ARCADIS
Infrastructure, environment, buildings

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Monitoring Well Installation Report
Former BP Service Station No. 11102
100 MacArthur Boulevard
Oakland, California
ACEH Case #RO0000456

ENVIRONMENT

"I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Date:
November 30, 2010

Submitted by:

ARCADIS U.S., Inc

Hollis E. Phillips, PG
Project Manager

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ENVIRONMENT

Mr. Paresh Khatri
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject:
Monitoring Well Installation Report
Former BP Service Station No. 11102
100 MacArthur Boulevard
Oakland, California
ACEH Case #RO0000456

Date:
November 30, 2010

Contact:
Hollis Phillips

Phone:
415.374.2744 ext. 13

Email:
Hollis.Phillips@
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Our ref:
GP09BPNA.C111

Dear Mr. Khatri:

ARCADIS U.S. (ARCADIS) has prepared this *Monitoring Well Installation Report* (Report) for the Former ARCO Service Station No. 11102 (Site) located at 100 MacArthur Blvd in Oakland California (**Figure 1**). This Report has been prepared to document site assessment activities conducted as proposed originally in Broadbent & Associates, Inc. (BAIs) *Initial Site Conceptual Model with Soil and Groundwater Investigation Work Plan* dated April 9, 2009 and revised in BAIs *Addendum to Soil and Groundwater Investigation Work Plan* dated June 1, 2009 and finalized in ARCADIS' *Rider to the Addendum to Soil and Groundwater Investigation Work Plan* dated March 9, 2010. This work was conducted as requested in the Alameda County Environmental Health (ACEH) letter dated January 8, 2009.

Site Background

The Site is located at 100 MacArthur Boulevard in Oakland, California. It is an active 76-branded gasoline station. BP acquired the property from Mobil Oil Corporation in 1989. Although BP sold the property to TOSCO Marketing Corporation in 1994, it retained the environmental liability for contamination released prior to this transfer. Current improvements to the Site include three, single-wall fiberglass gasoline underground storage tanks (USTs) (6,000-gallons, 10,000-gallons, and 12,000-gallons) believed to have been installed in 1982, one 1,000-gallon double-walled fiberglass underground waste oil storage tank installed in 1988, two fuel dispenser islands with a total of eight dispensers, and a convenience store building with three vehicle service bays. The majority of the Site surface is paved with cement and

asphalt. A Site Location Map is provided as **Figure 1**. Site and local area development is provided as **Figure 2**.

The Site is bound by MacArthur Boulevard to the southwest, Oakland Avenue to the southeast, Harrison Street to the northwest and single-family residential dwellings to the northeast (uphill from the Site and its retaining wall). Interstate 580 and the associated on- and off-ramps are located across MacArthur Boulevard to the southwest. A small parking lot and several small commercial buildings are located across Oakland Avenue to the southeast. A Quik Stop retail gasoline station is located across Harrison Street to the northwest at 96 West MacArthur Boulevard. The Quik Stop gasoline station is Former Unocal Station No.1871, an active fuel leak case (ACEH Case No.RO0000455 / GeoTracker Global ID No.T0600101493).

Previous Site Investigations

Kaprealian Engineering, Inc. (KEI) observed the removal of a steel underground waste oil storage tank, variously reported to have been of 550-gallon or 280-gallon capacity, on 19 September 1988. Work was performed for Mobil Oil Corporation prior to the sale of the property to BP. KEI reported that no holes or cracks were evident in the tank. However, upon UST removal a representative of ACEH reportedly observed a hole in the UST and petroleum product “dripping” from the west sidewall (ERI 1998). Two soil samples were collected during the tank removal activities: sample WO was collected from the bottom of the tank pit and sample Comp WO was composed of two grab samples collected from the excavated soil stock piled on-site, which equaled approximately 15 cubic yards (yd3). Total Petroleum Hydrocarbons in the Diesel Range (TPHd) was reported at concentrations of 2.0 parts per million (ppm) and 1,700 ppm in samples WO and Comp WO, respectively. Total Oil & Grease (TOG) was reported at concentrations of 24 ppm and 65,000 ppm in samples WO and Comp WO, respectively. No Volatile Organic Compounds (VOCs) were detected above the laboratory reporting limit in sample WO (KEI 1988).

On 25 and 26 October 1989 Alton Geoscience, Inc. (Alton) observed the advancement of three soil borings onsite. Each boring was drilled to 33 feet below ground surface (ft bgs) and converted into 4-inch diameter groundwater monitoring wells (MW-1, MW-2, and MW-3). The wells were completed to a total depth of 32 ft bgs and screened from 11 ft bgs to total depth. Three soil samples were collected from each boring at depths of approximately 5 ft bgs, 10 ft bgs, and 15 ft bgs. Soil samples were analyzed for Total Petroleum Hydrocarbons in the Gasoline Range (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX). Soil samples

from boring MW-1 adjacent to the former waste oil UST were also analyzed for TPHd and TOG. Benzene was detected in soil samples collected from boring MW-2 at depths of 5 ft bgs and 10 ft bgs at 6 micrograms per kilogram (• g/kg) and 8 • g/kg, respectively. Toluene and Total Xylenes were detected in the 5 ft bgs soil sample collected from boring MW-3 at 6 • g/kg and 13 • g/kg, respectively. Wells MW-1, MW-2, and MW-3 were developed on 4 November 1989 and groundwater samples collected on 11 November 1989. Groundwater samples were analyzed for TPHg and BTEX, with samples from MW-1 also being analyzed for TOG and Halogenated VOCs. The ground-water sample collected from well MW-1 contained Benzene at 3.4 micrograms per liter (• g/L), Toluene at 0.6 • g/L, and 1,2-Dichloroethane (1,2-DCA) at 0.9 • g/L. The ground-water sample collected from well MW-2 contained Benzene at 6.5 • g/L. No other analytes were detected above their reporting limits (Alton 1989).

Cambria Environmental Technology, Inc. (Cambria) performed a well recovery test on 6 May 1999 to estimate the hydraulic conductivity of the water-bearing zone beneath the site. Static water levels in wells MW-1 and MW-2 were observed to be above the screened intervals, while the water level in well MW-3 was within the screened interval. The pumping test resulted in an average of 10.5 to 11 feet of drawdown in the wells after three to four minutes of pumping at five gallons per minute. Cambria calculated the hydraulic gradient for well MW-1 to be between 9.9x10-5 centimeters per second (cm/sec) and 1.5x10-4 cm/sec. Wells MW-2 and MW-3 were calculated to be between 6.5x10-6 cm/sec and 1.7x10-5 cm/sec. The geometric mean of the hydraulic gradient for each well was calculated as 2.5x10-5 cm/sec (Cambria 2000).

In their Historical Review, Utility Survey, and Recovery Testing Report dated 24 February 2000, Cambria obtained and reviewed nine Sanborn fire insurance maps spanning from 1903 to 1970and ten aerial photographs spanning from 1930 to 1996. Cambria reported no visually significant historical impacts to the site or surrounding properties. Cambria also conducted a utility, or preferential pathway investigation utilizing information provided by or collected from TOSCO Corporation, Underground Service Alert (USA), and a geophysical survey conducted by CU Surveys of San Ramon, California. Cambria reported that “the storm drain located beneath MacArthur Boulevard is believed to encounter groundwater at least seasonally” (Cambria 2000).

Also in 2000, Alisto Engineering Group (Alisto) conducted a sensitive receptor survey and well search for the area surrounding the Site. Sensitive receptors identified were limited to underground utilities previously identified by Cambria. Alisto reported in

their 19 October 2000 report that the California Department of Water Resources had no wells on record within a half mile radius of the site with the exception of the three monitoring wells associated with the site itself (Alisto 2000).

On 13 and 14 July 2005, URS Corporation (URS) observed the advancement of five soil borings, completed by Gregg Drilling and Testing Inc. (Gregg Drilling), with the purpose of further characterizing the subsurface hydrocarbon contamination at the Site. Borings SB-4, SB-5, and SB-7 were advanced to a depth of 32 ft bgs, while borings SB-6 and SB-8 were advanced to a depth of 28 ft bgs. Hydropunch® borings were advanced on 13 and 14 July 2005, spaced one to two feet laterally from each of the five soil borings. No water samples were obtained. However, soil samples were collected from within the saturated zones. Soil samples were also collected from each soil boring at approximate five foot intervals. Gasoline Range Organics (GRO) were detected in eleven samples collected from borings SB-4 through SB-7 at concentrations up to 1,300 mg/kg [SB-7 (2-2.5')]. Ethylbenzene was detected above laboratory reporting limits in three samples collected from borings SB-5 and SB-7 at concentrations up to 3.0 mg/kg [SB-7 (2-2.5')]. Total xylenes were detected in four samples collected from borings SB-6 and SB-7 at concentrations up to 3.9 mg/kg [SB-7 (5-5.5')]. Methyl tert-butyl ether (MTBE) was detected in ten samples collected from borings SB-4, SB-5, SB-6, and SB-8 at concentrations up to 3.7 mg/kg [SB-4 (29-29.5')]. Tert-butyl alcohol (TBA) was detected in two samples collected from borings SB-5 and SB-6 at concentrations up to 0.13 mg/kg [SB-6 (19.5-20')]. Other constituents analyzed for but not detected in the collected soil samples included Benzene, Toluene, Ethanol, Tert-Amyl Methyl Ether (TAME), Ethyl Tert-Butyl Ether (ETBE), Di-Isopropyl Ether (DIPE), 1,2-Dibromoethane (EDB), and 1,2-DCA (URS 2005).

