

**ExxonMobil Environmental Services Company**  
4096 Piedmont Avenue #194  
Oakland, California 94611  
510 547 8196 Telephone  
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**Jennifer C. Sedlachek**  
Project Manager

**RECEIVED**

3:58 pm, Feb 28, 2011

Alameda County  
Environmental Health

**ExxonMobil**

February 25, 2011

Mr. Jerry T. Wickham  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, California 94502-6577

**Subject:** Fuel Leak Investigation Site No. RO0002635  
Former Exxon RAS #74121, 10605 Foothill Boulevard, Oakland, California

Dear Mr. Wickham:

Attached for your review and comment is a copy of the *Soil Vapor Sampling Report* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the soil vapor sampling in January 2011.

Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

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

Sincerely,



Jennifer C. Sedlachek  
Project Manager

**Attachment:** ETIC Soil Vapor Sampling Report

- c: w/ attachment:  
Mr. Ken Phares - MacArthur Boulevard Associates, Oakland, California  
Mr. Peter McIntyre - AEI Consultants
- c: w/o attachment:  
Mr. Bryan Campbell - ETIC Engineering, Inc.



25 February 2011

Ms. Jennifer C. Sedlachek  
ExxonMobil Environmental Services Company  
4096 Piedmont Avenue #194  
Oakland, California 94611

**Subject: Soil Vapor Sampling Report**  
Former Exxon Retail Site 74121, 10605 Foothill Boulevard, Oakland, California  
Fuel Leak Investigation Site No. RO0002635

Dear Ms. Sedlachek:

ETIC Engineering, Inc. (ETIC) has prepared this Soil Vapor Sampling Report for ExxonMobil Environmental Services Company on behalf of ExxonMobil Oil Corporation for former Exxon Retail Site 74121, located at 10605 Foothill Boulevard in Oakland, California. This report was prepared in response to a letter from the Alameda County Health Care Services Agency (ACHCSA) dated 29 December 2010 (Attachment A), following the procedures described in ETIC's Vapor Sampling Report dated 10 December 2010.

### **Introduction**

In the Vapor Sampling Report, ETIC recommended that additional soil vapor samples be collected from vapor wells VW2 and VW11. The additional sampling was expected to provide soil vapor data for the area between the former excavation boundary and the residential property (VW2) and near former dispenser islands (VW11) in order to further evaluate the potential risk of vapor intrusion to existing adjacent residential properties and future commercial onsite properties following excavation activities (ETIC 2010).

In addition, the ACHCSA requested in their response letter dated 29 December 2010 that collection of soil vapor samples be attempted again from vapor probes VW3 and VW4. Well construction details are provided in Table 1.

### **Soil Vapor Sample Collection**

An advisory published by the Department of Toxic Substances Control and the California Regional Water Quality Control Board, Los Angeles Region was used as a guideline for the collection of the soil vapor samples (DTSC/LARWQCB 2003 and DTSC 2004).

A purge volume test was conducted during the previous soil vapor sampling performed in October 2010, and three purge volumes was determined to be the preferred purge volume prior to collecting the soil vapor samples at the site (ETIC 2010).

Prior to the collection of the soil vapor samples, irrigation of the onsite landscaping was discontinued. On 19 January 2011, the collection of soil vapor samples was attempted from vapor wells VW2 through VW4 and VW11. Soil vapor samples could not be collected from vapor wells VW3 and VW4 due to the presence of water in the wells. Attempts were not made to remove water as this may preclude performing proper purging of soil vapor before sampling. Wells VW2 and VW11 were purged of three well volumes using Summa canisters, prior to sampling. After purging, 1-liter Summa canisters were used to collect samples from each soil vapor well. The initial pressure and the final pressure readings taken from the gauges on the Summa canisters were recorded. During sampling, helium was used as a tracer to check for leaks.

Field protocols are provided in Attachment B. The field documents are included in Attachment C.

### **Soil Vapor Sample Analytical Methods and Results**

Soil vapor samples collected from vapor wells VW2 and VW11 were submitted to Calscience Environmental Laboratories, Inc., a state-certified laboratory in Garden Grove, California, for analysis.

The samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPH-g) by EPA Method TO-3M and for benzene, toluene, ethylbenzene, and total xylenes (BTEX), the oxygenates methyl tertiary butyl ether, tertiary butyl alcohol, diisopropyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether, and the additives 1,2-dibromoethane and 1,2-dichloroethane by EPA Method TO-15. The samples were also analyzed for oxygen + argon, methane, and carbon dioxide by ASTM D-1946.

The analytical results for the soil vapor samples are presented in Table 2 and on Figure 1. The laboratory analytical report and chain-of-custody documentation are included in Attachment D.

### **Conclusions**

The collection of soil vapor samples from soil vapor wells VW2 and VW11 was recommended at the site to provide data in order to further evaluate the potential risk of vapor intrusion to existing adjacent residential properties and future commercial onsite properties following excavation activities. Also, an additional attempt to collect soil vapor samples from vapor probes VW3 and VW4 was requested by the ACHCSA.

Soil vapor samples were collected from wells VW2 and VW11 and analyzed. Soil vapor samples could not be collected from wells VW3 and VW4 due to the presence of water in each well. Results for different areas of the site are listed below and compared with Environmental Screening Levels (ESLs) (RWQCB-SF 2007):

- **Former dispenser islands:** Well VW11 is located near the former dispenser islands. TPH-g was detected in soil vapor sample VW11 at a concentration exceeding the residential and

commercial ESLs. Benzene was detected in soil vapor sample VW11 at a concentration less than the residential and commercial ESLs.

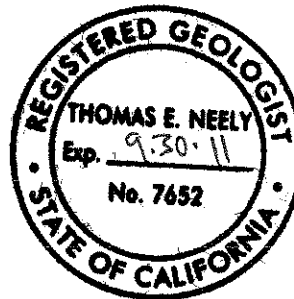
- **Between the excavation boundary and the residential property:** Vapor well VW2 is located between the former excavation boundary and the adjacent residential property to the southwest. TPH-g, BTEX, the five fuel oxygenates, 1,2-dibromoethane, and 1,2-dichloroethane were not detected in sample VW2.

