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**Jennifer C. Sedlachek**  
Project Manager

**RECEIVED**

By Alameda County Environmental Health at 2:36 pm, Oct 09, 2014

**ExxonMobil**

October 7, 2014

Mr. Mark Detterman  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

**RE: Former Exxon RAS #79374/990 San Pablo Avenue, Albany, California.**

Dear Mr. Detterman:

Attached for your review and comment is a copy of the letter report entitled *Soil Vapor Assessment Report*, dated October 7, 2014, for the above-referenced site. The report was prepared by Cardno ERI of Petaluma, California, and details activities at the subject site.

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.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,



Jennifer C. Sedlachek  
Project Manager

Attachment: Cardno ERI's *Soil Vapor Assessment Report*, dated October 7, 2014

cc: w/ attachment  
Ms. Muriel T. Blank, Trustee, The Blank Family Trust  
Reverend Deborah Blank, Trustee, The Blank Family Trust  
Ms. Marcia Blank Kelly, The Blank Family Trust

w/o attachment  
Mr. Greg Gurss, Cardno ERI

October 7, 2014  
Cardno ERI 2735C.R07

Ms. Jennifer C. Sedlachek  
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**SUBJECT**      **Soil Vapor Assessment Report**  
Former Exxon Service Station 79374  
990 San Pablo Avenue, Albany, California

Alameda County Department of Environmental Health RO 0002974

Ms. Sedlachek:

At the request of ExxonMobil Environmental Services (EMES), on behalf of Exxon Mobil Corporation, Cardno ERI prepared this soil vapor assessment report for the subject site. The purpose of the work was to conduct seasonal soil vapor sampling at the subject site, as recommended in the *Soil, Soil Vapor, and Groundwater Investigation Report and Site Conceptual Model*, dated May 2, 2014 (Cardno ERI, 2014a). Prior to submitting the report, which detailed the initial soil vapor sampling event at the site, the Alameda County Department of Environmental Health (ACEH) issued a deadline of June 16, 2014, for the second soil vapor sampling event at the site. In electronic correspondence dated June 5, 2014 (Appendix A), the ACEH granted an extension for the soil vapor sampling to October 10, 2014, so that the second event could take place approximately six months after the first sampling event in opposing seasons.

Additionally, the ACEH requested a foundation analysis in correspondence dated July 7, 2014 (Appendix A). The foundation analysis is included in this report. Additional work requested by the ACEH in correspondence dated July 7 and August 22, 2014 (Appendix A), will be submitted under separate cover as detailed in the *Response To Comments and Request For Extension*, dated September 5, 2014 (Cardno ERI, 2014c).

## **SITE DESCRIPTION**

Former Exxon Service Station 79374 is located at 990 San Pablo Avenue, on the northwestern corner of the intersection of Buchanan Street and San Pablo Avenue, Albany, California (Plate 1). A Generalized Site Plan is included as Plate 2. A tabular site conceptual model for the site detailing additional site information is included as Appendix B.

A retail outlet for Benjamin Moore paints and painting products and associated asphalt parking area currently occupies the site. The surrounding areas consist of residential and commercial properties (Plate 2). The City of Albany Fire Department and Police Department are located south of the site on Buchanan Street. ACEH case number RO0000119, identified as Firestone #3655 in the GeoTracker database, is located across San Pablo Avenue to the east. A Shell Service Station and an Atlantic Richfield Company Service Station (Arco) are located approximately 350 and 500 feet away, respectively, south-southeast of the site.

In 1945, a service station owned by Signal Oil Company occupied the site. Humble Oil company acquired the site in 1967 from Standard Oil Company of California (Chevron), rebranding the site as an Enco station. The station was rebranded as an Exxon service station in 1975 (EDR, 2009a; EDR, 2009b).

The service station was demolished in 1983. During demolition activities, one used-oil UST and four gasoline USTs were removed and the resulting tank cavity was backfilled with sand and compacted to 90% (City of Albany, 1983).

## **GEOLOGY AND HYDROGEOLOGY**

The site lies at an approximate elevation of 40 feet above msl, and the local topography slopes toward the southwest. The site is located along the eastern margin of the San Francisco Bay within the East Bay Plain (Hickenbottom and Muir, 1988). The surficial deposits in the site vicinity are mapped as Holocene alluvial fan and fluvial deposits (Graymer, 2000). The site is located approximately 1,630 feet north-northwest of Cordornices Creek. The active northwest trending Hayward fault is located approximately 1½ miles northeast of the site.

The East Bay Plain is regionally divided into two major groundwater basins: the San Pablo and the San Francisco Basin. These basins are tectonic depressions that are filled primarily with a sequence of coalescing alluvial fans. The San Francisco Basin is further divided into seven sub-areas. The site is located in the Berkeley Sub-Area, which is filled primarily by alluvial deposits that range from 10 to 300 feet thick with poorly defined aquitards (CRWQCB, 1999). Under natural conditions, the direction of groundwater flow in the East Bay Plain is east to west.

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Soil boring logs indicate that the soil beneath the site consists predominantly of silt and clay with an apparently continuous coarse-grained unit 2 to 8 feet thick encountered between approximately 8 and 20 feet bgs. Fill material was encountered in the boring for well SVE3 (located in the former UST pit) to approximately 7 feet bgs. CPT borings indicate the presence of predominantly silt and clay between approximately 20 and 60 feet bgs, the maximum depth explored. Coarse-grained layers up to 3 feet thick are interbedded with the silt and clay (EC&A, 2008; Cardno ERI, 2011; Cardno ERI, 2012a).

Historical groundwater elevation data indicate that DTW ranges from 5 to 11 feet bgs beneath the site with varying groundwater flow directions. The distribution of dissolved-phase hydrocarbons suggests that the dominant groundwater flow direction is west to southwest (Cardno ERI, 2014b).

## **PREVIOUS WORK**

Cumulative groundwater monitoring and sampling data are summarized in Tables 1A and 1B. Well construction details are presented in Table 2. Cumulative soil analytical results are summarized in Tables 3A and 3B. Cumulative soil vapor analytical results are summarized in Table 4. A tabular site conceptual model for the site detailing additional site information is included as Appendix B.

### **Fueling System Activities**

In 1983, one used-oil UST and four gasoline USTs were removed and the resulting tank cavity was backfilled with sand and compacted to 90% (City of Albany, 1983).

### **Site Assessment Activities**

Six exploratory borings (B1 through B6) were advanced on site in 2008. Maximum residual concentrations of TPHg, TPHd, and benzene were reported in the soil samples collected at 10.5 feet bgs from borings B1 and B2, located near the former USTs. Maximum dissolved-phase TPHg, TPHd, and benzene concentrations were also reported in the samples collected from soil borings B1 and B2, and the laboratory reported an immiscible sheen in the samples (EC&A, 2008).

Monitoring wells MW1 through MW6 and borings CPT1/HP1 and CPT2/HP2 were installed on site in 2010. Maximum residual concentrations of TPHg and TPHd in soil were reported in samples collected at 10.5 feet bgs from borings MW3 and MW5, located west of the former USTs. Dissolved-phase hydrocarbons were adequately delineated vertically at the site with petroleum hydrocarbon concentrations near or below laboratory reporting limits in groundwater samples collected deeper than 27.5 feet bgs (Cardno ERI, 2011).

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In January 2012, Cardno ERI installed SVE wells SVE1 through SVE3, AS well AS1, and monitoring well MW3A to be used during feasibility testing (Cardno ERI, 2012a).

In February and March 2014, Cardno ERI installed soil vapor wells SVS1 through SVS3 at the site and advanced on-site and off-site borings B7 through B17 (Cardno ERI, 2014a).

### **Remediation Activities**

According to City of Albany (City) permit number 82-0708, the USTs were removed and the resulting excavation backfilled in 1983 (City of Albany, 1983). It is unknown if over-excavation was performed during UST removal.

Between January 31 and February 1, 2012, Cardno ERI conducted three 4-hour feasibility tests: a DPE only test, a combined AS and DPE test, and an AS only test. Approximately 93 pounds of TPHg and 0.09 pound of benzene were removed during feasibility testing (Cardno ERI, 2012b).

### **Groundwater Monitoring Activities**

Groundwater monitoring began at the site in 2010 following the installation of wells MW1 through MW6. Maximum concentrations are present in wells MW3 and MW4, located west of the former USTs. In 2008, the laboratory reported an immiscible sheen in the samples collected from soil borings B1 and B2 (EC&A, 2008). Neither NAPL nor sheen have been observed in the groundwater monitoring wells at the site.

During fourth quarter 2012, concentrations of TPHg (270,000 µg/L) reported in well MW4 were potentially indicative of the presence of NAPL. To date, NAPL has not been observed in the well, and concentrations of TPHg reported in well MW4 during the second quarter 2013 (16,000 µg/L) and fourth quarter 2013 (13,000 µg/L) sampling events were consistent with historical results (Cardno ERI, 2014b). The fourth quarter 2012 TPHd result for well MW4 appears to have been anomalous.

### **Soil Vapor Monitoring Activities**

Soil vapor monitoring began with the installation and sampling of wells SVS1 through SVS3 in first quarter 2014. Vapor-phase TPHg ranged from 150,000,000 micrograms per cubic meter (µg/m<sup>3</sup>) to 190,000,000 µg/m<sup>3</sup>. Vapor-phase benzene was reported at a maximum of 22,000 µg/m<sup>3</sup> in well SVS3 (Cardno ERI, 2014a).

## **SOIL VAPOR ASSESSMENT**

On August 28, 2014, Cardno ERI collected soil vapor samples from soil vapor wells SVS1 through SVS3 using a custom-made purging manifold consisting of airtight valves, a flow regulator, pressure and vacuum gauges, and a vacuum pump capable of producing a vacuum of approximately 30 inches of mercury (in Hg). The manifold also includes a port that connects sample collection vessels (Summa™ canisters). A duplicate sample was collected from well SVS2. Field work was conducted in accordance with the protocol included in Appendix C. Field data sheets are included in Appendix D.

Prior to purging and sampling, the manifold was connected to each well, and the tubing and fittings downstream from the wellhead valves were vacuum tested at approximately 25 to 30 in Hg. The sampling manifold and tubing held the applied vacuum for five minutes at each well.

Prior to sampling, a helium leak test was performed at each well, including a Summa™ canister and its fittings, to check for leaks in the annulus. To assess the potential for leaks in the well annulus, a shroud was placed over the well and Summa™ canister, in accordance with Department of Toxic Substances Control (DTSC) guidance (DTSC, 2012), and helium was introduced into the shroud and maintained at a constant concentration. Helium screening was performed in the field by drawing soil gas into a Tedlar bag via a lung-box and screening the contents of the Tedlar bag with a helium meter. The concentration of helium in the sample divided by the concentration of helium in the shroud provides a measure of the proportion of the sample attributable to leakage. A leak that comprises less than 5% of the sample is insignificant. Helium screening was also performed using laboratory analysis of the contents of the Summa™ canister collected under the shroud. Sampling was conducted at approximately the same rate of purging, at 100 to 200 milliliters per minute.

The soil vapor samples were submitted to a California state-certified laboratory under COC protocol. Laboratory analytical reports are included in Appendix E. Laboratory analytical results and methods are summarized in Table 4.

## **FOUNDATION ASSESSMENT**

The ACEH requested a foundation analysis in correspondence dated July 7, 2014 (Appendix A). To evaluate building construction, Cardno ERI performed a site visit and visited City offices to review available files for the building at and adjacent to the subject site.

The site building plans reviewed at the City indicate that the building is constructed with a 4-inch concrete slab. Observations at the site are consistent with the building being constructed with a slab on top of grade, as evidenced by the step-up required to enter the building being approximately 4 inches, the slab thickness.

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There were no building plans available for the neighboring residential buildings, which appear to have been constructed in the early 1940s based on local real estate listings. Based on the site visit and external views of the buildings, the adjacent residential buildings appear to have two stories with a minor subfloor area in the central portion of the building. The buildings appear to have two stories on the outer portion above the ground floor garage with an offset single story in the center of the building raised above a small ground level "crawl space."

The *Advisory, Active Soil Gas Investigations* (DTSC, 2012) provides recommendations for appropriate sample depth for soil vapor assessments. The recommendation is that sample probes should not be installed within or below the capillary fringe. Since 2010, the DTW has fluctuated between 5.29 and 11.03 feet at the site (Table 1A). During the most recent groundwater monitoring event (Cardno ERI, 2014b), the DTW ranged from 6.25 to 9.63 feet (Table 1A). The soil vapor wells at the site are screened from 5.4 to 5.6 feet bgs. In Cardno ERI's opinion, the wells are screened to an appropriate depth considering the DTW and building construction. The wells likely could not be installed any deeper and still permit the collection of representative samples.

## **RESULTS AND DATA EVALUATION**

Cardno ERI installed soil vapor sampling wells SVS1 through SVS3 to assess vapor-phase concentrations near the buildings at and adjacent to the site to evaluate the Media-Specific Criteria for Vapor Intrusion to Indoor Air (Scenario 4) outlined in the *Low-Threat Underground Storage Tank Case Closure Policy* (Low-Threat Policy) (SWRCB, 2012). Cumulative soil vapor analytical results are summarized in Table 4 and select results from the current investigation are illustrated on Plate 2.

Concentrations of petroleum hydrocarbons exceeded ESLs in each of the soil vapor samples collected during the current investigation. Concentrations of TPHg and benzene were up to two to three orders of magnitude greater than the commercial and residential ESLs, respectively, with TPHg concentrations ranging up to 90,000,000  $\mu\text{g}/\text{m}^3$  (SVS1) and benzene concentrations ranging up to 21,000  $\mu\text{g}/\text{m}^3$  (SVS3). Concentrations of and/or reporting limits for benzene, ethylbenzene, and naphthalene were above both the residential and commercial soil gas criteria outlined in the Low-Threat Policy for sites with no bio-attenuation zone, but were less than the criteria for residential land use with a bio-attenuation zone. The reported oxygen concentrations ranged from 2.49% to 5.54%.

## **SITE CONCEPTUAL MODEL**

Based on historical data and the results of the current investigation, Cardno ERI updated the tabular site conceptual model for the site (Appendix B).

## **CONCLUSIONS AND RECOMMENDATIONS**

Soil vapor concentrations exceed select ESLs and Low-Threat Policy criteria. After the fourth quarter 2014 groundwater monitoring and sampling event and the installation and sampling of the previously-proposed off-site monitoring wells, Cardno ERI recommends preparing the feasibility study/corrective action plan (FS/CAP), as detailed in the *Response To Comments and Request For Extension* (Cardno ERI, 2014c).

## **CONTACT INFORMATION**

The responsible party contact is Ms. Jennifer C. Sedlachek, ExxonMobil Environmental Services Company, 4096 Piedmont Avenue #194, Oakland, California, 94611. The consultant contact is Mr. Greg Gurss, Cardno ERI, 601 North McDowell Boulevard, Petaluma, California, 94954. The agency contact is Mr. Mark Detterman, Alameda County Health Care Services Agency, Environmental Health Services, 1131 Harbor Bay Parkway, Suite 250, Alameda, California, 94502-6577.

## **LIMITATIONS**

For documents cited that were not generated by Cardno ERI, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno ERI does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform the work in a good and workmanlike manner and within all accepted standards pertaining to providers of environmental services in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.



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Please contact Mr. Greg Gurss, Cardno ERI's project manager for this site, at [greg.gurss@cardno.com](mailto:greg.gurss@cardno.com) or at (916) 692-3130 with any questions or comments regarding this report.

Sincerely,

SCANNED  
 IMAGE  


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Enclosures:

References

Acronym List

Plate 1	Site Vicinity Map
Plate 2	Select Soil Vapor Analytical Results
Table 1A	Cumulative Groundwater Monitoring and Sampling Data
Table 1B	Additional Cumulative Groundwater Monitoring and Sampling Data
Table 2	Well Construction Details
Table 3A	Cumulative Soil Analytical Results
Table 3B	Additional Cumulative Soil Analytical Results – HVOCs and PAHs
Table 4	Cumulative Soil Vapor Analytical Results
Appendix A	Correspondence
Appendix B	Site Conceptual Model
Appendix C	Field Protocol
Appendix D	Field Data Sheets
Appendix E	Laboratory Analytical Reports

October 7, 2014

Cardno ERI 2735C.R07 Former Exxon Service Station 79374, Albany, California

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## REFERENCES

California Regional Water Quality Control Board San Francisco Bay Region Groundwater Committee (CRWQCB). June 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, CA.*

Cardno ERI. February 28, 2011. *Site Assessment Report, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

Cardno ERI. April 12, 2012a. *Well Installation Report, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

Cardno ERI. April 12, 2012b. *Air Sparge and Dual-Phase Extraction and Feasibility Testing, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

Cardno ERI. May 2, 2014a. *Soil, Soil Vapor, and Groundwater Investigation Report and Site Conceptual Model, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

Cardno ERI. July 18, 2014b. *Groundwater Monitoring Report, First and Second Quarter 2014, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

Cardno ERI. September 5, 2014c. *Response To Comments and Request For Extension, Former Exxon Service Station 79374, 990 San Pablo Avenue, Albany, California.*

City of Albany. March 28, 1983. *Building Permit 82-0708.*

Department of Toxic Substances Control of the California EPA, Department of Toxic Substances Control, California Regional Water Quality Control Board, Los Angeles Region and San Francisco Region (DTSC). April 2012. *Advisory – Active Soil Gas Investigations.*

Edd Clark & Associates (EC&A). January 31, 2008. *Report of Phase II Environmental Assessment, 990 San Pablo Avenue, Albany, California 94706. EC&A Project No 0589,002.07.*

Environmental Data Resources Inc (EDR). December 1, 2009a. *The EDR-City Directory Abstract, 990 San Pablo Avenue, Albany, CA 94706. Inquiry Number: 2648519.6.*

October 7, 2014  
Cardno ERI 2735C.R07 Former Exxon Service Station 79374, Albany, California

Environmental Data Resources Inc. (EDR). December 1, 2009b. *Certified Sanborn® Map Report, 990 San Pablo Avenue, Albany, CA 94706. Inquiry Number: 2648519.36.*

Graymer, R.W. 2000. *Geologic map and map database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California. USGS, Miscellaneous Field Studies MF-2342.*

Hickenbottom, Kelvin and Muir, Kenneth S. June 1988. *Geohydrogeology and Groundwater Quality Overview of the East Bay Plain Area, Alameda County, CA. Alameda County Flood Control and Water Conservation District. 83p.*

State Water Resource Control Board (SWRCB). August 17, 2014. *Low-Threat Underground Storage Tank Case Closure Policy.*