On 7 October 2005 URS observed the advancement of three off-site soil borings (SB-1, SB-2, and SB-3) and one on-site soil boring (SB-4A), completed by Gregg Drilling. Off-site borings SB-1, SB-2, and SB-3 were placed between the Site and the storm drain under MacArthur Boulevard approximately one to two feet into the street from the sidewalk curb. Each offsite boring was hand augered to depth due to the proximity of underground utilities. Borings SB-1 and SB-3 were hand augered to 12 ft bgs, while boring SB-2 was hand augered to eight ft bgs. Ground water was not encountered in the three borings, and no soil samples were collected. Boring SB-4A was placed adjacent to previous boring SB-4 to confirm subsurface soil contaminant concentrations and lithology. Boring SB-4A was advanced to a total depth of 36 ftbgs with ground water first being encountered at 24.5 ft bgs. Six soil samples were collected from the boring at intervals of approximately five feet. TAME was detected

in one sample (SB-4A@20') at a concentration of 0.12 mg/kg. MTBE was detected in each of the six samples collected at concentrations up to 5.0 mg/kg (SB-4A@20'). The remaining analytes GRO, BTEX, TBA, DIPE, ETBE, 1,2-DCA, EDB, and Ethanol, were below laboratory reporting limits for each of the six samples collected (URS 2006).

Also on 7 October 2005, URS observed Gregg Drilling advance four Hydropunch® borings: one each within borings SB-1, SB-2, and SB-3, and one approximately one to two feet laterally from boring SB-4A. The Hydropunch® screen was exposed in borings SB-1, SB-2, and SB-3 at 12 ft to 14 ft bgs, 14 ft to 16 ft bgs, and 17 ft to 19 ft bgs, respectively. No ground water was encountered in these borings and therefore, no samples were collected. One ground-water sample (SB-4A) was collected from the Hydropunch® boring adjacent to boring SB-4A at a depth of 24 ft bgs. Ground-water sample SB-4A was analyzed for GRO, BTEX, MTBE, TAME, ETBE, DIPE, TBA, EDB, 1,2-DCA, and Ethanol. GRO was detected in the sample at a concentration of 3,000 • g/L, TAME at 110 • g/L, TBA at 5,700 • g/L, and MTBE at 4,500 • g/L. The remaining analytes were below the laboratory reporting limits (URS, 4/14/2006).

In their 14 April 2006 report, URS explained that after many attempts they were unable to coordinate with the City of Oakland in order to sample water present in the MacArthur Boulevard storm drain. However, URS also stated that they believed it was unlikely that contamination could migrate via the storm drain (URS 2006).

Quarterly ground-water monitoring at the Site was initiated in April 1990 by Alton, and is currently performed by Stratus Environmental, Inc. (Stratus).

Regional Geology and Hydrogeology

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the

early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of groundwater flow is from east to west or from the Hayward Fault to the San Francisco Bay. Groundwater flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction. The nearest natural drainage is Glen Echo Creek, located approximately 1,450 feet northwest of the Site. Glen Echo Creek flows generally northeast to southwest near the Site vicinity. Historic groundwater flow direction at the Site has varied between south and west/northwest, but has been predominantly southwest to west. The nearest natural drainage is Glen Echo Creek, located approximately 1,450 feet northwest of the Site. Glen Echo Creek flows generally northeast to southwest near the Site vicinity (BAI 2009).

The Site is situated at an approximate elevation of 90 feet above mean sea level. The Site is relatively flat, but slopes slightly to the west, consistent with the local topography. Sediments encountered at the Site consist primarily of silty clays or clayey silts with varying amounts of sand and gravel, extending from the ground surface to the total depth investigated, approximately 36 ft bgs.

Recent Site Activities

On October 6 and 13, 2010 ARCADIS supervised ULS Services Corporation (ULS) and WDC Exploration & Wells (WDC) in the advancement of one hollow stem auger boring, and in the installation and development of the newly installed well. Site activities were conducted to evaluate the nature and extent of potential impacts in downgradient and groundwater. The location of the monitoring well is shown in **Figure 2**.

Scope of Work

ARCADIS prepared a site specific Health and Safety Plan (HASP) which was reviewed by the field staff and contractors prior to beginning field operations at the site. A Well Permit was obtained from Alameda County Public Works Department and is included in **Appendix A**. The scope of work included (1) installation of the soil boring, soil sampling and well installation on October 6, 2010, and (2) the well

development and groundwater sampling on October 12, 2010. Additionally the well was sampled on November 12, 2010.

Well Installation

Underground Service Alert (USA) was notified at least 48 hours before proposed drilling activities to identify public utilities in the vicinity of the proposed borings. In conjunction with USA, ULS, a private utility locating company, was utilized to further evaluate the potential presence of underground utilities in the vicinity of the proposed well location. Prior to installation, the boring location was air knifed to 5 feet bgs to identify potential underground utilities in the vicinity. After preliminary clearance through ULS scanning, field crews attempted to clear the soil boring down to 5 ft bgs and found utilities, possibly a storm drain. As a contingency a new location in the same USA-cleared area was designated as an alternate location and was completed to its target depth. The first location was backfilled and grouted.

The soil boring was advanced to a depth of 20 ft bgs using a direct push drilling machine with the ability to auger with hollow stems. Soil samples were collected utilizing a small-diameter drive casing and a sample barrel that pushed into the ground. Soil samples for lithologic description were collected at 6.5 and 11.5 ft bgs.

Soil samples were examined for odors and visible signs of petroleum hydrocarbons. Two soil samples were submitted for chemical analysis and were sent under chain-of-custody documentation to Test America, a California state-certified laboratory. The soil samples were analyzed for the following constituents:

- TPHg by USEPA Method 8015M for C6-C12 range

- Benzene, Toluene, Ethylebenzene and total Xylenes (BTEX), Methyl-tert-butyl-ether (MTBE), 1,2-dichloroethane (1,2-DCA), diisopropyl ether (DIPE), ethyl tert-buytl ether (ETBE), tert-amyl methyl ether (TAME), t-buytl alcohol (TBA) and 1,2-dibromoethane (EDB) and Ethanol by USEPA Method 8260B

Upon completion of the sample collection, the equipment was retrieved to the ground surface and decontaminated. The well was constructed using 2-inch diameter, flush-threaded, schedule 40 PVC well casing with 10 feet of 0.020-inch slot well screen extending from approximately 10 to 20 ft bgs. The well was completed to surface with schedule 40 PVC blank well casing. A sand filter pack was placed in the annular space surrounding the entire screened interval, and extends approximately two feet above the

top of the screen interval. A 2-foot thick bentonite pellet annular seal was placed above the filter pack, and the well was completed with neat cement grout from the top of the seal to near ground surface. The well was secured with a locking well cap, and completed with a flush-mounted watertight traffic-rated well box installed at grade.

Depth to water was measured as 15 ft bgs upon soil boring completion. The location of the MW-4 well is presented on **Figure 2**. The boring log and well construction diagram are presented in **Appendix B**. Field Documentation is included in **Appendix C**. The laboratory analysis report is included in **Appendix D**.

Investigation-derived waste was containerized in 55-gallon Department of Transportation (DOT)-approved drums and temporarily stored on the subject property pending transport by Belshire Environmental Services Inc. (BESI) disposal contractor to an appropriate disposal or treatment facility. A total of two drums containing soil and one drum containing water were picked up and disposed of by BESI.

Well Development

The development of MW-4 was conducted by WDC under ARCADIS oversight. The depth to water was tagged at 13.14 ft from top of well casing, and the depth to bottom of the well at 19.83 ft from top of well casing. Three well volumes were initially purged with a bailer, which represented 1.1 gallons. 8.75 gallons were additionally purged using a pump. The depth to water was measured at 18.37 ft from top of casing before groundwater sample collection.

One groundwater sample was submitted for chemical analysis and was sent under chain-of-custody documentation to Test America, a California state-certified laboratory. The sample was analyzed for the following:

- TPHg by USEPA Method 8015M for C6-C12 range

- Benzene, Toluene, Ethylebenzene and total Xylenes (BTEX), Methyl-tert-butyl-ether (MTBE), 1,2-dichloroethane (1,2-DCA), diisopropyl ether (DIPE), ethyl tert-buytl ether (ETBE), tert-amyl methyl ether (TAME), t-buytl alcohol (TBA) and 1,2-dibromoethane (EDB) and Ethanol by USEPA Method 8260B

Upon completion of the sample collection, the equipment was decontaminated. Field Documentation is included in **Appendix C**. The laboratory analysis report is included in **Appendix D**.

Site Investigation Results

Subsurface Conditions

Generally, the soil profile consisted of silty clay. The boring log from the well installation is included as **Appendix B**.

Soil Analytical Data

Results of the two soil samples did not indicate the presence of any analyte above the method detection limits.. A copy of the laboratory analytical report and chain-of-custody documentation is included in **Appendix D**.

Groundwater Analytical Data

Concentrations of two analytes were reported above detection limits in October 2010: TBA and MTBE. The TBA concentration was 8.7 µg/L and the MTBE concentration was 55 µg/L. During the November 2010 sampling concentrations of three analytes were reported above the detection limits: TBA (6.9 µg/L), MTBE (95 µg/L) and TAME (0.75 µg/L).