Recommendations will be submitted under separate cover. If you have any questions, please contact me at (925) 602-4710 ext. 32.

Sincerely,



Thomas E. Neely, PG, CHG, REA II  
Senior Hydrogeologist



Attachments:

Figure 1:	Site Map Showing Soil Vapor Sample Analytical Results
Table 1:	Well Construction Details
Table 2:	Soil Vapor Sample Analytical Results
Attachment A:	Regulatory Correspondence
Attachment B:	Field Protocols
Attachment C:	Field Documents
Attachment D:	Laboratory Analytical Reports and Chain-of-Custody Documentation

**References**

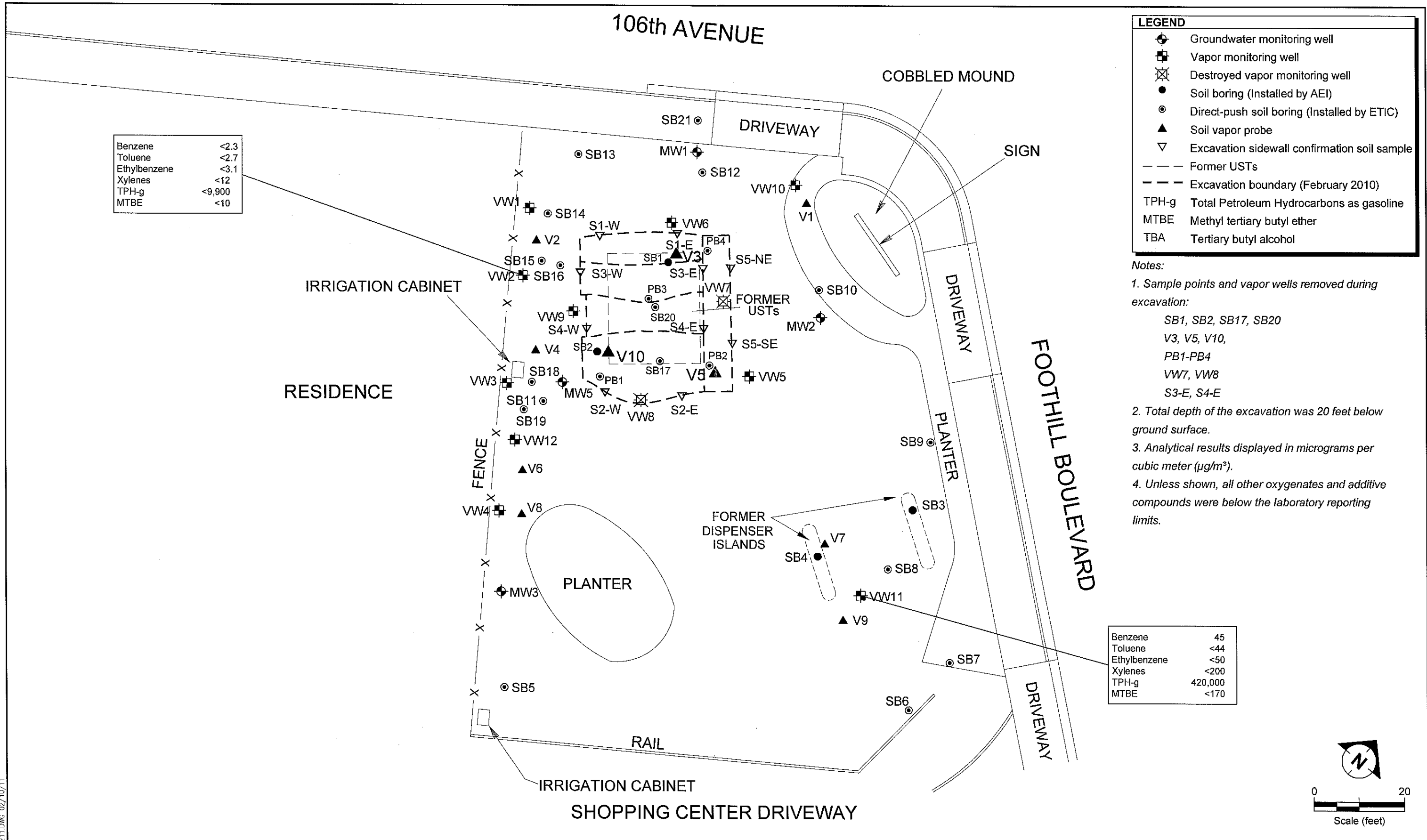
DTSC/LARWQCB (Department of Toxic Substances Control and California Regional Water Quality Control Board – Los Angeles Region). 2003. Advisory – Active Soil Gas Investigations. DTSC and LARWQCB, Glendale and Los Angeles, California. 28 January.

DTSC (Department of Toxic Substances Control). 2004. Guidance for the Evaluation and Mitigation of Substance Vapor Intrusion to Indoor Air – Interim Final. 15 December.

ETIC (ETIC Engineering, Inc.). 2010. Vapor Sampling Report, Former Exxon Retail Site 74121, 10605 Foothill Boulevard, Oakland, California. ETIC, Pleasant Hill, California. 10 December.

RWQCB-SF (California Regional Water Quality Control Board, San Francisco Bay Region). 2007. Screening for Environmental Concerns At Sites With Contaminated Soil and Groundwater. RWQCB-SF, Oakland, California. November 2007, revised May 2008.

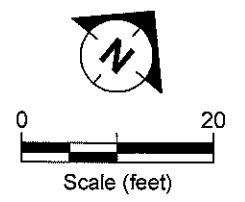
## Figures



**LEGEND**

- ⊕ Groundwater monitoring well
- ⊞ Vapor monitoring well
- ⊗ Destroyed vapor monitoring well
- Soil boring (Installed by AEI)
- ⊙ Direct-push soil boring (Installed by ETIC)
- ▲ Soil vapor probe
- ▽ Excavation sidewall confirmation soil sample
- Former USTs
- - - Excavation boundary (February 2010)
- TPH-g Total Petroleum Hydrocarbons as gasoline
- MTBE Methyl tertiary butyl ether
- TBA Tertiary butyl alcohol

- Notes:**
- Sample points and vapor wells removed during excavation:
    - SB1, SB2, SB17, SB20
    - V3, V5, V10,
    - PB1-PB4
    - VW7, VW8
    - S3-E, S4-E
  - Total depth of the excavation was 20 feet below ground surface.
  - Analytical results displayed in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).
  - Unless shown, all other oxygenates and additive compounds were below the laboratory reporting limits.



