disposal of fuel-affected soil that took place at the Site in 1995 and 2002 (see Section 1.2 and 1.4 of this report) and the operation of the operation of the soil-vapor extraction/air sparging (SVE/AS) system. Based on the removal action that took place at the Site, the operation of the SVE/AS, and the analytical data for groundwater samples conducted at the Site, it appears that no further investigation, remediation, or monitoring are needed for the Site, and the periodic groundwater monitoring and reporting program at the Site can be discontinued. Therefore, we request approval to cease the periodic groundwater monitoring and reporting program that has been taking place at the Site and abandon the groundwater monitoring wells, and recommend that this case be closed based on the San Francisco Regional Water Quality Control Board's (RWQCB's) "low-risk case closure criteria" (RWQCB 1995, 2009, and 2010).

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. This report represents the last quarterly monitoring report as part of the required year of post-system-shutdown monitoring. Accordingly, this report will also discuss site closure.

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), constituents of concern (COCs) at the Site in groundwater include TPHg, BTEX compounds, 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 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 has been redeveloped for use as a charter school. The Site is relatively flat and the ground surface is predominantly paved or covered with buildings. The final 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 the drilling of 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 were 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 startup 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 startup of the SVE/AS system, please refer to the quarterly report titled "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 had 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, was after completion of excavation and site demolition activities. SVE/AS operation was off 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 COCs in groundwater during the period of SVE/AS system shutdown.

1.4.2.1 Initial Phase SVE/AS System

The initial phase SVE/AS extended pilot test system operated from August 17, 2009 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.

1.4.2.2 Second Phase SVE/AS System

The second phase SVE/AS system 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 system 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 2009a and 2009c). During this reporting period, groundwater samples were collected on September 23, 2011, approximately twelve 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 eight monitoring wells during the September 23 sampling event.
- Collected groundwater samples from seven wells on September 23, 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 made by ARCADIS personnel during the September 2011 sampling event, wells AS-1I and AS-3I were inadvertently destroyed during the redevelopment of the Site and thus the wells were not included in this round of groundwater monitoring. ARCADIS personnel tried to locate wells AS-1I and AS-3I during the redevelopment of the Site but the wells could not be located and thus cannot 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.

- Intermediate-zone AS wells AS-4I and AS-6I are completed with 4-foot-long screen intervals that are set at depths between 13 and 17 and 9 and 13 feet bgs, respectively.

2.3 Groundwater Elevations

Groundwater elevations were measured on September 23, 2011. The depth to groundwater was measured in eight 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.

During the redevelopment activities permanent well boxes were installed at wells MW-4, AS-4I, AS-6I, NW-2S, NW-2I, NW-2D, ASMW-5I, and ASMW-5D. To ensure well boxes and vaults were constructed at ground surface to avoid slips, trips, and falls associated with the wells, well casings that protruded above ground surface were cut, altering top of the casing (TOC) for each well. These elevations of these modified TOCs have not been surveyed. Accordingly, groundwater elevation contours, data, and gradients were not calculated or included in this report. The depth-to-water results are summarized in Table 1.

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 of the groundwater monitoring and AS wells on September 23, 2011.

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 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, TBA, and MTBE analyses are summarized in Table 2. Table 3 summarizes the groundwater monitoring parameters measured during the collection of the groundwater samples. Figures 3, 4, and 5 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 September 2011 to provide data to evaluate the effectiveness of the SVE/AS system and to monitor for potential COC rebound. The results of the September 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 reporting quarter 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 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 not collected from shallow-zone wells during the current reporting quarter due to low water production in shallow-zone wells attributable to seasonal groundwater variations. Well NW-2S was purged dry on September 23 and after approximately 5 hours a measureable amount of groundwater did not recharge into the well (i.e., the well remained dry).

Historical analytical results for TPHg, BTEX, TBA, and MTBE are summarized in Table 2 and posted on Figure 3. 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 June 2011 from NW-2S indicate TPHg and benzene concentrations were significantly reduced by approximately 95.4% and 99.6%, respectively, relative to the concentrations of TPHg and benzene detected in samples collected prior to the operation of the SVE/AS system.

2.5.1.2 Intermediate Zone

Groundwater samples were collected from four 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 on Figure 4. 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 had contained 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 September 2011 from NW-2I and ASMW-5I after 141 days of total SVE/AS system operation and 374 days after demobilization indicate that TPHg concentrations were significantly reduced by approximately 98.9% and 99.9%, respectively (Table 2 and Figure 4).

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 4). The concentrations of benzene detected in samples collected from wells AS-4I and NW-2I have slightly increased from 0.68 micrograms per liter (µg/l) and below laboratory

reporting limits to 1.3 and 3.2 µg/l, respectively, since the last monitoring event, but remain well below the site-specific screening level for benzene (66 µg/l).

The data indicate that TPHg 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 4). The concentrations of TPHg detected in samples collected from wells AS-4I, AS6I, and NW-2I have increased since the last monitoring event.

The following table summarizes the percentage decreases in benzene and TPHg concentrations detected in samples collected in September 2011 relative to concentrations of benzene and TPHg detected prior to startup 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
	23-Sept-11	1.3	58
	Percent Decrease:	>99%	>99%
NW-2I	13-Mar-09	18,000	49,000
	23-Sept-11	3.2	510
	Percent Decrease:	>99%	>98.9%
AS-6I	26-May-09	11,000	42,000
	23-Sept-11	<0.50	500
	Percent Decrease:	>99%	>98.8%

Concentrations of MTBE and TBA detected in samples collected from intermediate-zone wells after the startup 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 4).

2.5.1.3 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 on Figure 5. 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 all three deep-zone wells during the September 2011 sampling event were below their respective laboratory reporting limits.

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 September 2011 Groundwater Sampling Results to Site-Specific Screening Level for Benzene

Concentrations of benzene in the groundwater samples from seven wells during the September 2011 sampling event ranged from below the laboratory detection limit <0.50 µg/l (in four wells) to 3.2 µg/l (in well NW-2I). The analytical results of the groundwater samples collected during the September 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 and have significantly decreased since last quarter (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 3 through 5).

Analytical results of groundwater samples collected on September 23, 2011, 374 days (approximately 12 months) after system shutdown, indicate a slight increase of concentrations of TPHg relative to samples collected in June 2011. Concentrations of TPHg increased in three of the seven groundwater samples collected. However, concentrations of TPHg detected in the groundwater samples collected in September 2011 are still significantly lower than concentrations detected in samples collected prior to the operation of the SVE/AS system.

Concentrations of benzene detected in the samples collected from wells NW2I and AS4I in September 2011 were above the concentrations detected in samples collected from these wells in June 2011. However, the concentrations of benzene detected in September 2011 are significantly below the screening level of 66 µg/l, with the highest concentration at 3.2 µg/l detected in the sample collected from well NW-2I.

Comparison of analytical results of groundwater samples collected 374 days after SVE/AS system shutdown to the calculated 66 µg/l groundwater concentration of benzene protective of the volatilization to indoor air exposure pathway shows that current groundwater conditions do not pose a risk of volatilization to indoor air. These trends indicate that site remedial activities have produced successful results.