Water analytical results are presented in **Table 1** A copy of the laboratory analytical report and chain-of-custody documentation is included in **Appendix D**.

Conclusion and Recommendations

The goal of this investigation was to evaluate the extent of contamination and fill the data gaps identified in the Site Conceptual Model presented by BAI in 2009.Soil concentrations were below reporting limits for all analytes. Groundwater concentrations in October 2010 detected TBA (8.7 µg/L) and MTBE (55 µg/L). Groundwater concentrations in November 2010 detected TBA (6.9 µg/L), MTBE (95 µg/L) and TAME (0.75 µg/.

Additionally, the purpose of the proposed soil boring and groundwater investigation was to further characterize residual hydrocarbon contamination within soils and

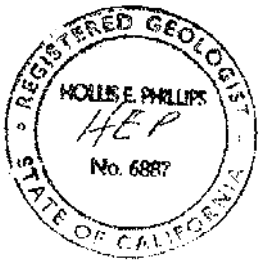
groundwater downgradient of the source area. Hydrocarbons were not detected in both the soil and groundwater downgradient from the original UST locations.

ARCADIS will continue to monitor and sample the newly installed well for four consecutive quarters in compliance with California State Water Resources Control Board Resolution No. 2009-0042 and continue monitoring and sampling of the existing well network semiannually to further evaluate the nature and extent of impacts.

If you have any questions or comments, please contact Ben McKenna by telephone at 925.296.7857 or by e-mail at Benino.McKenna@arcadis-us.com or Hollis Phillips by telephone at 415.374.2744 ext. 13 or by e-mail at Hollis.Phillips@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.



Ben McKenna
Project Geologist

Hollis Phillips, P.G.
Project Manager

Enclosures:

Table 1	Groundwater Analytical Data
Figure 1	Site Location Map
Figure 2	Site Map with Monitoring Well Locations
Appendix A	Alameda County Public Works Well Permit
Appendix B	Soil Boring Log and Well Installation Diagram
Appendix C	Field Documentation
Appendix D	Laboratory Analytical Reports and Chain-of-Custody Documentations

References

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Tables

Table 1
Groundwater Analytical Results
Monitoring Well Installation Report
Former BP Service Station 11102
100 MacArthur Blvd, Oakland, CA

Sample Name	Screen Depth Interval (ft bgs)	Sample Date	EPA 8015M	EPA 8260B											
			TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	EtBE (µg/L)	TAME (µg/L)	EDB (µg/L)	Ethanol (µg/L)	1,2 DCA (µg/L)
MW-4	10-20	10/06/10	<50	<0.50	<0.50	<0.50	<1.0	8.7	55	<0.50	<0.50	<0.50	<0.50	<250	<0.50
MW-4	10-20	11/12/10	<50	<0.50	<0.50	<0.50	<1.0	6.9	95	<0.50	<0.50	0.75	<0.50	<250	<0.50

Legend:

<4.6	Not detected at concentration threshold as shown

Acronyms:

1,2 DCA	1,2 dichloroethane
DIPE	di-isopropyl ether
EDB	ethylene dibromide
EPA	environmental protection agency
ESL	ecological screening Levels
EtBE	ethyl tert-butyl ether
ft bgs	feet below ground surface
µg/L	micrograms per liter
m bgs	meters below ground surface
MTBE	methyl tert-butyl ether
TAME	tert-amyl methyl ether
TBA	tert-butyl alcohol
TPHg	Total petroleum hydrocarbons as gasoline (i.e. purgeable hydrocarbons), C-6 to C-12 range

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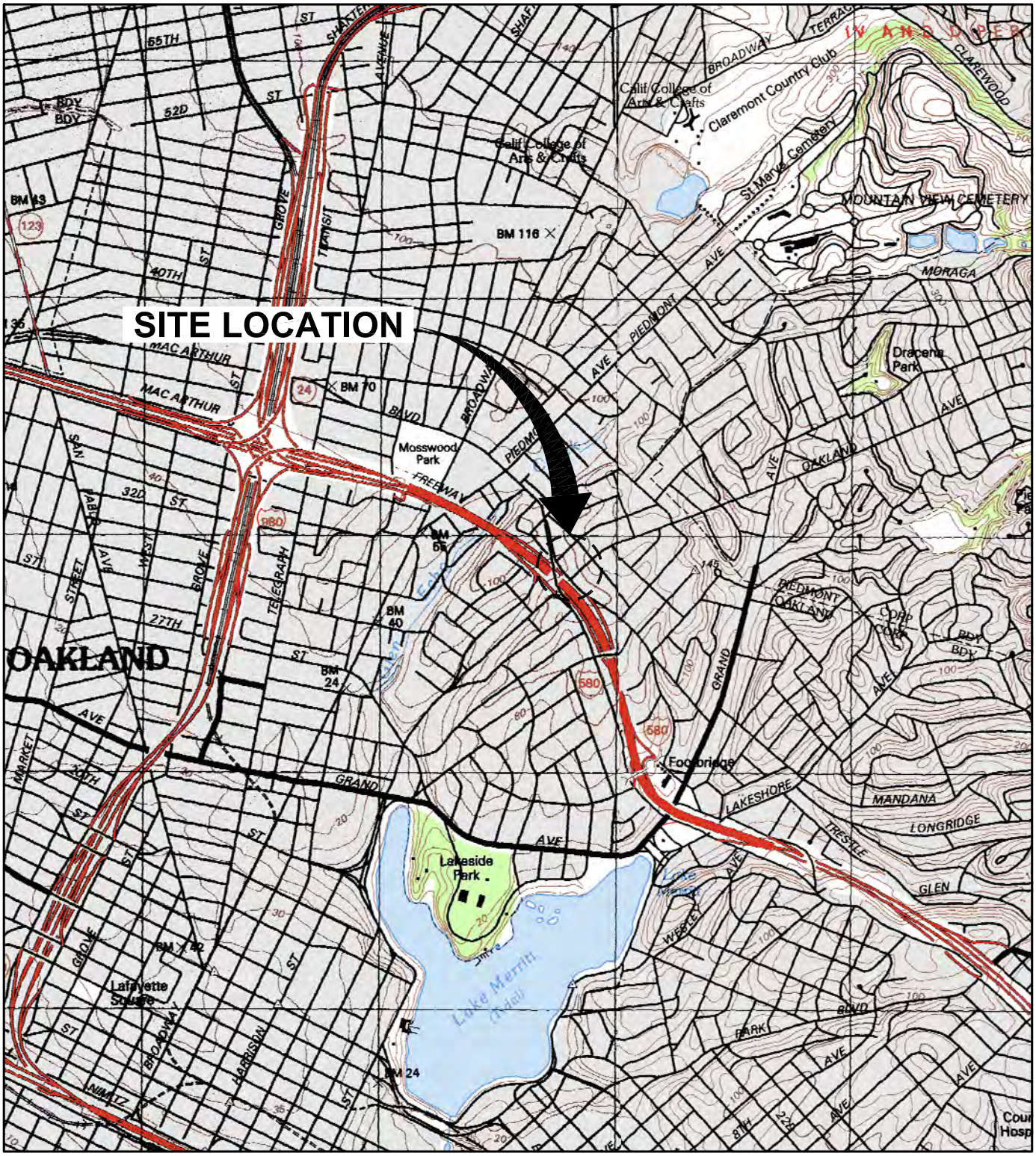
Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD.,OAKLAND WEST, CA., 1993 AND EAST, 1997.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

FORMER BP SERVICE STATION #11102
100 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