SITE MAP SHOWING SOIL VAPOR SAMPLE ANALYTICAL RESULTS  
 FORMER EXXON RS 74121  
 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA  
 19 JANUARY 2011

FILENAME: Sample0211.DWG 02/10/11

## **Tables**



TABLE 1 WELL CONSTRUCTION DETAILS, FORMER EXXON RS 74121, 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Well Number	Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1	a 01/23/07	82.47	PVC	26.5	25	8	2	10 - 25	0.010	8 - 25	#2/12 Sand
MW2	a 01/23/07	84.40	PVC	26.5	25	8	2	10 - 25	0.010	8 - 25	#2/12 Sand
MW3	a 01/24/07	83.25	PVC	26.5	25	8	2	10 - 25	0.010	8 - 25	#2/12 Sand
MW5	a 01/23/07	82.65	PVC	26.5	25	8	2	10 - 25	0.010	8 - 25	#2/12 Sand
VW1	a 01/22/07	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW2	a 01/22/07	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW3	a 01/22/07	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW4	a 01/22/07	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW5	a 01/22/07	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW6	b 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW7	c 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW8	c 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW9	b 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW10	b 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW11	b 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand
VW12	b 03/23/09	--	SS	6	6	6	0.25	5.25 - 5.75	0.0057	5 - 6	#2/12 Sand

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER EXXON RS 74121, 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Well Number	Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
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Notes:

- a Well surveyed on 12 March 2007 by Morrow Surveying.
  - b Well surveyed on 4 May 2009 by Morrow Surveying.
  - c Well destroyed during remedial excavation.
- PVC Polyvinyl chloride.  
 SS Stainless steel.  
 TOC Top of casing.

TABLE 2 SOIL VAPOR SAMPLE ANALYTICAL RESULTS, FORMER EXXON RETAIL SITE 74121, 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Boring ID	Depth (feet bgs)	Date	Concentration (% by Volume)					Concentration ( $\mu\text{g}/\text{m}^3$ )													
			Oxygen and Argon	Methane	Carbon Dioxide	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	TPH-g	MTBE	TBA	DIPE	ETBE	1,2-DCA	TAME	EDB	1,1-DFA	
V1	5.5	05/01/06	9.4	--	--	200	<100	<100	<100	<100	--	790,000	<100	--	--	--	--	--	--	<10,000	
V2 <sup>a</sup>	--	05/01/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
V3	5.5	05/01/06	19	--	--	120	160	140	<100	<100	--	110,000	<100	--	--	--	--	--	--	<10,000	
V3 <sup>a</sup>	10	05/01/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
V4 <sup>a</sup>	--	05/01/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
V5 <sup>a</sup>	--	05/01/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
V6	7.0	05/01/06	9.1	--	--	170	<100	540	410	<100	--	880,000	<100	--	--	--	--	--	--	<10,000	
V7	7.5	05/01/06	21	--	--	84	140	<100	110	<100	--	2,200	<100	--	--	--	--	--	--	<10,000	
V7 dup	7.5	05/01/06	20	--	--	<80	110	<100	<100	<100	--	2,400	<100	--	--	--	--	--	--	<10,000	
V8 <sup>a</sup>	--	05/01/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
V9	7.5	05/01/06	19	--	--	<80	<100	<100	<100	<100	--	360,000	<100	--	--	--	--	--	--	<10,000	
V10	8.0	05/01/06	11	--	--	1,100	130	340	180	<100	--	6,600,000	<100	--	--	--	--	--	--	<10,000	
V10	10.0	05/01/06	9.0	--	--	1,900	<100	<100	<100	<100	--	17,000,000	<100	--	--	--	--	--	--	<10,000	
VW1 <sup>b</sup>	5 - 6	4/27/07	11.1	--	--	<2.4	12	<3.2	10	4.8	--	<20,000	<11	<9.0	<12	<12	<3.0	<19	<5.7	<8.1	
VW1 <sup>c</sup>	--	4/23/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW1	5 - 6	10/12/10	17.5	<0.785	5.24	<2.5	3.6	<3.4	--	--	<14	<11,000	<11	<9.5	<13	<13	<3.2	<13	<6.0	--	
VW2 <sup>c</sup>	--	4/27/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW2	5 - 6	4/23/09	8.05	<0.770	6.55	<6.1	<7.3	<8.4	--	--	<33	210,000	<28	<23	<32	<32	<7.8	<32	<15	<21	
VW2 dup	5 - 6	4/23/09	7.88	<0.780	6.05	<6.2	<7.3	<8.5	--	--	<34	220,000	<28	<24	<33	<33	<7.9	<33	<15	29	
VW2	5 - 6	10/12/10	8.13	<0.820	6.90	<5.2	<6.2	<7.1	--	--	<28	190,000	<24	<20	<27	<27	<6.6	<27	<13	--	
VW2	5 - 6	1/19/11	2.59	<0.710	7.80	<2.3	<2.7	<3.1	--	--	<12	<9,900	<10	<8.6	<12	<12	<2.9	<12	<5.5	--	
VW3 <sup>c</sup>	--	4/27/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW3 <sup>c</sup>	--	4/23/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW3 <sup>c</sup>	--	10/12/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW3 <sup>c</sup>	--	1/19/11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW4 <sup>c</sup>	--	4/27/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW4 <sup>c</sup>	--	4/23/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW4 <sup>c</sup>	--	10/12/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW4 <sup>c</sup>	--	1/19/11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VWS <sup>b</sup>	5 - 6	4/27/07	3.49	--	--	4.4	11	4.4	12	4.8	--	<23,000	<12	<9.9	<14	<14	<3.3	<21	<6.3	<8.9	

