ConocoPhillips
76 Broadway
Sacramento, California 95818

RECEIVED

10:26 am, Mar 02, 2011

Alameda County
Environmental Health

February 28, 2011

Ms. Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Additional Assessment Report**
76 Station No. 0843 (2349)
1629 Webster Street
Alameda, California

Dear Ms. Jakub,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct. In accordance with Section 25297.15(a) of the Health & Safety Code, I also certify that I have notified all responsible landowners of the enclosed proposed action.

If you have any questions or need additional information, please contact me at (916) 558-7612.

Sincerely,

Bill Borgh

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment

ADDITIONAL ASSESSMENT REPORT

76 Station 0843 (2349)
1629 Webster St
Alameda, CA

Antea Group Project No. C102349220

February 28, 2011

Prepared for:
ConocoPhillips
76 Broadway
Sacramento, CA 95818

Prepared by:
Antea™Group
11050 White Rock Road
Suite 110
Rancho Cordova, CA
95670

Inogen Environmental Alliance

Antea USA, Inc.

Antea Group
11050 White Rock Road, Suite 110
Rancho Cordova, California 95670
www.anteagroup.com

February 28, 2011

Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: **ADDITIONAL ASSESSMENT REPORT**
Former 76 Service Station No. 0843 (2349)
1629 Webster Street
Alameda, California
AOC 2807
RO# 0450

Dear Ms. Jakub:

Due to global rebranding, as of January 5, 2011 Delta Consultants has become Antea Group. Any work performed or reports submitted prior to this date will be referenced using the Delta name.

On behalf of ConocoPhillips Company (COP), Antea Group is submitting this *Additional Assessment Report*, for the 76 Service Station 0843/2349, located at 1629 Webster Street in Alameda, California (**Figure 1**). Work discussed herein was conducted in response to the October 4, 2010 letter from Alameda County Environmental Health Care Services (ACEHCS) to COP requesting additional information prior to approving activities recommended by Delta in the April 7, 2010 *Corrective Action Plan*. A copy of the approval letter is provided as **Appendix A**.

Please contact James Barnard at (916) 503-1279 if you have questions.

Sincerely,
ANTEA GROUP

James B. Barnard, P.G.
Project Manager

cc: Mr. Bill Borgh - ConocoPhillips (electronic copy only)

Inogen

ADDITIONAL ASSESSMENT REPORT

Former 76 Service Station No. 0843 (2349)
1629 Webster Street
Alameda, Alameda County, California

February 28, 2010

Prepared for

ConocoPhillips Company
76 Broadway
Sacramento, California

The material and data in this report were prepared under the supervision and direction of the undersigned.

Antea Group

Alan Buehler
Staff Geologist

James B. Barnard, P.G.
Project Manager
California Registered Professional Geologist No. 7478

1.0 INTRODUCTION

On behalf of ConocoPhillips Company (COP), Antea is submitting this *Work Plan for Additional Assessment*, for the 76 Service Station 0843/2349, located at 1629 Webster Street in Alameda, California (Figure 1). Proposed activities are in response to the August 6, 2010 electronic mail letter to COP requesting additional information prior to approving activities recommended by Delta in the April 7, 2010 *Corrective Action Plan.* A copy of the email correspondence document is provided as Appendix A.

2.0 SITE DESCRIPTION

The site is located at the southwest corner of Webster Street and Pacific Avenue in Alameda, California (Figure 1). It is an inactive service station, with no existing USTs or onsite structures.

2.1 PREVIOUS ASSESSMENT

A Site Map with Historical Sampling Locations is provided as Figure 2. A Site Map showing proposed boring locations, the possible described area for future excavation activities, as well as current sampling locations is show as Figure 3.

June 1998 - Tosco Marketing Company (Tosco, now COP) exhumed and removed two 10,000-gallon gasoline underground storage tanks (USTs), one 550-gallon used oil UST, product lines, and fuel dispensers. Two holes approximately ¾-inch in diameter were observed in the used oil tank during removal. Approximately 338 tons of hydrocarbon impacted soil and backfill were removed from beneath the former USTs, fuel dispensers, and product lines during the UST removal activities.

March 1999 – Four soil borings (B1 through B4) were advanced at the site and converted to monitor wells MW-1 through MW-4. Groundwater was encountered from 8 to 15 feet below ground surface (bgs). Static groundwater was observed at depths ranging from 4 and 6 feet bgs subsequent to well installation.

December 1999 – Two off-site soil borings (B5 and B6) were advanced and subsequently converted to monitor wells MW-5 and MW-6. Groundwater was initially present at approximately 10 feet bgs. Static groundwater was observed at a depth of approximately 7 feet bgs subsequent to well installation.

March 2001 - An underground utility survey was conducted to identify and locate underground utilities beneath and in the vicinity of the site that could provide potential preferential pathways for groundwater flow.

May 2001 - Five direct-push soil borings (GP-1 through GP-5) were advanced to evaluate whether underground utilities in the vicinity of the site are providing preferential pathways for groundwater flow and the migration of dissolved phase hydrocarbons. The results of the investigation indicated insufficient evidence that underground utility lines were providing preferential pathways for the off-site migration of dissolved phase hydrocarbons.

December 2001 - Twelve direct-push soil borings (GP-6 through GP-17) were advanced to further assess the extent of residual hydrocarbons in the vadose zone beneath the site. The results of the investigation indicated that the extent of the residual hydrocarbon impact reported in the previous investigations was limited.

December 2002 - One on-site monitoring well (MW-2) was destroyed during remedial excavation of hydrocarbon-impacted soil. Prior to destruction, monitoring well MW-2 was located near the former eastern dispenser island. During the remedial excavation, monitoring well MW-2 was replaced with on-site backfill monitoring well MW-2A. Approximately 292 tons of hydrocarbon-impacted soil was removed from beneath the former eastern dispenser island.

September 2003 - A *Request and Work Plan for Closure* prepared by ERI was submitted to the Alameda County Health Care Services Agency (ACHCSA), dated September 10, 2003. The report summarized why no further action is needed for

the site; the report also included plans to destroy the existing wells upon regulatory acceptance for no further action. Closure was not granted.

June 2004 – A work plan was submitted for the installation of two additional monitor wells down-gradient of MW-5.

May 2005 – A work plan titled *Work Plan Addendum – Site Assessment Activity* dated May 17, 2005 was prepared by ATC Associates Inc. (ATC) for the installation of two off-site monitor wells.

September 2005 – A work plan was prepared by ATC titled *Work Plan Subsurface Investigation*, for the installation of one on-site monitor well.

September 2005 – Site environmental consulting responsibilities were transferred to Delta.

January 2007 - Delta submitted a work plan to the ACHCSA recommending the advancement of one soil boring and the installation of three ozone injection wells at the site.

August 2008 - Gregg Drilling under the supervision of a Delta field geologist advanced one soil boring to a depth of 55 feet bgs. The details of this investigation are described in the *Site Investigation Report* dated October 29, 2008.

May 2009 - RSI, under supervision of Delta, installed a total of seven groundwater monitoring wells (MW-1AR, MW-1BR, MW-7, MW-8, MW-9, MW-10, MW-11) and one ozone injection point well (TSP-1). Results of the investigation indicated that residual petroleum hydrocarbons remain at depths between 5 and 10 feet bgs in the eastern vicinity of the site (near MW-7 and the former dispenser island). During field activities one onsite monitoring well (MW-2A) was abandoned. Full results of this investigation and recommendations for future site activities were presented in the *Site Investigation and Well Installation Report*, submitted to ACEH on July 9, 2009.