4. Recommendations

In accordance with the Revised CAP, ARCADIS collected groundwater samples for one full year after the shutdown of the SVE\AS system (September 2010 through September 2011). Historical data presented in Table 2 and Figures 3 through 5 demonstrate a significant reduction in site COCs with benzene being reduced by greater than 99% in all monitoring wells with respect to baseline data. A slight increase in benzene concentrations has been observed in samples collected from wells AS-4I and NW-2I in September 2011. Based on the analytical results for groundwater samples collected over the year following the shutdown of the AS/SVE system, these concentrations appear to be stable overall and are well below the calculated screening level of 66 µg/l.

Based on the success of the SVE/AS system operation in the long-term reduction of fuel and fuel-related constituent concentrations in groundwater, ARCADIS is requesting case closure for this project from ACEH indicating that no further action (NFA) is required at this Site with respect to groundwater monitoring or remediation.

5. Request for Case Closure

The following are the facts most relevant to this case being recommended for case closure:

- Approximately 1,500 cubic yards of fuel-affected soil were removed in two excavation iterations completed at the Site during 1995.

- Approximately 116,000 gallons of petroleum hydrocarbon-affected groundwater were pumped from the excavation in 1995.

- Approximately 65,000 gallons of petroleum hydrocarbon-affected groundwater were removed from the excavation in 2002.

- Approximately 219 tons of petroleum hydrocarbon-affected soil was disposed of at an off-site facility in 2002.

- Approximately 639 pounds of fuel vapors were recovered from the Site in approximately 141 days of operation of the SVE/AS system in 2009 and 2010.

- Concentration trends for benzene present in groundwater at the Site have decreased significantly over time, and concentrations of benzene detected during the most recent monitoring event (one year after the operation of the SVE/AS remain below its respective cleanup goal).

- Based on the findings included in this report, the findings from previous investigations and remedial activities, and the facts presented above, ARCADIS recommends that this case be approved for regulatory closure, and requests that the ACEH provide CFC a letter stating that no further investigation or remediation is necessary and that the groundwater monitoring wells be abandoned at the Site.

6. 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.

7. References

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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.

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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
	15-Jun-11		2.58	11.19
	23-Sep-11		3.57**	10.20
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
	15-Jun-11		4.92	8.88
	23-Sep-11		4.76**	9.04
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
	15-Jun-11		3.85	9.98
	23-Sep-11		4.28**	9.55
AS-1I	26-May-09	NS	3.87	--
	24-May-10		4.91	--
	27-Jul-10	14.02	5.61	8.41

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)
	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
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
	16-Jun-11		3.16	10.88
	23-Sep-11		4.91**	9.13
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
	15-Jun-11		4.28	9.73
	23-Sep-11		4.47**	9.54
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
	15-Jun-11		3.90	10.04
	23-Sep-11		4.80**	9.14
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
	15-Jun-11		4.98	8.81
	23-Sep-11		4.75**	9.04
ASMW-5D	11-Mar-09	13.01	1.88	11.13

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]
	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
	15-Jun-11		2.87	10.76
	23-Sep-11		4.21**	9.42

Notes:

NM = water level not measured

NS = not surveyed

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

(**) Top of the casing was damaged or altered during excavation and or redevelopment 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
	15-Jun-11		83	720	16	2.3	<0.50	<0.50	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

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
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
	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
	15-Jun-11		320	610	43	4.0	<0.50	<0.50	NA	NA	5.2
	23-Sep-11		58	130	7.5	1.3	<0.50	<0.50	NA	NA	1.1
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
	15-Jun-11		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	23-Sep-11		510	460	9.5	3.2	<0.50	9.2	NA	NA	15
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

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
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
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
	16-Jun-11		100	600	110	0.68	<0.50	<0.50	NA	NA	<1.0
	23-Sep-11		700	310	79	1.30	<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
	15-Jun-11		<50	190	1.6	<0.50	<0.50	<0.50	NA	NA	<1.0
duplicate	15-Jun-11		<50	190	1.6	<0.50	<0.50	<0.50	NA	NA	<1.0
	23-Sep-11		500	690	9.4	<0.50	<0.50	3.3	NA	NA	4.2
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

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
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
	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
	15-Jun-11		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	23-Sep-11		<50	<4.0	<0.50	<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
	15-Jun-11		350	380	10	5.6	<0.50	7.9	NA	NA	16
	23-Sep-11		<50	<4.0	1.4	<0.50	<0.50	<0.50	NA	NA	<1.0
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

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
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
	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

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
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
	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
	15-Jun-11		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
	23-Sep-11		<50	<4.0	<0.50	<0.50	<0.50	<0.50	NA	NA	<1.0
duplicate	23-Sep-11		<50	<4.0	0.59	<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
	15-Jun-11	19.67	898	6.07	-96.0	0.12
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
	15-Jun-11	18.67	950	6.37	-177.7	0.08
	23-Sep-11	20.48	201	7.52	-54.2	0.20
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

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)
	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
	14-Jan-10	18.69	1,024	7.37	49.0	6.11
	16-Jun-11	17.86	889	8.66	51.9	0.48
	23-Sep-11	22.33	838	8.06	-80.1	0.19
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
	15-Jun-11	18.63	874	6.66	-19.6	0.22
	23-Sep-11	21.30	1,002	7.17	-65.4	0.18
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
	15-Jun-11	19.13	869	6.33	99.1	1.24
	23-Sep-11	21.66	1,567	6.99	-90.3	0.18
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

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)
	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
	15-Jun-11	20.91	255	7.49	-21.3	1.34
	23-Sep-11	19.93	238	10.38	-31.2	0.19
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
	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
	15-Jun-11	19.38	1,569	6.61	-129.5	0.15
	23-Sep-11	20.22	779	6.64	122.2	0.32
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
	15-Jun-11	18.96	1,103	6.64	1.4	0.16
	23-Sep-11	20.28	1,098	7.25	-81.9	0.24

Notes:

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)