TABLE 2 SOIL VAPOR SAMPLE ANALYTICAL RESULTS, FORMER EXXON RETAIL SITE 74121, 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Boring ID	Depth (feet bgs)	Date	Concentration (% by Volume)					Concentration (µg/m <sup>3</sup> )													
			Oxygen and Argon	Methane	Carbon Dioxide	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-Xylene	Total Xylenes	TPH-g	MTBE	TBA	DIPE	ETBE	1,2-DCA	TAME	EDB	1,1-DFA	
VW5	5 - 6	4/23/09	2.57	<0.710	9.84	<2.3	<2.7	<3.1	--	--	<12	9,800	<10	<8.6	<12	<12	<2.9	<12	<5.5	<7.7	
VW5	5 - 6	10/12/10	2.05	<0.790	13.2	5.1	6.8	<3.4	--	--	<14	22,000	<11	<9.6	<13	<13	<3.2	<13	<6.1	--	
VW5 dup	5 - 6	10/12/10	2.16	<0.840	12.5	<2.7	7.9	4.1	--	--	<15	36,000	<12	76	<14	<14	<3.4	<14	<6.5	--	
VW6 <sup>c</sup>	--	3/27/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW6	5 - 6	10/12/10	16.1	<0.835	5.25	7.3	11	12	--	--	24	<12,000	<12	12	<14	<14	<3.4	<14	<6.4	--	
VW7	5 - 6	3/27/09	6.94	<0.810	5.52	54	910	180	--	--	860	11,000	<12	<9.8	<14	<14	<3.3	<14	<6.2	<8.8	
VW8	5 - 6	3/27/09	2.91	2.61	5.98	<99	<120	<130	--	--	<540	4,400,000	<450	<380	<520	<520	<130	<520	<240	<330	
VW9	5 - 6	3/27/09	11.2	<0.820	4.36	25	250	51	--	--	260	65,000	<30	<25	<34	<34	<8.3	<34	<34	<22	
VW9 dup	5 - 6	3/27/09	<9.05	<9.05	<9.05	150	1,600	310	--	--	1,600	130,000	<130	<110	<150	<150	<37	<150	<70	<98	
VW9	5 - 6	10/12/10	7.01	<0.775	15.4	<2.5	3.7	<3.4	--	--	<13	<11,000	<11	<9.4	<13	<13	<3.1	<13	<6.0	--	
VW10	5 - 6	3/27/09	4.21	<0.780	2.69	38	520	120	--	--	550	880,000	<110	<95	<130	<130	<32	<130	<60	<84	
VW10	5 - 6	10/12/10	4.83	<0.815	6.32	<2.6	4.0	<3.5	--	--	<14	<11,000	<12	<9.9	<14	<14	<3.3	<14	<6.3	--	
VW11	5 - 6	3/27/09	6.18	<0.770	6.69	110	860	230	--	--	1,000	210,000	<110	<93	<130	<130	<31	<130	<59	5,300	
VW11 <sup>c</sup>	--	10/12/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
<b>VW11</b>	<b>5 - 6</b>	<b>1/19/11</b>	<b>2.35</b>	<b>&lt;0.725</b>	<b>12.4</b>	<b>45</b>	<b>&lt;44</b>	<b>&lt;50</b>	--	--	<b>&lt;200</b>	<b>420,000</b>	<b>&lt;170</b>	<b>&lt;140</b>	<b>&lt;190</b>	<b>&lt;190</b>	<b>&lt;47</b>	<b>&lt;190</b>	<b>&lt;89</b>	--	
VW12	5 - 6	3/27/09	12.9	<1.26	4.78	90	1,700	340	--	--	1,500	17,000	<18	<15	<21	<21	<5.1	<21	<9.7	<14	
Lowest Residential ESL <sup>d</sup>			--	--	--	84	63,000	980	21,000	21,000	21,000	10,000	9,400	--	--	--	94	--	4.1	--	
Lowest Commercial/Industrial ESL <sup>d</sup>			--	--	--	280	180,000	3,300	58,000	58,000	58,000	29,000	31,000	--	--	--	310	--	14	--	

Notes:

- a Soil vapor could not be extracted at depths between 4 and 10 feet bgs from this boring.
- b Soil vapor samples were collected without purging (grab samples).
- c Soil vapor samples were not collected due to the presence of water.
- d From Table E-1a: Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final, Regional Water Quality Control Board - San Francisco Bay Region, May 2008.

feet bgs Feet below ground surface.  
 1,1-DFA 1,1-Difluoroethane.  
 1,2-DCA 1,2-Dichloroethane.  
 DIPE Diisopropyl ether.  
 EDB Ethylene dibromide (1,2-dibromoethane).  
 ETBE Ethyl tertiary butyl ether.  
 MTBE Methyl tertiary butyl ether.

TABLE 2 SOIL VAPOR SAMPLE ANALYTICAL RESULTS, FORMER EXXON RETAIL SITE 74121, 10605 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

Boring ID	Depth (feet bgs)	Date	Concentration (% by Volume)			Concentration ( $\mu\text{g}/\text{m}^3$ )														
			Oxygen and Argon	Methane	Carbon Dioxide	Benzene	Toluene	Ethyl- benzene	m,p- Xylene	o- Xylene	Total Xylenes	TPH-g	MTBE	TBA	DIPE	ETBE	1,2-DCA	TAME	EDB	1,1-DFA
TAME	Tertiary amyl methyl ether.																			
TBA	Tertiary butyl alcohol.																			
TPII-g	Total Petroleum Hydrocarbons as gasoline.																			
dup	Duplicate.																			
ESL	Environmental screening level.																			
--	Not analyzed or not applicable.																			
$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter.																			

**Attachment A**  
**Regulatory Correspondence**

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

ALEX BRISCOE, Director



RECEIVED

JUN 04 2011

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

December 29, 2010

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

MacArthur Boulevard Associates  
c/o Mr. John Jay, Management Agent (*Sent via E-mail to: [johnjay@jayphares.com](mailto:johnjay@jayphares.com)*)  
10700 MacArthur Boulevard, Suite 200  
Oakland, CA 94605

Subject: Review of Soil Vapor Sampling Report for Fuel Leak Case No. RO0002635 and Geotracker Global ID T0600120383, Exxon #7-4121, 10605 Foothill Boulevard, Oakland, CA 94605

Dear Ms. Sedlachek and Mr. Jay:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site, including the most recently submitted document entitled, "*Vapor Sampling Report*," dated December 10, 2010 (Report). The Report, which was prepared by ETIC Engineering, Inc., presents the results from sampling of six of ten existing soil vapor probes. The sampling was expected to provide data to evaluate the potential for vapor intrusion to existing adjacent residential properties and future onsite commercial buildings. However, soil vapor samples could not be collected from vapor probes VW3, VW4, VW11 due to water in the probes and due to low-flow conditions in VW12.