September 2009 – Integral Engineering Services, Inc. (Integral) preformed daily ozone injection feasibility testing at the site. Continuous injection of ozone into test point TSP-1 occurred for eight hours per day at a rate of 0.45 lbs of ozone per day. Field parameters were also measured. Results indicated that ozone had the greatest influence on well MW-9. Following ozone injection, Delta recommended continued sampling and suspended remediation activities.

April 2010 – Delta prepared a corrective action plan focusing on best practice methods to remediate the onsite MTBE plume. Combined ozone/oxygen injection was ultimately proposed, as Delta found it is best available and the most cost-effective corrective action. Limited assessment and excavation was suggested as additional method for remediation, following Agency review.

August 2010 – An electronic mail letter from Ms. Barbara Jakub (ACEH) to COP requested additional information on the proposed ozone/oxygen corrective action path. The letter is provided as Appendix A. A site map with the proposed ozone/oxygen sparge points is included as Figure 4.

2.2 SENSITIVE RECEPTOR

June/July 2002 - A groundwater receptor survey was conducted. Three irrigation wells were located within a one-half mile radius of the site. The wells are located approximately 1,980 feet west and 2,245 feet southwest of the site, cross-gradient and up-gradient of the site.

November 2006 – A survey entailing a visit to the DWR office in Sacramento was conducted to examine well log records and to identify domestic wells within the survey area. The DWR survey provided 15 potential receptors within one mile of the site; one domestic well located 0.5 miles southwest of the site; one domestic/irrigation well located 0.7 miles southeast of the site; 11 irrigation wells with three located 0.1 miles northwest, west, and southeast of the site; and two industrial wells located 0.3 miles southwest and 0.9 miles northeast of the site.

2.3 SITE GEOLOGY

The subject site is located on an island in the eastern portion of the San Francisco Bay and is underlain by interbedded Holocene marine beach and near shore deposits. These deposits are composed of unconsolidated sands and semi-consolidated deposits of well-graded to poorly-graded sand, silty sand/sandy silt, silt, and clayey sand.

Previous site investigations indicate that the subsurface lithology onsite is consistent with that described above (sand, silty sand/sandy silt, silt) to the maximum depth explored.

2.4 SITE HYDROGEOLOGY

Historically, first water has been encountered at depths between 9.5-19 feet below ground surface (bgs). First water could not be determined in borings locations MW-1AR, MW-1BR, MW-10, and TSP-1 due to a quickly rising column of sand up the annular space of the auger at depths of 17.5 feet bgs to 20.5 feet bgs. This type of sand rising under pressure is called heaving sands. Heaving sands are indicative of a pressurized, confined aquifer. The confinement layer appears to be very silty sand or clayey sand with compacted pore spaces that essentially traps this pressurized aquifer within a defined zone. These heaving sands have not been documented in any previous boring investigation at this site.

Data from the quarterly groundwater monitoring conducted at the site indicate that static depth to groundwater varies from approximately 4.5 to 9.5 feet bgs. The groundwater flow direction is generally to the north-northeast with infrequent variations to the northwest.

Quarterly groundwater monitoring and sampling was initiated in March 1999. During the most recent (second quarter 2010) groundwater monitoring and sampling event conducted by TRC on June 7, 2010, depth to groundwater ranged from 5.39 feet (MW-5) to 7.28 (MW-1BR) below top of casing (TOC). The groundwater flow direction was interpreted to be to the northeast at a gradient of 0.005 foot per foot (ft/ft), as compared to the previous quarterly sampling event when the groundwater flow direction was interpreted to be to the northeast with a gradient of 0.025 ft/ft (02/05/10).

3.0 ADDITIONAL ASSESSMENT

3.1 PRE-FIELD ACTIVITIES

Before commencing field activities Antea prepared a Health and Safety Plan in accordance with state and federal requirements for use during on-site assessment activities. In addition, drilling permits were obtained from the Alameda County Public Works Agency (ACPWA). Prior to drilling, Antea reviewed available as-built drawings, notified Underground Service Alert (USA) and contracted a private utility locator as required to clear the proposed boring locations for underground utilities. Prior to drilling, each location was cleared to at least 5 feet bgs with an air vacuum or water vacuum to minimize potential impact to underground utilities.

3.2 SCOPE OF WORK

3.2.1 Soil and Groundwater Borings

To confirm previous analytical results, and in order to better assesses lateral dispersion of hydrocarbons surrounding MW-7, Antea advanced five borings (DP-1, DP-2, DP-3, DP-4 and DP-5) in the northeast corner of the site, in the vicinity of the former eastern dispenser island (**Figure 2**).

On January 10 and 11, 2011, Antea oversaw the air-knife and direct push boring advancement activities performed Gregg Drilling and Testing. Each of the five borings was advanced to a total depth of 15 feet bgs, using GeoProbe technology. Soil was collected continuously from below the air-knife depth of 5 feet bgs to total depth using acetate liners. Lithology was logged using the Unified Soil Classification System (USCS).

3.2.2 Soil Sampling

In order to properly assess vertical limits of hydrocarbon impact in shallow soil, between 4 and 5 soil samples were collected for laboratory analysis from between 5 and 15 feet bgs from each of the five borings. For each sample, a six-inch section of the five-foot-long acetate liner containing the soil was cut away and capped with Teflon sheeting and tight fitting plastic end caps, properly labeled, and placed on ice for transportation to a California certified laboratory.

Each sample collected was analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (collectively BTEX), and 8 fuel oxygenates [methyl tert butyl ether (MTBE), tert amyl methyl ether (TAME), diisopropyl ether (DIPE), tert butyl alcohol (TBA), ethyl tert butyl ether (ETBE), ethylene dibromide (EDB), 1,2 dichloroethane (1,2-DCA), and ethanol] by Environmental Protection Agency (EPA) method 8260.

3.2.3 Groundwater Sampling

During soil sampling activities, two possible groundwater bearing zone were identified. An attempt was made in each boring to collect grab groundwater samples from both of these zones. The shallow sample was collected as a grab sample from the bottom of the open hole at 12 feet bgs. In an attempt to isolate the shallow water from the deeper water samples, once the soil sample was advanced to 15 feet bgs, a hydropunch was advanced in the same hole to 18 feet bgs, and a ¾ inch temporary PVC well screen exposed to the subsurface from between 16 and 18 feet bgs. A depth discrete groundwater sample was collected from this depth in each boring, though a shallower sample was successfully collected from only several of the boreholes. Each sample collected was placed in appropriate sampling bottles, properly labeled, and placed on ice for transportation to a California certified laboratory.

Each groundwater sample collected was analyzed for TPHg, BTEX, and 8 fuel oxygenates by EPA method 8260.