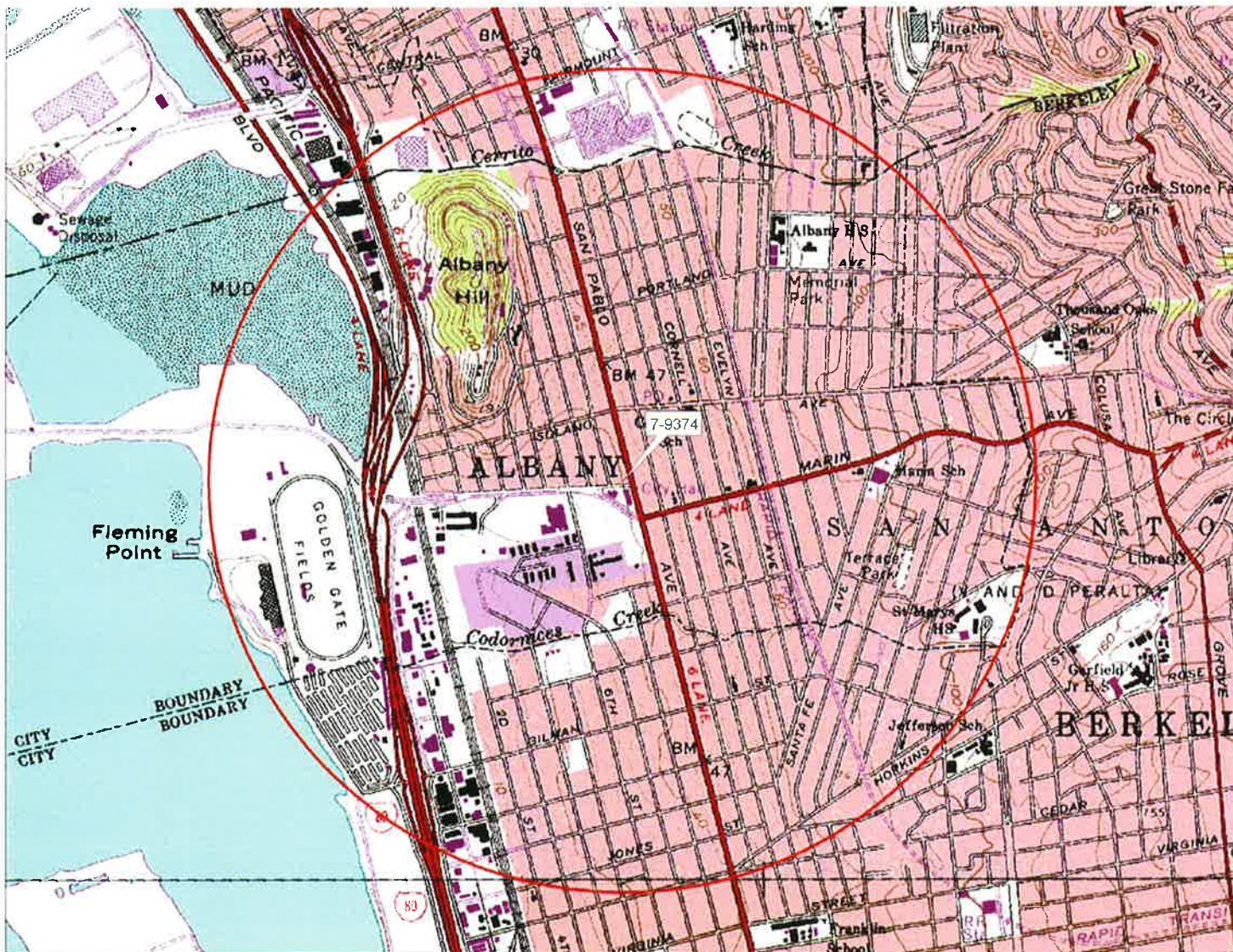
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**ACRONYM LIST**

µg/L	Micrograms per liter	NEPA	National Environmental Policy Act
µs	Microsiemens	NGVD	National Geodetic Vertical Datum
1,2-DCA	1,2-dichloroethane	NPDES	National Pollutant Discharge Elimination System
acfm	Actual cubic feet per minute	O&M	Operations and Maintenance
AS	Air sparge	ORP	Oxidation-reduction potential
bgs	Below ground surface	OSHA	Occupational Safety and Health Administration
BTEX	Benzene, toluene, ethylbenzene, and total xylenes	OVA	Organic vapor analyzer
CEQA	California Environmental Quality Act	P&ID	Process & Instrumentation Diagram
cfm	Cubic feet per minute	PAH	Polycyclic aromatic hydrocarbon
COC	Chain of Custody	PCB	Polychlorinated biphenyl
CPT	Cone Penetration (Penetrometer) Test	PCE	Tetrachloroethene or perchloroethylene
DIPE	Di-isopropyl ether	PID	Photo-ionization detector
DO	Dissolved oxygen	PLC	Programmable logic control
DOT	Department of Transportation	POTW	Publicly owned treatment works
DPE	Dual-phase extraction	ppmv	Parts per million by volume
DTW	Depth to water	PQL	Practical quantitation limit
EDB	1,2-dibromoethane	psi	Pounds per square inch
EPA	Environmental Protection Agency	PVC	Polyvinyl chloride
ESL	Environmental screening level	QA/QC	Quality assurance/quality control
ETBE	Ethyl tertiary butyl ether	RBSL	Risk-based screening levels
FID	Flame-ionization detector	RCRA	Resource Conservation and Recovery Act
fpm	Feet per minute	RL	Reporting limit
GAC	Granular activated carbon	scfm	Standard cubic feet per minute
gpd	Gallons per day	SSTL	Site-specific target level
gpm	Gallons per minute	STLC	Soluble threshold limit concentration
GWPTS	Groundwater pump and treat system	SVE	Soil vapor extraction
HVOC	Halogenated volatile organic compound	SVOC	Semivolatile organic compound
J	Estimated value between MDL and PQL (RL)	TAME	Tertiary amyl methyl ether
LEL	Lower explosive limit	TBA	Tertiary butyl alcohol
LPC	Liquid-phase carbon	TCE	Trichloroethene
LRP	Liquid-ring pump	TOC	Top of well casing elevation; datum is msl
LUFT	Leaking underground fuel tank	TOG	Total oil and grease
LUST	Leaking underground storage tank	TPHd	Total petroleum hydrocarbons as diesel
MCL	Maximum contaminant level	TPHg	Total petroleum hydrocarbons as gasoline
MDL	Method detection limit	TPHmo	Total petroleum hydrocarbons as motor oil
mg/kg	Milligrams per kilogram	TPHs	Total petroleum hydrocarbons as stoddard solvent
mg/L	Milligrams per liter	TRPH	Total recoverable petroleum hydrocarbons
mg/m <sup>3</sup>	Milligrams per cubic meter	UCL	Upper confidence level
MPE	Multi-phase extraction	USCS	Unified Soil Classification System
MRL	Method reporting limit	USGS	United States Geologic Survey
msl	Mean sea level	UST	Underground storage tank
MTBE	Methyl tertiary butyl ether	VCP	Voluntary Cleanup Program
MTCA	Model Toxics Control Act	VOC	Volatile organic compound
NAI	Natural attenuation indicators	VPC	Vapor-phase carbon
NAPL	Non-aqueous phase liquid		





DELORME

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FN 2735 TOPO

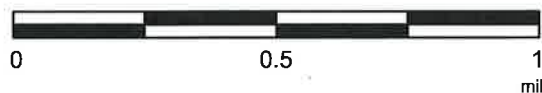
**EXPLANATION**



1/2-mile radius circle



**APPROXIMATE SCALE**



SOURCE:  
Modified from a map  
provided by  
DeLorme 3-D TopoQuads



**SITE VICINITY MAP**

FORMER EXXON SERVICE STATION 79374  
990 San Pablo Avenue  
Albany, California

**PROJECT NO.**

2735

**PLATE**

1

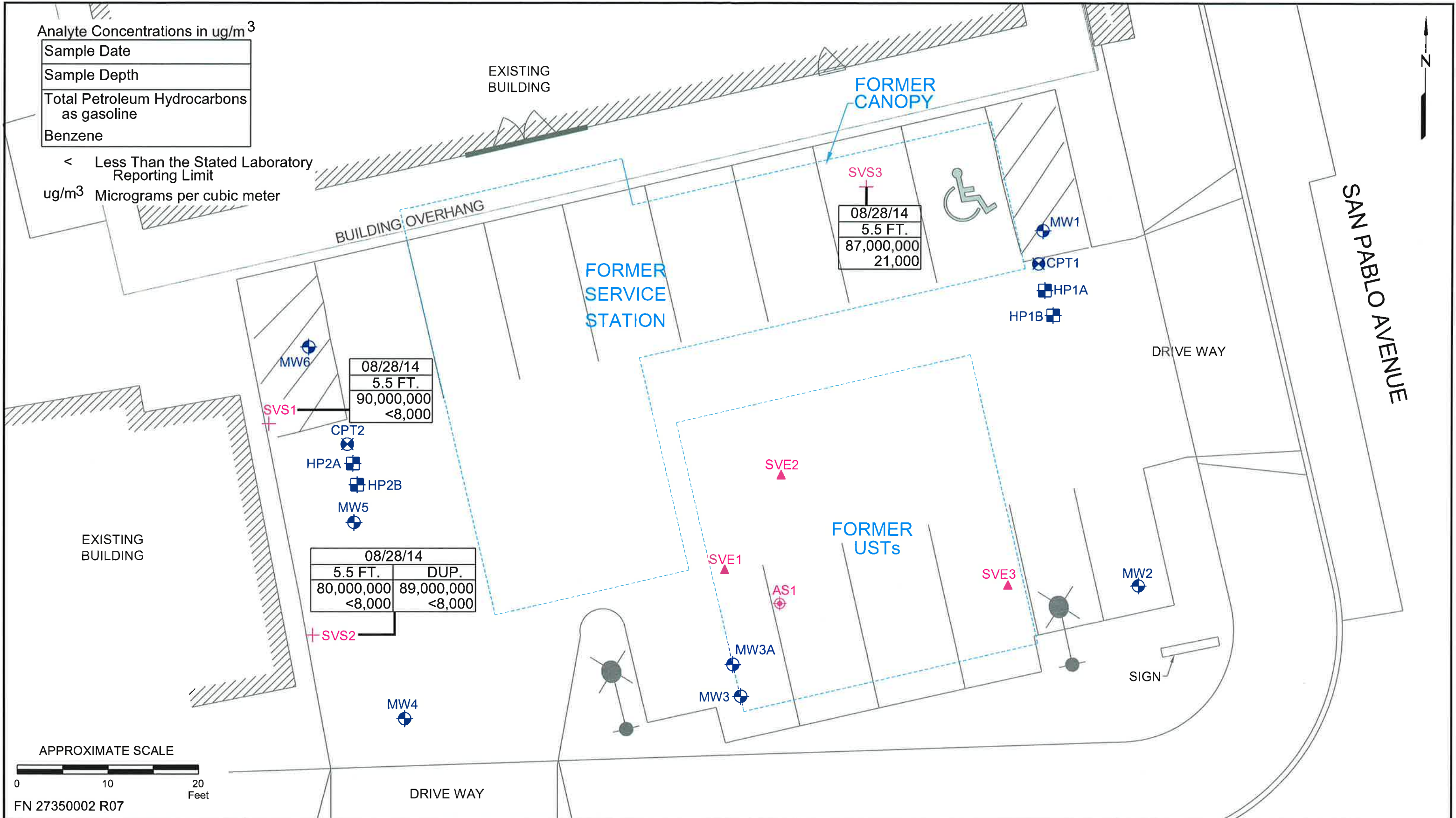


Analyte Concentrations in ug/m<sup>3</sup>

Sample Date
Sample Depth
Total Petroleum Hydrocarbons as gasoline
Benzene

< Less Than the Stated Laboratory Reporting Limit

ug/m<sup>3</sup> Micrograms per cubic meter



**SELECT SOIL VAPOR ANALYTICAL RESULTS**  
**August 28, 2014**

FORMER EXXON SERVICE STATION 79374  
 990 San Pablo Avenue  
 Albany, California

**EXPLANATION**

- MW6 Groundwater Monitoring Well
- HP2B Hydro-punch Boring
- CPT2 Cone Penetration Test Boring
- AS1 Air Sparge Well
- SVS3 Soil Vapor Sampling Well
- SVE3 Soil Vapor Extraction Well

**PROJECT NO.**  
2735

**PLATE**  
2



APPROXIMATE SCALE  
 0 10 20 Feet  
 FN 27350002 R07

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev.	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Monitoring Well Samples</b>															
MW1	11/04/10	---	Well installed.												
MW1	12/01/10	---	41.45	Well surveyed.											
MW1	12/16/10	---	41.45	9.18	32.27	No	---	<250	71a	54	<0.50	1.4	0.65	0.58	1.6
MW1	01/31/11	---	41.45	8.78	32.67	No	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW1	04/07/11	---	41.45	8.45	33.00	No	---	<250	65a	160a	<0.50	2.9	0.92	<0.50	1.7
MW1	07/18/11	---	41.45	9.49	31.96	No	---	<250	<50	63a	<0.50	<0.50	<0.50	<0.50	<0.50
MW1	10/13/11	---	41.45	9.86	31.59	No	---	<250	54	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW1	04/06/12	---	41.45	8.11	33.34	No	---	<250	130	130	<0.50	2.1	<0.50	<0.50	<0.50
MW1	10/19/12	---	41.45	10.42	31.03	No	---	<250	<50	<50	<0.50	0.51	2.2	<0.50	0.65
MW1	06/11/13	---	41.45	10.48	30.97	No	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW1	12/19/13	---	41.45	10.67	30.78	No	---	<250	<50	<50	<0.50	<0.50	1.3	<0.50	0.53
MW1	04/03/14	---	44.19	Elevation converted to NAVD88.											
<b>MW1</b>	<b>04/30/14</b>	---	<b>44.19</b>	<b>9.49</b>	<b>34.70</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW1</b>	<b>05/01/14</b>	---	<b>44.19</b>	---	---	---	---	<b>&lt;240</b>	<b>&lt;48</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW2	11/04/10	---	Well installed.												
MW2	12/01/10	---	41.25	Well surveyed.											
MW2	12/16/10	---	41.25	8.11	33.14	No	---	<250	110a	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/31/11	---	41.25	9.29	31.96	No	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	04/07/11	---	41.25	8.21	33.04	No	---	<250	<50	<50	0.51	<0.50	<0.50	<0.50	<0.50
MW2	07/18/11	---	41.25	9.52	31.73	No	---	<250	<50	54a	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	10/13/11	---	41.25	9.56	31.69	No	---	<250	98	75a	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	04/06/12	---	41.25	8.68	32.57	No	---	<250	60	68	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	10/19/12	---	41.25	11.03	30.22	No	---	<250	<50	59a	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	06/11/13	---	41.25	10.67	30.58	No	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	12/19/13	---	41.25	10.77	30.48	No	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	04/03/14	---	43.99	Elevation converted to NAVD88.											
<b>MW2</b>	<b>04/30/14</b>	---	<b>43.99</b>	<b>9.63</b>	<b>34.36</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW2</b>	<b>05/01/14</b>	---	<b>43.99</b>	---	---	---	---	<b>&lt;240</b>	<b>&lt;48</b>	<b>53a</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW3	11/08/10	---	Well installed.												
MW3	12/01/10	---	40.42	Well surveyed.											
MW3	12/16/10	---	40.42	8.18	32.24	No	---	<250	2,900a	19,000	<12	350	130	940	290
MW3	01/31/11	---	40.42	7.64	32.78	No	---	390	2,800a	17,000a	<12	540	140	700	270
MW3	04/07/11	---	40.42	5.88	34.54	No	---	<250	2,700a	14,000	<10	600	150	780	230
MW3	07/18/11	---	40.42	8.31	32.11	No	---	<250	1,700a	19,000	<10	650	140	660	220
MW3	10/13/11	---	40.42	8.76	31.66	No	---	<250	1,900a	16,000	<10	520	150	900	270
MW3	04/06/12	---	40.42	8.13	32.29	No	---	<250	3,200a	18,000	<20	300	120	1,100	180
MW3	10/19/12	---	40.42	9.37	31.05	No	---	<250	1,700a	11,000a	<10	380	120	740	150
MW3	06/11/13	---	40.42	9.48	30.94	No	---	<250	2,700a	17,000	<10	270	110	990	140
MW3	12/19/13	---	40.42	10.00	30.42	No	---	---	---	---	---	---	---	---	---



**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev.	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW3	12/20/13	---	40.42	---	---	---	---	<250	2,000a	16,000	<10	310	120	710	120
MW3	04/03/14	---	43.16	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>MW3</b>	<b>04/30/14</b>	---	<b>43.16</b>	<b>9.17</b>	<b>33.99</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW3</b>	<b>05/01/14</b>	---	<b>43.16</b>	---	---	---	---	<b>&lt;240</b>	<b>3,100a</b>	<b>18,000</b>	<b>&lt;10</b>	<b>230</b>	<b>110</b>	<b>1,100</b>	<b>170</b>
MW3A	01/18/12	---	Well installed.			---	---	---	---	---	---	---	---	---	---
MW3A	02/06/12	---	40.68	Well surveyed.			---	---	---	---	---	---	---	---	---
MW3A	04/06/12	---	40.68	6.02	34.66	No	---	<250	170a	1,300	<2.0	41	7.5	140	38
MW3A	10/19/12	---	40.68	10.44	30.24	No	---	<250	860a	4,400a	<5.0	390	59	410	82
MW3A	06/11/13	---	40.68	9.75	30.93	No	---	<250	160a	1,100	<2.0	99	14	110	3.6
MW3A	12/19/13	---	40.68	10.05	30.63	No	---	<250	270a	1,800	<2.0	150	18	65	4.7
MW3A	04/03/14	---	43.42	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>MW3A</b>	<b>04/30/14</b>	---	<b>43.42</b>	<b>7.55</b>	<b>35.87</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW3A</b>	<b>05/01/14</b>	---	<b>43.42</b>	---	---	---	---	<b>&lt;240</b>	<b>&lt;48</b>	<b>130a</b>	<b>&lt;0.50</b>	<b>7.0</b>	<b>1.2</b>	<b>7.4</b>	<b>1.3</b>
MW4	11/05/10	---	Well installed.			---	---	---	---	---	---	---	---	---	---
MW4	12/01/10	---	39.30	Well surveyed.			---	---	---	---	---	---	---	---	---
MW4	12/16/10	---	39.30	6.10	33.20	No	---	<250	2,000a	9,900	<5.0	440	40	170	380
MW4	01/31/11	---	39.30	6.84	32.46	No	---	260	3,900a	13,000	<10	500	59	320	740
MW4	04/07/11	---	39.30	5.29	34.01	No	---	<250	1,900a	9,600	<10	530	59	250	340
MW4	07/18/11	---	39.30	7.36	31.94	No	---	<250	2,800a	14,000	<10	570	66	320	510
MW4	10/13/11	---	39.30	7.83	31.47	No	---	320	7,200a	14,000	<10	350	43	340	690
MW4	04/06/12	---	39.30	6.21	33.09	No	---	<250	1,800a	9,100a	<10	380	40	220	410
MW4	10/19/12	---	39.30	10.64	28.66	No	---	1,400a	20,000a	270,000	<10	440	88	2,100	3,800
MW4	03/06/13	---	39.30	8.02	31.28	No	---	---	---	---	---	---	---	---	---
MW4	06/11/13	---	39.30	9.05	30.25	No	---	<250	3,400a	16,000	<10	430	48	520	820
MW4	12/19/13	---	39.30	8.95	30.35	No	---	---	---	---	---	---	---	---	---
MW4	12/20/13	---	39.30	---	---	---	---	<250	2,800a	13,000	<10	590	41	430	530
MW4	03/05/14	---	39.30	---	---	No	---	---	---	---	---	---	---	---	---
MW4	04/03/14	---	42.04	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>MW4</b>	<b>04/30/14</b>	---	<b>42.04</b>	<b>6.25</b>	<b>35.79</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW4</b>	<b>05/01/14</b>	---	<b>42.04</b>	---	---	---	---	<b>&lt;240</b>	<b>3,000a</b>	<b>13,000</b>	<b>&lt;10</b>	<b>520</b>	<b>46</b>	<b>310</b>	<b>340</b>
MW5	11/11/10	---	Well installed.			---	---	---	---	---	---	---	---	---	---
MW5	12/01/10	---	40.38	Well surveyed.			---	---	---	---	---	---	---	---	---
MW5	12/16/10	---	40.38	7.69	32.69	No	---	<250	1,100a	6,200	<2.5	150	96	270	980
MW5	01/31/11	---	40.38	8.00	32.38	No	---	270	4,600a	15,000	<10	520	310	1,100	2,500
MW5	04/07/11	---	40.38	6.73	33.65	No	---	<250	610a	2,500	<2.5	61	32	180	390
MW5	07/18/11	---	40.38	7.63	32.75	No	---	<250	2,000a	11,000	<2.5	340	160	990	1,800
MW5	10/13/11	---	40.38	9.31	31.07	No	---	660	7,600a	23,000	<20	390	160	1,200	3,100
MW5	04/06/12	---	40.38	6.77	33.61	No	---	<250	880a	6,000a	<5.0	62	17	360	680
MW5	10/19/12	---	40.38	10.64	29.74	No	---	280a	2,100a	15,000	<20	580	63	950	1,400
MW5	06/11/13	---	40.38	10.06	30.32	No	---	<250	2,700a	13,000	<20	540	36	930	1,200
MW5	12/19/13	---	40.38	9.85	30.53	No	---	---	---	---	---	---	---	---	---