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

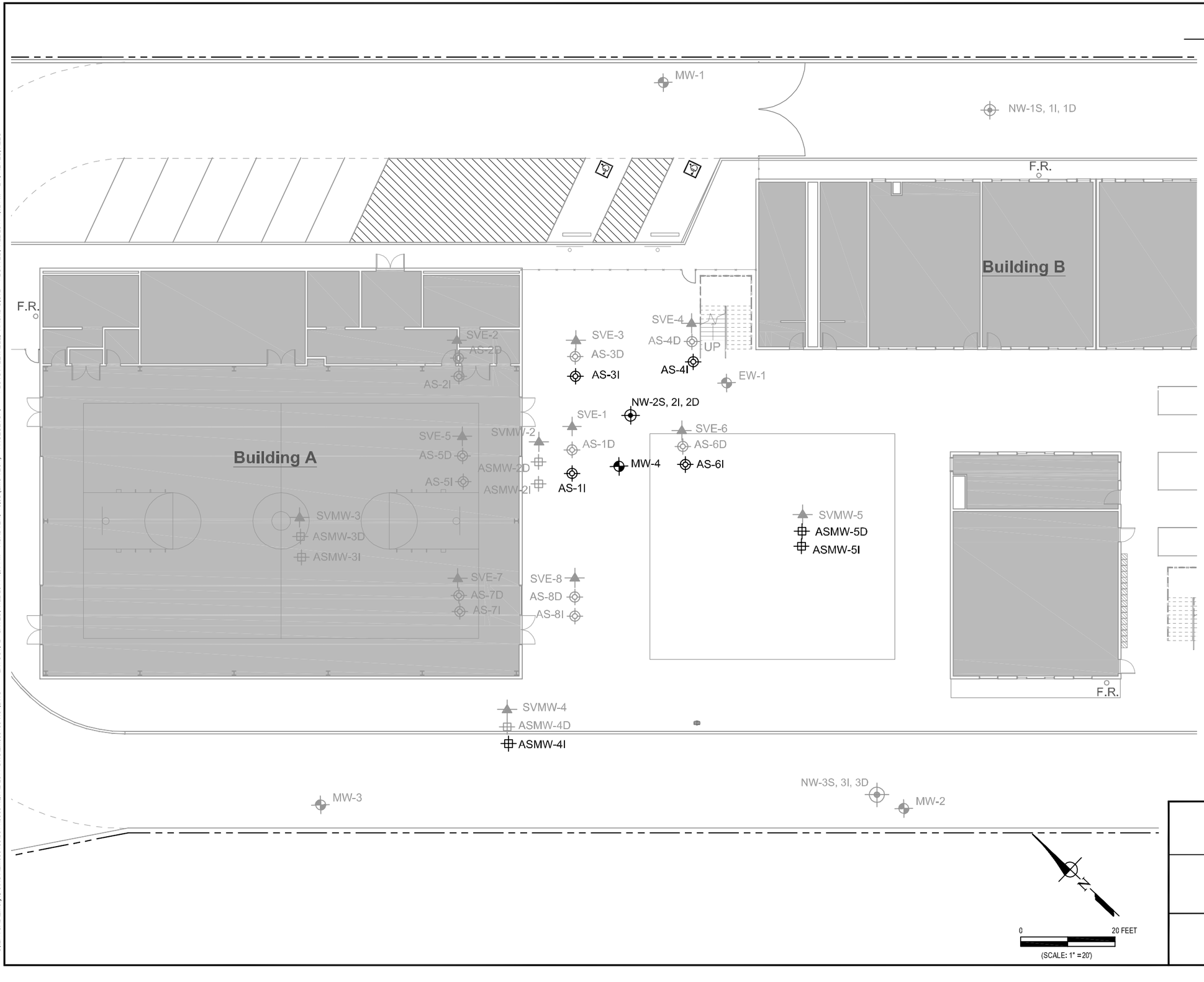
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE VICINITY MAP

ARCADIS

FIGURE 1

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



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:

SVE = Soil Vapor Extraction

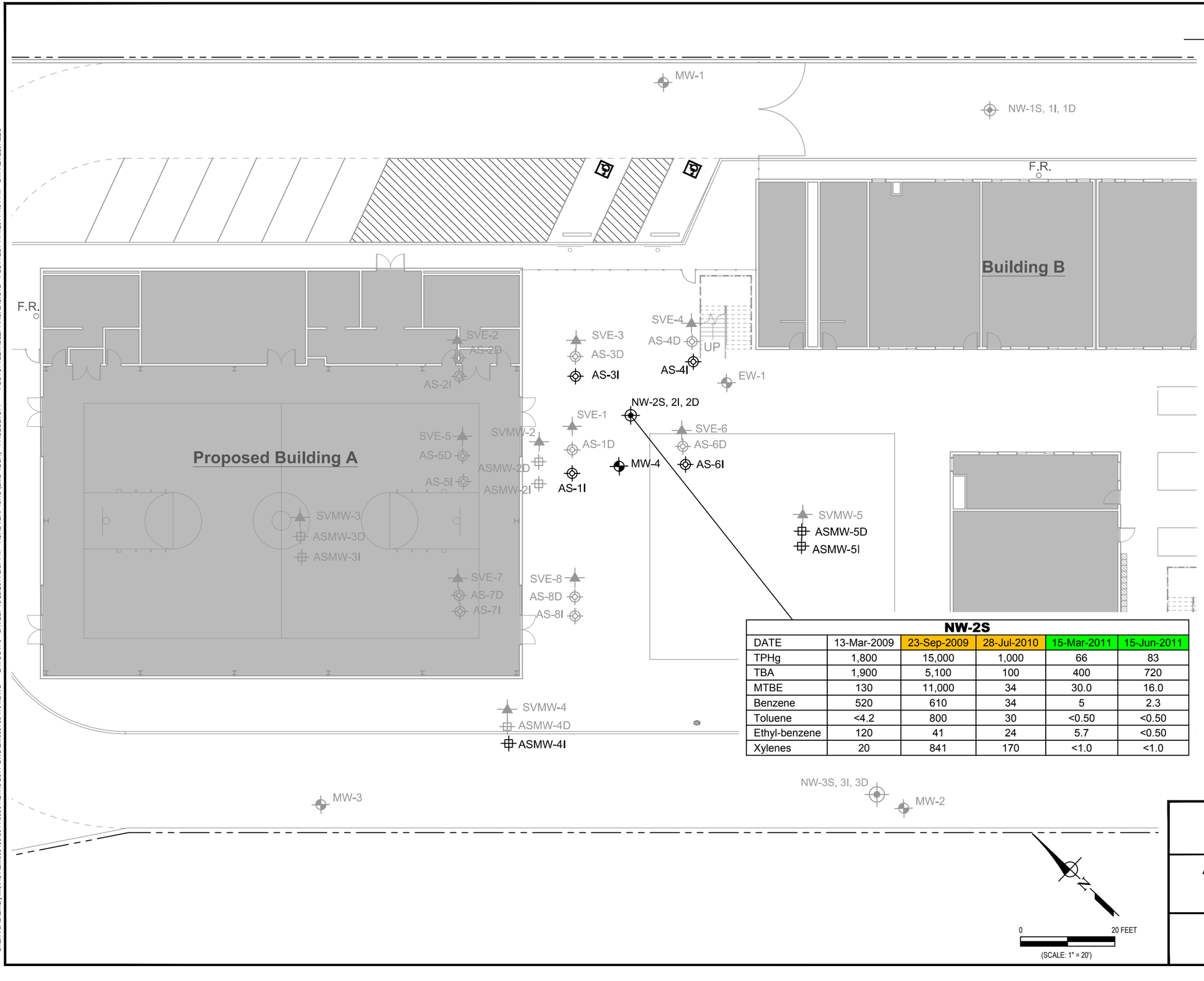
GREY symbols represent abandoned well locations

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

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

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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 13, 2010 shutdown

NS-2S	15-Jun-11
TPHg	<50

Location ID; Date sample taken; Concentration in micrograms per liter; Chemical

NW-2S

DATE	13-Mar-2009	23-Sep-2009	28-Jul-2010	15-Mar-2011	15-Jun-2011
TPHg	1,800	15,000	1,000	66	83
TBA	1,900	5,100	100	400	720
MTBE	130	11,000	34	30.0	16.0
Benzene	520	610	34	5	2.3
Toluene	<4.2	800	30	<0.50	<0.50
Ethyl-benzene	120	41	24	5.7	<0.50
Xylenes	20	841	170	<1.0	<1.0

