

C A M B R I A

RO 2466

February 26, 2004

Mr. Amir Gholami  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency-  
Environmental Health Services (ACHCSA-EHS)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-9335

Alameda County  
MAR 09 2004  
Environmental Health Services



Re: **Soil Sampling Report**  
Former Signal Oil Marine Storage and Distribution Facility #20-6127  
2301 Blanding Avenue  
Alameda, California  
Cambria Project No. 31D-1916

Dear Mr. Gholami:

On behalf of Chevron Products Company (Chevron), Cambria Environmental Technology, Inc., (Cambria) submits this report summarizing soil sampling activities in the vicinity of the above referenced site (Figure 1). The soil sampling was conducted in accordance with our proposed interim action, which was summarized in a letter to you dated August 25, 2003. A copy of the letter is presented as Attachment A. Groundwater monitoring from MW-1 and surface water sampling from the adjacent Alameda Canal are ongoing at this site.


### SOIL SAMPLING

On January 13, 2004, Staff Scientist Melissa Terry of Cambria Environmental Technology, Inc (Cambria) collected three soil samples (S1, S2 and S3) from the soil bank above the western shore of the Alameda Canal. One sample (S2) was collected directly down-slope of MW-1. Two additional samples were collected approximately 70 feet and 90 feet east (S1) and north (S3) of MW-1, respectively. The samples were collected by removing the top three inches of soil and hand driving a brass tube into the upper one foot of soil at the three locations shown on Figure 2. The samples were then labeled, placed on ice and transported under chain of custody to a Chevron-approved laboratory for analysis.

**Cambria  
Environmental  
Technology, Inc.**

5900 Hollis Street  
Suite A  
Emeryville, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

## ANALYTIC RESULTS



The soil samples were analyzed for the presence of Total Petroleum Hydrocarbons as gasoline and diesel (TPHg and TPHd), benzene, toluene, ethylbenzene and xylene (BTEX) and the fuel oxygenate methyl tertiary butyl ether (MTBE). No TPHg, MTBE or BTEX was detected in any of the soil samples. Low concentrations of TPHd were detected in all three soil samples. Sample S1 contained 14 mg/kg of diesel and samples S2 and S3 both contained 220 mg/kg of diesel. However, laboratory chromatographs indicate that the hydrocarbon pattern observed in the soil samples is not typical of diesel fuel. This may represent either highly degraded diesel fuel from various historical onsite and nearby operations or residual unknown hydrocarbons present in local fill material. Laboratory results and the chain of custody form are included as Attachment B.

## DISCUSSION

Groundwater monitoring is ongoing at this site, as is sampling and testing of surface water from the adjacent Alameda Canal. Based on downward trending concentrations of TPHg and BTEX, and stable concentrations of TPHd observed in MW-1, it is Cambria's opinion that no additional environmental investigation is warranted. However, we recommend that quarterly groundwater monitoring and sampling continue for an additional period of one year to track trends of dissolved hydrocarbons in groundwater beneath the site. Additionally, despite the presence of motorized watercraft in varied conditions moored adjacent to site, sampling of surface water from Alameda Canal should continue to verify no impacts from the former facility occur. After a period of four additional quarters, we will evaluate then current conditions and anticipate submitting a request for case closure.

**CLOSING**

Please review the data presented in this document and feel free to contact Mr. Robert Foss at (510) 420-3348 if you have any questions or comments.

Sincerely,

**Cambria Environmental Technology, Inc.**

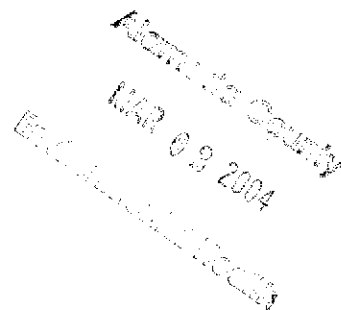
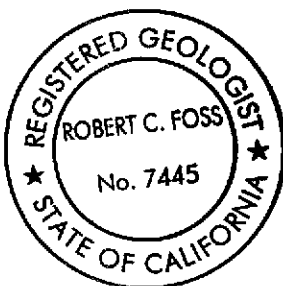
*Melissa Terry*