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev.	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW5	12/20/13	---	40.38	---	---	---	---	<250	2,100a	21,000	<20	370	36	1,500	1,400
MW5	04/03/14	---	43.12	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>MW5</b>	<b>04/30/14</b>	---	<b>43.12</b>	<b>7.51</b>	<b>35.61</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW5</b>	<b>05/01/14</b>	---	<b>43.12</b>	---	---	---	---	<b>&lt;240</b>	<b>2,000a</b>	<b>10,000</b>	<b>&lt;10</b>	<b>170</b>	<b>10</b>	<b>600</b>	<b>510</b>
MW6	11/03/10	---	Well installed.			---	---	---	---	---	---	---	---	---	---
MW6	12/01/10	---	41.06	Well surveyed.			---	---	---	---	---	---	---	---	---
MW6	12/16/10	---	41.06	8.55	32.51	No	---	<250	110a	1,700	<0.50	2.8	1.2	61	46
MW6	01/31/11	---	41.06	8.52	32.54	No	---	<250	800a	2,000a	<1.0	6.0	<1.0	30	24
MW6	04/07/11	---	41.06	7.78	33.28	No	---	<250	660a	2,000	<0.50	10	1.0	20	19
MW6	07/18/11	---	41.06	9.27	31.79	No	---	<250	350a	1,000a	<0.50	2.5	<0.50	3.8	3.5
MW6	10/13/11	---	41.06	10.21	30.85	No	---	<250	370a	890a	<0.50	2.8	<0.50	7.9	5.5
MW6	04/06/12	---	41.06	7.19	33.87	No	---	<250	440a	1,400a	<0.50	2.4	<0.50	13	15
MW6	10/19/12	---	41.06	11.36	29.70	No	---	<250	99a	510a	<0.50	4.2	1.6	8.0	7.0
MW6	06/11/13	---	41.06	10.81	30.25	No	---	<250	150a	500	<0.50	<0.50	<0.50	2.4	1.1
MW6	12/19/13	---	41.06	10.78	30.28	No	---	<250	68a	440	<0.50	<0.50	<0.50	2.3	0.87
MW6	04/03/14	---	43.80	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>MW6</b>	<b>04/30/14</b>	---	<b>43.80</b>	<b>8.23</b>	<b>35.57</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>MW6</b>	<b>05/01/14</b>	---	<b>43.80</b>	---	---	---	---	<b>&lt;240</b>	<b>450a</b>	<b>1,500</b>	<b>&lt;0.50</b>	<b>2.8</b>	<b>0.57</b>	<b>13</b>	<b>4.8</b>
AS1	01/18/12	---	Well installed.			---	---	---	---	---	---	---	---	---	---
AS1	10/19/12	---	---	10.32	---	No	---	---	---	---	---	---	---	---	---
AS1	06/11/13	---	---	9.82	---	No	---	---	---	---	---	---	---	---	---
AS1	12/19/13	---	---	10.12	---	No	---	---	---	---	---	---	---	---	---
<b>AS1</b>	<b>04/30/14</b>	---	---	<b>7.95</b>	---	<b>No</b>	---	---	---	---	---	---	---	---	---
SVE1	01/17/12	---	Well installed.			---	---	---	---	---	---	---	---	---	---
SVE1	02/06/12	---	40.58	Well surveyed.			---	---	---	---	---	---	---	---	---
SVE1	10/19/12	---	40.58	10.21	30.37	No	---	---	---	---	---	---	---	---	---
SVE1	06/11/13	---	40.58	9.63	30.95	No	---	---	---	---	---	---	---	---	---
SVE1	12/19/13	---	40.58	9.89	30.69	No	---	---	---	---	---	---	---	---	---
SVE1	04/03/14	---	43.32	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>SVE1</b>	<b>04/30/14</b>	---	<b>43.32</b>	<b>7.70</b>	<b>35.62</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
SVE2	01/17/12	---	Well installed.			---	---	---	---	---	---	---	---	---	---
SVE2	02/06/12	---	40.94	Well surveyed.			---	---	---	---	---	---	---	---	---
SVE2	10/19/12	---	40.94	10.48	30.46	No	---	---	---	---	---	---	---	---	---
SVE2	06/11/13	---	40.94	9.94	31.00	No	---	---	---	---	---	---	---	---	---
SVE2	12/19/13	---	40.94	10.20	30.74	No	---	---	---	---	---	---	---	---	---
SVE2	04/03/14	---	43.68	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>SVE2</b>	<b>04/30/14</b>	---	<b>43.68</b>	<b>8.09</b>	<b>35.59</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
SVE3	01/17/12	---	Well installed.			---	---	---	---	---	---	---	---	---	---
SVE3	02/06/12	---	40.93	Well surveyed.			---	---	---	---	---	---	---	---	---
SVE3	10/19/12	---	40.93	10.39	30.54	No	---	---	---	---	---	---	---	---	---

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev.	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
SVE3	06/11/13	---	40.93	9.65	31.28	No	---	---	---	---	---	---	---	---	---
SVE3	12/19/13	---	40.93	10.31	30.62	No	---	---	---	---	---	---	---	---	---
SVE3	04/03/14	---	43.67	Elevation converted to NAVD88.			---	---	---	---	---	---	---	---	---
<b>SVE3</b>	<b>04/30/14</b>	---	<b>43.67</b>	<b>7.79</b>	<b>35.88</b>	<b>No</b>	---	---	---	---	---	---	---	---	---
<b>Grab Groundwater Samples</b>															
B-1W	01/06/08	---	---	---	---	---	26r,s	<5,000	99,000o,n,r	76,000m,p,r	<50	<50	93	3,100	9,600
B-2W	01/06/08	---	---	---	---	---	---	310s	23,000o,r,s	77,000 l,r,s	<50	1,500	300	2,000	6,800
B-3W	01/06/08	---	---	---	---	---	---	<250s	2,000o,s	6,200 l,s	<10	170	32	740	250
B-4W	01/06/08	---	---	---	---	---	---	<250s	3,100o,s	7,700 l,s	<10	360	<10	240	20
B-5W	01/06/08	---	---	---	---	---	---	<250s	120o,s	120q,s	<0.5	<0.5	<0.5	<0.5	<0.5
B-6W	01/06/08	---	---	---	---	---	---	<250s	830o,s	1,700 l,s	<2.5	5.2	<2.5	100	8.6
DR-W	01/06/08	---	---	---	---	---	---	<250	96o	730m,p	<0.5	<0.5	<0.5	6.9	14
W-27.5-HP1A	10/28/10	27.5	---	---	---	---	---	260	330a	63a	<0.50	<0.50	<0.50	<0.50	<0.50
W-36-HP1A	10/28/10	36	---	---	---	---	---	<250	220a	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-46.5-HP1A	10/28/10	46.5	---	---	---	---	---	<420	<83	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-59-HP1B	10/27/10	59	---	---	---	---	---	<250	130	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-27.5-HP2A	10/29/10	27.5	---	---	---	---	---	<250	100a	340	<0.50	1.7	2.1	20	46
W-52-HP2A	10/29/10	52	---	---	---	---	---	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-60.5-HP2B	10/27/10	60.5	---	---	---	---	---	<250	62	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-10-SVE1-2	01/31/12	10	---	---	---	---	---	890a	1,500a	1,400	<1.0	46	2.0	24	23
W-10-SVE1-1	01/31/12	10	---	---	---	---	---	990a	1,900a	2,000	<2.0	87	2.1	13	23
W-5-B7	02/27/14	5	---	---	---	---	---	<310	<62	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-12-B8	02/28/14	12	---	---	---	---	---	<240	130a	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-5-B9	02/27/14	5	---	---	---	---	---	<310	370a	1,400a	<0.50	<0.50	<0.50	<0.50	<0.50
W-5.5-B10	02/27/14	5.5	---	---	---	---	---	<310	<62	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-14-B11	03/05/14	14	---	---	---	---	---	<310	<62	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-10-B12	02/26/14	10	---	---	---	---	---	<250	800a	5,900	<2.0	<2.0	<2.0	7.5	<2.0
W-10-B13	02/28/14	10	---	---	---	---	---	<250	1,500a	6,300	<5.0	12	8.8	290	22

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev.	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
B14	03/05/14	t ---					---								
W-14-B15	03/05/14	14	---	---	---	---	---	<310	<62	<50	1.3	<0.50	<0.50	<0.50	<0.50
W-14-B16	02/26/14	14	---	---	---	---	---	<250	180a	170a	<0.50	1.1	<0.50	5.4	<0.50
W-10-B17	02/27/14	10	---	---	---	---	---	<270	<54	110a	<0.50	<0.50	<0.50	<0.50	<0.50

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

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Notes:	=	
TOC	=	Top of well casing elevation; datum is NAVD88, prior to April 2014, datum was mean sea level.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation; datum is NAVD88, prior to April 2014, datum was mean sea level. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.76)].
NAPL	=	Non-aqueous phase liquid.
O&G	=	Oil and grease with silica gel clean-up analyzed using Standard Method 5520B/F.
TPHmo	=	Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015 (modified).
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015 (modified).
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015 (modified).
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	=	1,2-dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-dichloroethane analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
Add'l VOCs	=	Additional volatile organic carbons analyzed using EPA Method 8260B.
Add'l SVOCs	=	Additional semi-volatile organic carbons analyzed using EPA Method 8270C.
µg/L	=	Micrograms per liter.
ND	=	Not detected at or above laboratory reporting limits.
---	=	Not measured/Not sampled/Not analyzed.
<	=	Less than the stated laboratory reporting limit.
a	=	The chromatographic pattern does not match that of the specified standard.
b	=	n-butylbenzene.
c	=	sec-butylbenzene.
d	=	Isopropylbenzene.
e	=	n-propylbenzene.
f	=	1,2,4-trimethylbenzene.
g	=	1,3,5-trimethylbenzene.
h	=	Naphthalene.
i	=	1-butanone.
j	=	1,2-dibromo-3-chloropropane.
k	=	2-methylnaphthalene.
l	=	Unmodified or weakly modified gasoline is significant.
m	=	Heavier gasoline range compounds are significant.
n	=	Diesel range compounds are significant; no recognizable pattern.
o	=	Gasoline range compounds are significant.
p	=	No recognizable pattern.
q	=	Strongly aged gasoline or diesel compounds are significant.
r	=	Lighter than water immiscible sheen/product is present.
s	=	Liquid sample that contains greater than approximately 1 volume % sediment.
t	=	Groundwater did not enter boring, sample not collected.

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Add'l VOCs (µg/L)	Add'l SVOCs (µg/L)
<b>Monitoring Well Samples</b>										
MW1	11/04/10	---	Well installed.							
MW1	12/16/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	01/31/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	04/07/11	---	<0.50	<0.50	<0.50	10	<0.50	<0.50	---	---
MW1	07/18/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	10/13/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	04/06/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	10/19/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	06/11/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW1	12/19/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
<b>MW1</b>	<b>05/01/14</b>	---	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>5.1</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---	---
MW2	11/04/10	---	Well installed.							
MW2	12/16/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	01/31/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	04/07/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	07/18/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	10/13/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	04/06/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	10/19/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	06/11/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW2	12/19/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
<b>MW2</b>	<b>05/01/14</b>	---	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---	---
MW3	11/08/10	---	Well installed.							
MW3	12/16/10	---	<12	<12	<12	<120	<12	<12	---	---
MW3	01/31/11	---	<12	<12	<12	<120	<12	<12	---	---
MW3	04/07/11	---	<10	<10	<10	<100	<10	<10	---	---
MW3	07/18/11	---	<10	<10	<10	<100	<10	<10	---	---
MW3	10/13/11	---	<10	<10	<10	<100	<10	<10	---	---
MW3	04/06/12	---	<20	<20	<20	<200	<20	<20	---	---
MW3	10/19/12	---	<10	<10	<10	<100	<10	<10	---	---
MW3	06/11/13	---	<10	<10	<10	<100	<10	<10	---	---
MW3	12/20/13	---	<10	<10	<10	<100	<10	<10	---	---
<b>MW3</b>	<b>05/01/14</b>	---	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;10</b>	---	---
MW3A	01/18/12	---	Well installed.							
MW3A	04/06/12	---	<2.0	<2.0	<2.0	<20	<2.0	<2.0	---	---
MW3A	10/19/12	---	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---	---
MW3A	06/11/13	---	<2.0	<2.0	<2.0	<20	<2.0	<2.0	---	---
MW3A	12/19/13	---	<2.0	<2.0	<2.0	<20	<2.0	<2.0	---	---
<b>MW3A</b>	<b>05/01/14</b>	---	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---	---

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Add'l VOCs (µg/L)	Add'l SVOCs (µg/L)
MW4	11/05/10	---	Well installed.							
MW4	12/16/10	---	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---	---
MW4	01/31/11	---	<10	<10	<10	<100	<10	<10	---	---
MW4	04/07/11	---	<10	<10	<10	<100	<10	<10	---	---
MW4	07/18/11	---	<10	<10	<10	<100	<10	<10	---	---
MW4	10/13/11	---	<10	<10	<10	<100	<10	<10	---	---
MW4	04/06/12	---	<10	<10	<10	<100	<10	<10	---	---
MW4	10/19/12	---	<10	<10	<10	<100	<10	<10	---	---
MW4	06/11/13	---	<10	<10	<10	<100	<10	<10	---	---
MW4	12/20/13	---	<10	<10	<10	<100	<10	<10	---	---
<b>MW4</b>	<b>05/01/14</b>	---	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;10</b>	---	---
MW5	11/11/10	---	Well installed.							
MW5	12/16/10	---	<2.5	<2.5	<2.5	<25	<2.5	<2.5	---	---
MW5	01/31/11	---	<10	<10	<10	<100	<10	<10	---	---
MW5	04/07/11	---	<2.5	<2.5	<2.5	<25	<2.5	<2.5	---	---
MW5	07/18/11	---	<2.5	<2.5	<2.5	<25	<2.5	<2.5	---	---
MW5	10/13/11	---	<20	<20	<20	<200	<20	<20	---	---
MW5	04/06/12	---	<0.50	<5.0	<5.0	<50	<5.0	<5.0	---	---
MW5	10/19/12	---	<20	<20	<20	<200	<20	<20	---	---
MW5	06/11/13	---	<20	<20	<20	<200	<20	<20	---	---
MW5	12/20/13	---	<20	<20	<20	<200	<20	<20	---	---
<b>MW5</b>	<b>05/01/14</b>	---	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;10</b>	---	---
MW6	11/03/10	---	Well installed.							
MW6	12/16/10	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	01/31/11	---	<1.0	<1.0	<1.0	<10	<1.0	<1.0	---	---
MW6	04/07/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	07/18/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	10/13/11	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	04/06/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	10/19/12	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	06/11/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
MW6	12/19/13	---	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
<b>MW6</b>	<b>05/01/14</b>	---	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	---	---
AS1	01/18/12	---	Well installed.							
AS1	10/19/12	---	- Present Not sampled.							
SVE1	01/17/12	---	Well installed.							
SVE1	10/19/12	---	- Present Not sampled.							
SVE2	01/17/12	---	Well installed.							
SVE2	10/19/12	---	- Present Not sampled.							
SVE3	01/17/12	---	Well installed.							

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Add'l VOCs (µg/L)	Add'l SVOCs (µg/L)
SVE3	10/19/12 - Present	Not sampled.								
<b>Grab Groundwater Samples</b>										
B-1W	01/06/08	---	<50	<50	<50	<200	<50	<50	210b, 68c, 370d, 1,100e, 3,800f, 1,300g, 1,500h	4,000h, 3,900k
B-2W	01/06/08	---	<50	<50	<50	<200	<50	<50	110b, 140e, 440f, 2,400g, 730h, 610i, 32j	---
B-3W	01/06/08	---	<10	<10	<10	<40	<10	<10	25b, 11c, 74d, 190e, 290f, 49g, 55i	---
B-4W	01/06/08	---	<10	<10	<10	<40	<10	<10	46b, 19c, 48d, 160e, 16f, 100h	---
B-5W	01/06/08	---	ND	<0.5	<0.5	<2.0	<0.5	<0.5	2.6b, 0.83e, 4.8f, 1.2g, 6.5h	---
B-6W	01/06/08	---	<2.5	<2.5	<2.5	<10	<2.5	<2.5	14b, 5.6c, 17d, 60e, 32f, 5.8g, 38h, 10i	---
DR-W	01/06/08	---	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	6.9b, 2.4c, 2.5d, 11e, 17f, 5.5g, 7.0h	---
W-27.5-HP1A	10/28/10	27.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-36-HP1A	10/28/10	36	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-46.5-HP1A	10/28/10	46.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-59-HP1B	10/27/10	59	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-27.5-HP2A	10/29/10	27.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-52-HP2A	10/29/10	52	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-60.5-HP2B	10/27/10	60.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-10-SVE1-2	01/31/12	10	<1.0	<1.0	<1.0	57	<1.0	<1.0	---	---
W-10-SVE1-1	01/31/12	10	<2.0	<2.0	<2.0	62	<2.0	<2.0	---	---
W-5-B7	02/27/14	5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-12-B8	02/28/14	12	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-5-B9	02/27/14	5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-5.5-B10	02/27/14	5.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-14-B11	03/05/14	14	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-10-B12	02/26/14	10	<2.0	<2.0	<2.0	<20	<2.0	<2.0	---	---
W-10-B13	02/28/14	10	<5.0	<5.0	<5.0	<50	<5.0	<5.0	---	---
W-14-B15	03/05/14	14	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-14-B16	02/26/14	14	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-10-B17	02/27/14	10	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---



**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

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Notes:	=	
TOC	=	Top of well casing elevation; datum is NAVD88, prior to April 2014, datum was mean sea level.
DTW	=	Depth to water.
GW Elev.	=	Groundwater elevation; datum is NAVD88, prior to April 2014, datum was mean sea level. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.76)].
NAPL	=	Non-aqueous phase liquid.
O&G	=	Oil and grease with silica gel clean-up analyzed using Standard Method 5520B/F.
TPHmo	=	Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015 (modified).
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015 (modified).
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015 (modified).
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	=	1,2-dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-dichloroethane analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
Add'l VOCs	=	Additional volatile organic carbons analyzed using EPA Method 8260B.
Add'l SVOCs	=	Additional semi-volatile organic carbons analyzed using EPA Method 8270C.
µg/L	=	Micrograms per liter.
ND	=	Not detected at or above laboratory reporting limits.
---	=	Not measured/Not sampled/Not analyzed.
<	=	Less than the stated laboratory reporting limit.
a	=	The chromatographic pattern does not match that of the specified standard.
b	=	n-butylbenzene.
c	=	sec-butylbenzene.
d	=	Isopropylbenzene.
e	=	n-propylbenzene.
f	=	1,2,4-trimethylbenzene.
g	=	1,3,5-trimethylbenzene.
h	=	Naphthalene.
i	=	1-butanone.
j	=	1,2-dibromo-3-chloropropane.
k	=	2-methylnaphthalene.
l	=	Unmodified or weakly modified gasoline is significant.
m	=	Heavier gasoline range compounds are significant.
n	=	Diesel range compounds are significant; no recognizable pattern.
o	=	Gasoline range compounds are significant.
p	=	No recognizable pattern.
q	=	Strongly aged gasoline or diesel compounds are significant.
r	=	Lighter than water immiscible sheen/product is present.
s	=	Liquid sample that contains greater than approximately 1 volume % sediment.
t	=	Groundwater did not enter boring, sample not collected.