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FIGURE 1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD:-- PIC: S.GLENN PM: H.PHILLIPS TM: C.MEYER LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\PetalumaA\ACT\GP09BPNA\C111\B0000\Figure 1_Site Location Map.dwg LAYOUT: 1 SAVED: 9/23/2009 11:40 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/23/2009 12:24 PM BY: HARRIS, JESSICA
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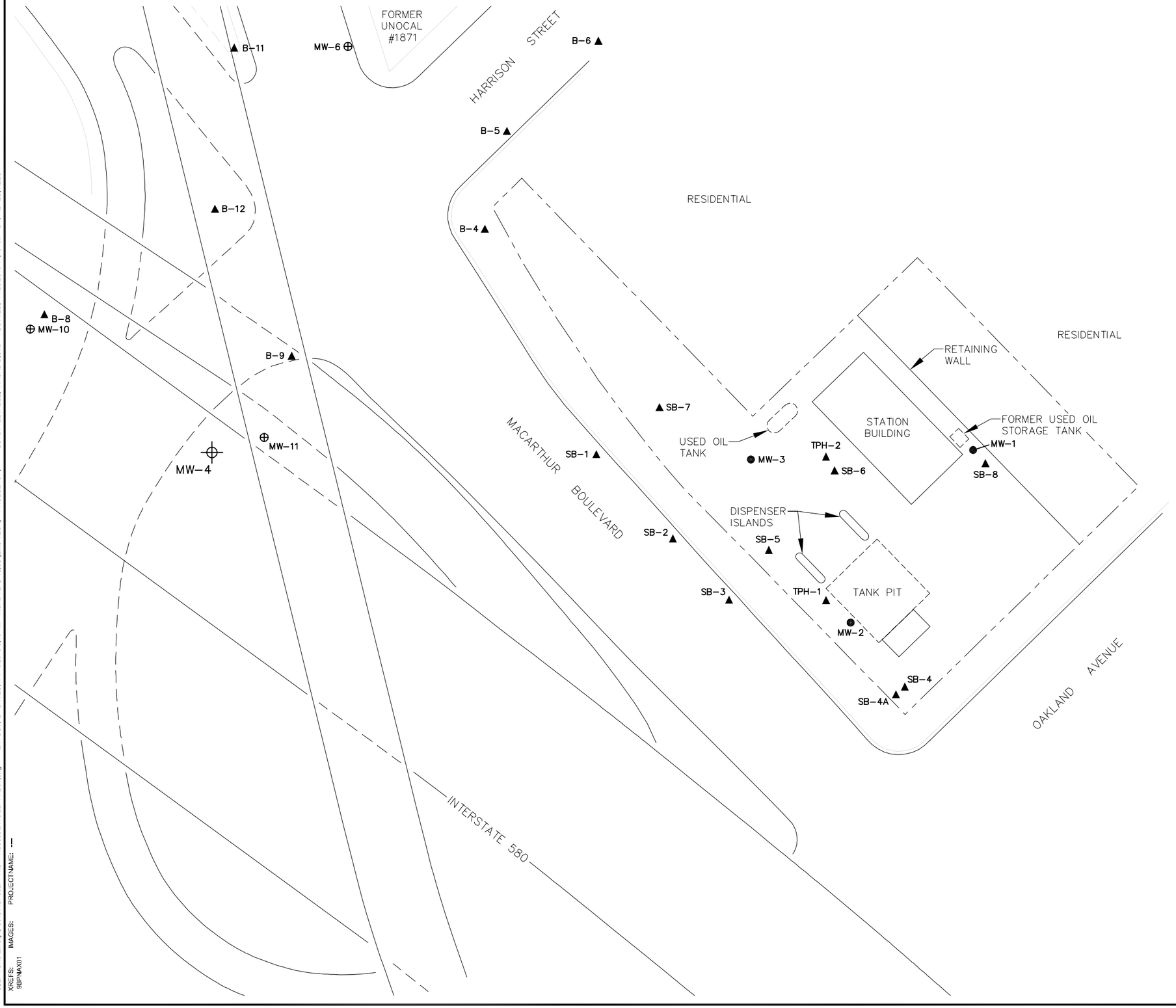
GP09BX02.tiff



LEGEND:

- NEW MONITORING WELL LOCATION
- BP MONITORING WELL LOCATION
- UNOCAL MONITORING WELL LOCATION
- FORMER SOIL BORING LOCATION

NOTES:

1. BASE MAP PREPARED BY DIGITIZING A HARD COPY OF A DRAWING BY "BROADBENT AND ASSOCIATES, INC"., TITLED "SITE LAYOUT PLAN WITH PROPOSED SOIL BORING AND WELL LOCATIONS", DATED 3/9/09, AT A SCALE OF 1'=40'
2. ALL LOCATIONS ARE APPROXIMATE.
3. THE NEW MONITORING WELL WAS INSTALLED ON 10/06/2010 AND DEVELOPED AND SAMPLED ON 10/12/2010.

FORMER STATION No. 11102
100 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE MAP WITH MONITORING WELL LOCATIONS

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FIGURE 2

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Appendix A

Alameda County Public Works
Well Permit

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 04/01/2010 By vickyh1

Permit Numbers: W2010-0184 to W2010-0186
Permits Valid from 06/16/2010 to 06/18/2010

Application Id: 1269970487289 **City of Project Site:** Oakland
Site Location: former BP Service Station #11102, 100 MacArthur Blvd, Oakland, CA
Project Start Date: 04/15/2010 **Completion Date:** 05/15/2010
Assigned Inspector: Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org
Extension Start Date: 06/16/2010 **Extension End Date:** 06/18/2010
Extension Count: 1 **Extended By:** vickyh1

Applicant: ARCADIS - US - Ben McKenna
2033 N Main St, Ste 34D, Walnut Creek, CA 94596 **Phone:** 925-274-1100
Property Owner: Myong Hwan Son Song Po Son
100 MacArthur Blvd., Oakland, CA 94610 **Phone:** 510-653-6519
Client: ** same as Property Owner **

Total Due: $1059.00
Receipt Number: WR2010-0092 **Total Amount Paid:** $1059.00
Payer Name : ARCADIS Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Well Construction-Monitoring-Monitoring - 2 Wells
Driller: WDC - Lic #: 283326 - Method: auger **Work Total: $794.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2010-0184	04/01/2010	07/14/2010	MW4	8.25 in.	2.00 in.	2.00 ft	20.00 ft
W2010-0185	04/01/2010	07/14/2010	MW5	8.25 in.	2.00 in.	2.00 ft	20.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with

appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.

5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

6. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

7. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

8. Minimum surface seal thickness is two inches of cement grout placed by tremie

9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.

10. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

Borehole(s) for Investigation-Geotechnical Study/CPT's - 1 Boreholes
Driller: WDC - Lic #: 283326 - Method: auger **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2010-0186	04/01/2010	07/14/2010	1	8.25 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities

or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. Cuttings may also be left on site or spread out as long as the applicants has approval from the property owner and the cuttings will not violate the State and County Clean Water laws (NPDES).

8. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

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Appendix B

Soil Boring Log and Well Installation Diagram

Date Start/Finish: 10/6/2010
Drilling Company: WDC Exploration & Wells
Driller's Name: WDC Exploration & Wells
Drilling Method: Air Knife / Hollow Stem Auger
Bit Size: 8-inch
Auger Size: 8-inch
Rig Type: 7730 DT
Sampling Method:
Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 20 ft
Surface Elevation: NA

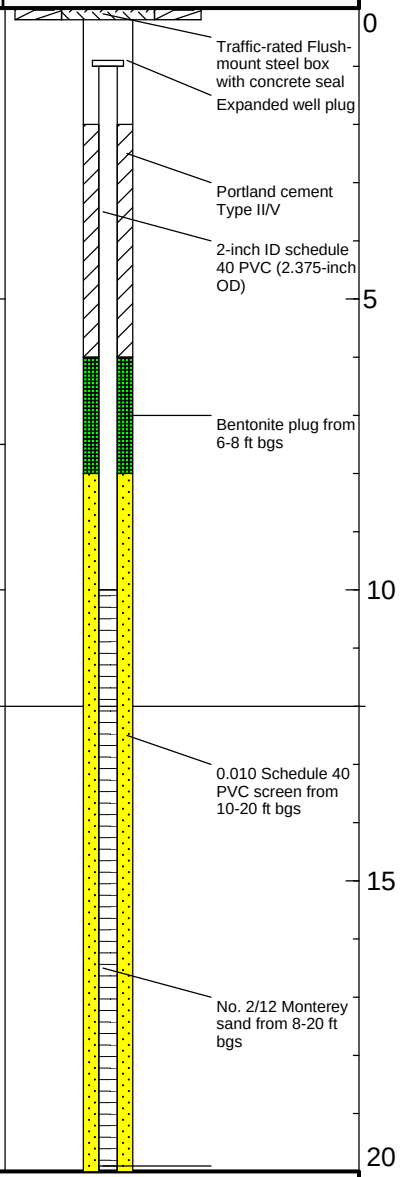
Description By: K. Lim
Reviewed By: Hollis Phillips, PG

Well/Boring ID: MW-4

Client: British Petroleum

Location: Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, California

DEPTH	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description
0		AK						Air Knife to 5 ft bgs
5	1	HSA	1.5					SILTY CLAY (CL), very dark gray (7.5YR 3/1), trace fine gravel, medium plasticity, soft, moist
	2	HSA	1					
	3	HSA	0					No Recovery
10	4	HSA	1					SILTY CLAY (CL), brown (7.5YR 4/3), trace fine gravel, medium plasticity, firm, moist
	5	HSA	1.5					
	6	HSA	1.5					SILTY CLAY (CL), yellowish brown (10YR 5/4), trace fine gravel, medium plasticity, firm, moist
15	7	HSA	1.5					
	8	HSA	1.5					
	9		1.5					
	10	HSA	1.5					
20	11	HSA	1					



ARCADIS
Infrastructure, environment, buildings

Remarks: AK = air knife; bgs = below ground surface; ft = feet; HSA = hollow stem auger; ID = inner diameter; in = inch; NA = not applicable; PG = professional geologist; PHC = petroleum hydrocarbon odor; PID = photoionization detector; ppm = parts per million; PVC = poly vinyl chloride; SAA = same as above

Air knife to 5 ft bgs; hollow stem auger from 5 ft to 20 ft bgs.

Analtyical samples were collected at 6.5 and 11.5 feet.