3.3 DISPOSAL OF DRILL CUTTINGS AND WASTEWATER

Drill cuttings and wastewater generated during proposed soil, groundwater and soil vapor assessment activities were placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and temporarily stored at the service station site. Samples of the drill cuttings and wastewater were collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPHg, BTEX, and 8 Oxygenates by EPA Method 8260B. Additionally, soil samples will also be analyzed for CAM 17 metals by EPA Method 6010. A chain-of-custody accompanied the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

4.0 DISCUSSION

A site map with current boring locations is included as **Figure 2**. A site map with historical sampling locations is included as **Figure 3**. Soil and groundwater analytical results from this investigation are included as **Table 1** and **Table 2**, respectively. Borings logs for borings DP-1 through DP-5 are included as **Appendix B**. Historical groundwater monitoring and sampling data through fourth quarter 2010 for wells MW-7 and MW-8 from TRC's *Groundwater Monitoring Report – October through December 2010* is included as **Appendix C**.

It was determined as part of Delta's April 7, 2010 *Corrective Action Plan* that soil impact was limited to soil in the immediate vicinity of MW-7. The purpose of this investigation was to identify possible remaining hydrocarbon impact in the soil surrounding MW-7. Hydrocarbon concentrations in MW-7 at the time of drilling (5/14/09) was 4,100 milligrams per kilogram (mg/kg) TPHg, 38 mg/kg ethylbenzene, and 770 mg/kg total xylenes at 10 feet bgs, with all other constituents below laboratory indicated reporting limits.

Based on the analytical results of this investigation, it does not appear that any significant hydrocarbon impact remains in soil surrounding MW-7. The highest hydrocarbon concentrations were 110 mg/kg TPHg (DP-3@9.5-10), 0.27 mg/kg ethylbenzene (DP-3@9.5-10), and 0.80 mg/kg total xylenes (DP-3@9.5-10), with all other constituents below laboratory indicted reporting limits.

Soil samples collected from boring DP-1 were below laboratory indicated reporting limits for all constituents analyzed at all depths.

The maximum TPHg concentration in DP-2 was 77 mg/kg at 9.5 to 10 feet bgs. This depth also contained less than 0.10 mg/kg ethylbenzene and total xylenes. 0.22 mg/kg TPHg was reported in this boring at 11.5 to 12 feet bgs. All other constituents at all depths were below laboratory indicated reporting limits.

The maximum TPHg concentration in boring DP-3 was 110 mg/kg at 9.5 to 10 feet bgs. This depth also contained less than 1.0 mg/kg ethylbenzene and total xylenes. All constituents at all other depths were below laboratory indicated reporting limits.

The maximum TPHg concentration in DP-4 was 1.8 mg/kg at 9.5 to 10 feet bgs. This depth also contained less than 0.02 mg/kg ethylbenzene and total xylenes. TPHg was also detected in this boring at a concentration of 0.64 mg/kg at 11.5 to 12 feet bgs. This depth also contained less than 0.01 mg/kg ethylbenzene. All other constituents at all depth were below laboratory indicated reporting limits.

The maximum TPHg concentration in boring DP-5 was 2.3 mg/kg at 13 to 13.5 feet bgs. This depth also contained less than 0.5 mg/kg ethylbenzene and total xylenes. TPHg was also reported in this boring at a concentration of 1.6 mg/kg at 9.5 to 10 feet bgs. This depth also contained less than 0.3 mg/kg ethylbenzene and total xylenes. All other constituents at all depths were below laboratory indicated reporting limits.

Concentrations in groundwater were notably higher in the shallow samples than the deep samples. Shallow groundwater samples were successfully collected from three of the five boring locations (DP-2, DP-3, DP-5). Deep groundwater samples were successfully collected from all five boring locations. TPHg concentrations in the shallow samples ranged from 1,300 ug/L (DP-3@12) to 17,000 ug/L (DP-5@12). TPHg concentrations in the deep samples ranged from below laboratory reporting limit (DP-1@18) to 980 ug/L (DP-5@18).

5.0 RECOMMENDATIONS

The only significant hydrocarbon impact in soil, though still relatively low, was found in between 9 and 10 feet bgs in borings DP-2 and DP-3, which are the closest MW-7. The highest impact in groundwater was found in borings DP-2 and DP-3 at 12 feet bgs, as well as in boring DP-5 at 12 feet bgs.

It was previously known that groundwater in the area contained elevated concentrations as shown by MW-7 and MW-8 monitoring and sampling data.

It appears that soil contamination is limited to the area immediately around MW-7, and only from approximately 9 feet bgs to 12 feet bgs. With limited lateral dispersal and the minimal concentrations discussed above, **Antea Group does not recommend excavation in this area.** Antea Group does not believe that excavation of soil with these low concentrations would be cost effective.

Moving forward, Antea Group will proceed with the remaining scope of work detailed in the Delta *Corrective Action Plan*, dated April 7, 2010, and approved in the ACEHCS letter dated October 4, 2010.

6.0 LIMITATIONS AND CERTIFICATIONS

This report was prepared in accordance with the scope of work outlined in Antea Group's contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of ConocoPhillips for the expressed purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Antea Group. To the extent that this report is based on information provided to Antea Group by third parties, Antea Group may have made efforts to verify this third party information, but Antea Group cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied, are made by Antea Group.

CONSULTANT: ANTEA GROUP

*****

Figures

Figure 1 – Site Location Map
Figure 2 – Site Map with Current Boring Locations
Figure 3 – Site Map Historical Sampling Locations