**TABLE 2**  
**WELL CONSTRUCTION DETAILS**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Well Installation Date	TOC Elevation (feet)	Borehole Diameter (inches)	Total Depth of Boring (feet bgs)	Well Depth (feet bgs)	Casing Diameter (inches)	Well Casing Material	Screened Interval (feet bgs)	Slot Size (inches)	Filter Pack Interval (feet bgs)	Filter Pack Material
MW1	11/04/10	44.19	8	17	17	2	Schedule 40 PVC	12-17	0.020	10-17	#3 Sand
MW2	11/04/10	43.99	8	17	17	4	Schedule 40 PVC	12-17	0.020	10-17	#3 Sand
MW3	11/08/10	43.16	8	17	17	4	Schedule 40 PVC	11-16	0.020	9-16	#3 Sand
MW3A	01/18/12	43.42	10	15.5	15.5	4	Schedule 40 PVC	5-15	0.020	4.5-15.5	#2/12 Sand
MW4	11/05/10	42.04	8	17	13	2	Schedule 40 PVC	8-13	0.020	6-13	#3 Sand
MW5	11/05/10	43.12	8	17	14	2	Schedule 40 PVC	9-14	0.020	7-14	#3 Sand
MW6	11/03/10	43.80	10	20	20	2	Schedule 40 PVC	15-20	0.020	13-20	#3 Sand
AS1	01/18/12	---	8	15.5	15.5	1	Schedule 80 PVC	10.25-13.5	#60 mesh	10.5-15.5	#2/12 Sand
SVE1	01/17/12	43.32	10	15.5	15.5	4	Schedule 40 PVC	5-15	0.020	4.5-15.5	#2/12 Sand
SVE2	01/17/12	43.68	10	15	15	4	Schedule 40 PVC	5-15	0.020	4.5-15	#2/12 Sand
SVE3	01/17/12	43.67	10	15	15	4	Schedule 40 PVC	5-15	0.020	4.5-15.5	#2/12 Sand
SVS1	02/25/14	---	4	5.6	5.6	0.25	PVC	5.4-5.6	0.010	4.6-5.6	#3 Sand
SVS2	02/25/14	---	4	5.6	5.6	0.25	PVC	5.4-5.6	0.010	4.6-5.6	#3 Sand
SVS3	02/25/14	---	4	5.6	5.6	0.25	PVC	5.4-5.6	0.010	4.6-5.6	#3 Sand

Notes:

- TOC = Top of well casing elevation; datum is NAVD88.
- PVC = Polyvinyl chloride.
- feet bgs = Feet below ground surface.

**TABLE 3A**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Service Station 79374  
990 San Pablo Boulevard  
Albany, California  
(Page 1 of 4)

Sample ID	Sampling Date	Depth (feet bgs)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Naphthalene (mg/kg)	VOCs (mg/kg)	Lead (mg/kg)	
<b>Environmental Screening Levels, Potential Drinking Water Source (December 2013)</b>																				
Shallow (<10 feet bgs), Residential (Table A-1)			---	100	100	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80	
Shallow (<10 feet bgs), Commercial (Table A-2)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320	
Deep (≥10 feet bgs), Residential (Table C-1)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80	
Deep (≥10 feet bgs), Commercial (Table C-2)			---	110	770	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320	
<b>Soil Boring Samples</b>																				
B-1	01/06/08	6.0	<5.0	3.7c	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	---	
B-1	01/06/08	10.5	<100	<b>1,400b,c</b>	<b>7,200b,f</b>	<5.0	<b>2</b>	<b>51</b>	<b>110</b>	<b>400</b>	---	---	---	---	---	---	---	---	---	
B-2	01/06/08	5.5	<5.0	<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	---	
B-2	01/06/08	10.5	<100	<b>1,400d</b>	<b>4,500b,f</b>	<5.0	<b>13</b>	<b>35</b>	<b>100</b>	<b>380</b>	---	---	---	---	---	---	---	---	---	
B-3	01/06/08	5.5	<5.0	<1.0	<1.0	<0.50	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	---	
B-3	01/06/08	10.5	<5.0	53d	<b>130e,f</b>	<0.50	<b>0.37</b>	0.29	2.6	0.44	---	---	---	---	---	---	---	---	---	
B-4	01/06/08	5.5	<5.0	62d	<b>140e,f</b>	<0.50	<0.005	1.0	0.066	0.094	---	---	---	---	---	---	---	---	---	
B-4	01/06/08	10.5	<5.0	15d	<b>140e,f</b>	<0.50	<b>0.25</b>	1.5	1.3	0.11	---	---	---	---	---	---	---	---	---	
B-5	01/06/08	5.5	<5.0	<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	---	
B-5	01/06/08	11.5	<5.0	5.4c,d	32e,f	<0.25	0.038	0.24	0.051	0.035	---	---	---	---	---	---	---	---	---	
B-6	01/06/08	5.5	<5.0	<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005	---	---	---	---	---	---	---	---	---	
B-6	01/06/08	10.5	<5.0	6.0c,d	32e,f	<0.05	0.009	0.41	<0.005	0.039	---	---	---	---	---	---	---	---	---	
S-5-B7	02/27/14	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0099	<0.0099	<0.0099	<0.050	---	---	
S-11.5-B7	02/27/14	11.5	<25	<5.0	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	
S-5-B8	02/28/14	5.0	<25	<5.0	<0.52	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	---	---	
S-11.5-B8	02/28/14	11.5	<25	<5.0	<0.51	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	---	---	---	
S-15.5-B8	02/28/14	15.5	<26	<5.1	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	
S-5-B9	02/27/14	5.0	<25	<5.0	<0.52	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	---	---	
S-11.5-B9	02/27/14	11.5	<25	<5.0	<0.52	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	---	---	---	
S-5-B10	02/27/14	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	---	---	
S-11.5-B10	02/27/14	11.5	<24	<4.9	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	
S-5-B11	02/28/14	5.0	<25	<5.0	<0.50	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.010	<0.010	<0.010	<0.051	---	---	
S-11.5-B11	03/05/14	11.5	<25	<5.0	<0.50	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	---	---	---	
S-15-B11	03/05/14	15.0	<24	<4.9	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---	
S-5-B12	02/26/14	5.0	<25	<5.0	<0.50	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0098	<0.0098	<0.0098	<0.049	---	---	
S-11.5-B12	02/26/14	11.5	<25	<5.0	0.50a	<0.0052	0.00074g	<0.0052	0.00026g	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	---	---	---	
S-5-B13	02/25/14	5.0	<24	<4.9	<0.48	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	<0.052	---	---	
S-11.5-B13	02/28/14	11.5	<25	<b>160a</b>	<b>1,800</b>	<1.0	<1.0	<1.0	<b>16</b>	1.5	<1.0	<1.0	<10	<2.0	<2.0	<2.0	---	---	---	

**TABLE 3A**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Service Station 79374  
990 San Pablo Boulevard  
Albany, California  
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Sample ID	Sampling Date	Depth (feet bgs)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Naphthalene (mg/kg)	VOCs (mg/kg)	Lead (mg/kg)
<b>Environmental Screening Levels, Potential Drinking Water Source (December 2013)</b>																			
Shallow (<10 feet bgs), Residential (Table A-1)			---	100	100	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80
Shallow (<10 feet bgs), Commercial (Table A-2)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320
Deep (≥10 feet bgs), Residential (Table C-1)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80
Deep (≥10 feet bgs), Commercial (Table C-2)			---	110	770	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320
S-5-B14	03/05/14	5.0	<25	<5.0	<0.53	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	---	---
S-11.5-B14	03/05/14	11.5	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-15.5-B14	03/05/14	15.5	<24	<4.9	<0.51	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.010	<0.010	<0.010	---	---	---
S-19-B14	03/05/14	19.0	<25	<5.0	<0.50	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.048	<0.0096	<0.0096	<0.0096	---	---	---
S-5-B15	03/05/14	5.0	<25	<5.0	<0.49	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.010	<0.010	<0.010	<0.051	---	---
S-10-B15	03/05/14	10.0	<24	<4.9	<0.52	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-14.0-B15	03/05/14	14.0	<25	<5.0	<0.48	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-B16	02/26/14	5.0	<25	<5.0	0.62a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.030g	<0.0099	<0.0099	<0.0099	<0.050	---	---
S-10-B16	02/26/14	10.0	<24	43a	530	<0.49	0.026g	<0.49	0.10g	0.058g	<0.49	<0.49	<4.9	<0.97	<0.97	<0.97	0.84g	---	---
S-15.5-B16	02/26/14	15.5	<25	<5.0	<0.51	<0.0050	<0.0050	<0.0050	0.00021g	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-B17	02/26/14	5.0	<25	<5.0	<0.48	<0.0050	0.00014g	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011g	<0.010	<0.010	<0.010	0.0021g	---	---
S-10-B17	02/26/14	10.0	<25	<5.0	8.4a	<0.0050	0.0063	<0.0050	<0.0050	0.00081g	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	---	---
S-15.5-B17	02/26/14	15.5	<24	<4.9	<0.51	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.052	<0.010	<0.010	<0.010	---	---	---
<b>Well Samples</b>																			
S-5-MW1	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10-MW1	11/04/10	10.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-14.5-MW1	11/04/10	14.5	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10-MW2	11/04/10	10.0	<25	<5.0	3.1a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-15-MW2	11/04/10	15.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-MW3	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10.5-MW3	11/08/10	10.5	<25	11a	220	<0.50	<0.50	<0.50	2.0	1.1	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-15.5-MW3	11/08/10	15.5	<25	<5.0	2.2	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-8-MW3A	01/18/12	8.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-14.5-MW3A	01/18/12	14.5	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	0.015	0.0052	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-MW4	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10-MW4	11/05/10	10.0	<25	<5.0	44a	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-15-MW4	11/05/10	15.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-16.5-MW4	11/05/10	16.5	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-MW5	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10.5-MW5	11/05/10	10.5	29	93a	450a	<0.050	<0.050	1.5	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-16.5-MW5	11/05/10	16.5	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-MW6	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10-MW6	11/02/10	10.0	<25	8.2a	8.7a	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---

**TABLE 3A**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**  
Former Exxon Service Station 79374  
990 San Pablo Boulevard  
Albany, California  
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Sample ID	Sampling Date	Depth (feet bgs)	TPHmo (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	MTBE (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	EDB (mg/kg)	1,2-DCA (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	Naphthalene (mg/kg)	VOCs (mg/kg)	Lead (mg/kg)
<b>Environmental Screening Levels, Potential Drinking Water Source (December 2013)</b>																			
Shallow (<10 feet bgs), Residential (Table A-1)			---	100	100	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80
Shallow (<10 feet bgs), Commercial (Table A-2)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320
Deep (≥10 feet bgs), Residential (Table C-1)			---	110	500	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	80
Deep (≥10 feet bgs), Commercial (Table C-2)			---	110	770	0.023	0.044	2.9	3.3	2.3	0.00033	0.0045	0.075	---	---	---	1.2	---	320
S-14.5-MW6	11/02/10	14.5	<25	<5.0	1.8a	<0.0050	<0.0050	<0.0050	<0.0093	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-20-MW6	11/02/10	20.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-CPT1	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-CPT2	10/20/10	5.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-10-AS1	01/18/12	10.0	<25	<b>800a</b>	<b>2,900</b>	<2.5	<2.5	<2.5	<b>47</b>	<2.5	<2.5	<2.5	<25	<5.0	<5.0	<5.0	---	---	---
S-8.5-SVE1	01/17/12	8.5	<25	87a	<b>480a</b>	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-11.5-SVE1	01/17/12	11.5	<25	<5.0	18	<0.0050	<0.50	0.010	0.084	0.11	<0.0050	<0.0050	<0.50	<0.010	<0.010	<0.010	---	---	---
S-10-SVE2	01/17/12	10.0	53a	37a	<b>390a</b>	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-14-SVE2	01/17/12	14.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.50	<0.010	<0.010	<0.010	---	---	---
S-12.5-SVE3	01/17/12	12.5	57a	<b>760a</b>	<b>1,900a</b>	<2.5	<2.5	<2.5	<2.5	<2.5	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---	---	---
S-15-SVE3	01/17/12	15.0	<25	<5.0	<0.50	<0.0050	<0.0050	<0.0050	0.015	0.033	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	---
S-5-SVS1	02/25/14	5.0	<25	<5.0	<0.50	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0099	<0.0099	<0.0099	<0.049	---	---
S-5-SVS2	02/25/14	5.0	<25	<5.0	<0.49	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.048	<0.0096	<0.0096	<0.0096	<0.048	---	---
S-5-SVS3	02/25/14	5.0	<25	<5.0	5.0a	<0.0050	0.00036g	<0.0050	0.0030g	0.00088g	<0.0050	<0.0050	0.016g	<0.010	<0.010	<0.010	0.0038g	---	---
<b>Drum Samples</b>																			
DR-1	01/06/08	---	<5.0	2.5c,d	4.9e,f	<0.050	<0.005	0.027	0.035	0.035	---	---	---	---	---	---	---	---	9.7
<b>Soil Stockpile Samples</b>																			
COMP(S-Profile-1-4)	11/08/10	---	<25	7.1a	14a	<0.0050	<0.0050	<0.0050	0.069	0.049	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	6.93
S-SP1 (1-4)	01/18/12	---	190a	39a	230	<0.0050	0.20	0.66	4.3	14	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	---	---	37.6
SP1	03/05/14	---	<24	<4.9	<0.49	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.010	<0.010	<0.010	<0.050	ND	5.34

**TABLE 3A**  
**CUMULATIVE SOIL ANALYTICAL RESULTS**

Former Exxon Service Station 79374

990 San Pablo Boulevard

Albany, California

(Page 4 of 4)

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Notes:

TPHmo	=	Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015B.
TPHd	=	Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8260B; analyzed using EPA Method 8020 in 2008.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	=	1,2-Dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	=	1,2-Dichloroethane analyzed using EPA Method 8260B.
TBA	=	Tertiary butyl alcohol analyzed using EPA Method 8260B.
DIPE	=	Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	=	Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	=	Tertiary amyl methyl ether analyzed using EPA Method 8260B.
Lead	=	Total lead analyzed using EPA Method 6010B.
VOCs	=	Volatile organic compounds analyzed using EPA Method 8260B.
HVOCs	=	Halogenated volatile organic compounds analyzed using EPA Method 8260B.
PAHs	=	Polycyclic aromatic hydrocarbons analyzed using EPA Method 8310.
feet bgs	=	Feet below ground surface.
ND	=	Not detected.
---	=	Not analyzed/Not applicable
<	=	Less than the laboratory reporting limit.
a	=	The chromatographic pattern does not match that of the specified standard.
b	=	Heavier gasoline range compounds are significant.
c	=	Diesel range compounds are significant; no recognizable pattern.
d	=	Gasoline range compounds are significant.
e	=	Strongly aged gasoline or diesel range compounds are significant.
f	=	No recognizable pattern.
g	=	Estimated value; analyte present at concentration above the method detection limit but below the reporting limit.







**TABLE 3B**  
**ADDITIONAL CUMULATIVE SOIL ANALYTICAL RESULTS - HVOCs AND PAHs**  
Former Exxon Service Station 79374  
990 San Pablo Boulevard  
Albany, California  
(Page 3 of 3)

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Notes:	
TPHmo	= Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015B.
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015B.
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B.
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8260B; analyzed using EPA Method 8020 in 2008.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	= 1,2-Dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-Dichloroethane analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
Lead	= Total lead analyzed using EPA Method 6010B.
VOCs	= Volatile organic compounds analyzed using EPA Method 8260B.
HVOCs	= Halogenated volatile organic compounds analyzed using EPA Method 8260B.
PAHs	= Polyaromatic hydrocarbons analyzed using EPA Method 8310.
feet bgs	= Feet below ground surface.
ND	= Not detected.
---	= Not analyzed/Not applicable
<	= Less than the laboratory reporting limit.
a	= The chromatographic pattern does not match that of the specified standard.
b	= Heavier gasoline range compounds are significant.
c	= Diesel range compounds are significant; no recognizable pattern.
d	= Gasoline range compounds are significant.
e	= Strongly aged gasoline or diesel range compounds are significant.
f	= No recognizable pattern.
g	= Estimated value; analyte present at concentration above the method detection limit but below the reporting limit.