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Appendix C

Field Documentation

PROJECT NAME BP BP# 11102
CLIENT BP

LOG OF BORING / WELL MW-4

PAGE 1 OF

PROJECT LOCATION Oakland CA
PROJECT NUMBER GP09BPNA.C111.C0000
LOCATION oakland CA
OVA EQUIPMENT –
GROUND ELEVATION _____ HOLE DIAMETER 8"
TOP OF CASING ELEVATION – HOLE DEPTH 20'
FIRST ENCOUNTERED WATER –
STABILIZED WATER –
LOGGED BY Kayleigh Lim DATE 10/6/2010

DRILLING CONTRACTOR WDC
DRILLING METHOD 7730 DT
STAMP (IF APPLICABLE) AND/OR NOTES

DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	BLOW COUNTS (per 6 inches)	GRAPHIC LOG	DEPTHS	LITHOLOGIC DESCRIPTION	PID or OVA (ppm)	WELL DIAGRAM	DEPTH (feet)
0						Air knife down to 5' bgs		well box. Concrete.	
5	MW-4-6.5'			SC	5'	5' – Silty clay, trace fine gravel, very dark gray, med plasticity soft. moist		neat Cement. hydrated chips	
10	MW-4-11.5'				9'	9' – as above, firm, brown (7.5 YR 4/3)			
15					12'	12' – as above, yellowish brown (10 YR 5/4)		0.01" Screen	
20					EOB = 20'				

(Continued Next Page)

APPROVED BY: _____ DATE: _____

ARCADIS infrastructure, environment, business

BORING+WELL 2006 CM FIELD BLANK LFR MASTER PROJECT TEMPLATE AUG2006.GPJ LFR SEPT 2006.GDT 1/13/10

Date = 10/6/2010
Employee = Kayleigh Lau
Activity: Well installation mw-4
Weather: Sunny

0730: Arrive site, check out site & location selection
0745: ULC Arrive site, H&S, start scanning
0830: WDC Arrived site, H&S, [redacted]
0915: Geophysical completed, left site to wait for Hollis
0920: Air knife setup
0940: Air Knife start
1001: found storm drain (:) @ first air knife hole, move to new
1030: finish 2nd Air knife hole, backfill first
1050 start drilling
1145 Drilling completed, well shell tagged, DTW=15'
& soil samples collected @ 6.5 & 11.5'
Break for lunch
1215 HSA start for well Installation
Call Vicky to confirm time.
1330 Vicky arrived. inspect, check mw-4 for location mw-4, cancel mw-5 & SB

Vicky mentioned she will call Tobin in 2 weeks to refund & well Completion rpt
~1400 Vicky left site
1418 Test Amera pick up
1530 left site

Date = 10/12/10 Personnel: Kayleigh Lim
Activity: MW-4 well development
Sub = WDC (max)
Weather: Sunny

0800 Arrive site (WDC + KLL)
0813 = H2S meeting. 1 setup.

Pre purge
DTW = 13.14'
DTB = 19.83 } 0.165 gal/ft x 0.69 ft = 1.1 gal
2" dia.

0920 - Calibrate pH & conductivity meter

Time	pH	T(°C)	Cond(us)	(gallon) PV	DTW
0930	7.13	22.3	3999	0	
0935	7.28	20.9	39999	1.25	~~pulled~~
0937	7.08	20.9	3999	2.5	15.48
0940	7.06	20.5	3999	3.75	17.1
0945	7.02	20.6	3999	5	18.21
0955	7.06	20.2	3999	6.25	19.15
	Let recover				
1136	7.02	19.8	3098	7.5	16.99
1141	7.04	19.8	3830	8.75	18.37

Sampled @ 1145

1230 Left site.

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Appendix D

Laboratory Analytical Reports and
Chain-of-Custody Documentations

ANALYTICAL REPORT

Job Number: 720-31012-1

Job Description: BP #11102, Oakland

For:
ARCADIS U.S., Inc.
155 Montgomery Street
Suite 1500
San Francisco, CA 94104

Attention: Hollis Phillips

Approved for release.
Dimple Sharma
Project Manager I
10/20/2010 9:39 AM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
10/20/2010

cc: Mr. Jason Duda
Mr. Ben McKenna

CA ELAP Certification # 2496
The Chain(s) of Custody are included and are an integral part of this report.
The report shall not be reproduced except in full, without the written approval of the laboratory. The client, by accepting this report, also agrees not to alter any reports whether in the hard copy or electronic format and to use reasonable efforts to preserve the reports in the form and substance originally provided by TestAmerica.
A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

TestAmerica Laboratories, Inc.
TestAmerica San Francisco 1220 Quarry Lane, Pleasanton, CA 94566
Tel (925) 484-1919 Fax (925) 600-3002 www.testamericainc.com

Comments
No additional comments.

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

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

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-31012-3	**WASTE**				
Lead		6.2	2.0	mg/Kg	6010B

METHOD SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Description	Lab Location	Method	Preparation Method
Matrix Solid			
8260B / CA LUFT MS	TAL SF	SW846 8260B/CA_LUFTMS	
Purge and Trap	TAL SF		SW846 5030B
Metals (ICP)	TAL SF	SW846 6010B	
Preparation, Metals	TAL SF		SW846 3050B

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

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

SAMPLE SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-31012-1	MW-4-6.5'	Solid	10/06/2010 1058	10/06/2010 1715
720-31012-2	MW-4-11.5'	Solid	10/06/2010 1107	10/06/2010 1715
720-31012-3	Waste	Solid	10/06/2010 1127	10/06/2010 1715

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **MW-4-6.5'**

Lab Sample ID: 720-31012-1 Date Sampled: 10/06/2010 1058
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79445		Instrument ID:	HP7
Preparation:	5030B	Prep Batch: 720-79544		Lab File ID:	10071015.D
Dilution:	1.0			Initial Weight/Volume:	5.09 g
Date Analyzed:	10/07/2010 1623			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		4.9
Benzene		ND		4.9
EDB		ND		4.9
1,2-DCA		ND		4.9
Ethylbenzene		ND		4.9
Toluene		ND		4.9
Xylenes, Total		ND		9.8
Gasoline Range Organics (GRO)-C6-C12		ND		250
TBA		ND		9.8
DIPE		ND		4.9
TAME		ND		4.9
Ethyl t-butyl ether		ND		4.9

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	84		52 - 140
1,2-Dichloroethane-d4 (Surr)	101		60 - 140
Toluene-d8 (Surr)	94		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **MW-4-6.5'**

Lab Sample ID: 720-31012-1 Date Sampled: 10/06/2010 1058
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79587		Instrument ID:	HP9
Preparation:	5030B	Prep Batch: 720-79664		Lab File ID:	10081030.D
Dilution:	1.0			Initial Weight/Volume:	5.34 g
Date Analyzed:	10/09/2010 0024			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Ethanol		ND		94

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	80		52 - 140
1,2-Dichloroethane-d4 (Surr)	96		60 - 140
Toluene-d8 (Surr)	92		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **MW-4-11.5'**

Lab Sample ID: 720-31012-2 Date Sampled: 10/06/2010 1107
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79445		Instrument ID:	HP7
Preparation:	5030B	Prep Batch: 720-79544		Lab File ID:	10071016.D
Dilution:	1.0			Initial Weight/Volume:	5.05 g
Date Analyzed:	10/07/2010 1658			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		5.0
Benzene		ND		5.0
EDB		ND		5.0
1,2-DCA		ND		5.0
Ethylbenzene		ND		5.0
Toluene		ND		5.0
Xylenes, Total		ND		9.9
Gasoline Range Organics (GRO)-C6-C12		ND		250
TBA		ND		9.9
DIPE		ND		5.0
TAME		ND		5.0
Ethyl t-butyl ether		ND		5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	99		52 - 140
1,2-Dichloroethane-d4 (Surr)	98		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **MW-4-11.5'**

Lab Sample ID: 720-31012-2 Date Sampled: 10/06/2010 1107
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79587		Instrument ID:	HP9
Preparation:	5030B	Prep Batch: 720-79664		Lab File ID:	10081031.D
Dilution:	1.0			Initial Weight/Volume:	5.27 g
Date Analyzed:	10/09/2010 0056			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Ethanol		ND		95

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		52 - 140
1,2-Dichloroethane-d4 (Surr)	93		60 - 140
Toluene-d8 (Surr)	94		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **Waste**

Lab Sample ID: 720-31012-3 Date Sampled: 10/06/2010 1127
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79445		Instrument ID:	HP7
Preparation:	5030B	Prep Batch: 720-79544		Lab File ID:	10071017.D
Dilution:	1.0			Initial Weight/Volume:	5.03 g
Date Analyzed:	10/07/2010 1732			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND		5.0
Benzene		ND		5.0
EDB		ND		5.0
1,2-DCA		ND		5.0
Ethylbenzene		ND		5.0
Toluene		ND		5.0
Xylenes, Total		ND		9.9
Gasoline Range Organics (GRO)-C6-C12		ND		250
TBA		ND		9.9
DIPE		ND		5.0
TAME		ND		5.0
Ethyl t-butyl ether		ND		5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		52 - 140
1,2-Dichloroethane-d4 (Surr)	102		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **Waste**

Lab Sample ID: 720-31012-3 Date Sampled: 10/06/2010 1127
Client Matrix: Solid Date Received: 10/06/2010 1715

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79587		Instrument ID:	HP9
Preparation:	5030B	Prep Batch: 720-79664		Lab File ID:	10081032.D
Dilution:	1.0			Initial Weight/Volume:	5.08 g
Date Analyzed:	10/09/2010 0129			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Ethanol		ND		98

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	93		52 - 140
1,2-Dichloroethane-d4 (Surr)	94		60 - 140
Toluene-d8 (Surr)	93		58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Client Sample ID: **Waste**

Lab Sample ID: 720-31012-3 Date Sampled: 10/06/2010 1127
Client Matrix: Solid Date Received: 10/06/2010 1715