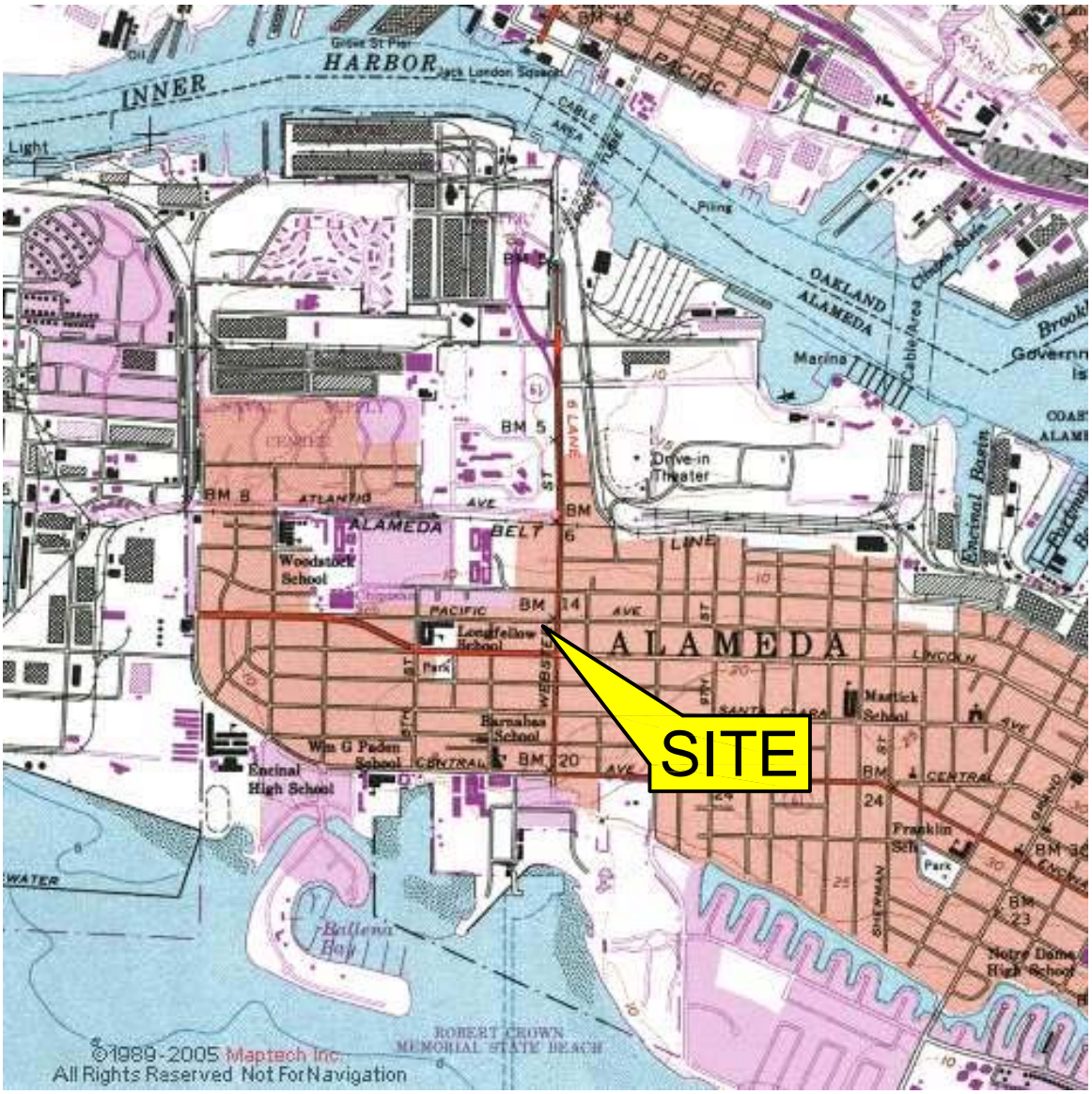
Tables

Table 1 – Soil Analytical Results
Table 2 – Groundwater Analytical Results

Appendices

Appendix A – ACEHCS Letter Dated October 4, 2010
Appendix B – Boring Logs
Appendix C – Historical M&S Data for MW-7 and MW-8

FIGURES



0 1000 FT 2000 FT

SCALE: 1 : 24,000

North

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND WEST QUADRANGLE, 1996

FIGURE 1

SITE LOCATION MAP

76 STATION NO. 0843
1629 WEBSTER STREET
ALAMEDA, CALIFORNIA

PROJECT NO. C100-843	DRAWN BY JH 01/25/11
FILE NO. Site Locator 0843	PREPARED BY AB
REVISION NO. 3	REVIEWED BY JM

anteagroup

LEGEND:

MW–1 ACTIVE 76 MONITORING WELL

MW–2A ABANDONED 76 MONITORING WELL

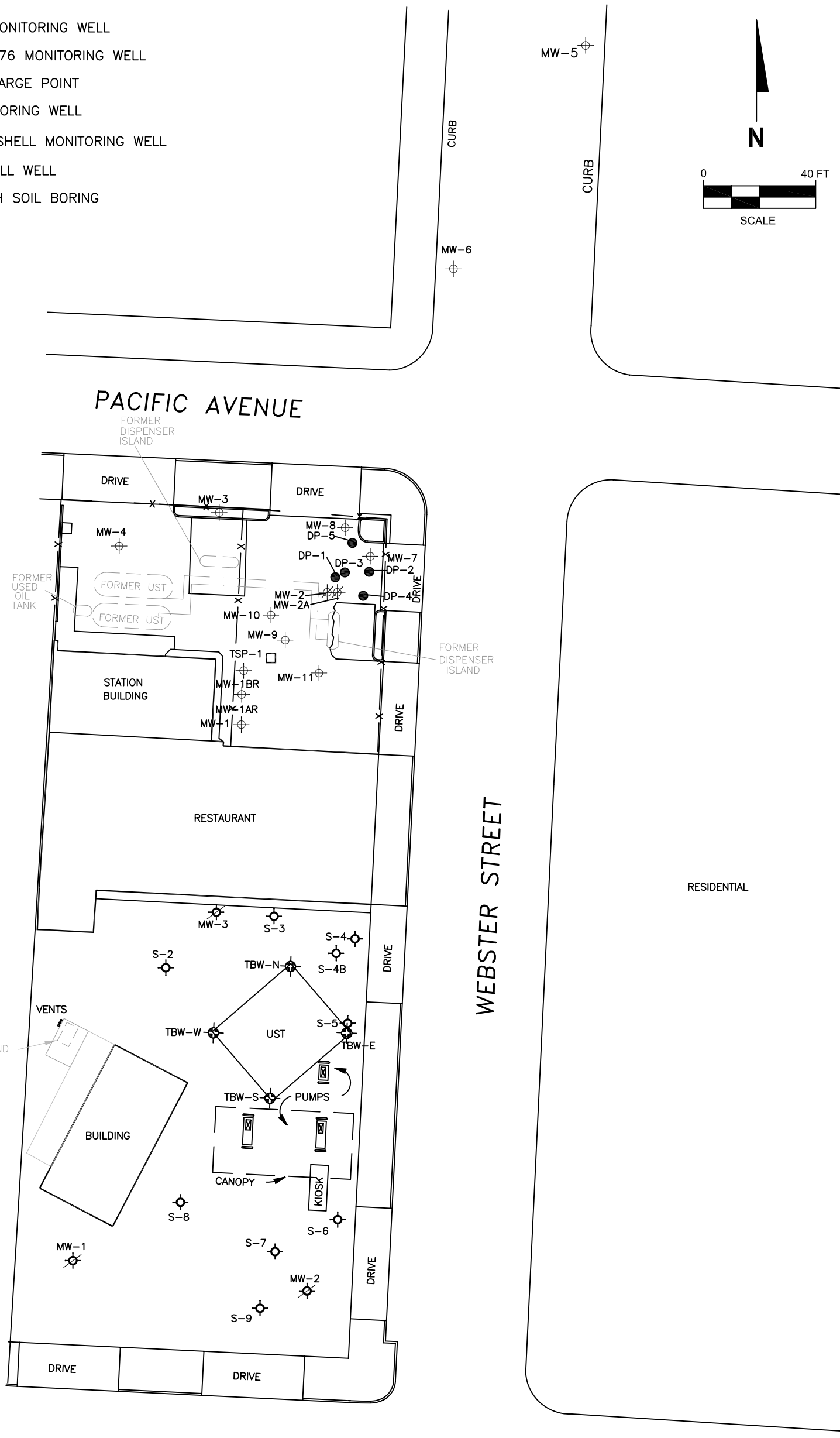
TSP–1 CURRENT SPARGE POINT

S–1 SHELL MONITORING WELL

MW–1 DESTROYED SHELL MONITORING WELL

TBW–N TANK BACKFILL WELL

DP–1 DIRECT–PUSH SOIL BORING



PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING DATED FEBRUARY 2009.