1009 66TH AVENUE, OAKLAND, CALIFORNIA

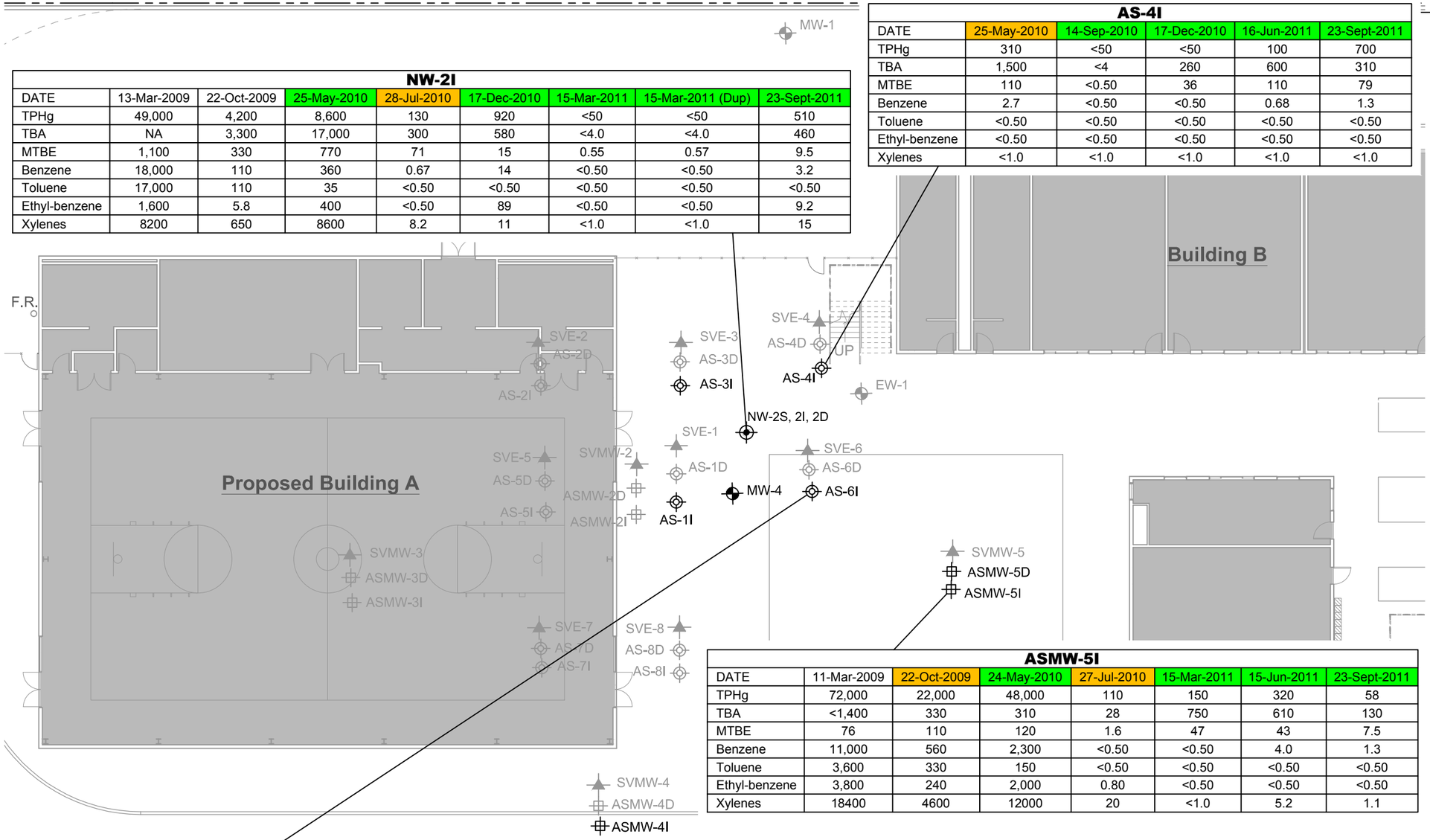
ANALYTICAL RESULTS FOR TPHg AND VOCs IN SHALLOW-ZONE GROUNDWATER SAMPLES

ARCADIS

FIGURE 3

NW-2I								
DATE	13-Mar-2009	22-Oct-2009	25-May-2010	28-Jul-2010	17-Dec-2010	15-Mar-2011	15-Mar-2011 (Dup)	23-Sept-2011
TPHg	49,000	4,200	8,600	130	920	<50	<50	510
TBA	NA	3,300	17,000	300	580	<4.0	<4.0	460
MTBE	1,100	330	770	71	15	0.55	0.57	9.5
Benzene	18,000	110	360	0.67	14	<0.50	<0.50	3.2
Toluene	17,000	110	35	<0.50	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	1,600	5.8	400	<0.50	89	<0.50	<0.50	9.2
Xylenes	8200	650	8600	8.2	11	<1.0	<1.0	15

AS-4I					
DATE	25-May-2010	14-Sep-2010	17-Dec-2010	16-Jun-2011	23-Sept-2011
TPHg	310	<50	<50	100	700
TBA	1,500	<4	260	600	310
MTBE	110	<0.50	36	110	79
Benzene	2.7	<0.50	<0.50	0.68	1.3
Toluene	<0.50	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes	<1.0	<1.0	<1.0	<1.0	<1.0



ASMW-5I							
DATE	11-Mar-2009	22-Oct-2009	24-May-2010	27-Jul-2010	15-Mar-2011	15-Jun-2011	23-Sept-2011
TPHg	72,000	22,000	48,000	110	150	320	58
TBA	<1,400	330	310	28	750	610	130
MTBE	76	110	120	1.6	47	43	7.5
Benzene	11,000	560	2,300	<0.50	<0.50	4.0	1.3
Toluene	3,600	330	150	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	3,800	240	2,000	0.80	<0.50	<0.50	<0.50
Xylenes	18400	4600	12000	20	<1.0	5.2	1.1

AS-6I								
DATE	26-May-2009	23-Sep-2009	25-May-2010	28-Jul-2010	15-Mar-2011	15-Jun-2011	15-Jun-2011 (Dup)	23-Sept-2011
TPHg	42,000	26,000	840	58	<50	<50	<50	500
TBA	<1,000	330	210	450	480	190	190	690
MTBE	170	1,600	25	45	5.2	1.6	1.6	9.4
Benzene	11,000	1,000	23	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	780	400	<0.50	1.9	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	2,400	230	14	2.7	<0.50	<0.50	<0.50	3.3
Xylenes	3,180	630	1.5	8.1	<1.0	<1.0	<1.0	4.2

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

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 13, 2010 shutdown

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

Location ID

Date sample taken

Concentration in micrograms per liter

Chemical

N

0 20 FEET

(SCALE: 1" = 20')