**TABLE 4**  
**CUMULATIVE SOIL VAPOR ANALYTICAL RESULTS**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Sample ID	Sampling Date	Depth (feet)	TPHg (µg/m³)	MTBE (µg/m³)	B (µg/m³)	T (µg/m³)	E (µg/m³)	X (µg/m³)	EDB (µg/m³)	1,2-DCA (µg/m³)	TBA (µg/m³)	TAME (µg/m³)	ETBE (µg/m³)	DIPE (µg/m³)	Naphthalene (µg/m³)	Add'l VOCs (µg/m³)	Methane (%V)	Helium (%V)	CO <sub>2</sub> (%V)	O <sub>2</sub> + Argon (%V)	Vacuum (in Hg)
<b>Environmental Screening Levels, Shallow Soil Gas, Table E-2 (December 2013)</b>																					
Residential			300,000	4,700	42	160,000	490	52,000	17	58	---	---	---	---	36	---	---	---	---	---	---
Commercial/Industrial			2,500,000	47,000	420	1,300,000	4,900	440,000	170	580	---	---	---	---	360	---	---	---	---	---	---
<b>Media-Specific Criteria for Vapor Intrusion to Indoor Air, No Bioattenuation Zone (SWRCB, 2012)</b>																					
Residential			---	---	85	---	1,100	---	---	---	---	---	---	---	93	---	---	---	---	---	---
Commercial			---	---	280	---	3,600	---	---	---	---	---	---	---	310	---	---	---	---	---	---
<b>Media-Specific Criteria for Vapor Intrusion to Indoor Air, With Bioattenuation Zone (SWRCB, 2012)</b>																					
Residential			---	---	85,000	---	1,100,000	---	---	---	---	---	---	---	93,000	---	---	---	---	---	---
Commercial			---	---	280,000	---	3,600,000	---	---	---	---	---	---	---	310,000	---	---	---	---	---	---
SVS1	03/06/14	5.5	180,000,000	<12,000	<2,600	<3,000	<3,500	<3,500	<6,100	<3,200	<9,700	<13,000	<13,000	<13,000	<0.020	---	15.5	<0.0100	10.0	2.58	-5.00
SVS1	08/28/14	5.5	90,000,000	<36,000	<8,000	12,000	<11,000	<11,000	<19,000	<10,000	<30,000	<42,000	<42,000	<42,000	<20	ND	15.3	<0.0100	13.2	2.49	-5.00
SVS2	03/06/14	5.5	190,000,000	<1,800	1,700	740	650	3,100	<960	<510	<1,500	<2,100	<2,100	<2,100	<0.020	---	11.4	<0.0100	8.31	3.62	-5.00
SVS2	08/28/14	5.5	80,000,000	<36,000	<8,000	13,000	<11,000	<11,000	<19,000	<10,000	<30,000	<42,000	<42,000	<42,000	<20	ND	11.5	<0.0100	9.67	5.54	-5.00
SVS2 Dup	08/28/14	5.5	89,000,000	<36,000	<8,000	13,000	<11,000	<11,000	<19,000	<10,000	<30,000	<42,000	<42,000	<42,000	---	ND	13.5	<0.0100	11.3	2.82	-5.00
SVS3	03/07/14	5.5	150,000,000	<5,800	15,000	<1,500	15,000	<1,700	<3,100	<1,600	<4,900	<6,700	<6,700	<6,700	1.1	---	6.29	<0.0100	13.3	4.41	-5.00
SVS3 Dup	03/07/14	5.5	150,000,000	<5,800	22,000	<1,500	23,000	<1,700	<3,100	<1,600	<4,900	<6,700	<6,700	<6,700	---	---	6.73	<0.0100	14.4	3.10	-5.00
SVS3	08/28/14	5.5	87,000,000	<36,000	21,000	13,000	31,000	<11,000	<19,000	<10,000	<30,000	<42,000	<42,000	<42,000	820a	ND	5.11	<0.0100	14.7	5.49	-5.00

**TABLE 4**  
**CUMULATIVE SOIL VAPOR ANALYTICAL RESULTS**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

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Notes:	
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method TO-17; analyzed using EPA Method TO-3M in March 2014.
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method TO-15.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method TO-15.
EDB	= 1,2-dibromoethane analyzed using EPA Method TO-15.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method TO-15.
TBA	= Tertiary butyl alcohol analyzed using EPA Method TO-15.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method TO-15.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method TO-15.
DIPE	= Di-isopropyl ether analyzed using EPA Method TO-15.
Naphthalene	= Naphthalene analyzed using EPA Method TO-17(M).
Add'l VOCs	= Additional volatile organic compounds analyzed using EPA Method TO-15.
Methane	= Methane analyzed using ASTM Method D-1946.
Helium	= Helium analyzed using ASTM Method D-1946 (M).
CO <sub>2</sub>	= Carbon dioxide analyzed using ASTM Method D-1946.
O <sub>2</sub> + Argon	= Oxygen plus argon analyzed using ASTM Method D-1946.
Vacuum	= Vacuum measured using a vacuum gauge.
µg/m <sup>3</sup>	= Micrograms per cubic meter.
%V	= Percent by volume.
in Hg	= Inches of mercury.
ND	= Not detected.
<b>Bold</b>	= Greater than or equal to the most stringent, applicable screening level.
<	= Less than the stated method detection limit.
---	= Not applicable.
a	= Possibly biased high due to results of associated standard.

## **APPENDIX A**

### **CORRESPONDENCE**

**From:** Detterman, Mark, Env. Health [<mailto:Mark.Detterman@acgov.org>]  
**Sent:** Thursday, June 05, 2014 10:13 AM  
**To:** Greg Gurss  
**Subject:** RE: Former Exxon 79374 (RO2974) 990 San Pablo Avenue, Albany, CA

Greg,  
Please use this email to document ACEH concurrence with the requested extension.

*Mark Detterman*  
*Senior Hazardous Materials Specialist, PG, CEG*  
*Alameda County Environmental Health*  
*1131 Harbor Bay Parkway*  
*Alameda, CA 94502*  
*Direct: 510.567.6876*  
*Fax: 510.337.9335*  
*Email: [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org)*

*PDF copies of case files can be downloaded at:*

*<http://www.acgov.org/aceh/lop/ust.htm>*

**From:** Greg Gurss [<mailto:greg.gurss@cardno.com>]  
**Sent:** Tuesday, June 03, 2014 1:53 PM  
**To:** Detterman, Mark, Env. Health  
**Subject:** Former Exxon 79374 (RO2974) 990 San Pablo Avenue, Albany, CA  
**Importance:** High

Mr. Detterman:

Alameda County Environmental Health (ACEH) issued a letter dated September 17, 2013 approving the Cardno ERI Work Plan dated July 22, 2013. The first soil vapor sampling event (SVS1 through SVS3) was conducted on March 6, and 7, 2014. These results were included in the Soil, Soil Vapor, and Groundwater Investigation Report and Site Conceptual Model Report dated May 2, 2014 (ACEH approved an extension for this report to May 5, 2014). In the ACEH letter, it was requested that a second soil vapor sampling event be conducted approximately 6 months from the first event. Based on this, we plan to collect additional samples in late August of 2014. The letter requested that this report be submitted by June 16, 2014. We are requesting an extension for submittal of this report to October 10, 2014. If you should have any questions, please call or email. Thank you.

**Greg Gurss**  
SR PROJECT MANAGER  
CARDNO ERI



**Phone** (+1) 916-892-3100 **Fax** (+1) 707-789-0414 **Direct** (+1) 916-892-3130 **Mobile** (+1) 916-842-6486  
**Address** 701 University Avenue, Suite 200, Sacramento, CA 95825  
**Email** [greg.gurss@cardno.com](mailto:greg.gurss@cardno.com) **Web** [www.cardno.com](http://www.cardno.com) [www.cardnoeri.com](http://www.cardnoeri.com)

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July 7, 2014

Ms. Jennifer Sedlachek  
ExxonMobil  
4096 Piedmont Ave., #194  
Oakland, CA 94611  
(Sent via E-mail to:  
[jennifer.c.sedlachek@exxonmobil.com](mailto:jennifer.c.sedlachek@exxonmobil.com))

Mrs. Muriel Blank  
Blank Family Trust  
1164 Solano Ave., #406  
Albany, CA 94706

Subject: Request for a Work Plan; Fuel Leak Case No. RO0002974 and GeoTracker Global ID T0619716673, Exxon, 990 San Pablo Ave., Albany, CA 94706

Dear Ms. Sedlachek and Mrs. Blank:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Soil, Soil Vapor, and Groundwater Investigation Report and Site Conceptual Model*, dated May 2, 2014, which was prepared and submitted on your behalf by Cardno ERI (Cardno) for the subject site. The report recommended work to address identified data gaps including the offsite monitoring of groundwater by the installation of two wells, and evaluation of seasonal soil vapor concentrations beneath the site to evaluate the risk of vapor intrusion at the site. In general, ACEH is in agreement with the proposed work; however, discusses differences in the sections below.

ACEH has previously evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on the recent investigation and ACEH staff review, we have revised the checklist and have determined that the site fails to meet the Media-Specific Criteria for Groundwater and the Media-Specific Criteria for Vapor Intrusion to Indoor Air (see Geotracker for an updated copy).

Based on the review of the case file ACEH requests that you address the following technical comments and send us the documents requested below.

#### **TECHNICAL COMMENTS**

1. **Request for a Work Plan** – ACEH requests the submittal of a work plan by the date referenced below.
  - a. **Groundwater Delineation** - The downgradient extent of the dissolved-phased groundwater plume remains undefined. It is appropriate to monitor the extent the offsite migration of the dissolved-phased plume to the south of the site utilizes the sanitary sewer installed at an approximate depth of 12.7 feet below grade surface (bgs) beneath Buchanan Street. The proposed installation of a well near bore B12 appears warranted. A second well was proposed to be installed near soil bore B8 to monitor the terminal end of the plume; however, ACEH requests that the well be placed near bore B9 due to the apparent split in the plume migration suggested by very low to trace grab groundwater sample concentrations collected from bores B8 and B10, and higher concentrations detected at soil bore B9 downgradient of offsite residential homes.

- b. Seasonal Soil Vapor Evaluation** – The referenced report also recommended seasonal soil vapor sampling. As communicated in previous directive letters ACEH is in agreement with this recommendation; however, ACEH requests the inclusion of Halogenated Volatile Organic Compounds (HVOCs) due to the documented, but unknown location, of a former waste oil underground storage tank (UST) at the site, and the detection of exceptionally high photoionization detector (PID) results in wells MW-3 and MW-4, and high results in MW-2, without the detection of significant petroleum hydrocarbon volatiles in soil samples collected at the time of well installation. The presence of sandy soils may also contribute to the generation of a subsurface vapor cloud; however, it is appropriate to verify that chlorinated solvents related to the former waste oil UST are not a part of this vapor.

An evaluation of the foundation of the building at the subject site, or of the immediately downgradient adjacent residential homes was not included in the referenced report. The September 17, 2013 directive letter requested the evaluation of the onsite and offsite residential buildings prior to installation of vapor wells at the site. Based on a review of the residential homes on Google Earth Street View, it appears that one residential foundation may be partially below grade. This may effectively reduce the minimum five foot separation distance allowed by one LTCP vapor intrusion scenario, but also affects the appropriateness of the vapor well installation depth under the LTCP (required to be five feet below building foundations). ACEH requests a review of these foundations be undertaken, and a discussion of the depth of the existing vapor wells relative to the foundations be provided by the date requested below.

- 2. Draft Feasibility Study / Corrective Action Plan** – ACEH's evaluation of the vapor well results indicates that the site does not satisfy the LTCP Petroleum Vapor Intrusion to Indoor Air criterion. Based on ACEH's analysis, three of four vapor samples contained oxygen less than 4% oxygen, benzene concentrations in groundwater beneath the site were recently as high as 590 micrograms per liter ( $\mu\text{g/l}$ ), and the bioattenuation zone at the site appears to be approximately 6 feet (greater than 5 feet, but less than 10 feet). This combination of site characteristics eliminates each available scenario within the LTCP Vapor Intrusion to Indoor Air criteria.

At this time, a Draft Feasibility Study / Corrective Action Plan (FS/CAP) prepared in accordance with Title 23, California Code of Regulations, Section 2725 appears warranted. The FS/CAP must include a concise background of soil and groundwater investigations performed in connection with this case and an assessment of the residual impacts of the chemicals of concern (COCs) for the site and the surrounding area where the unauthorized release has migrated or may migrate. The FS/CAP should also include, but is not limited to, a detailed description of site lithology, including soil permeability, and most importantly, contamination cleanup levels and LTCP appropriate cleanup goals in accordance with the San Francisco Regional Water Quality Control Board (SFRWQCB) Basin Plan. Should other non-petroleum contaminants be documented, other non-LTCP cleanup goals may be required, such as San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESL) guidance for all COCs, or other generated site-specific risk-based goals. Please note that soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality objectives (cleanup goals) for groundwater in accordance with the SFRWQCB Basin Plan. Please specify appropriate cleanup levels and cleanup goals in accordance with 23 CCR Section 2725, 2726, and 2727 in the CAP.

The CAP must evaluate at least three viable alternatives for remedying or mitigating the actual or potential adverse effects of the unauthorized release(s) besides the 'no action' and 'monitored natural attenuation' remedial alternatives. Each alternative shall be evaluated not only for cost-effectiveness but also its timeframe to reach cleanup levels and cleanup goals, and ultimately the Responsible Party must propose the most cost-effective corrective action. Please submit the Draft FS/CAP by the date identified below.



- 3. Groundwater Monitoring** – Please continue semi-annual groundwater monitoring in accordance with the approved groundwater monitoring plan for the site and submit groundwater monitoring report in accordance with the schedule below. For the reason discussed above for vapor, please also include analysis for HVOCs on a one time basis. The appropriateness of additional HVOC sampling is requested to be evaluated thereafter.

**TECHNICAL REPORT REQUEST**

Please upload technical reports to the ACEH ftp site (Attention: Barbara Jakub), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **July 25, 2014** – Semi-Annual Groundwater Monitoring Report  
File to be named: RO2974\_GWM\_R\_yyyy-mm-dd
- **September 5, 2014** – Data Gap Investigation Work Plan and Foundation Analysis  
File to be named: RO2974\_WP\_R\_yyyy-mm-dd
- **September 19, 2014** – Draft Feasibility Study / Corrective Action Plan  
File to be named: RO2974\_DRAFT\_FEASSTUD\_R\_yyyy-mm-dd
- **60 Days After Work Plan Addendum Approval** – Site Investigation Report  
File to be named: RO2974\_SWI\_R\_yyyy-mm-dd
- **December 5, 2014** – Semi-Annual Groundwater Monitoring Report  
File to be named: RO2974\_GWM\_R\_yyyy-mm-dd

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.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Thank you for your cooperation. If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org).

Sincerely,



Digitally signed by Mark E. Detterman  
DN: cn=Mark E. Detterman, o, ou,  
email, c=US  
Date: 2014.07.07 14:39:33 -07'00'

Mark E. Detterman, PG, CEG  
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations  
Electronic Report Upload (ftp) Instructions

cc: Rebekah Westrup, Environmental Resolutions, Inc., 601 North McDowell Blvd., Petaluma, CA 94954 (Sent via E-mail to: [rebekah.westrup@cardno.com](mailto:rebekah.westrup@cardno.com))

Mrs. Marcia B. Kelly, 641 SW Morningside Rd., Topeka, KS 66615 (Sent via E-mail to: [marciabkelly@earthlink.net](mailto:marciabkelly@earthlink.net))

Ms. Sedlachek and Mrs. Blank  
RO0002974  
July 7, 2014, Page 4

Rev. Deborah Blank, 1563 Solano Ave. #344, Berkeley, CA 94707 (Sent via E-mail to:  
[miracoli@earthlink.net](mailto:miracoli@earthlink.net))

Dilan Roe, ACEH (Sent via E-mail to: [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
Mark Detterman, ACEH (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))  
GeoTracker, file



ENVIRONMENTAL HEALTH SERVICES  
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FAX (510) 337-9335

August 22, 2014

Ms. Jennifer Sedlachek  
ExxonMobil  
4096 Piedmont Ave., #194  
Oakland, CA 94611

(Sent via E-mail to:

[jennifer.c.sedlachek@exxonmobil.com](mailto:jennifer.c.sedlachek@exxonmobil.com))

Mrs. Muriel Blank  
Blank Family Trust  
1164 Solano Ave., #406  
Albany, CA 94706

Subject: Conditional Work Plan Approval; Fuel Leak Case No. RO0002974 and GeoTracker Global ID T0619716673, Exxon, 990 San Pablo Ave., Albany, CA 94706

Dear Ms. Sedlachek and Mrs. Blank:

Alameda County Environmental Health (ACEH) staff has reviewed the case file including the *Work Plan for Well Installation*, dated July 7, 2014, and the *Groundwater Monitoring Report, First and Second Quarter 2014*, dated July 18, 2014, which were prepared and submitted on your behalf by Cardno ERI (Cardno) for the subject site. Thank you for submitting the reports.

Based on ACEH staff review of the work plan, the proposed scope of work is conditionally approved for implementation provided that the technical comments below are incorporated during the proposed work. Submittal of a revised work plan or a work plan addendum is not required unless an alternate scope of work outside that described in the work plan or these technical comments is proposed. We request that you address the following technical comments, perform the proposed work, and send us the report described below. Please provide 72-hour advance written notification to this office (e-mail preferred to: [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org)) prior to the start of field activities.

### **TECHNICAL COMMENTS**

**1. Work Plan Modifications** – The referenced work plan proposes a series of actions with which ACEH is in general agreement of undertaking; however, ACEH requests a modification to the approach. Please submit a report by the date specified below.

- a. Subsurface Clearance Protocols** – The referenced work plan proposes to clear well bore locations with hand tools or an air knife. ACEH requests that clearance not include air knifing due to the likelihood of volatilization of light hydrocarbon fractions, in particular in the vicinity of soil bore B12 / MW7.

### **TECHNICAL REPORT REQUEST**

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **September 19, 2014** – Draft Feasibility Study / Corrective Action Plan  
File to be named: RO2974\_DRAFT\_FEASSTUD\_R\_yyyy-mm-dd

Ms. Sedlachek and Mrs. Blank  
RO0002974  
August 22, 2014, Page 2

- **November 15, 2014** – Site Investigation Report  
File to be named: RO2974\_SWI\_R\_yyyy-mm-dd
- **December 5, 2014** – Semi-Annual Groundwater Monitoring Report  
File to be named: RO2974\_GWM\_R\_yyyy-mm-dd

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.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Thank you for your cooperation. If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org).

Sincerely,



Digitally signed by Mark E. Detterman  
DN: cn=Mark E. Detterman, o, ou,  
email, c=US  
Date: 2014.08.22 15:31:19 -07'00'

Mark E. Detterman, PG, CEG  
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations  
Electronic Report Upload (ftp) Instructions

cc: Rebekah Westrup, Environmental Resolutions, Inc., 601 North McDowell Blvd., Petaluma, CA 94954 (Sent via E-mail to: [rebekah.westrup@cardno.com](mailto:rebekah.westrup@cardno.com))

Mrs. Marcia B. Kelly, 641 SW Morningside Rd., Topeka, KS 66615 (Sent via E-mail to: [marciabkelly@earthlink.net](mailto:marciabkelly@earthlink.net))

Rev. Deborah Blank, 1563 Solano Ave. #344, Berkeley, CA 94707 (Sent via E-mail to: [miracoli@earthlink.net](mailto:miracoli@earthlink.net))

Dilan Roe, ACEH (Sent via E-mail to: [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
Mark Detterman, ACEH (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))  
GeoTracker, file