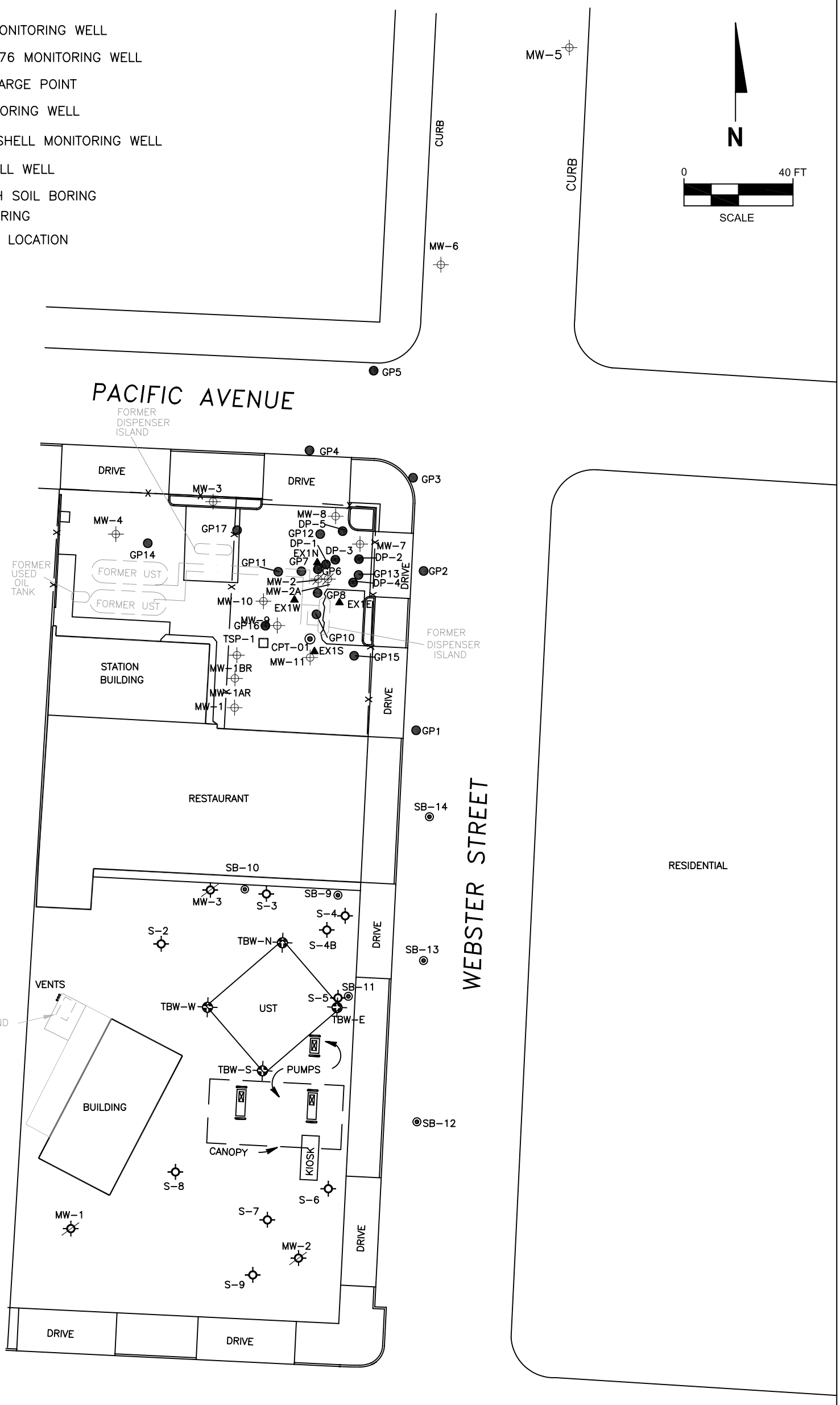
FIGURE 2
SITE PLAN

FORMER 76 STATION NO. 0843
1629 WEBSTER ROAD
ALAMEDA, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY	
C102349217	AB	JH	
DATE	REVIEWED BY	FILE NAME	
01/25/11	JBB	76–0843–S	anteagroup

LEGEND:

MW–1 ACTIVE 76 MONITORING WELL
MW–2A ABANDONED 76 MONITORING WELL
TSP–1 CURRENT SPARGE POINT
S–1 SHELL MONITORING WELL
MW–1 DESTROYED SHELL MONITORING WELL
TBW–N TANK BACKFILL WELL
GP1/DP–1 DIRECT–PUSH SOIL BORING
CPT–01 CPT SOIL BORING
EX1N SOIL SAMPLE LOCATION



PLAN ADAPTED FROM A SURVEY BY MORROW SURVEYING DATED FEBRUARY 2009.

FIGURE 3
SITE MAP WITH
HISTORICAL SAMPLING LOCATIONS
FORMER 76 STATION NO. 0843
1629 WEBSTER ROAD
ALAMEDA, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C102349217	AB	JH
DATE	REVIEWED BY	FILE NAME
01/25/11	JBB	76–0843–S

anteagroup

TABLES

Table 1

Soil Analytical Results
Former 76 Service Station No. 0843 (2349)
1629 Wester Street
Alameda, CA

Sample ID	Date	Depth	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	EDB	1,2-DCA	Ethanol
		(ft)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
DP-1@6.5-7	1/11/11	6.5-7	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-1@10-10.5	1/11/11	10-10.5	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-1@11.5-12	1/11/11	11.5-12	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-1@13-13.5	1/11/11	13-13.5	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-1@14.5-15	1/11/11	14.5-15	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-2@7.5-8	1/11/11	7.5-8	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-2@9.5-10	1/11/11	9.5-10	**77**	<0.0050	<0.0050	**0.068**	**0.094**	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-2@11.5-12	1/11/11	11.5-12	**0.22**	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-2@12.5-13	1/11/11	12.5-13	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-2@14.5-15	1/11/11	14.5-15	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-3@7.5-8	1/11/11	7.5-8	**0.26**	<0.0050	<0.0050	**0.0064**	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-3@9.5-10	1/11/11	9.5-10	**110**	<0.0050	<0.0050	**0.27**	**0.80**	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-3@11.5-12	1/11/11	11.5-12	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-3@12.5-13	1/11/11	12.5-13	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-3@14.5-15	1/11/11	14.5-15	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-4@7.5-8	1/11/11	7.5--8	**0.60**	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-4@9.5-10	1/11/11	9.5-10	**1.8**	<0.0050	<0.0050	**0.0051**	**0.011**	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-4@11.5-12	1/11/11	11.5-12	**0.64**	<0.0050	<0.0050	**0.0057**	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-4@12.5-13	1/11/11	12.5-13	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-4@14.5-15	1/11/11	14.5-15	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-5@6.5-7	1/11/11	6.5-7	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-5@9.5-10	1/11/11	9.5-10	**1.6**	<0.0050	<0.0050	**0.078**	**0.27**	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-5@13-13.5	1/11/11	13-13.5	**2.3**	<0.0050	<0.0050	**0.20**	**0.44**	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0
DP-5@14.5-15	1/11/11	14.5-15	<0.20	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<1.0

TPHg = Total Petroleum Hydrocarbons as Gasoline MTBE = Methyl Tert Butyl Ether TBA = Tert Butyl Alcohol DIPE = Diisopropyl Ether ETBE = Ethyl Tert Butyl Ether TAME = Tert Amyl Methyl Ether EDB = Ethylene Dibromide
1,2-DCA = 1,2 Dichloroethane mg/kg = milligrams per kilogram **bold** = value above laboratory indicated reporting limit

Table 2

Groundwater Analytical Results
Former 76 Service Station No. 0843 (2349)
1629 Wester Street
Alameda, CA