1009 66TH AVENUE, OAKLAND, CALIFORNIA

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

ARCADIS

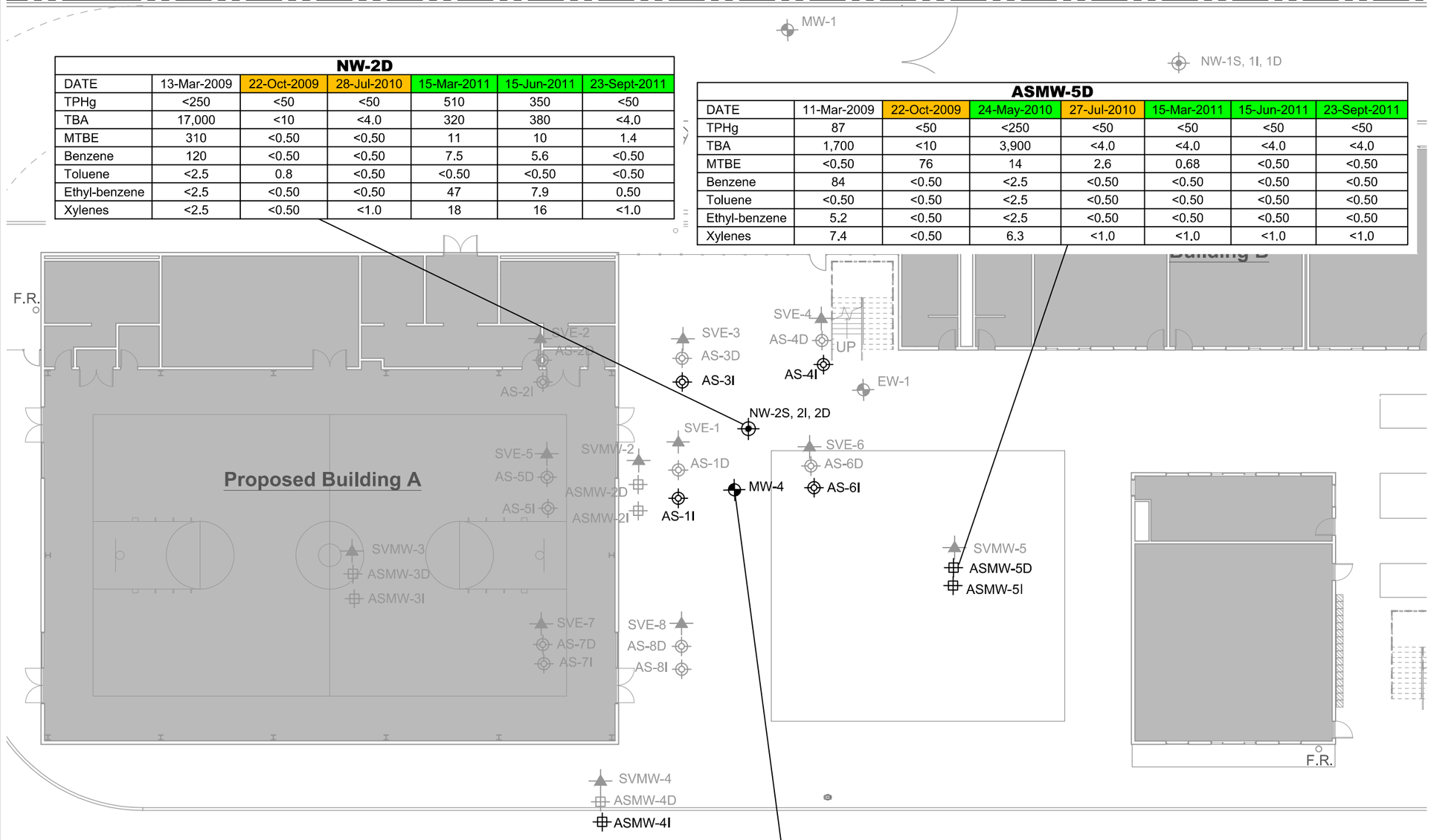
FIGURE 4

NW-2D

DATE	13-Mar-2009	22-Oct-2009	28-Jul-2010	15-Mar-2011	15-Jun-2011	23-Sept-2011
TPHg	<250	<50	<50	510	350	<50
TBA	17,000	<10	<4.0	320	380	<4.0
MTBE	310	<0.50	<0.50	11	10	1.4
Benzene	120	<0.50	<0.50	7.5	5.6	<0.50
Toluene	<2.5	0.8	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	<2.5	<0.50	<0.50	47	7.9	0.50
Xylenes	<2.5	<0.50	<1.0	18	16	<1.0

ASMW-5D

DATE	11-Mar-2009	22-Oct-2009	24-May-2010	27-Jul-2010	15-Mar-2011	15-Jun-2011	23-Sept-2011
TPHg	87	<50	<250	<50	<50	<50	<50
TBA	1,700	<10	3,900	<4.0	<4.0	<4.0	<4.0
MTBE	<0.50	76	14	2.6	0.68	<0.50	<0.50
Benzene	84	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50
Toluene	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	5.2	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50
Xylenes	7.4	<0.50	6.3	<1.0	<1.0	<1.0	<1.0



MW-4

DATE	13-Mar-2009	22-Oct-2009	24-May-2010	28-Jul-2010	15-Mar-2011	15-Jun-2011	23-Sept-2011	23-Sept-2011 (Dup)
TPHg	55,000	<50	250	<50	<50	<50	<50	<50
TBA	<1,400	<10	180	<4.0	<4.0	<4.0	<4.0	<4.0
MTBE	950	3.7	21	<0.50	0.61	<0.50	<0.50	0.59
Benzene	19,000	<.50	11	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	7,200	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethyl-benzene	2,300	<0.50	3.6	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes	12000	<0.50	7.1	<1.0	<1.0	<1.0	<1.0	<1.0

20 FEET

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 13, 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 5

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: 720-37662-1
Client Project/Site: Aspire Oakland
Revision: 1

For:
ARCADIS U.S., Inc
2000 Powell Street 7th Floor
Emeryville, California 94608-1827

Attn: Mr. Ron Goloubow

Authorized for release by:
11/01/2011 05:50:43 PM

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

Table of Contents

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
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

TestAmerica Job ID: 720-37662-1

Job ID: 720-37662-1

Laboratory: TestAmerica San Francisco

Narrative

Job Narrative
720-37662-1

Revised report on 11/1/11.Added the COC.

Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

GC/MS VOA

Method(s) 8260B: The Gasoline Range Organics (GRO) concentration reported for the following sample 37662-9 is due to the presence of discrete peaks: AS-4I (720-37662-9).
No other analytical or quality issues were noted.

Detection Summary

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

TestAmerica Job ID: 720-37662-1

Client Sample ID: MW-4 — Lab Sample ID: 720-37662-2

No Detections

Client Sample ID: MW-4-D — Lab Sample ID: 720-37662-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.59		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: MW-2I — Lab Sample ID: 720-37662-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	9.5		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	3.2		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Ethylbenzene	9.2		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	15		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	460		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: MW-2D — Lab Sample ID: 720-37662-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	1.4		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: AS-6I — Lab Sample ID: 720-37662-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	9.4		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Ethylbenzene	3.3		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	4.2		1.0		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	500		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	690		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: ASMW-5D — Lab Sample ID: 720-37662-7

No Detections

Client Sample ID: ASMW-5I — Lab Sample ID: 720-37662-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	7.5		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	1.3		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	1.1		1.0		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	58		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	130		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: AS-4I — Lab Sample ID: 720-37662-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	79		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	1.3		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C5-C12	700		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	310		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA

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

Client Sample ID: MW-4
Date Collected: 09/23/11 14:15
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			09/27/11 00:57	1
Benzene	ND		0.50		ug/L			09/27/11 00:57	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 00:57	1
Toluene	ND		0.50		ug/L			09/27/11 00:57	1
Xylenes, Total	ND		1.0		ug/L			09/27/11 00:57	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			09/27/11 00:57	1
TBA	ND		4.0		ug/L			09/27/11 00:57	1
DIPE	ND		0.50		ug/L			09/27/11 00:57	1
TAME	ND		0.50		ug/L			09/27/11 00:57	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 00:57	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*67 - 130*		*09/27/11 00:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*67 - 130*		*09/27/11 00:57*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/11 00:57*	*1*

Client Sample ID: MW-4-D
Date Collected: 09/23/11 14:30
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.59**		0.50		ug/L			09/27/11 02:23	1
Benzene	ND		0.50		ug/L			09/27/11 02:23	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 02:23	1
Toluene	ND		0.50		ug/L			09/27/11 02:23	1
Xylenes, Total	ND		1.0		ug/L			09/27/11 02:23	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			09/27/11 02:23	1
TBA	ND		4.0		ug/L			09/27/11 02:23	1
DIPE	ND		0.50		ug/L			09/27/11 02:23	1
TAME	ND		0.50		ug/L			09/27/11 02:23	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 02:23	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*67 - 130*		*09/27/11 02:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*67 - 130*		*09/27/11 02:23*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/11 02:23*	*1*