## **APPENDIX B**

### **SITE CONCEPTUAL MODEL**

Element	Description	Data Gaps
<b>Geology and Hydrogeology</b>		
Regional Geology and Hydrogeology	<p>The site lies at an approximate elevation of 40 feet above msl, and the local topography slopes toward the southwest. The site is located along the eastern margin of the San Francisco Bay within the East Bay Plain (Hickenbottom and Muir, 1988). The surficial deposits in the site vicinity are mapped as Holocene alluvial fan and fluvial deposits (Graymer, 2000). The active northwest trending Hayward fault is located approximately 1.5 miles northeast of the site.</p> <p>The East Bay Plain is regionally divided into two major groundwater basins: the San Pablo and the San Francisco Basin. These basins are tectonic depressions that are filled primarily with a sequence of coalescing alluvial fans. The San Francisco Basin is further divided into seven sub-areas. The site is located in the Berkeley Sub-Area, which is filled primarily by alluvial deposits that range from 10 to 300 feet thick with poorly defined aquitards (CRWQCB, 1999). Under natural conditions, the direction of groundwater flow in the East Bay Plain is east to west.</p>	None
Site Geology, Hydrogeology, Hydraulic Flow, and Groundwater Gradient	<p>Soil boring logs indicate that the soil beneath the site consists predominantly of silt and clay with an apparently continuous coarse-grained unit 2 to 8 feet thick encountered between approximately 8 and 20 feet bgs. Fill material was encountered in the boring for well SVE3 (located in the former UST pit) to approximately 7 feet bgs. CPT borings indicate the presence of predominantly silt and clay between approximately 20 and 60 feet bgs, the maximum depth explored. Coarse-grained layers up to 3 feet thick are interbedded with the silt and clay (EC&amp;A, 2008; Cardno ERI, 2011; Cardno ERI, 2012a).</p> <p>Historical groundwater elevation data indicate that DTW ranges from 5 to 11 feet bgs beneath the site with varying groundwater flow directions. The distribution of dissolved-phase hydrocarbons suggests that the dominant groundwater flow direction is west to southwest (Cardno ERI, 2014b).</p> <p>Due to varying well construction, Cardno ERI separated the wells into shallow and deep water-bearing zones. Wells MW3A, MW4, MW5, and SVE1 through SVE3 are screened no deeper than 15 feet bgs and are referred to as the shallow water-bearing zone; wells MW1 through MW3 and MW6 have screened intervals that extend deeper than 15 feet bgs and are referred to as the deep water-bearing zone. The groundwater elevations in wells screened deeper than 15 feet are commonly irregular and do not agree with the distribution of petroleum hydrocarbon concentrations. Although the water-bearing zones are referred to as shallow and deep, they likely do not represent unique water-bearing zones. During fourth quarter 2013, the groundwater flow direction in the shallow water-bearing zone was towards the southwest with a hydraulic gradient of approximately 0.008. Due to varying well construction, the groundwater flow in the deep water-bearing zone is not calculated (Cardno ERI, 2014b).</p>	None
<b>Facility History</b>		
Facility Structures and Site Operations	<p>In 1945, a service station owned by Signal Oil Company occupied the site. Humble Oil company acquired the site in 1967 from Standard Oil Company of California (Chevron), rebranding the site as an Enco station. The station was rebranded as an Exxon service station in 1975 (EDR, 2009a; EDR, 2009b).</p> <p>The service station was demolished in 1983. During demolition activities, one used-oil UST and four gasoline USTs were removed and the resulting tank cavity was backfilled with sand and compacted to 90% (City of Albany, 1983).</p> <p>Cardno ERI reviewed eight aerial photographs of the site and site vicinity dated from September 6, 1949, to June 21, 1983 (EDR, 2009b). Based on these photographs, the dispenser islands appeared to be located beneath the station canopy on the northern portion of the site and the former USTs appeared to be located on the southern portion of the site, east of the station's service bays. The location of the former used-oil UST is unknown. The approximate location of the former USTs are shown on Plate 2.</p> <p>A retail outlet for Benjamin Moore paints and painting products and associated asphalt parking currently occupy the site.</p>	None

Element	Description	Data Gaps
<b>Sensitive Receptors, Land Use, and Nearby Sites</b>		
Surface Water Bodies	The site is located approximately 1,630 feet north-northwest of Cordomices Creek. No other surface water bodies have been located within a 300-meter radius of the site.	None
Nearby Wells	There are not public water supply, municipal, or domestic wells located within a ¼-mile radius of the site.	None
Public Use Areas	Two public use areas are present within a 100-meter radius of the site: the City of Albany Police, Fire, and City offices located across Buchanan Street at 1000 San Pablo Avenue and a physical therapy office located in the strip mall approximately 50 meters north of the site.	None
Residences	Sixteen residential buildings have been identified within a 300-meter radius of the site; five of those buildings are located within a 100-meter radius of the site.	None
Sub-Grade	Sub-grade structures have not been identified within a 100-meter radius of the site.	None
Utility Vaults	Twenty-three vaults have been identified on or immediately adjacent to the site. Vault uses include: water, telephone, gas meter, electric, sewer, traffic box, traffic signal, and anode.	None
Storm and Sanitary Sewers	Three storm drains are located on or adjacent to the site. The storm drains daylight along the curb and water flows west along Buchanan Street. The City of Albany Public Works Department confirmed that the storm drains discharge directly into the Bay. Two sanitary sewer cleanout vaults are located on site. The City of Albany Public Works Department confirmed that sewage is discharged at the East Bay Municipal Utilities District Treatment Plant, located 4.5 miles south of the site, at the entrance to the San Francisco Bay Bridge.	None
Other	Other site receptors have not been identified.	None
Nearby Sites	The surrounding areas consist of residential and commercial properties (Plate 2). The City of Albany Fire Department and Police Department are located south of the site on Buchanan Street. ACEH case number RO0000119, identified as Firestone #3655 in the GeoTracker™ database, is located across San Pablo Avenue to the east. A Shell Service Station and an Atlantic Richfield Company Service Station (Arco) are located approximately 350 and 500 feet away, respectively, south-southeast of the site.	None
<b>Release Information</b>		
Release History	The primary sources of petroleum hydrocarbons at the site are the former used-oil UST and the four former gasoline USTs. The USTs were removed in 1983 (City of Albany, 1983).	None
Extent and Distribution of Petroleum Hydrocarbon Concentrations	<b>Non-Aqueous Phase Liquid</b> An immiscible sheen was reported in groundwater samples collected from borings B1 and B2 (EC&A, 2008). Neither NAPL nor sheen have been observed in the groundwater monitoring wells at the site; however, during fourth quarter 2012, concentrations of TPHg (270,000 µg/L) reported in well MW4 were potentially indicative of the presence of NAPL. Although the TPHg concentrations increased, BTEX concentrations were consistent with previous data. As a result, Cardno ERI began quarterly monitoring of well MW4 to check for NAPL. To date, NAPL has not been observed in the well. Concentrations of TPHg reported in well MW4 during the second quarter 2013 (16,000 µg/L) and fourth quarter 2013 (13,000 µg/L) sampling events were consistent with historical results (Cardno ERI, 2014b). The fourth quarter 2012 TPHd result for well MW4 appears to have been anomalous.	None



Element	Description	Data Gaps
	<p><b>Hydrocarbons in Groundwater</b></p> <p>Current and historic maximum dissolved-phase petroleum hydrocarbon concentrations have been reported in well MW3, located in the vicinity of the former USTs, and wells MW4 and MW5, located west of the former USTs. Concentrations are delineated to the east of the site by wells MW1 and MW2 and to the south of the site by borings B11 and B15.</p> <p>Dissolved-phase hydrocarbons are adequately vertically delineated at the site with petroleum hydrocarbon concentrations below or near the laboratory reporting limits in groundwater samples collected deeper than 27.5 feet bgs (Cardno ERI, 2011).</p> <p><b>Data Gap:</b> Dissolved-phase petroleum hydrocarbons require monitoring off site to the west and southwest near borings B9 and B12.</p> <p><b>How to Address:</b> Cardno ERI proposes installing two off-site wells near borings B9 and B12.</p>	Yes
	<p><b>Hydrocarbons in Soil</b></p> <p>Maximum residual petroleum hydrocarbon concentrations are present at approximately 10.5 feet bgs in the vicinity of the former USTs. With the exception of naphthalene by EPA Method 8310 in boring B13 (5 feet bgs) and TPHg in borings B4 (5 feet bgs) and SVE1 (8.5 feet bgs), residual petroleum hydrocarbon concentrations have been near or below reporting limits in the shallow soil samples collected at the site, including samples collected in the vicinity of the former UST and suspected dispenser island locations. Residual petroleum hydrocarbon concentrations are adequately delineated in both shallow (less than 10 feet bgs) and deep (greater than or equal to 10 feet bgs) soil to the northeast, the northwest, the west, the east, the southwest, and the south by borings B5 through B11, B14, B15, MW1, MW2, and CPT1. Residual TPHg (530 mg/kg) is present to the north at 10 feet bgs in boring B16, but is near or below reporting limits at 5 and 15.5 feet bgs (EC&amp;A, 2008; Cardno ERI, 2011; Cardno ERI, 2014a).</p>	None
	<p><b>Hydrocarbons in Soil Vapor</b></p> <p>Maximum vapor-phase concentrations are present in well SVS3, located in the vicinity of the suspected locations of the former dispenser islands. Petroleum hydrocarbons exceed ESLs by up to three orders of magnitude in wells SVS1 through SVS3.</p> <p><b>Data Gap:</b> Vapor-phase concentrations exceed applicable screening levels.</p> <p><b>How to Address:</b> Cardno ERI will submit a Feasibility Study/Corrective Action Plan (FS/CAP) to address vapor-phase concentrations.</p>	Yes
<b>Exposure Routes and Potential Receptors</b>		
Exposure Routes and Potential Receptors	<p>Utility trench backfill material is not acting as a preferential pathway for petroleum hydrocarbon concentrations (Cardno ERI, 2014a).</p> <p>There are not public water supply, municipal, or domestic wells located within a quarter mile of the site. The nearest surface water body (Cordornices Creek) is located approximately 1,630 feet south-southeast of the site. Residual and dissolved-phase petroleum hydrocarbons are delineated south and east of the site and are not likely to migrate to Cordornices Creek.</p> <p>A construction worker excavating soil at the site is a potential receptor; however, since the site is paved, direct exposure (via ingestion or dermal contact) to chemicals of concern released during Exxon's operations is not likely.</p> <p>The potential exposure route of vapor inhalation may exist in the commercial/industrial setting for workers in the on-site retail outlet.</p> <p>Users of shallow and deep groundwater are potential receptors.</p> <p><b>Data Gap:</b> See the groundwater and soil vapor data gaps in the Release Information section.</p>	Yes



## **APPENDIX C**

### **FIELD PROTOCOL**

## Cardno ERI Soil Vapor Sampling Well Installation and Sampling Field Protocol

### Preliminary Activities

Prior to the onset of field activities at the site, Cardno ERI obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Cardno ERI marks the borehole locations and contacts the local one call utility locating service at least 48 hours prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Prior to drilling, the borehole location is cleared in accordance with the client's procedures. Fieldwork is conducted under the advisement of a registered professional geologist and in accordance with an updated site-specific safety plan prepared for the project, which is available at the job site during field activities.

### Well Construction

The borehole is advanced to the desired depth using either a direct-push rig, hand auger, or air vacuum rig. Lithologic conditions are recorded on a boring log during borehole advancement, and select soil matrix sampling may be conducted based on soil characteristics.

Each soil vapor sampling (SVS) well is constructed using inert screen material attached to  $\frac{1}{8}$ - to  $\frac{1}{4}$ -inch outer diameter inert tubing. A gas-tight vacuum fitting or valve is attached to the top of each length of tubing using a female compression fitting. Each screen is set within a minimum of a 12-inch thick appropriately sized sand pack, with a minimum of 3 inches of sand pack above the top of the screen. A minimum of 4 inches of dry granular bentonite is set above each screen and associated sand pack. In SVS wells with multiple and separate casings and screens, the annular space between the top of the dry granular bentonite above the deep screen and the bottom of the sand pack associated with the shallow screen is sealed with a minimum of 18 inches of hydrated bentonite. The remainder of the annular space of the well is sealed with hydrated bentonite to 1 foot below ground surface. Wellheads are finished with traffic-rated well boxes set in concrete flush with the surrounding grade. No glues, chemical cements, or solvents are used in well construction.

A boring log is completed with the construction details for each well, including the materials of construction, depth of the borehole, screen length, and annular seal thickness.

### Soil Vapor Sampling

Samples are collected using a soil vapor purging and sampling manifold consisting of a flow regulator, vacuum gauges, vacuum pump, shroud, and laboratory-prepared, gas-tight, opaque containers such as Summa™ canisters. Samples may also be collected using a syringe and analyzed by a mobile laboratory. Prior to use, Summa™ canisters are checked to ensure they are under the laboratory induced vacuum between 31 and 25 inches of mercury (in. Hg). New inert tubing is used to purge and sample each well. Prior to purging and sampling each SVS well, the sampling manifold is connected to the gas-tight vacuum fitting or valve at the wellhead, and the downstream tubing and fittings are vacuum tested at approximately 24 to 28 in. Hg. Purging and sampling are conducted only on SVS wells when the tubing and fittings hold the applied vacuum for 5 minutes per vacuum gauge reading.

When required, Cardno ERI conducts a purge volume versus constituent concentration test on at least one SVS well prior to purging and sampling activities. The purge volume test well is selected based on the location of the anticipated source of chemical constituents at the site and on the location of anticipated maximum soil vapor concentrations based on lithologic conditions. If the SVS well has been in place for more than 1 week, it is assumed that soil vapor in the sand pack has equilibrated with the surrounding soil, and only the screen and tubing volumes are included in the purge volume calculation. If the SVS well has been in place for less than 1 week, the volume of the sand pack around the screen is included in the purge volume calculation. A photo-ionization detector (PID) or on-site mobile laboratory is used to evaluate concentrations of chemical constituents in the vapor stream after 1, 3, and 10 volumes of vapor have been purged from the SVS well. Purging is conducted at a rate of 100 to 200 milliliters per minute (ml/min). The purge volume exhibiting the highest concentration is the volume of vapor purged

from each SVS well prior to sampling. If the three separate purge volumes produce equal concentrations a default of 3 purge volumes is extracted prior to sampling.

Prior to sampling, a helium leak test is performed at each SVS well, including a summa canister and its fittings, to check for leaks in the SVS annulus. To assess the potential for leaks in the SVS well annulus, a shroud is placed over the SVS well and summa canister and the shroud is filled with a measured amount of helium. Helium screening is performed in the field by drawing soil gas into a Tedlar bag via a lung-box and screening the contents of the Tedlar bag with a helium meter. The concentration of helium in the sample divided by the concentration of helium in the shroud provides a measure of the proportion of the sample attributable to leakage. A leak that comprises less than 5% of the sample is insignificant. Helium screening is also performed using laboratory analysis of the contents of the summa canister collected under the shroud. Sampling is conducted at approximately the same rate of purging, at 100 to 200 ml/min. Soil vapor samples are submitted under chain-of-custody protocol for the specified laboratory analyses.

At a minimum, weather conditions (temperature, barometric pressure and precipitation), the sampling flow rate, the purge volume, the helium leak detection percentage results, the sample canister identification number, the method of sample collection, and the vacuum of the sampling canister at the start and end of sample collection (if applicable) are recorded on a log for each SVS well purged and sampled.

### **Decontamination Procedures**

If soil samples are collected, Cardno ERI or the contracted driller decontaminates the soil sampling equipment between each sampling interval using a non-phosphate solution, followed by a minimum of two tap water rinses. De-ionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned or triple-rinsed prior to advancing each borehole.

### **Waste Treatment and Disposal**

Soil cuttings generated from the well installation are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. The soil is removed from the site and transported under manifest to a client- and regulatory-approved facility for recycling or disposal. Decontamination water is stored on site in labeled, regulatory-approved storage containers, and is subsequently transported under manifest to a client- and regulatory-approved facility for disposal or treated with a permitted mobile or fixed-base carbon treatment system.

## **APPENDIX D**

### **FIELD DATA SHEETS**

**SVS Data Sheet**

**Former Exxon 79374  
990 San Pablo Ave  
Albany, California**

Date 8/29/14  
Sampler NMV

SVS 1	Start	End	Inches Hg	Flow Setting	He (ppm)
Vac Test	1106	1111	24.5/24.5	—	—
Purge	1111	1117	—	100cc/min	10%/10
Sample	1117	1123	30/5	200cc/min	10%

Summa ID# LC899

Flow Regulator ID# SGM404

Date 8/29/14  
Sampler NMV

SVS 2	Start	End	Inches Hg	Flow Setting	He (ppm)
Vac Test	1043	1048	24.5/24.5	—	—
Purge	1048	1054	—	200cc/min	10%/150ppm
Sample	1055	1059	30/5	200cc/min	10%

Summa ID# LC184

Flow Regulator ID# SGM013

Date 8/29/14  
Sampler NMV

SVS 3	Start	End	Inches Hg	Flow Setting	He %/ppm
Vac Test	1138	1143	25/25	—	—
Purge	1143	1149	—	100cc/min	10%/10
Sample	1149	1154	30/5	200cc/min	10%

Summa ID# LC501

Flow Regulator ID# SGM177

SVS 2 Dup	Start	End	Inches Hg	Flow Setting	He %/ppm
Sample	1055	1100	30/5	100cc/min	10%

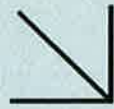
Summa ID# SLC081

Flow Regulator ID# SGM245

1 purge vol. = 5.88 minutes

## **APPENDIX E**

### **LABORATORY ANALYTICAL REPORTS**



**WORK ORDER NUMBER: 14-08-2328**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI  
**Client Project Name:** ExxonMobil 79374/022735C  
**Attention:** Greg Guss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
SEP 15 2014

*Cecile de Guia*

**BY:** .....

Approved for release on 09/15/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

## Contents

Client Project Name: ExxonMobil 79374/022735C  
 Work Order Number: 14-08-2328

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/30/14. They were assigned to Work Order 14-08-2328.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

TO-15

LCS/LCSD: All target analytes were within acceptance criteria with the exception of 1,1,2-Trichloro-1,2,2-Trifluoroethane. The LCS percent recovery for this analyte was below the lower control limit of 70%, but was above the NELAC-defined lower marginal exceedance (ME) limit of 59%. (ME =  $\pm 4$  standard deviations.) Based upon the number of analytes spiked into the LCS/LCSD, and per NELAC, the laboratory is allowed to report associated data when there is, in this case, one marginal exceedance in the LCS/LCSD.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

<b>Client:</b> Cardno ERI	<b>Work Order:</b>	14-08-2328
601 North McDowell Blvd.	<b>Project Name:</b>	ExxonMobil 79374/022735C
Petaluma, CA 94954-2312	<b>PO Number:</b>	022735C
	<b>Date/Time Received:</b>	08/30/14 09:20
	<b>Number of Containers:</b>	4

**Attn:** Greg Gurs

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SVS1	14-08-2328-1	08/28/14 11:23	1	Air
SVS2	14-08-2328-2	08/28/14 10:59	1	Air
SVS2 Dup	14-08-2328-3	08/28/14 11:00	1	Air
SVS3	14-08-2328-4	08/28/14 11:54	1	Air

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: ASTM D-1946  
Units: %v

Project: ExxonMobil 79374/022735C

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>SVS1</b>	<b>14-08-2328-1-A</b>	<b>08/28/14 11:23</b>	<b>Air</b>	<b>GC 65</b>	<b>N/A</b>	<b>08/30/14 15:24</b>	<b>140830L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Methane		15.3		0.500		1.00	
Carbon Dioxide		13.2		0.500		1.00	
Oxygen (+ Argon)		2.49		0.500		1.00	
<b>SVS2</b>	<b>14-08-2328-2-A</b>	<b>08/28/14 10:59</b>	<b>Air</b>	<b>GC 65</b>	<b>N/A</b>	<b>08/30/14 15:43</b>	<b>140830L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Methane		11.5		0.500		1.00	
Carbon Dioxide		9.67		0.500		1.00	
Oxygen (+ Argon)		5.54		0.500		1.00	
<b>SVS2 Dup</b>	<b>14-08-2328-3-A</b>	<b>08/28/14 11:00</b>	<b>Air</b>	<b>GC 65</b>	<b>N/A</b>	<b>08/30/14 16:01</b>	<b>140830L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Methane		13.5		0.500		1.00	
Carbon Dioxide		11.3		0.500		1.00	
Oxygen (+ Argon)		2.82		0.500		1.00	
<b>SVS3</b>	<b>14-08-2328-4-A</b>	<b>08/28/14 11:54</b>	<b>Air</b>	<b>GC 65</b>	<b>N/A</b>	<b>08/30/14 16:19</b>	<b>140830L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Methane		5.11		0.500		1.00	
Carbon Dioxide		14.7		0.500		1.00	
Oxygen (+ Argon)		5.49		0.500		1.00	
<b>Method Blank</b>	<b>099-16-444-41</b>	<b>N/A</b>	<b>Air</b>	<b>GC 65</b>	<b>N/A</b>	<b>08/30/14 14:47</b>	<b>140830L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Methane		ND		0.500		1.00	
Carbon Dioxide		ND		0.500		1.00	
Oxygen (+ Argon)		ND		0.500		1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/30/14  
 Work Order: 14-08-2328  
 Preparation: N/A  
 Method: ASTM D-1946 (M)  
 Units: %v