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-80169		Instrument ID:	Thermo ICP2
Preparation:	3050B	Prep Batch: 720-80105		Lab File ID:	10181004a.txt
Dilution:	4.0			Initial Weight/Volume:	1.02 g
Date Analyzed:	10/18/2010 2020			Final Weight/Volume:	50 mL
Date Prepared:	10/18/2010 1304				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Lead		6.2		2.0

DATA REPORTING QUALIFIERS

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Section	Qualifier	Description
GC/MS VOA		
	F	RPD of the MS and MSD exceeds the control limits

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:720-79445					
LCS 720-79544/2-A	Lab Control Sample	T	Solid	8260B/CA_LUFT	720-79544
LCS 720-79544/4-A	Lab Control Sample	T	Solid	8260B/CA_LUFT	720-79544
LCSD 720-79544/3-A	Lab Control Sample Duplicate	T	Solid	8260B/CA_LUFT	720-79544
LCSD 720-79544/5-A	Lab Control Sample Duplicate	T	Solid	8260B/CA_LUFT	720-79544
MB 720-79544/1-A	Method Blank	T	Solid	8260B/CA_LUFT	720-79544
720-31012-1	MW-4-6.5'	T	Solid	8260B/CA_LUFT	720-79544
720-31012-2	MW-4-11.5'	T	Solid	8260B/CA_LUFT	720-79544
720-31012-3	Waste	T	Solid	8260B/CA_LUFT	720-79544
Prep Batch: 720-79544					
LCS 720-79544/2-A	Lab Control Sample	T	Solid	5030B	
LCS 720-79544/4-A	Lab Control Sample	T	Solid	5030B	
LCSD 720-79544/3-A	Lab Control Sample Duplicate	T	Solid	5030B	
LCSD 720-79544/5-A	Lab Control Sample Duplicate	T	Solid	5030B	
MB 720-79544/1-A	Method Blank	T	Solid	5030B	
720-31012-1	MW-4-6.5'	T	Solid	5030B	
720-31012-2	MW-4-11.5'	T	Solid	5030B	
720-31012-3	Waste	T	Solid	5030B	
Analysis Batch:720-79587					
LCS 720-79664/2-A	Lab Control Sample	T	Solid	8260B/CA_LUFT	720-79664
LCSD 720-79664/3-A	Lab Control Sample Duplicate	T	Solid	8260B/CA_LUFT	720-79664
MB 720-79664/1-A	Method Blank	T	Solid	8260B/CA_LUFT	720-79664
720-31012-1	MW-4-6.5'	T	Solid	8260B/CA_LUFT	720-79664
720-31012-1MS	Matrix Spike	T	Solid	8260B/CA_LUFT	720-79664
720-31012-1MSD	Matrix Spike Duplicate	T	Solid	8260B/CA_LUFT	720-79664
720-31012-2	MW-4-11.5'	T	Solid	8260B/CA_LUFT	720-79664
720-31012-3	Waste	T	Solid	8260B/CA_LUFT	720-79664
Prep Batch: 720-79664					
LCS 720-79664/2-A	Lab Control Sample	T	Solid	5030B	
LCSD 720-79664/3-A	Lab Control Sample Duplicate	T	Solid	5030B	
MB 720-79664/1-A	Method Blank	T	Solid	5030B	
720-31012-1	MW-4-6.5'	T	Solid	5030B	
720-31012-1MS	Matrix Spike	T	Solid	5030B	
720-31012-1MSD	Matrix Spike Duplicate	T	Solid	5030B	
720-31012-2	MW-4-11.5'	T	Solid	5030B	
720-31012-3	Waste	T	Solid	5030B	

Report Basis
T = Total

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-80105					
LCS 720-80105/2-A	Lab Control Sample	T	Solid	3050B	
LCSD 720-80105/3-A	Lab Control Sample Duplicate	T	Solid	3050B	
MB 720-80105/1-A	Method Blank	T	Solid	3050B	
720-31012-3	Waste	T	Solid	3050B	
Analysis Batch:720-80169					
LCS 720-80105/2-A	Lab Control Sample	T	Solid	6010B	720-80105
LCSD 720-80105/3-A	Lab Control Sample Duplicate	T	Solid	6010B	720-80105
MB 720-80105/1-A	Method Blank	T	Solid	6010B	720-80105
720-31012-3	Waste	T	Solid	6010B	720-80105

Report Basis

T = Total

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Method Blank - Batch: 720-79544

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-79544/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 10/07/2010 1000
Date Prepared: 10/07/2010 0800

Analysis Batch: 720-79445
Prep Batch: 720-79544
Units: ug/Kg

Instrument ID: HP7
Lab File ID: 10071004.D
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		5.0
Benzene	ND		5.0
EDB	ND		5.0
1,2-DCA	ND		5.0
Ethylbenzene	ND		5.0
Toluene	ND		5.0
m-Xylene & p-Xylene	ND		5.0
o-Xylene	ND		5.0
Xylenes, Total	ND		10
Gasoline Range Organics (GRO)-C6-C12	ND		250
TBA	ND		10
DIPE	ND		5.0
TAME	ND		5.0
Ethyl t-butyl ether	ND		5.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	99	52 - 140
1,2-Dichloroethane-d4 (Surr)	103	60 - 140
Toluene-d8 (Surr)	96	58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-79544

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-79544/2-A	Analysis Batch:	720-79445	Instrument ID:	HP7
Client Matrix:	Solid	Prep Batch:	720-79544	Lab File ID:	10071005.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/07/2010 1034			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

LCSD Lab Sample ID:	LCSD 720-79544/3-A	Analysis Batch:	720-79445	Instrument ID:	HP7
Client Matrix:	Solid	Prep Batch:	720-79544	Lab File ID:	10071006.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/07/2010 1108			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methyl tert-butyl ether	89	90	71 - 144	1	20		
Benzene	91	89	82 - 124	1	20		
EDB	97	97	79 - 140	0	20		
1,2-DCA	97	95	74 - 125	2	20		
Ethylbenzene	98	97	80 - 137	0	20		
Toluene	96	94	83 - 128	2	20		
m-Xylene & p-Xylene	98	98	79 - 146	1	20		
o-Xylene	96	95	84 - 140	1	20		
TBA	96	96	76 - 119	0	20		
DIPE	90	86	83 - 131	5	20		
TAME	92	93	74 - 140	1	20		
Ethyl t-butyl ether	89	87	76 - 129	1	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	100	98	52 - 140
1,2-Dichloroethane-d4 (Surr)	97	97	60 - 140
Toluene-d8 (Surr)	98	95	58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-79544

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-79544/4-A	Analysis Batch:	720-79445	Instrument ID:	HP7
Client Matrix:	Solid	Prep Batch:	720-79544	Lab File ID:	10071007.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/07/2010 1142			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

LCSD Lab Sample ID:	LCSD 720-79544/5-A	Analysis Batch:	720-79445	Instrument ID:	HP7
Client Matrix:	Solid	Prep Batch:	720-79544	Lab File ID:	10071008.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/07/2010 1216			Final Weight/Volume:	10 mL
Date Prepared:	10/07/2010 0800				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Gasoline Range Organics (GRO)-C6-C12	80	86	64 - 107	7	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	102	102	52 - 140
1,2-Dichloroethane-d4 (Surr)	98	104	60 - 140
Toluene-d8 (Surr)	96	99	58 - 140

Client: ARCADIS U.S., Inc.

Job Number: 720-31012-1

Method Blank - Batch: 720-79664

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-79664/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 10/08/2010 2246
Date Prepared: 10/08/2010 1700

Analysis Batch: 720-79587
Prep Batch: 720-79664
Units: ug/Kg

Instrument ID: HP9
Lab File ID: 10081027.D
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		5.0
Benzene	ND		5.0
EDB	ND		5.0
1,2-DCA	ND		5.0
Ethylbenzene	ND		5.0
Toluene	ND		5.0
m-Xylene & p-Xylene	ND		5.0
o-Xylene	ND		5.0
Xylenes, Total	ND		10
Gasoline Range Organics (GRO)-C6-C12	ND		250
TBA	ND		10
Ethanol	ND		100
DIPE	ND		5.0
TAME	ND		5.0
Ethyl t-butyl ether	ND		5.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	95	52 - 140
1,2-Dichloroethane-d4 (Surr)	97	60 - 140
Toluene-d8 (Surr)	93	58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-79664

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-79664/2-A	Analysis Batch:	720-79587	Instrument ID:	HP9
Client Matrix:	Solid	Prep Batch:	720-79664	Lab File ID:	10081023.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/08/2010 2038			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

LCSD Lab Sample ID:	LCSD 720-79664/3-A	Analysis Batch:	720-79587	Instrument ID:	HP9
Client Matrix:	Solid	Prep Batch:	720-79664	Lab File ID:	10081024.D
Dilution:	1.0	Units:	ug/Kg	Initial Weight/Volume:	5 g
Date Analyzed:	10/08/2010 2110			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methyl tert-butyl ether	105	98	71 - 144	7	20		
Benzene	108	109	82 - 124	1	20		
EDB	110	104	79 - 140	5	20		
1,2-DCA	105	102	74 - 125	2	20		
Ethylbenzene	108	110	80 - 137	1	20		
Toluene	109	111	83 - 128	1	20		
m-Xylene & p-Xylene	105	106	79 - 146	1	20		
o-Xylene	107	108	84 - 140	1	20		
TBA	97	96	76 - 119	1	20		
Ethanol	92	92	49 - 162	0	20		
DIPE	103	102	83 - 131	1	20		
TAME	112	107	74 - 140	5	20		
Ethyl t-butyl ether	99	95	76 - 129	4	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	98	95	52 - 140
1,2-Dichloroethane-d4 (Surr)	96	94	60 - 140
Toluene-d8 (Surr)	94	94	58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-79664