Melissa Terry  
Staff Scientist



*Robert Foss*

Robert Foss, R.G.  
Senior Project Geologist



Figures: 1 - Vicinity Map  
2 - Site Plan

Attachments: A - Regulatory Response Letter  
B - Laboratory Analytical Report

cc: Ms. Karen Streich, Chevron Environmental Management Company, PO Box 6012, San Ramon, CA 94583

i:\206127 alameda\soil sampling report jan 04.doc

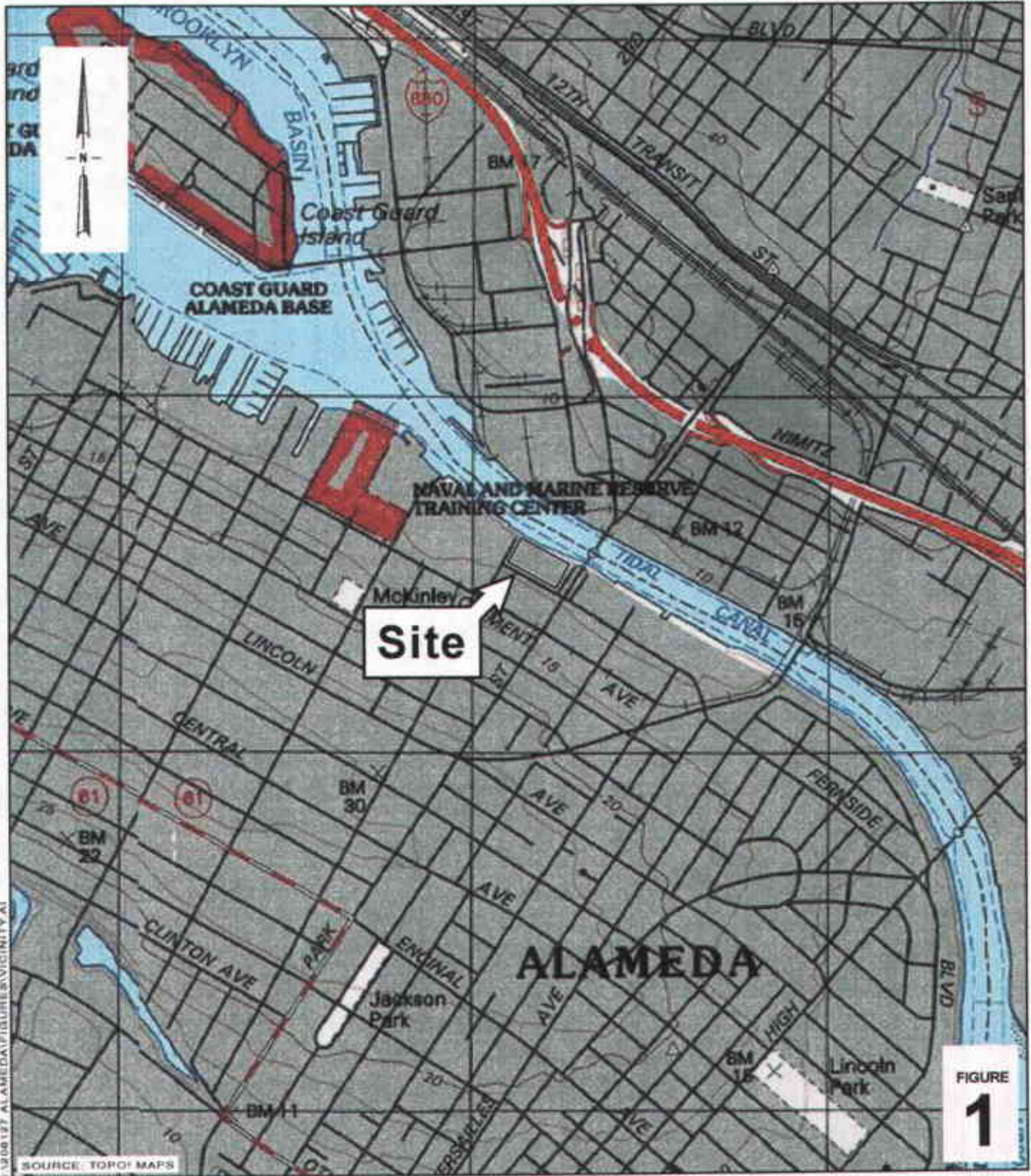


FIGURE 1

**Chevron # 206127**  
**Former Signal Oil Bulk Plant**  
 2301-2311 Blanding Avenue  
 Alameda, California



C A M B R I A

Vicinity Map

**EXPLANATION**

- MW-1 ◆ Monitoring Well Location
- CWL-1 ◇ Canal water level gauging station from Park Street bridge (RRM, October 1998)
- CS-2 ▲ Canal grab surface water sample
- S2 ■ Grab soil sample
- GWS-10 ⊕ Shallow groundwater survey point (Geomatrix, April 1995)
- Site features noted on Sanborn Fire Insurance map, dated 1932