The Report recommends additional sampling of probe VW2 and VW11. We concur with additional sampling of VW2 and VW11 and request that sampling also be attempted at probes VW3 and VW4. Please use the sampling and analytical methods described in the, "*Vapor Sampling Work Plan*," dated September 3, 2010 and present the results of the sampling in the Soil Vapor Sampling Report requested below.

Please note that public participation will be required as part of the case closure process. Upon ACEH review of your summary report, ACEH will prepare and distribute a fact sheet to notify potentially affected members of the public who live or own property in the surrounding area of the potential for case closure. Public comments on the potential case closure will be accepted for a 30-day period.

**TECHNICAL REPORT REQUEST**

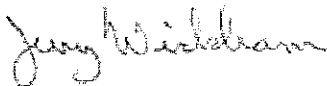
Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **February 28, 2011** – Soil Vapor Sampling Report

Jennifer Sedlachek  
John Jay  
RO0002635  
December 29, 2010  
Page 2

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org).

Sincerely,



Digitally signed by Jerry Wickham  
DN: cn=Jerry Wickham, o=Alameda County  
Environmental Health, ou,  
email=jerry.wickham@acgov.org, c=US  
Date: 2010.12.29 15:57:18 -08'00'

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297  
Senior Hazardous Materials Specialist

Attachments: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (Sent via E-mail to: [lgriffin@oaklandnet.com](mailto:lgriffin@oaklandnet.com))

Bryan Campbell, ETIC Engineering, Inc., 2285 Morello Avenue, Pleasant Hill, CA 94523  
(Sent via E-mail to: [bcampbell@eticeng.com](mailto:bcampbell@eticeng.com))

Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597  
(Sent via E-mail to: [pmcintyre@aeiconsultants.com](mailto:pmcintyre@aeiconsultants.com))

Donna Drogos, ACEH (Sent via E-mail to: [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Jerry Wickham, ACEH (Sent via E-mail to: [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org))

File



Attachment 1  
Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

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

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

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

AGENCY OVERSIGHT

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

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

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

## REQUIREMENTS

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

RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

## Submission Instructions

- 1) Obtain User Name and Password
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i. Send an e-mail to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org)
  - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
    - i. Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
  - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
  - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
  - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

## **Attachment B**

### **Field Protocols**

## **PROTOCOLS FOR SAMPLING SOIL VAPOR WELLS**

### **SOIL VAPOR SAMPLING PROCEDURES**

To ensure air-tight connections between the tubing, sampling port, valves, and other connections, a vacuum tightness test is performed on each well. The test consists of the application of a vacuum and monitoring of vacuum tightness using vacuum gauges and/or flow meter for 5 to 10 minutes. A leak would be evident if the vacuum gauges registered a decrease in the vacuum.

A purge test is conducted for one well. The selected well is generally the one with the highest expected concentrations. The test consists of the collection of vapor samples using Tedlar bags after purging the well of one (1), three (3), and seven (7) purge volumes by drawing vapor into the Tedlar bag using a vacuum chamber and vacuum pump. The purge volume is estimated based on the internal volume of the tubing used, the volume of the screen, and the voids in the sand pack within the annular space around the screen. The samples are collected through a particulate filter and flow controller which regulates the flow of soil vapor to no more than 200 milliliters per minute. The purge test samples are analyzed in the field using a photoionization detector. The results of the purge test are used to dictate the purge volume to be used during the sampling of subsequent wells.

The vapor samples are collected in 1-liter stainless steel Summa canisters. The samples are collected through a particulate filter and flow controller which regulates the flow of soil vapor to no more than 200 milliliters per minute. To ensure an air-tight connection at the well head and that ambient air does not enter the well at the well head, a tracer is applied. The tracer used is helium gas. To apply the tracer, a small shroud is placed over the well head and the tracer gas is allowed to fill the shroud at a constant rate. A hand-held helium detector is used in the field to measure the tracer within the shroud. Vapor is drawn into a Tedlar bag from the well using a vacuum chamber and vacuum pump. A leak will be evident if the concentration of the tracer in the well sample exceeds 10% of the concentration of the tracer in the shroud.

The 1-liter Summa canisters are labeled and packaged for delivery to a state-certified laboratory for chemical analysis. The initial pressure and the final pressure readings taken from the gauges on the Summa canisters are recorded. A small vacuum of about 5 inches of mercury is left inside the sample canister and is recorded on the chain-of-custody. Upon receipt, the laboratory checks the pressure in the sample canister and compares it to the pressure recorded on the chain-of-custody for quality control purposes.

**Attachment C**

**Field Documents**

## Purge Volume Calculations for Vapor Wells

<b>TUBING</b>	<b>12 INCHES</b>	<b>0.25 INCHES O.D. 0.17 INCHES I.D.</b>
RADIUS	0.085 INCHES	
VOLUME	0.272 INCHES <sup>3</sup>	
CONVERT INCHES <sup>3</sup> to ML	1 INCHES <sup>3</sup> =	16.387 ML
VOLUME	4.461 ML	
<b>TOTAL TUBING VOLUME (5.25 FT)</b>	<b>23.421 ML</b>	

<b>SCREEN</b>	<b>6 INCHES</b>	<b>0.4 INCHES</b>
RADIUS	0.2 INCHES	
VOLUME	0.754 INCHES <sup>3</sup>	
CONVERT INCHES <sup>3</sup> to ML	1 INCHES <sup>3</sup> =	16.387 ML
<b>VOLUME</b>	<b>12.349 ML</b>	