Sample ID	Date	Depth (ft)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)	Ethanol (ug/L)
DP-1@18	1/11/2011	18	<50	<0.50	<0.50	<0.50	<1.0	**20**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
DP-2@12	1/11/11	12	**5600**	<2.5	<2.5	**84**	**85**	<2.5	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1200
DP-2@18	1/11/11	18	**110**	<0.50	<0.50	**0.67**	**1.5**	**17**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
DP-3@12	1/11/11	12	**1300**	<0.50	**0.55**	**100**	**75**	**10**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
DP-3@18	1/11/11	18	**99**	<0.50	<0.50	**1.1**	**1.6**	**41**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
DP-4@18	1/11/11	18	**50**	<0.50	<0.50	<0.50	**1.1**	**2.1**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250
DP-5@12	1/11/11	12	**17000**	**6.8**	**7.0**	**1200**	**3700**	<2.5	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<1200
DP-5@18	1/11/11	18	**980**	<0.50	<0.50	**70**	**68**	**12**	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<250

TPHg = Total Petroleum Hydrocarbons as Gasoline MTBE = Methyl Tert Butyl Ether TBA = Tert Butyl Alcohol DIPE = Diisopropyl Ether ETBE = Ethyl Tert Butyl Ether TAME = Tert Amyl Methyl Ether EDB = Ethylene Dibromide
1,2-DCA = 1,2 Dichloroethane mg/kg = milligrams per kilogram **bold** = value above laboratory indicated reporting limit

APPENDIX A

ACEHCS Letter Dated October 4, 2010

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

October 4, 2010

Bill Borgh
ConocoPhillips
76 Broadway
Sacramento, CA 95818

Sam and Michele Koka
802 Pacific Avenue
Alameda, CA 94501

Subject: Corrective Action Plan Approval for Fuel Leak Case No. RO0000450 and Geotracker Global ID T0600102263, Unocal #0843, 1629 Webster St., Alameda, CA 94501

Dear Mr. Borgh and Mr. and Mrs. Koka:

Thank you for the recently submitted document entitled, *Corrective Action Plan* dated April 7, 2010, and *Work Plan for Additional Assessment* dated August 24, 2010 which were prepared by Delta Consultants for the subject site. Alameda County Environmental Health (ACEH) staff has reviewed the case file including the above-mentioned report/work plan for the above-referenced site. The corrective action plan presents three active remediation alternatives and monitored natural attenuation and recommends ozone /oxygen injection as the most appropriate and cost-effective technology for site remediation. The Work plan for additional assessment shows the proposed injection points and the proposed locations for soil sampling to define the source area to be removed and to ensure that source removal is necessary.

The proposal to perform ozone/oxygen injection as the primary remediation alternative presented in the above-mentioned Corrective Action Plan (CAP) with locations shown in the work plan is acceptable. Subsequent excavation will depend on the results of the proposed borings and will be evaluated and approved if warranted after that data is obtained. At this time, public participation is a requirement for the CAP process. Therefore, ACEH will notify potentially affected stakeholders who live or own property in the surrounding area of the proposed remediation described in the *Corrective Action Plan* and *Work Plan for Additional Assessment* through mailing of a fact sheet (enclosed). Public comments on the proposed remediation will be accepted for a period of thirty days beginning Monday, October 4, 2010 through Wednesday, November 3, 2010. Following the public comment period, the comments received including ACEH's comments described below, must be addressed and incorporated into a Final CAP.

TECHNICAL COMMENTS

1. **Groundwater Contaminant Plume Monitoring** – Please add Chromium VI to the monitoring schedule as well as the other listed constituents for the affected wells (MW-1, MW-7, MW-8, MW-9 MW-10 and MW-11).

NOTIFICATION OF FIELDWORK ACTIVITIES

Please schedule and complete the fieldwork activities by the date specified below and provide ACEH with at least three (3) business days notification prior to conducting the fieldwork.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Barbara Jakub), according to the following schedule:

- **November 3, 2010** – End of 30-day Public Participation Period
- **December 30, 2010** – Quarterly Monitoring Report (4th Quarter 2010)
- **March 30, 2011** – Quarterly Monitoring Report (1st Quarter 2011), SWI and Excavation Evaluation
- **June 30, 2011** – Quarterly Monitoring Report (2nd Quarter 2011)
- **September 30, 2011** – Quarterly Monitoring Report (3rd Quarter 2011)

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara J. Jakub, P.G.
Hazardous Materials Specialist

Enclosures: Fact Sheet and List of Recipients
Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

cc: James Barnard, Delta Consultants, 11050 White Rock Rd., Suite 110 Rancho Cordova, CA 95670 (Sent via e-mail to: jbarnard@deltaenv.com)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Barbara Jakub, ACEH (*Sent via E-mail to: barbara.jakub@acgov.org*)
Peter Russel, Russell Resources, Inc., 440 Albion Way, Ste.1, San Rafael, CA 94903 (Sent via E-mail to: peter@russellresources.com)
GeoTracker, File

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
Alex Briscoe, Agency Director

FACT SHEET ON ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

UNOCAL#0843
1629 Webster Street, Alameda, CA 94501
Fuel Leak Case No. RO0000450 and
GeoTracker Global ID T0600102263

Site Remediation Summary

This fact sheet has been prepared to inform community members and other interested stakeholders regarding the status of a proposed soil and groundwater cleanup at the former ARCO located at 1629 Webster St., Alameda, California. Mr. Borgh, the lead responsible party for the fuel leak case is proposing ozone/oxygen injection and potential limited soil excavation as remediation technologies to cleanup the site.

Site Background

The site is located in the Webster Street commercial area of Alameda. It was previously operated as a Unocal gasoline station but is now currently a vacant lot. Plans to redevelop the property to senior housing with first floor commercial retail have been approved by the City of Alameda and await completion of remediation at the site.

Remediation Alternative: Ozone/oxygen Injection with Potential for Excavating Source Area Soils

Ozone/oxygen injection is proposed to remediate groundwater contaminated with MTBE at the site. The MTBE plume is located beneath the site at a depth of between 20 to 30 feet below ground surface (bgs). The proposed remediation will inject ozone into the plume which then reacts with the MTBE and forms carbon dioxide and water, thus destroying the MTBE. The proposal would include injecting ozone/oxygen at six different points located throughout the site for an estimated 3 to 6 months. Typically no additional infrastructure is needed to install this system.

Soil Excavation and Removal

The remediation proposal includes an evaluation of soil in the area of the former USTs. Soil borings would be advanced and samples collected to determine the extent of residual contamination. If contamination levels warrant, the soil will be excavated and removed from the site and disposed at an appropriate landfill.

Next Step

Mr. Borgh is working with Alameda County Environmental Health (ACEH) to implement a soil and groundwater cleanup at the site. The proposed alternative is described in the reports *Corrective Action Plan dated* April 7, 2010 and *Work Plan for Additional Assessment* dated August 24, 2010 prepared by Delta Consultants on behalf of Mr. Borgh. The public is invited to review and comment on the proposed cleanup action. The reports are available on ACEH's website (http://www.acgov.org/aceh/lop/ust.htm) or the State Water Resources Control Board's GeoTracker website (http://www.geotracker.waterboards.ca.gov/). The report and case file are also available for review at the ACEH located at 1131 Harbor Bay Parkway in Alameda, California. Please send a fax to 510-337-9335 to request a date and time to review the case file. Please send written comments regarding the corrective action to Barbara Jakub at the address below. All written comments received by **November 3, 2010** will be forwarded to the Responsible Party and will be considered and responded to prior to a final determination on the proposed cleanup.