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>SVS1</b>	<b>14-08-2328-1-A</b>	<b>08/28/14 11:23</b>	<b>Air</b>	<b>GC 55</b>	<b>N/A</b>	<b>09/02/14 11:53</b>	<b>140902L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Helium		ND		0.0100		1.00	
<b>SVS2</b>	<b>14-08-2328-2-A</b>	<b>08/28/14 10:59</b>	<b>Air</b>	<b>GC 55</b>	<b>N/A</b>	<b>09/02/14 12:42</b>	<b>140902L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Helium		ND		0.0100		1.00	
<b>SVS2 Dup</b>	<b>14-08-2328-3-A</b>	<b>08/28/14 11:00</b>	<b>Air</b>	<b>GC 55</b>	<b>N/A</b>	<b>09/02/14 12:18</b>	<b>140902L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Helium		ND		0.0100		1.00	
<b>SVS3</b>	<b>14-08-2328-4-A</b>	<b>08/28/14 11:54</b>	<b>Air</b>	<b>GC 55</b>	<b>N/A</b>	<b>09/02/14 13:05</b>	<b>140902L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Helium		ND		0.0100		1.00	
<b>Method Blank</b>	<b>099-12-872-673</b>	<b>N/A</b>	<b>Air</b>	<b>GC 55</b>	<b>N/A</b>	<b>09/02/14 11:28</b>	<b>140902L01</b>
<u>Parameter</u>		<u>Result</u>		<u>RL</u>		<u>DF</u>	<u>Qualifiers</u>
Helium		ND		0.0100		1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>SVS1</b>	<b>14-08-2328-1-A</b>	<b>08/28/14 11:23</b>	<b>Air</b>	<b>GC/MS K</b>	<b>N/A</b>	<b>09/11/14 02:17</b>	<b>140910L01</b>

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	24000	5000	
Benzene	ND	8000	5000	
Benzyl Chloride	ND	39000	5000	
Bromodichloromethane	ND	17000	5000	
Bromoform	ND	26000	5000	
Bromomethane	ND	9700	5000	
2-Butanone	ND	22000	5000	
Carbon Disulfide	ND	31000	5000	
Carbon Tetrachloride	ND	16000	5000	
Chlorobenzene	ND	12000	5000	
Chloroethane	ND	6600	5000	
Chloroform	ND	12000	5000	
Chloromethane	ND	5200	5000	
Dibromochloromethane	ND	21000	5000	
Dichlorodifluoromethane	ND	12000	5000	
Diisopropyl Ether (DIPE)	ND	42000	5000	
1,1-Dichloroethane	ND	10000	5000	
1,1-Dichloroethene	ND	9900	5000	
1,2-Dibromoethane	ND	19000	5000	
Dichlorotetrafluoroethane	ND	70000	5000	
1,2-Dichlorobenzene	ND	15000	5000	
1,2-Dichloroethane	ND	10000	5000	
1,2-Dichloropropane	ND	12000	5000	
1,3-Dichlorobenzene	ND	15000	5000	
1,4-Dichlorobenzene	ND	15000	5000	
c-1,3-Dichloropropene	ND	11000	5000	
c-1,2-Dichloroethene	ND	9900	5000	
t-1,2-Dichloroethene	ND	9900	5000	
t-1,3-Dichloropropene	ND	23000	5000	
Ethyl-t-Butyl Ether (ETBE)	ND	42000	5000	
Ethylbenzene	ND	11000	5000	
4-Ethyltoluene	ND	12000	5000	
Hexachloro-1,3-Butadiene	ND	80000	5000	
2-Hexanone	ND	31000	5000	
Methyl-t-Butyl Ether (MTBE)	ND	36000	5000	

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI	Date Received:	08/30/14
601 North McDowell Blvd.	Work Order:	14-08-2328
Petaluma, CA 94954-2312	Preparation:	N/A
	Method:	EPA TO-15
	Units:	ug/m3

Project: ExxonMobil 79374/022735C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	87000	5000	
4-Methyl-2-Pentanone	ND	31000	5000	
o-Xylene	ND	11000	5000	
p/m-Xylene	ND	43000	5000	
Xylenes (total)	ND	11000	1.00	
Styrene	ND	32000	5000	
Tert-Amyl-Methyl Ether (TAME)	ND	42000	5000	
Tert-Butyl Alcohol (TBA)	ND	30000	5000	
Tetrachloroethene	ND	17000	5000	
Toluene	12000	9400	5000	
Trichloroethene	ND	13000	5000	
Trichlorofluoromethane	ND	28000	5000	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	57000	5000	
1,1,1-Trichloroethane	ND	14000	5000	
1,1,2-Trichloroethane	ND	14000	5000	
1,3,5-Trimethylbenzene	ND	12000	5000	
1,1,2,2-Tetrachloroethane	ND	34000	5000	
1,2,4-Trimethylbenzene	ND	37000	5000	
1,2,4-Trichlorobenzene	ND	74000	5000	
Vinyl Acetate	ND	35000	5000	
Vinyl Chloride	ND	6400	5000	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	104	68-134		
1,2-Dichloroethane-d4	98	67-133		
Toluene-d8	82	70-130		

Return to Contents ↑

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVS2	14-08-2328-2-A	08/28/14 10:59	Air	GC/MS K	N/A	09/11/14 03:08	140910L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	24000	5000	
Benzene	ND	8000	5000	
Benzyl Chloride	ND	39000	5000	
Bromodichloromethane	ND	17000	5000	
Bromoform	ND	26000	5000	
Bromomethane	ND	9700	5000	
2-Butanone	ND	22000	5000	
Carbon Disulfide	ND	31000	5000	
Carbon Tetrachloride	ND	16000	5000	
Chlorobenzene	ND	12000	5000	
Chloroethane	ND	6600	5000	
Chloroform	ND	12000	5000	
Chloromethane	ND	5200	5000	
Dibromochloromethane	ND	21000	5000	
Dichlorodifluoromethane	ND	12000	5000	
Diisopropyl Ether (DIPE)	ND	42000	5000	
1,1-Dichloroethane	ND	10000	5000	
1,1-Dichloroethene	ND	9900	5000	
1,2-Dibromoethane	ND	19000	5000	
Dichlorotetrafluoroethane	ND	70000	5000	
1,2-Dichlorobenzene	ND	15000	5000	
1,2-Dichloroethane	ND	10000	5000	
1,2-Dichloropropane	ND	12000	5000	
1,3-Dichlorobenzene	ND	15000	5000	
1,4-Dichlorobenzene	ND	15000	5000	
c-1,3-Dichloropropene	ND	11000	5000	
c-1,2-Dichloroethene	ND	9900	5000	
t-1,2-Dichloroethene	ND	9900	5000	
t-1,3-Dichloropropene	ND	23000	5000	
Ethyl-t-Butyl Ether (ETBE)	ND	42000	5000	
Ethylbenzene	ND	11000	5000	
4-Ethyltoluene	ND	12000	5000	
Hexachloro-1,3-Butadiene	ND	80000	5000	
2-Hexanone	ND	31000	5000	
Methyl-t-Butyl Ether (MTBE)	ND	36000	5000	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

**Analytical Report**

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	87000	5000	
4-Methyl-2-Pentanone	ND	31000	5000	
o-Xylene	ND	11000	5000	
p/m-Xylene	ND	43000	5000	
Xylenes (total)	ND	11000	1.00	
Styrene	ND	32000	5000	
Tert-Amyl-Methyl Ether (TAME)	ND	42000	5000	
Tert-Butyl Alcohol (TBA)	ND	30000	5000	
Tetrachloroethene	ND	17000	5000	
Toluene	13000	9400	5000	
Trichloroethene	ND	13000	5000	
Trichlorofluoromethane	ND	28000	5000	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	57000	5000	
1,1,1-Trichloroethane	ND	14000	5000	
1,1,2-Trichloroethane	ND	14000	5000	
1,3,5-Trimethylbenzene	ND	12000	5000	
1,1,2,2-Tetrachloroethane	ND	34000	5000	
1,2,4-Trimethylbenzene	ND	37000	5000	
1,2,4-Trichlorobenzene	ND	74000	5000	
Vinyl Acetate	ND	35000	5000	
Vinyl Chloride	ND	6400	5000	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	106	68-134		
1,2-Dichloroethane-d4	100	67-133		
Toluene-d8	92	70-130		

Return to Contents 

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>SVS2 Dup</b>	<b>14-08-2328-3-A</b>	<b>08/28/14 11:00</b>	<b>Air</b>	<b>GC/MS K</b>	<b>N/A</b>	<b>09/11/14 03:58</b>	<b>140910L01</b>

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	24000	5000	
Benzene	ND	8000	5000	
Benzyl Chloride	ND	39000	5000	
Bromodichloromethane	ND	17000	5000	
Bromoform	ND	26000	5000	
Bromomethane	ND	9700	5000	
2-Butanone	ND	22000	5000	
Carbon Disulfide	ND	31000	5000	
Carbon Tetrachloride	ND	16000	5000	
Chlorobenzene	ND	12000	5000	
Chloroethane	ND	6600	5000	
Chloroform	ND	12000	5000	
Chloromethane	ND	5200	5000	
Dibromochloromethane	ND	21000	5000	
Dichlorodifluoromethane	ND	12000	5000	
Diisopropyl Ether (DIPE)	ND	42000	5000	
1,1-Dichloroethane	ND	10000	5000	
1,1-Dichloroethene	ND	9900	5000	
1,2-Dibromoethane	ND	19000	5000	
Dichlorotetrafluoroethane	ND	70000	5000	
1,2-Dichlorobenzene	ND	15000	5000	
1,2-Dichloroethane	ND	10000	5000	
1,2-Dichloropropane	ND	12000	5000	
1,3-Dichlorobenzene	ND	15000	5000	
1,4-Dichlorobenzene	ND	15000	5000	
c-1,3-Dichloropropene	ND	11000	5000	
c-1,2-Dichloroethene	ND	9900	5000	
t-1,2-Dichloroethene	ND	9900	5000	
t-1,3-Dichloropropene	ND	23000	5000	
Ethyl-t-Butyl Ether (ETBE)	ND	42000	5000	
Ethylbenzene	ND	11000	5000	
4-Ethyltoluene	ND	12000	5000	
Hexachloro-1,3-Butadiene	ND	80000	5000	
2-Hexanone	ND	31000	5000	
Methyl-t-Butyl Ether (MTBE)	ND	36000	5000	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI	Date Received:	08/30/14
601 North McDowell Blvd.	Work Order:	14-08-2328
Petaluma, CA 94954-2312	Preparation:	N/A
	Method:	EPA TO-15
	Units:	ug/m3

Project: ExxonMobil 79374/022735C Page 6 of 10

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	87000	5000	
4-Methyl-2-Pentanone	ND	31000	5000	
o-Xylene	ND	11000	5000	
p/m-Xylene	ND	43000	5000	
Xylenes (total)	ND	11000	1.00	
Styrene	ND	32000	5000	
Tert-Amyl-Methyl Ether (TAME)	ND	42000	5000	
Tert-Butyl Alcohol (TBA)	ND	30000	5000	
Tetrachloroethene	ND	17000	5000	
Toluene	13000	9400	5000	
Trichloroethene	ND	13000	5000	
Trichlorofluoromethane	ND	28000	5000	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	57000	5000	
1,1,1-Trichloroethane	ND	14000	5000	
1,1,2-Trichloroethane	ND	14000	5000	
1,3,5-Trimethylbenzene	ND	12000	5000	
1,1,2,2-Tetrachloroethane	ND	34000	5000	
1,2,4-Trimethylbenzene	ND	37000	5000	
1,2,4-Trichlorobenzene	ND	74000	5000	
Vinyl Acetate	ND	35000	5000	
Vinyl Chloride	ND	6400	5000	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	110	68-134		
1,2-Dichloroethane-d4	100	67-133		
Toluene-d8	93	70-130		

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>SVS3</b>	<b>14-08-2328-4-A</b>	<b>08/28/14 11:54</b>	<b>Air</b>	<b>GC/MS K</b>	<b>N/A</b>	<b>09/11/14 04:47</b>	<b>140910L01</b>

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	24000	5000	
Benzene	21000	8000	5000	
Benzyl Chloride	ND	39000	5000	
Bromodichloromethane	ND	17000	5000	
Bromoform	ND	26000	5000	
Bromomethane	ND	9700	5000	
2-Butanone	ND	22000	5000	
Carbon Disulfide	ND	31000	5000	
Carbon Tetrachloride	ND	16000	5000	
Chlorobenzene	ND	12000	5000	
Chloroethane	ND	6600	5000	
Chloroform	ND	12000	5000	
Chloromethane	ND	5200	5000	
Dibromochloromethane	ND	21000	5000	
Dichlorodifluoromethane	ND	12000	5000	
Diisopropyl Ether (DIPE)	ND	42000	5000	
1,1-Dichloroethane	ND	10000	5000	
1,1-Dichloroethene	ND	9900	5000	
1,2-Dibromoethane	ND	19000	5000	
Dichlorotetrafluoroethane	ND	70000	5000	
1,2-Dichlorobenzene	ND	15000	5000	
1,2-Dichloroethane	ND	10000	5000	
1,2-Dichloropropane	ND	12000	5000	
1,3-Dichlorobenzene	ND	15000	5000	
1,4-Dichlorobenzene	ND	15000	5000	
c-1,3-Dichloropropene	ND	11000	5000	
c-1,2-Dichloroethene	ND	9900	5000	
t-1,2-Dichloroethene	ND	9900	5000	
t-1,3-Dichloropropene	ND	23000	5000	
Ethyl-t-Butyl Ether (ETBE)	ND	42000	5000	
Ethylbenzene	31000	11000	5000	
4-Ethyltoluene	ND	12000	5000	
Hexachloro-1,3-Butadiene	ND	80000	5000	
2-Hexanone	ND	31000	5000	
Methyl-t-Butyl Ether (MTBE)	ND	36000	5000	


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	87000	5000	
4-Methyl-2-Pentanone	ND	31000	5000	
o-Xylene	ND	11000	5000	
p/m-Xylene	ND	43000	5000	
Xylenes (total)	ND	11000	1.00	
Styrene	ND	32000	5000	
Tert-Amyl-Methyl Ether (TAME)	ND	42000	5000	
Tert-Butyl Alcohol (TBA)	ND	30000	5000	
Tetrachloroethene	ND	17000	5000	
Toluene	13000	9400	5000	
Trichloroethene	ND	13000	5000	
Trichlorofluoromethane	ND	28000	5000	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	57000	5000	
1,1,1-Trichloroethane	ND	14000	5000	
1,1,2-Trichloroethane	ND	14000	5000	
1,3,5-Trimethylbenzene	ND	12000	5000	
1,1,2,2-Tetrachloroethane	ND	34000	5000	
1,2,4-Trimethylbenzene	ND	37000	5000	
1,2,4-Trichlorobenzene	ND	74000	5000	
Vinyl Acetate	ND	35000	5000	
Vinyl Chloride	ND	6400	5000	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	105	68-134		
1,2-Dichloroethane-d4	101	67-133		
Toluene-d8	89	70-130		


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>Method Blank</b>	<b>095-01-021-14086</b>	<b>N/A</b>	<b>Air</b>	<b>GC/MS K</b>	<b>N/A</b>	<b>09/10/14 22:07</b>	<b>140910L01</b>

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	4.8	1.00	
Benzene	ND	1.6	1.00	
Benzyl Chloride	ND	7.8	1.00	
Bromodichloromethane	ND	3.4	1.00	
Bromoform	ND	5.2	1.00	
Bromomethane	ND	1.9	1.00	
2-Butanone	ND	4.4	1.00	
Carbon Disulfide	ND	6.2	1.00	
Carbon Tetrachloride	ND	3.1	1.00	
Chlorobenzene	ND	2.3	1.00	
Chloroethane	ND	1.3	1.00	
Chloroform	ND	2.4	1.00	
Chloromethane	ND	1.0	1.00	
Dibromochloromethane	ND	4.3	1.00	
Dichlorodifluoromethane	ND	2.5	1.00	
Diisopropyl Ether (DIPE)	ND	8.4	1.00	
1,1-Dichloroethane	ND	2.0	1.00	
1,1-Dichloroethene	ND	2.0	1.00	
1,2-Dibromoethane	ND	3.8	1.00	
Dichlorotetrafluoroethane	ND	14	1.00	
1,2-Dichlorobenzene	ND	3.0	1.00	
1,2-Dichloroethane	ND	2.0	1.00	
1,2-Dichloropropane	ND	2.3	1.00	
1,3-Dichlorobenzene	ND	3.0	1.00	
1,4-Dichlorobenzene	ND	3.0	1.00	
c-1,3-Dichloropropene	ND	2.3	1.00	
c-1,2-Dichloroethene	ND	2.0	1.00	
t-1,2-Dichloroethene	ND	2.0	1.00	
t-1,3-Dichloropropene	ND	4.5	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	8.4	1.00	
Ethylbenzene	ND	2.2	1.00	
4-Ethyltoluene	ND	2.5	1.00	
Hexachloro-1,3-Butadiene	ND	16	1.00	
2-Hexanone	ND	6.1	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 79374/022735C

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	17	1.00	
4-Methyl-2-Pentanone	ND	6.1	1.00	
o-Xylene	ND	2.2	1.00	
p/m-Xylene	ND	8.7	1.00	
Xylenes (total)	ND	2.2	1.00	
Styrene	ND	6.4	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	8.4	1.00	
Tert-Butyl Alcohol (TBA)	ND	6.1	1.00	
Tetrachloroethene	ND	3.4	1.00	
Toluene	ND	1.9	1.00	
Trichloroethene	ND	2.7	1.00	
Trichlorofluoromethane	ND	5.6	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	
1,1,1-Trichloroethane	ND	2.7	1.00	
1,1,2-Trichloroethane	ND	2.7	1.00	
1,3,5-Trimethylbenzene	ND	2.5	1.00	
1,1,2,2-Tetrachloroethane	ND	6.9	1.00	
1,2,4-Trimethylbenzene	ND	7.4	1.00	
1,2,4-Trichlorobenzene	ND	15	1.00	
Vinyl Acetate	ND	7.0	1.00	
Vinyl Chloride	ND	1.3	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,4-Bromofluorobenzene	99	68-134		
1,2-Dichloroethane-d4	96	67-133		
Toluene-d8	95	70-130		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: GC/MS C6-C12 AS GASOLINE  
Units: ug/m3

Project: ExxonMobil 79374/022735C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVS1	14-08-2328-1-A	08/28/14 11:23	Air	GC/MS K	N/A	09/11/14 02:17	G140910L01

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline (C6-C12)	90000000	2300000	5000	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	97	50-150	
1,4-Bromofluorobenzene	92	50-150	
Toluene-d8	79	50-150	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVS2	14-08-2328-2-A	08/28/14 10:59	Air	GC/MS K	N/A	09/11/14 03:08	G140910L01

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline (C6-C12)	80000000	2300000	5000	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	98	50-150	
1,4-Bromofluorobenzene	94	50-150	
Toluene-d8	89	50-150	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVS2 Dup	14-08-2328-3-A	08/28/14 11:00	Air	GC/MS K	N/A	09/11/14 03:58	G140910L01

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline (C6-C12)	89000000	2300000	5000	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	99	50-150	
1,4-Bromofluorobenzene	88	50-150	
Toluene-d8	90	50-150	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVS3	14-08-2328-4-A	08/28/14 11:54	Air	GC/MS K	N/A	09/11/14 04:47	G140910L01