<b>SAND PACK</b>	<b>12 INCHES</b>	<b>4 INCHES</b>
RADIUS	2 INCHES	
VOLUME	150.72 INCHES <sup>3</sup>	
CONVERT INCHES <sup>3</sup> to ML	1 INCHES <sup>3</sup> =	16.387 ML
VOLUME	2469.858 ML	
VOLUME - SCREEN VOLUME	2457.508 ML	
POROSITY	0.33	
<b>VOLUME OF PORE SPACE</b>	<b>810.978 ML</b>	

**TOTAL VOLUME = TOTAL TUBING + SCREEN + SAND PACK = 846.75 ML**

PURGE VOLUMES	TOTAL VOLUME (ML)	TIME TO PURGE (MINUTES) AT 200ML/MIN	SUMMA GAUGE "Hg
	0		-30
1	800	4	-26
3	2,500	13	-17.5
7	5,900	30	-0.5



## SUMMA Canister Soil Vapor Sampling Form

Site: Former Exxon RS 74121  
 Address: 10605 Foothill Blvd, Oakland, CA  
 Project #: UP4121 6.12  
 Date: 1/19/11

Personnel: Yuko Mamiya  
 Page: 1 of 1  
 Purge Canister Volume (liters): 6  
 Sample Canister Volume (liters): 1

Temperature: ~60 °F  
 Barometric Pressure: 30.10 inches Hg  
 Precipitation: 0  
 Relative Humidity: ~65 %  
 Purge Volume: 3  
 Flow Rate: 200 liters/minute

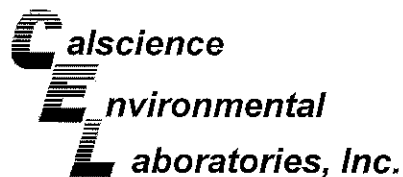
Sampling Location	Purge Canister Serial Number	Sample Canister Serial Number	Flow Regulator Serial Number	Leak Check 1		Initial Purge Canister Vacuum (Inches Hg)	Leak Check 2		Purge Canister Vacuum (Inches Hg)	Vapor Purge		Final Purge Canister Vacuum (Inches Hg)	Initial Sample Canister Vacuum (Inches Hg)	Vapor Sample		Final Sample Canister Vacuum (Inches Hg)
				Ambient He Concentration (ppm)	Tubing He Concentration (ppm)		Start Time	Stop Time		Start Time	Stop Time			Start Time	Stop Time	
VW2	0076	<sup>LC</sup> 138	A146	80,000	0	-30	1229	1234	-30	1234	1253	-17	-30	1253	1308	-3
VW3		Water		in the tubing												
VW4		Water		in the tubing												
VW11	D766	<sup>LC</sup> 258	A197	120,000	0	-30	1404	1409	-30	1409	1422	-17	-30	1430	1438	-5

General Weather Conditions: Sunny, clear  
 Other: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Attachment D**

**Laboratory Analytical Reports and  
Chain-of-Custody Documentation**





Supplemental Report 1

February 01, 2011

The original report has been revised/corrected.

Erik Appel  
ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Subject: **Calscience Work Order No.: 11-01-1405**  
Client Reference: **ExxonMobil 74121**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 1/22/2011 and analyzed in accordance with the attached chain-of-custody.

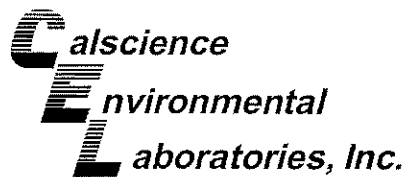
Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental  
Laboratories, Inc.  
Cecile deGuia  
Project Manager



**REPORT NARRATIVE**

**Calscience Work Order No.: 11-01-1405**  
**Client Reference: ExxonMobil 74121**

Note that the report has been amended to reflect the units change to ug/m3 for the TO-3M and TO-15. The revised report is attached.

A handwritten signature in black ink, appearing to be "M. W. ...".

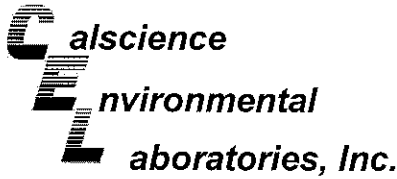
### Case Narrative

#### Work Order # 11-01-1405 Modified EPA TO-14A or EPA TO-15

EPA Methods TO-14A and TO-15 describe gas chromatographic procedures that will allow for that separation of volatile organic compounds and their qualitative and quantitative analysis by mass spectrometry (GC/MS). A known volume of sample is directed from the container (Summa® canister or Tedlar™ bag) through a solid multi-module (glass beads, tenex, cryofocuser) concentrator. Following concentration, the VOCs are thermally desorbed onto a gas chromatographic column for separation and then detected on a mass selective detector.

#### Comparison of EPA TO-14A/TO-15 versus Calscience EPA TO-14A/TO-15 (Modified)

Requirement	EPA Method	Calscience Modifications
BFB Acceptance Criteria	CLP Protocol	SW846 Protocol
Initial Calibration	Allowable % RSD for each Target Analyte $\leq$ 30%, two analytes allowed $\leq$ 40%	Allowable % RSD for each Target Analyte $\leq$ 30%, 10% of analytes allowed $\leq$ 40%
Initial Calibration Verification (ICV) - Second Source Standard (LCS)	Not Mentioned	Analytes contained in the LCS standard evaluated against historical control limits for the LCS
Daily Calibration Verification (CCV)	Allowable % Difference for each Target Analyte is $\leq$ 30%	<b>Full List Analysis:</b> Allowable % Difference for each CCC analyte is $\leq$ 30%
		<b>Target List Analysis:</b> Allowable % Difference for each target analytes is $\leq$ 30%
Daily Calibration Verification (CCV) - Internal Standard Area Response	Allowable +/- 40% (Range: 60% to 140%)	Allowable +/- 50% (Range: 50% to 150%)
Method Blank, Laboratory Control Sample and Sample - Internal Standard Area Response	Allowable +/- 40% of the mean area response of most recent Initial Calibration (Range: 60% to 140%)	Allowable +/- 50% of the mean area response of the most recent Calibration Verification (Range: 50% to 150%)
Surrogates	Not Mentioned	1,4-Bromofluorobenzene, 1,2-Dichloroethane-d4 and Toluene-d8 - % Recoveries based upon historical control limits +/-3S



Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 01/22/11  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: ASTM D-1946  
Units: %v

Project: ExxonMobil 74121

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW2	11-01-1405-1-A	01/19/11 13:08	Air	GC 36	N/A	01/22/11 14:07	110122L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.710	1.42	U	Oxygen + Argon	2.59	0.710	1.42	
Carbon Dioxide	7.80	0.710	1.42						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW11	11-01-1405-2-A	01/19/11 14:38	Air	GC 36	N/A	01/22/11 14:23	110122L01

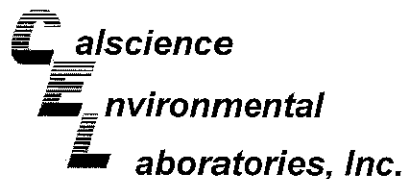
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.725	1.45	U	Oxygen + Argon	2.35	0.725	1.45	
Carbon Dioxide	12.4	0.725	1.45						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-03-002-1,217	N/A	Air	GC 36	N/A	01/22/11 08:55	110122L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1	U	Oxygen + Argon	ND	0.500	1	U
Carbon Dioxide	ND	0.500	1	U					

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





## Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 01/22/11  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 74121

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW2	11-01-1405-1-A	01/19/11 13:08	Air	GC 13	N/A	01/22/11 14:17	110122L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9900	1.42	U	ug/m3

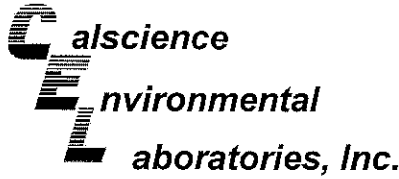
VW11	11-01-1405-2-A	01/19/11 14:38	Air	GC 13	N/A	01/22/11 14:31	110122L01
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	420000	10000	1.45		ug/m3

Method Blank	098-01-005-2,877	N/A	Air	GC 13	N/A	01/22/11 08:52	110122L01
--------------	------------------	-----	-----	-------	-----	-------------------	-----------

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	7000	1	U	ug/m3

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 01/22/11  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: EPA TO-15  
Units: ug/m3

Project: ExxonMobil 74121

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW2	11-01-1405-1-A	01/19/11 13:08	Air	GC/MS V	N/A	01/22/11 15:10	110122L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.3	1.42	U	Methyl-t-Butyl Ether (MTBE)	ND	10	1.42	U
Diisopropyl Ether (DIPE)	ND	12	1.42	U	Xylenes (total)	ND	12	1.42	U
1,2-Dibromoethane	ND	5.5	1.42	U	Tert-Amyl-Methyl Ether (TAME)	ND	12	1.42	U
1,2-Dichloroethane	ND	2.9	1.42	U	Tert-Butyl Alcohol (TBA)	ND	8.6	1.42	U
Ethyl-t-Butyl Ether (ETBE)	ND	12	1.42	U	Toluene	ND	2.7	1.42	U
Ethylbenzene	ND	3.1	1.42	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	99	57-129			1,2-Dichloroethane-d4	103	47-137		
Toluene-d8	100	78-156							

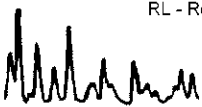
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW11	11-01-1405-2-A	01/19/11 14:38	Air	GC/MS V	N/A	01/22/11 15:56	110122L01

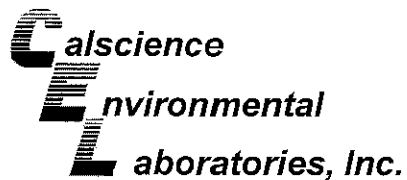
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	45	37	23.2		Methyl-t-Butyl Ether (MTBE)	ND	170	23.2	U
Diisopropyl Ether (DIPE)	ND	190	23.2	U	Xylenes (total)	ND	200	23.2	U
1,2-Dibromoethane	ND	89	23.2	U	Tert-Amyl-Methyl Ether (TAME)	ND	190	23.2	U
1,2-Dichloroethane	ND	47	23.2	U	Tert-Butyl Alcohol (TBA)	ND	140	23.2	U
Ethyl-t-Butyl Ether (ETBE)	ND	190	23.2	U	Toluene	ND	44	23.2	U
Ethylbenzene	ND	50	23.2	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	100	57-129			1,2-Dichloroethane-d4	103	47-137		
Toluene-d8	90	78-156							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-021-8,929	N/A	Air	GC/MS V	N/A	01/22/11 13:05	110122L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	1.6	1	U	Methyl-t-Butyl Ether (MTBE)	ND	7.2	1	U
Diisopropyl Ether (DIPE)	ND	8.4	1	U	Xylenes (total)	ND	8.7	1	U
1,2-Dibromoethane	ND	3.8	1	U	Tert-Amyl-Methyl Ether (TAME)	ND	8.4	1	U
1,2-Dichloroethane	ND	2.0	1	U	Tert-Butyl Alcohol (TBA)	ND	6.1	1	U
Ethyl-t-Butyl Ether (ETBE)	ND	8.4	1	U	Toluene	ND	1.9	1	U
Ethylbenzene	ND	2.2	1	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	98	57-129			1,2-Dichloroethane-d4	96	47-137		
Toluene-d8	96	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





## Quality Control - Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

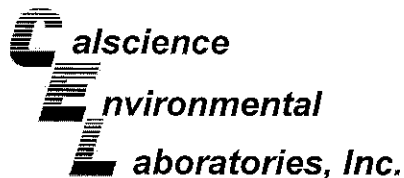
Date Received: 01/22/11  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: EPA TO-3M

Project: ExxonMobil 74121

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
11-01-1402-2	Air	GC 13	N/A	01/22/11	110122D01

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	4308000	4125000	4	0-20	

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: N/A  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: ASTM D-1946

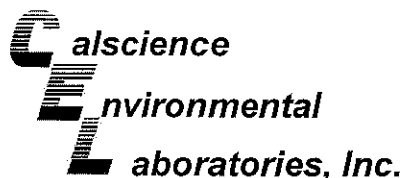
Project: ExxonMobil 74121

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,217	Air	GC 36	N/A	01/22/11	110122L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Carbon Dioxide	107	107	80-120	1	0-30	
Oxygen + Argon	92	92	80-120	0	0-30	
Nitrogen	95	95	80-120	0	0-30	