For Additional information, please contact:

Barbara Jakub
Alameda County Environmental Health
1131 Harbor Bay Parkway, Ste 250
Alameda, CA 94502
Phone: 510-639-1287
E-mail: barbara.jakub@acgov.org

James Barnard
Delta Environmental, Inc.
11050 White Rock Rd., Suite 110
Rancho Cordova CA 95670
Phone: 916-503-1279
E-mail: jbarnard@deltaenv.com


Traffic
More...
Map
Satellite
N
Pacific Ave
Kelly-Moore Paint
Curves
260
260
Subway
700
SK Auto
A
Hawthorn Suites Oakla
Eyes On Webster
Star Lights Donut
KB Hair Salon
Tinys
Wally's Corner
1600
Lincoln Ave
Shell of Alameda

ALAMEDA HOSPITALITY LLC
Parcel #: 73-418-4-1
1628 WEBSTER ST
ALAMEDA CA 94501

CAMPOS JOSE J & SOCORRO
Parcel #: 74-430-3-1
1438 39TH AVE
OAKLAND CA 94601

EQUILON ENTERPRISES LLC
Parcel #: 74-430-5-1
PO BOX 4369
HOUSTON TX 77210

KOKA SAM & MICHELLE J
Parcel #: 74-430-1-1
802 PACIFIC AVE
ALAMEDA CA 94501

LAU PETER K & MIRASOL Y
Parcel #: 74-430-6
643 LINCOLN AVE
ALAMEDA CA 94501

LEE SHUN M & LUCIA L
Parcel #: 74-430-7
639 LINCOLN AVE
ALAMEDA CA 94501

RESIDENT
Parcel #: 73-417-12-1
1700 WEBSTER ST
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-430-5-1
1607 WEBSTER ST
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-430-34-2
640 PACIFIC AVE
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-430-1-1
650 PACIFIC AVE
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-431-5
643 PACIFIC AVE
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-431-4
1711 WEBSTER ST
ALAMEDA CA 94501

RESIDENT
Parcel #: 74-430-3-1
1619 WEBSTER ST
ALAMEDA CA 94501

SAYON CHARLES J &
Parcel #: 74-430-8
637 LINCOLN AVE
ALAMEDA CA 94501

TIMBER DELL PROPERTIES
Parcel #: 74-431-4
1406 WEBSTER ST
ALAMEDA CA 94501

TIMBER DELL PROPERTIES
Parcel #: 74-431-5
1406 WEBSTER ST
ALAMEDA CA 94501

WONG RODNEY & SHARON
Parcel #: 74-430-34-2
619 HAIGHT AVE
ALAMEDA CA 94501

YANG ESTHER M TR
Parcel #: 73-417-12-1
P O BOX 20218
EL SOBRANTE CA 94820

Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** July 20, 2010
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

Boring Logs

anteagroup	Project No: C102349220	Client: ConocoPhillips	Boring/Well No: **DP-1**
	Logged By: A. Buehler/C. Morgan	Location: Alameda, CA	Page 1 of 1
	Driller: Gragg Drilling & Testing	Date Drilled: 1/11/11	Site Address:
	Drilling Method: Direct Push	Hole Diameter: 2"	1629 Webster St, Alameda, CA
	Sampling Method: GeoProbe	Hole Depth: 15'	
	Casing Type: N/A	Well Diameter: N/A	
	Slot Size: N/A	Well Depth: N/A	
	Gravel Pack: N/A	▼ First Water Depth:	
		▽ Static Water Depth:	
	Elevation:	Northing:	Easting:

Well Completion (Backfill / Casing)	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					1				Air-Knife cleared to 5 feet bgs.
					2				Well graded sand with gravel and trace clay, brown/ light brown, some brick fill in top 1-2', no utilities encountered
					3				
					4				
					5				
					6			SW-SM	Brown, well graded sand with silt and gravel, 10% silt, 30% gravel
			1.6	DP-1@ 6.5-7	7				
	▼				8				
		wet			9			SW-SM	Brown, well graded sand with silt and gravel, 10% silt, 20% gravel, saturated
		wet		DP-1@ 10-10.5	10			GW	Brown, well graded gravel, 1/8" gravel, saturated
			1.1	DP-1@ 11.5-12	11				
					12			SM	Brown, silty sand, 30% silt
			1.2	DP-1@ 13-13.5	13			SW-SM	Brown, well graded sand with silt and gravel, 10% silt, 30% gravel
					14			SM	Green/gray, silty sand, 20 % silt, very dense, damp
Neat Cement Grout			0.8	DP-1@ 14.5-15	15				
					16				Total Depth = 15 feet
					17				
					18				
					19				
					20				
					21				
					22				

Project No: C102349220	Client: ConocoPhillips	Boring/Well No: **DP-2**
Logged By: A. Buehler/C. Morgan	Location: Alameda, CA	Page 1 of 1
Driller: Gragg Drilling & Testing	Date Drilled: 1/11/11	
Drilling Method: Direct Push	Hole Diameter: 2"	Site Address:
Sampling Method: GeoProbe	Hole Depth: 15'	1629 Webster St, Alameda, CA
Casing Type: N/A	Well Diameter: N/A	
Slot Size: N/A	Well Depth: N/A	
Gravel Pack: N/A	▼ First Water Depth:	
	▽ Static Water Depth:	
Elevation:	Northing:	Easting:

Well Completion	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					1				Air-Knife cleared to 5 feet bgs.
					2				Light brown, well graded sand, no odor, no utilities encountered
					3				
					4				
					5				
Neat Cement Grout								SM	Brown, silty sand with gravel, 5% gravel, 20% silt, damp
					6				
					7				
	▼	wet						SM	Same as above, saturated
			12.0	DP-2@	8				
		wet		7.5-8				SM	Brown, silty sand, 30% silt, wet
					9				
			515	DP-2@	10				
				9.5-10				SM	Green/gray, silty sand, 30% silt, damp
					11				
			23.5	DP-2@	12				
	▼	wet		11.5-12				SM	Brown, silty sand with gravel, 10% gravel, 20% silt, saturated
			8.3	DP-2@	13				
				12.5-13					
					14			SM	Green/gray, silty sand, 30% silt, damp
			13.4	DP-2@	15				
				14.5-15					Total Depth = 15 feet
					16				
					17				
					18				
					19				
					20				
					21				
					22				

Project No: C102349220	Client: ConocoPhillips	Boring/Well No: **DP-3**
Logged By: A. Buehler/C. Morgan	Location: Alameda, CA	Page 1 of 1
Driller: Gragg Drilling & Testing	Date Drilled: 1/11/11	
Drilling Method: Direct Push	Hole Diameter: 2"	Site Address:
Sampling Method: GeoProbe	Hole Depth: 15'	1629 Webster St, Alameda, CA
Casing Type: N/A	Well Diameter: N/A	
Slot Size: N/A	Well Depth: N/A	
Gravel Pack: N/A	▼ First Water Depth:	
	▽ Static Water Depth:	
Elevation:	Northing:	Easting:

Well Completion (Backfill / Casing)	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement Grout					1				Air-Knife cleared to 5 feet bgs.
					2				Light brown, pea-thumb sized gravel, trace clay, no odor, no utilities encountered
					3				
					4				
					5				
					6			SM	Light brown, silty sant with gravel, 10% gravel, 20 % silt, damp, no odor
					7				
			2.0	DP-3@ 7.5-8	8				
					9			SM	Brown, silty sand, 40% silt, damp
			40.2	DP-3@ 9.5-10	10				
					11			SM	Green/gray, silty sand, 30% silt, damp
			6.0	DP-3@ 11.5-12	12				
	▼	wet						SM	Same as above, saturated
			1.8	DP-3@ 12.5-13	13				
					14			SM	Same as above, damp
			3.7	DP-3@ 14.5-15	15				
					16				Total Depth = 15 feet
					17				
					18				
					19				
					20				
					21				
					22				

anteagroup	Project No: C102349220 Logged By: A. Buehler/C. Morgan Driller: Gragg Drilling & Testing Drilling Method: Direct Push Sampling Method: GeoProbe Casing Type: N/A Slot Size: N/A Gravel Pack: N/A	Client: ConocoPhillips Location: Alameda, CA Date Drilled: 1/11/11 Hole Diameter: 2" Hole Depth: 15' Well Diameter: N/A Well Depth: N/A ▼ First Water Depth: ▽ Static Water Depth:	Boring/Well No: **DP-4** Page 1 of 1 Site Address: 1629 Webster St, Alameda, CA
	Elevation:	Northing:	Easting:

Well Completion: Backfill	Well Completion: Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample: Recovery	Sample: Interval	Soil Type	LITHOLOGY / DESCRIPTION
						0				
						1				Air-Knife cleared to 5 feet bgs.
						2				Light brown, well graded sand, no odor
						3				
						4				
						5				
						6			SM	Brown, silty sand, 30% silt, damp
						7				
				7.3	DP-4@	8			CL	Gray, lean clay with sand, 20% sand, damp
Neat Cement Grout		▼	wet		7.5-8				SC	Brown clayey sand, 30% clay, wet
						9			SM	Brown silty sand, 30% silt
				496	DP-4@	10				
					9.5-10				SM	Green/gray, silty sand, 30% silt
				14.2	DP-4@	11				
					11.5-12	12			SM	Brown, silty sand, 30% silt, damp
				8.7	DP-4@	13				
					12.5-13	14			SM	Green/gray, silty sand, 30% silt
				4.0	DP-4@	15				
					14.5-15					Total Depth = 15 feet
						16				
						17				
						18				
						19				
						20				
						21				
						22				

anteagroup	Project No: C102349220	Client: ConocoPhillips	Boring/Well No: **DP-5**
	Logged By: A. Buehler/C. Morgan	Location: Alameda, CA	Page 1 of 1
	Driller: Gragg Drilling & Testing	Date Drilled: 1/11/11	Site Address:
	Drilling Method: Direct Push	Hole Diameter: 2"	1629 Webster St, Alameda, CA
	Sampling Method: GeoProbe	Hole Depth: 15'	
	Casing Type: N/A	Well Diameter: N/A	
	Slot Size: N/A	Well Depth: N/A	
	Gravel Pack: N/A	▼ First Water Depth:	
		▽ Static Water Depth:	
	Elevation:	Northing:	Easting:

Well Completion: Backfill	Well Completion: Casing	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample: Recovery	Sample: Interval	Soil Type	LITHOLOGY / DESCRIPTION
						1				Air-Knife cleared to 5 feet bgs.
						2				Brown, sand with gravel and fill, brick fill between 2-3' bgs, no utilities encountered
						3				
						4				
						5				
						6			SM	Brown silty sand, 50% sand, damp, no odor
Neat Cement Grout					DP-5@ 6.5-7	7				
		▼	wet			8			SC	Brown, clayey sand with gravel, 10% gravel, 15% clay, saturated
						9				
					DP-5@ 9.5-10	10			SM	Green/gray, silty sand, 40% silt, damp, some odor
						11				
						12				
		▼	wet						SM	Brown sitly sand, 40% silt, saturated
				22.1	DP-5@ 13-13.5	13				
						14			SM	Same as above, damp
				4.2	DP-5@ 14.5-15	15				
						16				Total Depth = 15 feet
						17				
						18				
						19				
						20				
						21				
						22				

APPENDIX C

Historical M&S Data for MW-7 and MW-8

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
March 1999 Through November 2010
Former 76 Station 0843

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-6 continued														
8/3/2010	16.97	5.96	0.00	11.01	-0.44	--	71	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	180	
11/11/2010	16.97	6.54	0.00	10.43	-0.58	--	--	--	--	--	--	--	--	Sampled Q1 and Q3 only
MW-7			**(Screen Interval in feet: 25-30)**											
5/28/2009	17.81	8.29	0.00	9.52	--	--	1100	ND<0.50	ND<0.50	1.4	7.1	--	15000	
9/14/2009	17.81	6.77	0.00	11.04	1.52	--	7900	ND<25	ND<25	ND<25	ND<50	--	15000	
11/13/2009	17.81	6.78	0.00	11.03	-0.01	--	5700	ND<10	ND<10	ND<10	ND<20	--	13000	
2/5/2010	17.81	8.50	0.00	9.31	-1.72	--	4300	ND<12	ND<12	ND<12	ND<25	--	12000	
6/7/2010	17.81	5.74	0.00	12.07	2.76	--	7100	ND<12	ND<12	ND<12	ND<25	--	16000	
8/3/2010	17.81	6.36	0.00	11.45	-0.62	--	1600	ND<10	ND<10	ND<10	ND<20	--	12000	
11/11/2010	17.81	7.23	0.00	10.58	-0.87	--	2600	ND<5.0	ND<5.0	ND<5.0	ND<10	--	13000	
MW-8			**(Screen Interval in feet: 25-30)**											
5/28/2009	18.13	7.42	0.00	10.71	--	--	850	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	12000	
9/14/2009	18.13	6.97	0.00	11.16	0.45	--	3500	ND<25	ND<25	ND<25	ND<50	--	5600	
11/13/2009	18.13	7.11	0.00	11.02	-0.14	--	3200	ND<5.0	ND<5.0	ND<5.0	ND<10	--	6700	
2/5/2010	18.13	7.38	0.00	10.75	-0.27	--	2400	ND<10	ND<10	ND<10	ND<20	--	6300	
6/7/2010	18.13	6.07	0.00	12.06	1.31	--	4200	ND<10	ND<10	ND<10	ND<20	--	9000	
8/3/2010	18.13	6.56	0.00	11.57	-0.49	--	1200	ND<5.0	ND<5.0	ND<5.0	ND<10	--	5600	
11/11/2010	18.13	7.60	0.00	10.53	-1.04	--	ND<5000	ND<50	ND<50	ND<50	ND<100	--	4900	
MW-9			**(Screen Interval in feet: 20-25)**											
5/28/2009	18.75	6.24	0.00	12.51	--	--	1200	ND<0.50	ND<0.50	0.75	15	--	13000	
9/14/2009	18.75	7.36	0.00	11.39	-1.12	--	280	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	390	
11/13/2009	18.75	7.56	0.00	11.19	-0.20	--	170	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	280	