Method: 8260B/CA_LUFTMS
Preparation: 5030B

MS Lab Sample ID:	720-31012-1	Analysis Batch:	720-79587	Instrument ID:	HP9
Client Matrix:	Solid	Prep Batch:	720-79664	Lab File ID:	10081036.D
Dilution:	1.0			Initial Weight/Volume:	5.72 g
Date Analyzed:	10/09/2010 0338			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

MSD Lab Sample ID:	720-31012-1	Analysis Batch:	720-79587	Instrument ID:	HP9
Client Matrix:	Solid	Prep Batch:	720-79664	Lab File ID:	10081037.D
Dilution:	1.0			Initial Weight/Volume:	5.20 g
Date Analyzed:	10/09/2010 0410			Final Weight/Volume:	10 mL
Date Prepared:	10/08/2010 1700				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Methyl tert-butyl ether	99	99	69 - 130	10	20		
Benzene	103	106	70 - 130	13	20		
EDB	98	99	66 - 135	10	20		
1,2-DCA	100	102	70 - 130	12	20		
Ethylbenzene	104	110	65 - 130	15	20		
Toluene	107	114	70 - 130	16	20		
m-Xylene & p-Xylene	99	106	70 - 130	16	20		
o-Xylene	102	107	68 - 130	15	20		
TBA	92	97	70 - 130	14	20		
Ethanol	91	104	70 - 130	22	20		F
DIPE	101	104	70 - 130	12	20		
TAME	106	108	70 - 130	11	20		
Ethyl t-butyl ether	95	97	70 - 130	11	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	93	89	52 - 140
1,2-Dichloroethane-d4 (Surr)	96	95	60 - 140
Toluene-d8 (Surr)	93	92	58 - 140

Client: ARCADIS U.S., Inc. Job Number: 720-31012-1

Method Blank - Batch: 720-80105

Method: 6010B
Preparation: 3050B

Lab Sample ID: MB 720-80105/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 10/18/2010 2008
Date Prepared: 10/18/2010 1304

Analysis Batch: 720-80169
Prep Batch: 720-80105
Units: mg/Kg

Instrument ID: Thermo ICP2
Lab File ID: 10181004a.txt
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Lead	ND		0.49

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-80105

Method: 6010B
Preparation: 3050B

LCS Lab Sample ID: LCS 720-80105/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 10/18/2010 2012
Date Prepared: 10/18/2010 1304

Analysis Batch: 720-80169
Prep Batch: 720-80105
Units: mg/Kg

Instrument ID: Thermo ICP2
Lab File ID: 10181004a.txt
Initial Weight/Volume: .96 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-80105/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 10/18/2010 2016
Date Prepared: 10/18/2010 1304

Analysis Batch: 720-80169
Prep Batch: 720-80105
Units: mg/Kg

Instrument ID: Thermo ICP2
Lab File ID: 10181004a.txt
Initial Weight/Volume: 1.04 g
Final Weight/Volume: 50 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Lead	98	97	80 - 120	9	20		

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

720-31012

TESTAMERICA San Francisco Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: 127358

Date 10/6/2010 Page 1 of 1

Report To

Attn: Ben McKenna
Company: Arcadis
Address: Walnut Creek
Phone: Email: Ben.McKenna@arcadis-us.com
Bill To:
Sampled By: Kayleigh Lim
Attn:
Phone: 714 824 2014

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	TPH EPA - ☐ 8260B ☐ Gas w/ ☐ BTEX ☐ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☒ Other C6-C12	EPA 8260B: ☐ Gas ☒ BTEX ☒ 5 Oxygenates ☒ DCA, EDB ☒ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☒ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
MW-4-6.5'	10/6/10	1058	SOIL	—		X	X																			3
MW-4-11.5'	10/6/10	1107	SOIL	—		X	X																			3
Waste	10/6/10	1127	SOIL	—		X	X								X											3

Page 23 of 24

Project Info.

Project Name: BP #11102
Project#: GP09BPNA-C111.COVID
PO#:
Credit Card#:

Sample Receipt

of Containers: 3
Head Space:
Temp: 3.8°C
Conforms to record:

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

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank
Fund EDF
Special Instructions / Comments: ☐ Global ID _____

See Terms and Conditions on reverse
*TestAmerica SF reports 8015M from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1418	Signature: [signature] Time: 1715	Signature: Time:
Printed Name: Kayleigh Lim Date: 10/6/10	Printed Name: Bryan Thomas Date: 10/6/10	Printed Name: Date:
Company: Arcadis	Company: TestAmerica	Company:
1) Received by:	**2) Received by:**	**3) Received by:**
Signature: [signature] Time: 1418	Signature: [signature] Time: 1715	Signature: Time:
Printed Name: Bryan Thomas Date: 10/6/10	Printed Name: TMF Date: 10/6/10	Printed Name: Date:
Company: TestAmerica	Company:	Company:

Rev09/09

Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-31012-1

Login Number: 31012

List Source: TestAmerica San Francisco

Creator: Hoang, Julie

List Number: 1

Question	T / F/ NA	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	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

ANALYTICAL REPORT

Job Number: 720-31130-1

Job Description: BP #11102, Oakland

For:
ARCADIS U.S., Inc.
155 Montgomery Street
Suite 1500
San Francisco, CA 94104

Attention: Hollis Phillips

Approved for release.
Dimple Sharma
Project Manager I
10/21/2010 3:04 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
10/21/2010

cc: Mr. Ben McKenna

CA ELAP Certification # 2496
The Chain(s) of Custody are included and are an integral part of this report.
The report shall not be reproduced except in full, without the written approval of the laboratory. The client, by accepting this report, also agrees not to alter any reports whether in the hard copy or electronic format and to use reasonable efforts to preserve the reports in the form and substance originally provided by TestAmerica.
A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

Comments
No additional comments.

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

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

EXECUTIVE SUMMARY - Detections

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-31130-1	**MW-4**				
MTBE		55	0.50	ug/L	8260B/CA_LUFTMS
TBA		8.7	4.0	ug/L	8260B/CA_LUFTMS

METHOD SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
8260B / CA LUFT MS	TAL SF	SW846 8260B/CA_LUFTMS	
Purge and Trap	TAL SF		SW846 5030B

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

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

SAMPLE SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-31130-1	MW-4	Water	10/12/2010 1145	10/12/2010 1700

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Client Sample ID: **MW-4**

Lab Sample ID: 720-31130-1 Date Sampled: 10/12/2010 1145
Client Matrix: Water Date Received: 10/12/2010 1700

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-79994		Instrument ID:	HP9
Preparation:	5030B			Lab File ID:	10151009.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	10/15/2010 1327			Final Weight/Volume:	10 mL
Date Prepared:	10/15/2010 1327				

Analyte	Result (ug/L)	Qualifier	RL
MTBE	55		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
Gasoline Range Organics (GRO)-C6-C12	ND		50
TBA	8.7		4.0
Ethanol	ND		250
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	88		67 - 130
1,2-Dichloroethane-d4 (Surr)	104		67 - 130
Toluene-d8 (Surr)	88		70 - 130

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:720-79994					
LCS 720-79994/5	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCS 720-79994/7	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-79994/6	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
LCSD 720-79994/8	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-79994/4	Method Blank	T	Water	8260B/CA_LUFT	
720-31130-1	MW-4	T	Water	8260B/CA_LUFT	

Report Basis
T = Total

Client: ARCADIS U.S., Inc.

Job Number: 720-31130-1

Method Blank - Batch: 720-79994

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-79994/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2010 0956
Date Prepared: 10/15/2010 0956

Analysis Batch: 720-79994
Prep Batch: N/A
Units: ug/L

Instrument ID: HP9
Lab File ID: 10151004.D
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
MTBE	ND		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
Gasoline Range Organics (GRO)-C6-C12	ND		50
TBA	ND		4.0
Ethanol	ND		250
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	84	67 - 130
1,2-Dichloroethane-d4 (Surr)	102	67 - 130
Toluene-d8 (Surr)	88	70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-79994

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-79994/5	Analysis Batch:	720-79994	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	10151005.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/15/2010 1028			Final Weight/Volume:	10 mL
Date Prepared:	10/15/2010 1028				

LCSD Lab Sample ID:	LCSD 720-79994/6	Analysis Batch:	720-79994	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	10151006.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/15/2010 1101			Final Weight/Volume:	10 mL
Date Prepared:	10/15/2010 1101				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
MTBE	92	96	62 - 130	4	20		
Benzene	104	105	82 - 127	0	20		
EDB	103	103	70 - 130	1	20		
1,2-DCA	102	103	70 - 126	1	20		
Ethylbenzene	109	108	86 - 135	1	20		
Toluene	108	109	83 - 129	1	20		
TBA	99	98	82 - 116	1	20		
Ethanol	109	111	31 - 216	1	30		
DIPE	98	100	74 - 155	2	20		
TAME	98	101	79 - 129	4	20		
Ethyl t-butyl ether	87	90	70 - 130	4	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	97	98	67 - 130
1,2-Dichloroethane-d4 (Surr)	97	98	67 - 130
Toluene-d8 (Surr)	93	93	70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-31130-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-79994