Client Sample ID: MW-2I
Date Collected: 09/23/11 15:30
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**9.5**		0.50		ug/L			09/27/11 02:52	1
Benzene	**3.2**		0.50		ug/L			09/27/11 02:52	1
Ethylbenzene	**9.2**		0.50		ug/L			09/27/11 02:52	1
Toluene	ND		0.50		ug/L			09/27/11 02:52	1
Xylenes, Total	**15**		1.0		ug/L			09/27/11 02:52	1

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

Client Sample ID: MW-2I
Date Collected: 09/23/11 15:30
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C5-C12	**510**		50		ug/L			09/27/11 02:52	1
TBA	**460**		4.0		ug/L			09/27/11 02:52	1
DIPE	ND		0.50		ug/L			09/27/11 02:52	1
TAME	ND		0.50		ug/L			09/27/11 02:52	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 02:52	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*101*		*67 - 130*		*09/27/11 02:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*67 - 130*		*09/27/11 02:52*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/11 02:52*	*1*

Client Sample ID: MW-2D
Date Collected: 09/23/11 16:10
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**1.4**		0.50		ug/L			09/27/11 03:21	1
Benzene	ND		0.50		ug/L			09/27/11 03:21	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 03:21	1
Toluene	ND		0.50		ug/L			09/27/11 03:21	1
Xylenes, Total	ND		1.0		ug/L			09/27/11 03:21	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			09/27/11 03:21	1
TBA	ND		4.0		ug/L			09/27/11 03:21	1
DIPE	ND		0.50		ug/L			09/27/11 03:21	1
TAME	ND		0.50		ug/L			09/27/11 03:21	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 03:21	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*67 - 130*		*09/27/11 03:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*67 - 130*		*09/27/11 03:21*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/11 03:21*	*1*

Client Sample ID: AS-6I
Date Collected: 09/23/11 18:10
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**9.4**		0.50		ug/L			09/27/11 03:49	1
Benzene	ND		0.50		ug/L			09/27/11 03:49	1
Ethylbenzene	**3.3**		0.50		ug/L			09/27/11 03:49	1
Toluene	ND		0.50		ug/L			09/27/11 03:49	1
Xylenes, Total	**4.2**		1.0		ug/L			09/27/11 03:49	1
Gasoline Range Organics (GRO) -C5-C12	**500**		50		ug/L			09/27/11 03:49	1
TBA	**690**		4.0		ug/L			09/27/11 03:49	1
DIPE	ND		0.50		ug/L			09/27/11 03:49	1
TAME	ND		0.50		ug/L			09/27/11 03:49	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 03:49	1

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

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*99*		*67 - 130*		*09/27/11 03:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*67 - 130*		*09/27/11 03:49*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/27/11 03:49*	*1*

Client Sample ID: ASMW-5D
Date Collected: 09/23/11 19:00
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			09/27/11 04:18	1
Benzene	ND		0.50		ug/L			09/27/11 04:18	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 04:18	1
Toluene	ND		0.50		ug/L			09/27/11 04:18	1
Xylenes, Total	ND		1.0		ug/L			09/27/11 04:18	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			09/27/11 04:18	1
TBA	ND		4.0		ug/L			09/27/11 04:18	1
DIPE	ND		0.50		ug/L			09/27/11 04:18	1
TAME	ND		0.50		ug/L			09/27/11 04:18	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 04:18	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*97*		*67 - 130*		*09/27/11 04:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*67 - 130*		*09/27/11 04:18*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*09/27/11 04:18*	*1*

Client Sample ID: ASMW-5I
Date Collected: 09/23/11 20:30
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**7.5**		0.50		ug/L			09/27/11 04:47	1
Benzene	**1.3**		0.50		ug/L			09/27/11 04:47	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 04:47	1
Toluene	ND		0.50		ug/L			09/27/11 04:47	1
Xylenes, Total	**1.1**		1.0		ug/L			09/27/11 04:47	1
Gasoline Range Organics (GRO) -C5-C12	**58**		50		ug/L			09/27/11 04:47	1
TBA	**130**		4.0		ug/L			09/27/11 04:47	1
DIPE	ND		0.50		ug/L			09/27/11 04:47	1
TAME	ND		0.50		ug/L			09/27/11 04:47	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 04:47	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	*99*		*67 - 130*		*09/27/11 04:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*67 - 130*		*09/27/11 04:47*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*09/27/11 04:47*	*1*

Client Sample ID: AS-4I
Date Collected: 09/23/11 19:40
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**79**		0.50		ug/L			09/27/11 05:15	1

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

TestAmerica Job ID: 720-37662-1

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

Client Sample ID: AS-4I
Date Collected: 09/23/11 19:40
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.3**		0.50		ug/L			09/27/11 05:15	1
Ethylbenzene	ND		0.50		ug/L			09/27/11 05:15	1
Toluene	ND		0.50		ug/L			09/27/11 05:15	1
Xylenes, Total	ND		1.0		ug/L			09/27/11 05:15	1
Gasoline Range Organics (GRO) -C5-C12	**700**		50		ug/L			09/27/11 05:15	1
TBA	**310**		4.0		ug/L			09/27/11 05:15	1
DIPE	ND		0.50		ug/L			09/27/11 05:15	1
TAME	ND		0.50		ug/L			09/27/11 05:15	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/27/11 05:15	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*09/27/11 05:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*67 - 130*		*09/27/11 05:15*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*09/27/11 05:15*	*1*

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

Lab Sample ID: MB 720-99704/5
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Method Blank
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			09/26/11 20:09	1
Benzene	ND		0.50		ug/L			09/26/11 20:09	1
Ethylbenzene	ND		0.50		ug/L			09/26/11 20:09	1
Toluene	ND		0.50		ug/L			09/26/11 20:09	1
Xylenes, Total	ND		1.0		ug/L			09/26/11 20:09	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			09/26/11 20:09	1
TBA	ND		4.0		ug/L			09/26/11 20:09	1
DIPE	ND		0.50		ug/L			09/26/11 20:09	1
TAME	ND		0.50		ug/L			09/26/11 20:09	1
Ethyl t-butyl ether	ND		0.50		ug/L			09/26/11 20:09	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*67 - 130*		*09/26/11 20:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*67 - 130*		*09/26/11 20:09*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/26/11 20:09*	*1*

Lab Sample ID: LCS 720-99704/6
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Methyl tert-butyl ether	25.0	25.2		ug/L		101	62 - 130
Benzene	25.0	23.7		ug/L		95	82 - 127
Ethylbenzene	25.0	24.7		ug/L		99	86 - 135
Toluene	25.0	23.8		ug/L		95	83 - 129
m-Xylene & p-Xylene	50.0	50.9		ug/L		102	70 - 142
o-Xylene	25.0	25.2		ug/L		101	89 - 136
TBA	500	481		ug/L		96	82 - 116
DIPE	25.0	21.2		ug/L		85	74 - 155
TAME	25.0	25.1		ug/L		100	79 - 129
Ethyl t-butyl ether	25.0	23.5		ug/L		94	70 - 130

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*67 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCS 720-99704/8
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	444		ug/L		89	62 - 117