RPD - Relative Percent Difference, CL - Control Limit





## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: N/A  
Work Order No: 11-01-1405  
Preparation: N/A  
Method: EPA TO-15

Project: ExxonMobil 74121

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-021-8,929	Air	GC/MS V	N/A	01/22/11	110122L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	101	102	60-156	44-172	1	0-40	
Carbon Tetrachloride	101	102	64-154	49-169	1	0-32	
1,2-Dibromoethane	115	116	54-144	39-159	1	0-36	
1,2-Dichlorobenzene	112	109	34-160	13-181	2	0-47	
1,2-Dichloroethane	95	96	69-153	55-167	2	0-30	
1,2-Dichloropropane	100	101	67-157	52-172	1	0-35	
1,4-Dichlorobenzene	112	108	36-156	16-176	4	0-47	
c-1,3-Dichloropropene	117	118	61-157	45-173	1	0-35	
Ethylbenzene	107	108	52-154	35-171	1	0-38	
Xylenes (total)	108	108	52-148	36-164	0	0-38	
Tetrachloroethene	106	107	56-152	40-168	1	0-40	
Toluene	103	104	56-146	41-161	2	0-43	
Trichloroethene	101	102	63-159	47-175	1	0-34	
1,1,2-Trichloroethane	103	103	65-149	51-163	0	0-37	
Vinyl Chloride	98	102	45-177	23-199	4	0-36	

Total number of LCS compounds : 15  
Total number of ME compounds : 0  
Total number of ME compounds allowed : 1  
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit


## Glossary of Terms and Qualifiers



Work Order Number: 11-01-1405

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	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.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS recovery percentage is within LCS ME control limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	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.
QO	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
U	Undetected at detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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.



**Sandy Tat**

---

**From:** Bryan Campbell [bcampbell@eticeng.com]  
**Sent:** Tuesday, February 01, 2011 3:28 PM  
**To:** Sandy Tat  
**Cc:** Deborah Hensley; Aileen Galve; Jason Leary; Yuko Mamiya  
**Subject:** RE: LAB AIR RESULTS: 74121 (11-01-1405)  
**Attachments:** 11-01-1405.pdf

Sandy,

Can you please resubmit this report to me with the results for the TO-3M and TO-15 in units of ug/m3 instead of ppm (v/v)? Thank you.

**Bryan Campbell, PG**

ETIC Engineering, Inc.  
2285 Morello Ave.  
Pleasant Hill  
CA 94523  
Tel. 925-602-4710 x 24  
Fax. 925-602-4720  
Mobile.925-250-5256  
[bcampbell@eticeng.com](mailto:bcampbell@eticeng.com)  
[www.eticeng.com](http://www.eticeng.com)



---

**From:** Jason Leary  
**Sent:** Tuesday, February 01, 2011 3:08 PM  
**To:** Bryan Campbell  
**Cc:** Deborah Hensley; Aileen Galve  
**Subject:** LAB AIR RESULTS: 74121 (11-01-1405)

Bryan,

Who will be preparing the report associated with these results?

Thanks,

Jason

**Jason Leary**

ETIC Engineering, Inc.  
2285 Morello Ave.  
Pleasant Hill  
CA 94523  
Tel. 925-602-4710 x 20  
Fax. 925-602-4720

[jleary@eticeng.com](mailto:jleary@eticeng.com)  
[www.eticeng.com](http://www.eticeng.com)

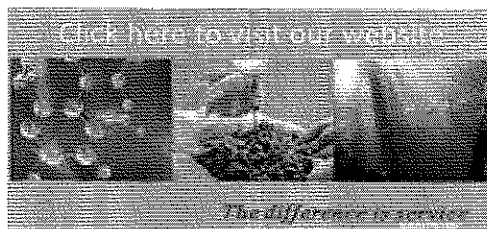


---

**From:** Sandy Tat [<mailto:STat@calscience.com>]  
**Sent:** Monday, January 31, 2011 3:01 PM  
**To:** ETICLabReports; [EAppel@eticeng.com](mailto:EAppel@eticeng.com)  
**Subject:** ExxonMobil 74121 / CEL 11-01-1405

Best Regards,

Sandy Tat  
Project Manager Assistant  
Calscience Environmental Laboratories, Inc.  
7440 Lincoln Way  
Garden Grove, CA 92841-1427  
Phone: 714-895-5494 x220  
Fax: 714-894-7501  
[STat@calscience.com](mailto:STat@calscience.com)



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1465



< 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> ETIC  <b>Delivery Instructions:</b>  <b>Signature Type:</b> SIGNATURE REQUIRED	<b>Tracking #:</b> 515799064 	<b>SDS</b>
	<b>ORC</b> <b>GARDEN GROVE</b> <b>D92843A</b>  88086822	

Print Date : 01/21/11 14:58 PM

Package 1 of 2

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.

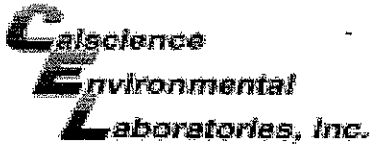
STEP 2 - Fold this page in half.

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.



WORK ORDER #: 11-01-1405

**SAMPLE RECEIPT FORM**

Box 1 of 1

CLIENT: ETIC

DATE: 01/27/11

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

Temperature \_\_\_\_\_ °C + 0.5°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    Initial: YL

**CUSTODY SEALS INTACT:**

Box     \_\_\_\_\_     No (Not Intact)     Not Present     N/A    Initial: YL

Sample     \_\_\_\_\_     No (Not Intact)     Not Present    Initial: YL

**SAMPLE CONDITION:**

	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"/>
pH / Residual Chlorine / Dissolved Sulfide received within 24 hours.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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®     \_\_\_\_\_

**Water:**  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     500PB     500PB<sub>na</sub>

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

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

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

**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>    znna: ZnAc<sub>2</sub>+NaOH    f: Field-filtered    **Scanned by:** MSC