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-79994/7	Analysis Batch:	720-79994	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	10151007.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/15/2010 1134			Final Weight/Volume:	10 mL
Date Prepared:	10/15/2010 1134				

LCSD Lab Sample ID:	LCSD 720-79994/8	Analysis Batch:	720-79994	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	10151008.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/15/2010 1206			Final Weight/Volume:	10 mL
Date Prepared:	10/15/2010 1206				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Gasoline Range Organics (GRO)-C6-C12	80	82	58 - 106	2	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	96	97	67 - 130
1,2-Dichloroethane-d4 (Surr)	100	99	67 - 130
Toluene-d8 (Surr)	95	95	70 - 130

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

720-31130

TESTAMERICA San Francisco Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756

Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: 127481

Date 10/12/10 Page 1 of 1

Report To

Attn: Ben McKenna

Company: Arcadis

Address: Walnut Creek

Phone: Email: ben.mckenna@arcadis-us.com

Bill To:

Sampled By: Kayleigh Gray

Attn:

Phone: 714 824 2014

Analysis Request

Sample ID	Date	Time	Mat rix	Preserv	TPH EPA - ☐ 8260B ☐ Gas w/ BTEX MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	EPA 8260B: ☐ Gas BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
MW-4	10/12/10	1145	W	HCL	X	X																			6

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Project Info

Project Name: BP #11102

Project#:

PO#:

Credit Card#:

Sample Receipt

of Containers: 6

Head Space: —

Temp: 2.7°C

Conforms to record:

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

Other:

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

Fund EDF

Special Instructions / Comments: ☐ Global ID _____

See Terms and Conditions on reverse

*TestAmerica SF reports 8015M from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: 1340 Time	Signature: 1700 Time	Signature: Time
Printed Name: Kayleigh 10/12/10 Date	Printed Name: Ed Mattinez 10.12.10 Date	Printed Name: Date
Company:	Company: TASF	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: 1340 Time	Signature: 1700 Time	Signature: Time
Printed Name: Ed Martinez 10.12.10 Date	Printed Name: Mulbery 10-12-10 Date	Printed Name: Date
Company: TASF	Company:	Company:

Rev09/09

Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-31130-1

Login Number: 31130

List Source: TestAmerica San Francisco

Creator: Hoang, Julie

List Number: 1

Question	T / F/ NA	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	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

ANALYTICAL REPORT

Job Number: 720-31760-1

Job Description: BP #11102, Oakland

For:
ARCADIS U.S., Inc.
155 Montgomery Street
Suite 1500
San Francisco, CA 94104

Attention: Hollis Phillips

Approved for release.
Dimple Sharma
Project Manager I
11/16/2010 5:01 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
11/16/2010

cc: Mr. Jason Duda
Mr. Ben McKenna

CA ELAP Certification # 2496
The Chain(s) of Custody are included and are an integral part of this report.

A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

Comments
No additional comments.

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

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

EXECUTIVE SUMMARY - Detections

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-31760-1	**MW-4 (11/12/10)**				
MTBE		95	0.50	ug/L	8260B/CA_LUFTMS
TBA		6.9	4.0	ug/L	8260B/CA_LUFTMS
TAME		0.75	0.50	ug/L	8260B/CA_LUFTMS

METHOD SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
8260B / CA LUFT MS	TAL SF	SW846 8260B/CA_LUFTMS	
Purge and Trap	TAL SF		SW846 5030B

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

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

SAMPLE SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-31760-1	MW-4 (11/12/10)	Water	11/12/2010 1320	11/12/2010 1423

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Client Sample ID: **MW-4 (11/12/10)**

Lab Sample ID: 720-31760-1 Date Sampled: 11/12/2010 1320
Client Matrix: Water Date Received: 11/12/2010 1423

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-81693		Instrument ID:	HP9
Preparation:	5030B			Lab File ID:	11121041.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	11/13/2010 0552			Final Weight/Volume:	10 mL
Date Prepared:	11/13/2010 0552				

Analyte	Result (ug/L)	Qualifier	RL
MTBE	95		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
Gasoline Range Organics (GRO)-C6-C12	ND		50
TBA	6.9		4.0
Ethanol	ND		250
DIPE	ND		0.50
TAME	0.75		0.50
Ethyl t-butyl ether	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	91		67 - 130
1,2-Dichloroethane-d4 (Surr)	107		67 - 130
Toluene-d8 (Surr)	102		70 - 130

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:720-81693					
LCS 720-81693/6	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCS 720-81693/8	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-81693/7	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
LCSD 720-81693/9	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-81693/5	Method Blank	T	Water	8260B/CA_LUFT	
720-31760-1	MW-4 (11/12/10)	T	Water	8260B/CA_LUFT	

Report Basis
T = Total

Client: ARCADIS U.S., Inc.

Job Number: 720-31760-1

Method Blank - Batch: 720-81693

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-81693/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/12/2010 2252
Date Prepared: 11/12/2010 2252

Analysis Batch: 720-81693
Prep Batch: N/A
Units: ug/L

Instrument ID: HP9
Lab File ID: 11121028.D
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
MTBE	ND		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
Gasoline Range Organics (GRO)-C6-C12	ND		50
TBA	ND		4.0
Ethanol	ND		250
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	90	67 - 130
1,2-Dichloroethane-d4 (Surr)	104	67 - 130
Toluene-d8 (Surr)	104	70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-81693

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-81693/6	Analysis Batch:	720-81693	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11121024.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/12/2010 2044			Final Weight/Volume:	10 mL
Date Prepared:	11/12/2010 2044				

LCSD Lab Sample ID:	LCSD 720-81693/7	Analysis Batch:	720-81693	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11121025.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/12/2010 2116			Final Weight/Volume:	10 mL
Date Prepared:	11/12/2010 2116				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
MTBE	120	121	62 - 130	1	20		
Benzene	114	112	82 - 127	2	20		
EDB	113	112	70 - 130	0	20		
1,2-DCA	106	104	70 - 126	2	20		
Ethylbenzene	114	111	86 - 135	3	20		
Toluene	109	107	83 - 129	2	20		
TBA	99	98	82 - 116	1	20		
Ethanol	95	89	31 - 216	7	30		
DIPE	122	120	74 - 155	2	20		
TAME	112	113	79 - 129	1	20		
Ethyl t-butyl ether	113	112	70 - 130	1	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	107	108	67 - 130
1,2-Dichloroethane-d4 (Surr)	103	102	67 - 130
Toluene-d8 (Surr)	110	110	70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-31760-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-81693

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-81693/8	Analysis Batch:	720-81693	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11121026.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/12/2010 2149			Final Weight/Volume:	10 mL
Date Prepared:	11/12/2010 2149				

LCSD Lab Sample ID:	LCSD 720-81693/9	Analysis Batch:	720-81693	Instrument ID:	HP9
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11121027.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/12/2010 2221			Final Weight/Volume:	10 mL
Date Prepared:	11/12/2010 2221				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Gasoline Range Organics (GRO)-C6-C12	78	78	58 - 106	0	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	105	105	67 - 130
1,2-Dichloroethane-d4 (Surr)	107	105	67 - 130
Toluene-d8 (Surr)	114	112	70 - 130

TestAmerica
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720-31760

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

Reference #: 128112

Date_____ Page_____of_____

Report To

Attn: Jason Dudon
Company: BAI
Address: 1324 Mangrove Ste 212 Chico CA 95926
Phone: 7705306611400 Email: Jdudon@Broadbentinc.com
Bill To: Aranis
Sampled By: Eric Farrar
Attn:
Phone:

Analysis Request

Sample ID	Date	Time	Mat'x	Preserv	TPH EPA - ☐ 8260B ☐ Gas w/ ☐ BTEX ☐ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other ___	EPA 8260B ☐ Gas ☐ BTEX ☐ 5 Oxygenates (DCA, EDB) ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other: ___	Low Level Metals by EPA 200.8/6020 (ICP-MS): ___	☐ W.E.T (STLC) ☐ TCLP ☐	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions : ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
MW-4 (11/12/10)	11/12/10	1320	AQ	HCl			X																		3V
Trip Blank	11/12/10	—	AQ	HCl			X																		2V

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Project Info

Project Name: BP 11102
Project#:
PO#: GB09BPNA.C111
Credit Card#:

Sample Receipt

of Containers:
Head Space:
Temp: 5.8°C
Conforms to record:

TAT: (5 Day) 3 Day 2 Day 1 Day
Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank
Fund EDF
Special Instructions / Comments: ☐ Global ID _____
Hold TB

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

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1423	Signature: Time:	Signature: Time:
Printed Name: Eric Farrar Date: 11/12/10	Printed Name: Date:	Printed Name: Date:
Company: BAI	Company:	Company:
1) Received by:	**2) Received by:**	**3) Received by:**
Signature: [signature] Time: 1423	Signature: Time:	Signature: Time:
Printed Name: [signature] Date: 11/12/10	Printed Name: Date:	Printed Name: Date:
Company: TASF	Company:	Company:

Rev09/09

Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-31760-1

Login Number: 31760

List Source: TestAmerica San Francisco

Creator: Hoang, Julie

List Number: 1

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