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 130*

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

Lab Sample ID: LCS 720-99704/8
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS % Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-99704/7
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	23.6		ug/L		94	62 - 130	7	20
Benzene			25.0	23.7		ug/L		95	82 - 127	0	20
Ethylbenzene			25.0	25.1		ug/L		100	86 - 135	2	20
Toluene			25.0	24.3		ug/L		97	83 - 129	2	20
m-Xylene & p-Xylene			50.0	51.7		ug/L		103	70 - 142	2	20
o-Xylene			25.0	25.6		ug/L		102	89 - 136	2	20
TBA			500	477		ug/L		95	82 - 116	1	20
DIPE			25.0	20.7		ug/L		83	74 - 155	2	20
TAME			25.0	23.5		ug/L		94	79 - 129	7	20
Ethyl t-butyl ether			25.0	22.3		ug/L		89	70 - 130	5	20

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*99*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*101*		*67 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-99704/9
Matrix: Water
Analysis Batch: 99704

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	442		ug/L		88	62 - 117	0	20

Surrogate	LCSD % Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*109*		*67 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*

Lab Sample ID: 720-37662-2 MS
Matrix: Water
Analysis Batch: 99704

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits		
Methyl tert-butyl ether	ND		25.0	23.3		ug/L		91	60 - 138		
Benzene	ND		25.0	21.0		ug/L		84	60 - 140		
Ethylbenzene	ND		25.0	21.8		ug/L		87	60 - 140		
Toluene	ND		25.0	21.0		ug/L		84	60 - 140		
m-Xylene & p-Xylene	ND		50.0	45.8		ug/L		92	60 - 140		
o-Xylene	ND		25.0	23.5		ug/L		94	60 - 140		
TBA	ND		500	422		ug/L		84	60 - 140		
DIPE	ND		25.0	20.0		ug/L		80	60 - 140		

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

Lab Sample ID: 720-37662-2 MS
Matrix: Water
Analysis Batch: 99704

Client Sample ID: MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits		
TAME	ND		25.0	23.5		ug/L		94	60 - 140		
Ethyl t-butyl ether	ND		25.0	21.5		ug/L		86	60 - 140		

Surrogate	*MS % Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*111*		*67 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: 720-37662-2 MSD
Matrix: Water
Analysis Batch: 99704

Client Sample ID: MW-4
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	ND		25.0	27.2		ug/L		107	60 - 138	15	20
Benzene	ND		25.0	22.9		ug/L		92	60 - 140	9	20
Ethylbenzene	ND		25.0	23.3		ug/L		93	60 - 140	7	20
Toluene	ND		25.0	22.6		ug/L		90	60 - 140	7	20
m-Xylene & p-Xylene	ND		50.0	48.8		ug/L		98	60 - 140	6	20
o-Xylene	ND		25.0	25.2		ug/L		101	60 - 140	7	20
TBA	ND		500	439		ug/L		88	60 - 140	4	20
DIPE	ND		25.0	21.9		ug/L		88	60 - 140	9	20
TAME	ND		25.0	27.6		ug/L		110	60 - 140	16	20
Ethyl t-butyl ether	ND		25.0	24.7		ug/L		99	60 - 140	14	20

Surrogate	*MSD % Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*117*		*67 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*

QC Association Summary

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

TestAmerica Job ID: 720-37662-1

GC/MS VOA

Analysis Batch: 99704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-37662-2	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-2 MS	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-2 MSD	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-3	MW-4-D	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-4	MW-2I	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-5	MW-2D	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-6	AS-6I	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-7	ASMW-5D	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-8	ASMW-5I	Total/NA	Water	8260B/CA_LUFT MS	
720-37662-9	AS-4I	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-99704/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-99704/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-99704/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-99704/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-99704/5	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Lab Chronicle

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

TestAmerica Job ID: 720-37662-1

Client Sample ID: MW-4
Lab Sample ID: 720-37662-2
Date Collected: 09/23/11 14:15
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 00:57	AC	TAL SF

Client Sample ID: MW-4-D
Lab Sample ID: 720-37662-3
Date Collected: 09/23/11 14:30
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 02:23	AC	TAL SF

Client Sample ID: MW-2I
Lab Sample ID: 720-37662-4
Date Collected: 09/23/11 15:30
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 02:52	AC	TAL SF

Client Sample ID: MW-2D
Lab Sample ID: 720-37662-5
Date Collected: 09/23/11 16:10
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 03:21	AC	TAL SF

Client Sample ID: AS-6I
Lab Sample ID: 720-37662-6
Date Collected: 09/23/11 18:10
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 03:49	AC	TAL SF

Client Sample ID: ASMW-5D
Lab Sample ID: 720-37662-7
Date Collected: 09/23/11 19:00
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 04:18	AC	TAL SF

Client Sample ID: ASMW-5I
Lab Sample ID: 720-37662-8
Date Collected: 09/23/11 20:30
Matrix: Water
Date Received: 09/26/11 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	99704	09/27/11 04:47	AC	TAL SF

Lab Chronicle

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

TestAmerica Job ID: 720-37662-1

Client Sample ID: AS-4I
Date Collected: 09/23/11 19:40
Date Received: 09/26/11 17:30

Lab Sample ID: 720-37662-9
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	99704	09/27/11 05:15	AC	TAL SF

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

Certification Summary

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

TestAmerica Job ID: 720-37662-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica San Francisco	California	State Program	9	2496

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.

Method Summary

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

TestAmerica Job ID: 720-37662-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTMS	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: 720-37662-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-37662-2	MW-4	Water	09/23/11 14:15	09/26/11 17:30
720-37662-3	MW-4-D	Water	09/23/11 14:30	09/26/11 17:30
720-37662-4	MW-2I	Water	09/23/11 15:30	09/26/11 17:30
720-37662-5	MW-2D	Water	09/23/11 16:10	09/26/11 17:30
720-37662-6	AS-6I	Water	09/23/11 18:10	09/26/11 17:30
720-37662-7	ASMW-5D	Water	09/23/11 19:00	09/26/11 17:30
720-37662-8	ASMW-5I	Water	09/23/11 20:30	09/26/11 17:30
720-37662-9	AS-4I	Water	09/23/11 19:40	09/26/11 17:30

1 2 3 4 5 6 7 8 9 10 11 12 13 14

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ID#:

720-37662

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

133890
Lab Work Order #

11/01/2011

Send Results to:

Contact & Company Name: Arcadis-US
Telephone: (510) 652-4500
Address: 2000 Powell St. 7th Floor
Fax:
City: Emeryville State: Ca Zip: 94608
E-mail Address: Ron.Goloubow@arcadis-us.com
Project Name/Location (City, State): Aspire Oakland
Project #: EM009155.0010
Sampler's Printed Name: Darrell Smolko
Sampler's Signature: [signature]

Preservative	HCl	HCl					
Filtered (✓)							
# of Containers							
Container Information							

PARAMETER ANALYSIS & METHOD

Sample ID	Collection Date	Collection Time	Type Comp	Type Grab	Matrix	TPHg 8260B	EPA 8260B BTEX, Oxygenates						REMARKS
TB082311	9/23	—		✓	W	X	X						
MW-4	↓	1415		↓	↓	↓	↓						
MW-4-D		1430											
NW-2I		1530											
NW-2D		1610											
AS-6I		1810											
ASMW-5D		1900											
ASMW-5I		2030											
AS-4I	↓	1940		↓	↓	↓	↓						

987654321

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: ______
G. Other: ______
H. Other: ______