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline (C6-C12)	87000000	2300000	5000	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	99	50-150	
1,4-Bromofluorobenzene	81	50-150	
Toluene-d8	86	50-150	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Analytical Report

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: GC/MS C6-C12 AS GASOLINE  
Units: ug/m3

Project: ExxonMobil 79374/022735C

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-014-49	N/A	Air	GC/MS K	N/A	09/10/14 22:07	G140910L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
TPH as Gasoline (C6-C12)	ND	470	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	94	50-150	
1,4-Bromofluorobenzene	86	50-150	
Toluene-d8	92	50-150	


  
Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: ASTM D-1946

Project: ExxonMobil 79374/022735C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-16-444-41	LCS	Air	GC 65	N/A	08/30/14 14:12	140830L01			
099-16-444-41	LCSD	Air	GC 65	N/A	08/30/14 14:30	140830L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Methane	4.500	4.261	95	4.267	95	80-120	0	0-30	
Carbon Dioxide	15.00	14.54	97	14.88	99	80-120	2	0-30	
Oxygen (+ Argon)	4.010	3.998	100	3.973	99	80-120	1	0-30	


  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: ASTM D-1946 (M)

Project: ExxonMobil 79374/022735C

Page 2 of 5

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-872-673	LCS	Air	GC 55	N/A	09/02/14 10:39	140902L01			
099-12-872-673	LCSD	Air	GC 55	N/A	09/02/14 11:04	140902L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Helium	1.000	1.010	101	1.021	102	80-120	1	0-30	


  
Return to Comments

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15

Project: ExxonMobil 79374/022735C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
095-01-021-14086	LCS	Air	GC/MS K	N/A	09/10/14 17:11	140910L01				
095-01-021-14086	LCSD	Air	GC/MS K	N/A	09/10/14 20:28	140910L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Acetone	59.39	49.92	84	53.12	89	67-133	56-144	6	0-30	
Benzene	79.87	84.28	106	86.02	108	70-130	60-140	2	0-30	
Benzyl Chloride	129.4	134.1	104	129.9	100	38-158	18-178	3	0-30	
Bromodichloromethane	167.5	175.0	104	180.7	108	70-130	60-140	3	0-30	
Bromoform	258.4	285.1	110	288.0	111	63-147	49-161	1	0-30	
Bromomethane	97.08	87.23	90	92.64	95	70-139	58-150	6	0-30	
2-Butanone	73.73	72.04	98	75.55	102	66-132	55-143	5	0-30	
Carbon Disulfide	77.85	56.36	72	55.80	72	68-146	55-159	1	0-30	
Carbon Tetrachloride	157.3	165.7	105	168.7	107	70-136	59-147	2	0-30	
Chlorobenzene	115.1	124.1	108	124.7	108	70-130	60-140	1	0-30	
Chloroethane	65.96	57.31	87	61.03	93	65-149	51-163	6	0-30	
Chloroform	122.1	120.2	98	125.4	103	70-130	60-140	4	0-30	
Chloromethane	51.63	45.91	89	49.00	95	69-141	57-153	7	0-30	
Dibromochloromethane	213.0	221.7	104	223.2	105	70-138	59-149	1	0-30	
Dichlorodifluoromethane	123.6	117.4	95	126.1	102	67-139	55-151	7	0-30	
Diisopropyl Ether (DIPE)	104.5	91.59	88	96.31	92	63-130	52-141	5	0-30	
1,1-Dichloroethane	101.2	102.6	101	106.4	105	70-130	60-140	4	0-30	
1,1-Dichloroethene	99.12	86.19	87	92.98	94	70-135	59-146	8	0-30	
1,2-Dibromoethane	192.1	194.1	101	195.1	102	70-133	60-144	1	0-30	
Dichlorotetrafluoroethane	174.8	122.0	70	131.2	75	51-135	37-149	7	0-30	
1,2-Dichlorobenzene	150.3	147.7	98	140.5	94	48-138	33-153	5	0-30	
1,2-Dichloroethane	101.2	96.89	96	101.5	100	70-132	60-142	5	0-30	
1,2-Dichloropropane	115.5	122.2	106	125.2	108	70-130	60-140	2	0-30	
1,3-Dichlorobenzene	150.3	144.6	96	137.3	91	56-134	43-147	5	0-30	
1,4-Dichlorobenzene	150.3	146.5	97	139.7	93	52-136	38-150	5	0-30	
c-1,3-Dichloropropene	113.5	126.4	111	129.1	114	70-130	60-140	2	0-30	
c-1,2-Dichloroethene	99.12	103.3	104	106.3	107	70-130	60-140	3	0-30	
t-1,2-Dichloroethene	99.12	99.58	100	102.1	103	70-130	60-140	2	0-30	
t-1,3-Dichloropropene	113.5	136.7	120	139.4	123	70-147	57-160	2	0-30	
Ethyl-t-Butyl Ether (ETBE)	104.5	97.78	94	101.0	97	67-130	56-140	3	0-30	
Ethylbenzene	108.6	117.6	108	119.9	110	70-130	60-140	2	0-30	
4-Ethyltoluene	122.9	116.6	95	114.1	93	68-130	58-140	2	0-30	
Hexachloro-1,3-Butadiene	266.6	340.1	128	348.6	131	44-146	27-163	2	0-30	
2-Hexanone	102.4	98.17	96	98.64	96	70-136	59-147	0	0-30	
Methyl-t-Butyl Ether (MTBE)	90.13	94.28	105	96.61	107	68-130	58-140	2	0-30	
Methylene Chloride	86.84	67.32	78	71.65	83	69-130	59-140	6	0-30	

RPD: Relative Percent Difference. CL: Control Limits

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: EPA TO-15

Project: ExxonMobil 79374/022735C

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Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
4-Methyl-2-Pentanone	102.4	100.1	98	102.6	100	70-130	60-140	3	0-30	
o-Xylene	108.6	109.2	101	112.4	104	69-130	59-140	3	0-30	
p/m-Xylene	217.1	230.8	106	239.6	110	70-132	60-142	4	0-30	
Styrene	106.5	102.3	96	102.3	96	65-131	54-142	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	104.5	103.0	99	103.2	99	69-130	59-140	0	0-30	
Tert-Butyl Alcohol (TBA)	151.6	123.8	82	131.5	87	66-144	53-157	6	0-30	
Tetrachloroethene	169.6	203.6	120	202.8	120	70-130	60-140	0	0-30	
Toluene	94.21	95.65	102	97.97	104	70-130	60-140	2	0-30	
Trichloroethene	134.3	139.8	104	143.4	107	70-130	60-140	3	0-30	
Trichlorofluoromethane	140.5	118.6	84	128.4	91	63-141	50-154	8	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	191.6	130.0	68	137.6	72	70-136	59-147	6	0-30	LR,RU
1,1,1-Trichloroethane	136.4	134.7	99	139.6	102	70-130	60-140	4	0-30	
1,1,2-Trichloroethane	136.4	142.9	105	146.5	107	70-130	60-140	3	0-30	
1,3,5-Trimethylbenzene	122.9	112.1	91	109.4	89	62-130	51-141	2	0-30	
1,1,2,2-Tetrachloroethane	171.6	153.1	89	150.5	88	63-130	52-141	2	0-30	
1,2,4-Trimethylbenzene	122.9	115.3	94	113.5	92	60-132	48-144	2	0-30	
1,2,4-Trichlorobenzene	185.5	210.0	113	211.0	114	31-151	11-171	0	0-30	
Vinyl Acetate	88.03	80.27	91	84.10	96	58-130	46-142	5	0-30	
Vinyl Chloride	63.91	56.36	88	59.99	94	70-134	59-145	6	0-30	

Total number of LCS compounds: 55

Total number of ME compounds: 1

Total number of ME compounds allowed: 3

LCS ME CL validation result: Pass

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2328  
Preparation: N/A  
Method: GC/MS C6-C12 AS GASOLINE

Project: ExxonMobil 79374/022735C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-16-014-49	LCS	Air	GC/MS K	N/A	09/10/14 18:00	G140910L01			
099-16-014-49	LCSD	Air	GC/MS K	N/A	09/10/14 18:49	G140910L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline (C6-C12)	4663	5782	124	6226	134	50-150	7	0-30	


  
Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

**Summa Canister Vacuum Summary**

Work Order: 14-08-2328

Page 1 of 1

<b>Sample Name</b>	<b>Vacuum Out</b>	<b>Vacuum In</b>	<b>Equipment</b>	<b>Description</b>
SVS1	-29.60 in Hg	-5.00 in Hg	LC899	Summa Canister 1L
SVS2	-29.60 in Hg	-5.00 in Hg	LC184	Summa Canister 1L
SVS2 Dup	-29.50 in Hg	-5.00 in Hg	SLC081	Summa Canister 1L
SVS3	-29.60 in Hg	-5.00 in Hg	LC501	Summa Canister 1L

<b>Qualifiers</b>	<b>Definition</b>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stnds.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.





2328

**GSO**  
 < WebShip > >>>>  
 800-322-5555 www.gso.com

<b>Ship From:</b> ALAN KEMP CAL SCIENCE- CONCORD 5063 COMMERCIAL CIRCLE #H CONCORD, CA 94520  <b>Ship To:</b> SAMPLE RECEIVING CEL 7440 LINCOLN WAY GARDEN GROVE, CA 92841  <b>COD:</b> \$0.00  <b>Reference:</b> CARDNO ERI  <b>Delivery Instructions:</b>  <b>Signature Type:</b> SIGNATURE REQUIRED	<b>Tracking #:</b> 525517696 	<b>SDS</b>  <b>A</b>
	<b>ORC</b> <b>GARDEN GROVE</b>  <b>D92845A</b>  28190598	

Print Date : 08/28/14 15:35 PM

Package 1 of 1

Print All

**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
- STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
- STEP 2 - Fold this page in half.
- STEP 3 - Securely attach this label to your package, do not cover the barcode.
- STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

**Calscience**

**WORK ORDER #: 14-08-2329**

**SAMPLE RECEIPT FORM**

Cooler 0 of 0

CLIENT: EXXON

DATE: 08/30/14

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature \_\_\_\_\_ °C - 0.3 °C (CF) = \_\_\_\_\_ °C     Blank     Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air     Filter    Checked by: 802

**CUSTODY SEALS INTACT:**

Cooler     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Checked by: 802

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Checked by: 801

<b>SAMPLE CONDITION:</b>	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> No analysis requested. <input type="checkbox"/> Not relinquished. <input type="checkbox"/> No date/time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers and sufficient volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfides <input type="checkbox"/> Dissolved Oxygen.....			
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

**Solid:**  4ozCGJ     8ozCGJ     16ozCGJ     Sleeve (\_\_\_\_)     EnCores®     TerraCores®     \_\_\_\_\_

**Aqueous:**  VOA     VOA<sub>h</sub>     VOA<sub>na2</sub>     125AGB     125AGB<sub>h</sub>     125AGB<sub>p</sub>     1AGB     1AGB<sub>na2</sub>     1AGB<sub>s</sub>

500AGB     500AGJ     500AGJ<sub>s</sub>     250AGB     250CGB     250CGB<sub>s</sub>     1PB     1PB<sub>na</sub>     500PB

250PB     250PB<sub>n</sub>     125PB     125PB<sub>z</sub>     100PJ     100PJ<sub>na2</sub>     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

**Air:**  Tedlar®     Canister    **Other:**  \_\_\_\_\_    **Trip Blank Lot#:** \_\_\_\_\_    **Labeled/Checked by:** 681

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope    **Reviewed by:** \_\_\_\_\_

**Preservative:** h: HCL n: HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure z: ZnAc<sub>2</sub>+NaOH f: Filtered    **Scanned by:** \_\_\_\_\_

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**WORK ORDER NUMBER: 14-08-2319**

*The difference is service*



AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 79374/022735C

**Attention:** Greg Gurss  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

**RECEIVED**  
SEP 15 2014

*Cecile de Guia*

**BY:** .....

Approved for release on 09/15/2014 by:  
Cecile deGuia  
Project Manager

ResultLink ▶

Email your PM ▶



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Work Order Number: 14-08-2319

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**Condition Upon Receipt:**

Samples were received under Chain-of-Custody (COC) on 08/30/14. They were assigned to Work Order 14-08-2319.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of  $\leq 15$  minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: [http://www.calscience.com/PDF/New\\_York.pdf](http://www.calscience.com/PDF/New_York.pdf)

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

TO-17 Naphthalene

The associated Internal Standard, Chlorobenzene-d5, was low due to high levels of hydrocarbon present in the sample and therefore the reported detection for Naphthalene may be biased high. Only one sorbent tube was received and a reanalysis was not performed.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

## Sample Summary

Client: Cardno ERI	Work Order:	14-08-2319
601 North McDowell Blvd.	Project Name:	ExxonMobil 79374/022735C
Petaluma, CA 94954-2312	PO Number:	022735C
	Date/Time Received:	08/30/14 09:20
	Number of Containers:	3

Attn: Greg Gurss

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
ST-SVS1	14-08-2319-1	08/28/14 12:21	1	Air
ST-SVS2	14-08-2319-2	08/28/14 12:17	1	Air
ST-SVS3	14-08-2319-3	08/28/14 12:11	1	Air

## Analytical Report

Cardno ERI  
 601 North McDowell Blvd.  
 Petaluma, CA 94954-2312

Date Received: 08/30/14  
 Work Order: 14-08-2319  
 Preparation: N/A  
 Method: EPA TO-17 (M)  
 Units: ug/m3

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ST-SVS1	14-08-2319-1-A	08/28/14 12:21	Air	GC/MS MMM	N/A	09/04/14 11:37	140903L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	ND	20	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	155	57-129	AZ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ST-SVS2	14-08-2319-2-A	08/28/14 12:17	Air	GC/MS MMM	N/A	09/04/14 12:21	140903L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	ND	20	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	9676	57-129	AZ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ST-SVS3	14-08-2319-3-A	08/28/14 12:11	Air	GC/MS MMM	N/A	09/04/14 13:04	140903L01

Comment(s): - Please see Work Order Narrative, additional comments section.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	820	20	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	829	57-129	AZ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-178-25	N/A	Air	GC/MS MMM	N/A	09/03/14 20:41	140903L01

Comment(s): - MB data is reported in ng/sample.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Naphthalene	ND	2.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	57-129	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

## Quality Control - LCS/LCSD

Cardno ERI  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

Date Received: 08/30/14  
Work Order: 14-08-2319  
Preparation: N/A  
Method: EPA TO-17 (M)

Project: ExxonMobil 79374/022735C

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-178-25	LCS	Air	GC/MS MMM	N/A	09/03/14 19:24	140903L01			
099-15-178-25	LCSD	Air	GC/MS MMM	N/A	09/03/14 20:02	140903L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	100.0	89.43	89	91.92	92	40-190	3	0-35	


  
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RPD: Relative Percent Difference. CL: Control Limits



<u>Qualifiers</u>	<u>Definition</u>
AZ	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BA	The MS/MSD RPD was out of control due to suspected matrix interference.
BB	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
DF	Reporting limits elevated due to matrix interferences.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
GE	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
HD	Chromat. profile inconsistent with pattern(s) of ref. fuel stdns.
HO	High concentration matrix spike recovery out of limits
HT	Analytical value calculated using results from associated tests.
HX	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS was in control.
IL	Relative percent difference out of control.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
LD	Analyte presence was not confirmed by second column or GC/MS analysis.
LP	The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
ND	Parameter not detected at the indicated reporting limit.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
RU	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
SG	A silica gel cleanup procedure was performed.
SN	See applicable analysis comment.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



2319



WebShip >>>>>

800-322-5555 www.gso.com

Ship From:  
ATAMSHIP  
1003 COMMERCIAL CIRCLE #H  
GARDNO ERI, CA 92841

Ship To:  
SAMPLE RECEIVING  
CEL  
2440 LINCOLN WAY  
GARDEN GROVE, CA 92841

1003  
GARDNO ERI

Reference:  
GARDNO ERI

Delivery Instructions:

Tracking #: 525517822



SDS

ORC

A

GARDEN GROVE

D92845A



28400046

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Calscience

WORK ORDER #: 14-08-2319

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Exxon

DATE: 08/30/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 3.0°C - 0.3°C (CF) = 2.7°C [X] Blank [ ] Sample

[ ] Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_)

[ ] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

[ ] Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: [ ] Air [ ] Filter

Checked by: [Signature]

CUSTODY SEALS INTACT:

[X] Cooler [ ] \_\_\_\_\_ [ ] No (Not Intact) [ ] Not Present [ ] N/A

Checked by: [Signature]

[ ] Sample [ ] \_\_\_\_\_ [ ] No (Not Intact) [X] Not Present

Checked by: [Signature]

SAMPLE CONDITION:

Chain-Of-Custody (COC) document(s) received with samples..... [X] Yes [ ] No [ ] N/A

COC document(s) received complete..... [X] Yes [ ] No [ ] N/A

[ ] Collection date/time, matrix, and/or # of containers logged in based on sample labels.

[ ] No analysis requested. [ ] Not relinquished. [ ] No date/time relinquished.

Sampler's name indicated on COC..... [X] Yes [ ] No [ ] N/A

Sample container label(s) consistent with COC..... [X] Yes [ ] No [ ] N/A

Sample container(s) intact and good condition..... [X] Yes [ ] No [ ] N/A

Proper containers and sufficient volume for analyses requested..... [X] Yes [ ] No [ ] N/A

Analyses received within holding time..... [X] Yes [ ] No [ ] N/A

Aqueous samples received within 15-minute holding time

[ ] pH [ ] Residual Chlorine [ ] Dissolved Sulfides [ ] Dissolved Oxygen..... [ ] Yes [ ] No [X] N/A

Proper preservation noted on COC or sample container..... [ ] Yes [ ] No [X] N/A

[ ] Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... [ ] Yes [ ] No [X] N/A

Tedlar bag(s) free of condensation..... [ ] Yes [ ] No [X] N/A

CONTAINER TYPE:

Solid: [ ] 4ozCGJ [ ] 8ozCGJ [ ] 16ozCGJ [ ] Sleeve (\_\_\_\_) [ ] EnCores® [ ] TerraCores® [ ] \_\_\_\_\_

Aqueous: [ ] VOA [ ] VOA<sub>h</sub> [ ] VOA<sub>na2</sub> [ ] 125AGB [ ] 125AGB<sub>h</sub> [ ] 125AGB<sub>p</sub> [ ] 1AGB [ ] 1AGB<sub>na2</sub> [ ] 1AGB<sub>s</sub>

[ ] 500AGB [ ] 500AGJ [ ] 500AGJ<sub>s</sub> [ ] 250AGB [ ] 250CGB [ ] 250CGB<sub>s</sub> [ ] 1PB [ ] 1PB<sub>na</sub> [ ] 500PB

[ ] 250PB [ ] 250PB<sub>n</sub> [ ] 125PB [ ] 125PB<sub>z<sub>na</sub></sub> [ ] 100PJ [ ] 100PJ<sub>na2</sub> [ ] \_\_\_\_\_ [ ] \_\_\_\_\_ [ ] \_\_\_\_\_

Air: [ ] Tedlar® [ ] Canister Other: [X] ST Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: [Signature]

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: [Signature]

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> u: Ultra-pure z<sub>na</sub>: ZnAc<sub>2</sub>+NaOH f: Filtered Scanned by: [Signature]

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\* Sorbent tube

Received 1- sorbent tube w/ blue cap ID: G0149667. (NOT in use)