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: ______
10. Other: ______

Matrix Key:
SO - Soil, SE - Sediment, NL - NAPL/Oil
W - Water, SL - Sludge, SW - Sample Wipe
T - Tissue, A - Air, Other: ______

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

3.3°C

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: Test America	Cooler Custody Seal (✓)	Printed Name: Eric Ehlers	Printed Name: Theodore Stitt	Printed Name: Theodore Stitt	Printed Name: Joan Muller
☒ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature: [signature]	Signature: [signature]	Signature: [signature]	Signature: [signature]
Specify Turnaround Requirements: Standard	Sample Receipt:	Firm: AUS	Firm/Courier: TASF	Firm/Courier: TASF	Firm: Test America
Shipping Tracking #:	Condition/Cooler Temp: ______	Date/Time: 9/26/11 14:32	Date/Time: 9-26-11 14:32	Date/Time: 9-26-11 17:30	Date/Time: 9-26-11 1730

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results   YELLOW – Lab copy   PINK – Retained by ARCADIS

Salimpour, Afsaneh

From: Goloubow, Ron [Ron.Goloubow@arcadis-us.com]
Sent: Tuesday, September 27, 2011 10:37 AM
To: Salimpour, Afsaneh; Ehlers, Eric
Subject: RE: Sample Login Confirmation for 720-37662, Aspire Oakland

Afsaneh - please place Sample TB082311 on HOLD

Ron Goloubow, PG | Principal Geologist | ron.goloubow@arcadis-us.com

ARCADIS U.S., Inc. | 2000 Powell Street, Suite 700 | Emeryville, CA 94608
T. 510.596.9550 | M. 510.501-1789 | F. 510.652.2246
www.arcadis-us.com

From: Salimpour, Afsaneh [mailto:afsaneh.salimpour@testamericainc.com]
Sent: Tuesday, September 27, 2011 10:21 AM
To: Ehlers, Eric; Goloubow, Ron
Subject: Sample Login Confirmation for 720-37662, Aspire Oakland

AFSANEH SALIMPOUR

TestAmerica San Francisco
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 925.484.1919
www.testamericainc.com

Reference: [090332]
Attachments: 3

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc

Job Number: 720-37662-1

Login Number: 37662

List Source: TestAmerica San Francisco

List Number: 1

Creator: Mullen, Joan

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	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Appendix B

Field Logs

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Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	MW-4
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		Recorded By	Darrell Smolko		
Weather	70 Sunny	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)	~~TD~~ 24.10	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.80	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)
1345		4.80						Start Purge	
1355	10	6.82	0.5	20.80	7.29	1113	-79.8	0.28	Clear
1359	14	6.85	0.7	20.78	7.28	1114	-80.8	0.26	Clear
1403	18	6.55	1.0	21.53	7.28	1124	-82.8	0.25	Clear
1406	21	7.42	1.3	20.28	7.25	1098	-81.9	0.24	Clear
1415								Sampled	

Collected Sample Condition Color Clear Odor _____ Appearance _____

Parameter	Container	No.	Preservative
	Cl		HCl

PID Reading _____

Comments Duplicate Sample Time 1430

1) Circle one unit type

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	MW-2S
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	5.35	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	3.57	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)
1418		1						Start Purge	
1428	10	4.52	0.4	23.37	6.78	1062	-65.8	0.13	
1431	13	4.81	0.6	23.39	6.80	1145	-77.2	0.20	
1434	16	5.08	0.9	23.31	6.83	1187	-83.6	0.23	
1437	19	5.22	1.2	23.20	6.86	1239	-90.9	0.24	
1440									
1445								Sampled	

Collected Sample Condition Color _____ Odor _____ Appearance _____

Parameter	Container	No.	Preservative

PID Reading _____

Comments Well stopped producing when I started to sample

1) Circle one unit type

ARCADIS
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Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	NW-2I
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	11.15	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.76	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)
1505		4.76						Start Purge	
1515	10	7.09	0.6	21.50	6.99	1550	-87.6	0.19	Clear / Slightly Cloudy
1518	13	7.08	0.9	21.54	7.01	1531	-89.6	0.18	Clear
1521	16	7.10	1.3	21.66	6.99	1567	-90.3	0.18	Clear
1530								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**	NW-2D
Date	8/23/2011	**Sampled By**	Darrell Smolko		
Sampling Time		**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)	29.25	**Pump Intake Depth (ft bmp)**			
Depth to Water (ft bmp)	4.75	**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)
1598		4.75						Start	Purge
1600	12	4.75	0.4	20.46	6.55	786	130.5	0.30	
1603	15	4.75	0.8	20.31	6.65	782	122.1	0.31	
1606	18	4.75	1.2	20.22	6.64	779	122.2	0.32	Clear
1610								Sampled	

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

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

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Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	AS-4I
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	4.91	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)
1627		4.91						Start Purge	
1637	10	10.25	0.5	22.33	8.06	838	-80.1	0.19	Slightly Cloudy
1640	13	10.	1.0					Purged Dry	
	Sampled		1940						

Collected Sample Condition Color _____ Odor _____ Appearance _____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

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Low-Flow Groundwater Sampling Log

Project	Aspire				
Project Number	EM009155.0011	Site Location	Oakland California	Well ID	AS-6I
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	4.47	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)
1730		4.47					Start Purge		
1740	10	4.58	0.5	21.67	7.42	841	58.0	0.17	Cloudy
1743	13	4.58	0.8	21.71	7.48	844	39.0	0.19	
1748	18	4.58	1.1	21.71	7.41	9.17	-24.9	0.19	
1751	21	4.58	1.3	21.62	7.29	966	-50.9	0.21	Clear
1754	24	4.58	1.5	21.52	7.22	993	-61.0	0.20	
1757	27	4.58	1.7	21.36	7.19	999	-63.9	0.19	Clear
1800	30	4.58	2.0	21.30	7.17	1002	-65.4	0.18	Clear
1810						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-50
Date	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	7.70	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.21	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)
1834		4.21							
1844	10	6.38	0.5	20.46	10.26	230	-24.2	0.48	Cloudy
1847	13	6.38	0.8	20.13	10.37	237	-28.5	0.30	
1850	16	6.38	1.1	20.08	10.39	236	-30.0	0.21	
1853	19	6.38	1.3	19.93	10.38	238	-31.2	0.19	
Sampled		1900							

Collected Sample Condition Color_____ Odor_____ Appearance_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments pH abnormally high; removed probe & cleaned it but came right back to 10.0 ?

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	8/23/2011	Sampled By	Darrell Smolko		
Sampling Time		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)	7.80	Pump Intake Depth (ft bmp)			
Depth to Water (ft bmp)	4.28	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)
1915		4.28							
1921	6	6.57	0.3	20.48	7.60	136	-44.4	0.58	Cloudy
1924	9	6.74	0.5	20.48	7.49	141	-45.9	0.45	Cloudy
1927	12	6.98	0.7	20.48	7.52	201	-54.2	0.20	Cloudy
1930	15		0.9	20.39					Very Cloudy
				Purged		Dry			
Sampled		7.030							

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 23-Aug-11

Well (s)	Time	Depth to Water (ft)	Remarks
MW-4	1345	4.80	
MW-2S	1428	3.57	
MW-2I	1505	4.76	
MW-2D	1548	4.75	
AS-4I	1627	4.91	
AS-6I	1730	4.47	
ASMW-5D	1834	4.21	
ASMW-5I	1915	4.28	