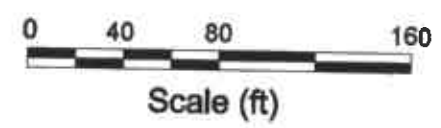
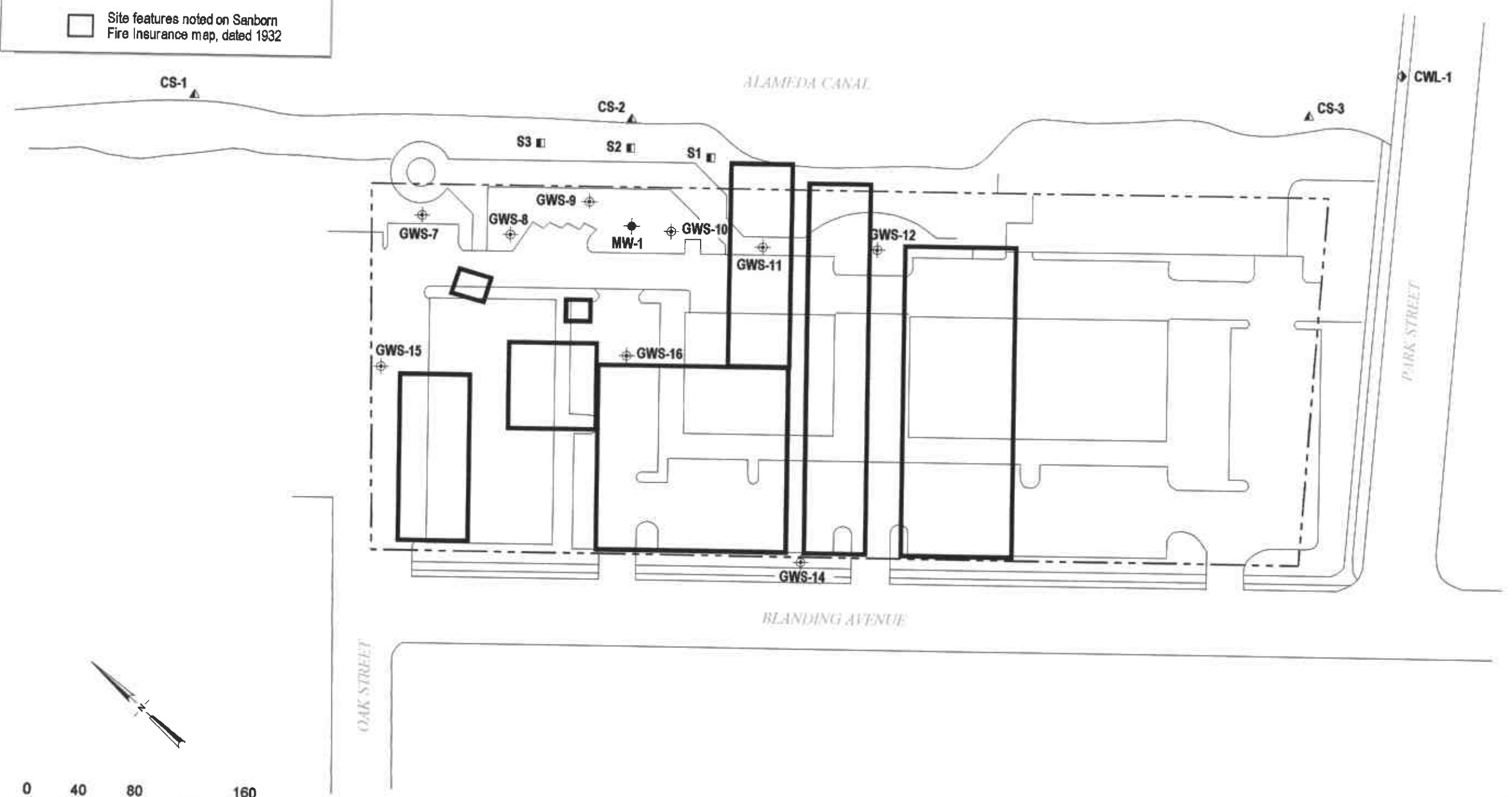


FIGURE  
**2**

I:\206127 ALAMEDA\FIGURES\SITEPLAN6.DWG



C A M B R I A

Site Plan

**Chevron # 206127**  
**Former Signal Oil Bulk Plant**  
2301-2311 Blanding Avenue  
Alameda, California

**ATTACHMENT A**

**Regulatory Response Letter – August 25, 2003**

August 25, 2003

Mr. Amir Gholami  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency-  
Environmental Health Services (ACHCSA-EHS)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-9335



Re: **Regulatory Response**  
Former Signal Oil Marine Storage and Distribution Facility (#20-6127)  
2301 Blanding Avenue  
Alameda, California  
Cambria Project no. 31D-1916

Mr. Gholami:

On behalf of Chevron Products Company (Chevron), Cambria Environmental (Cambria) is submitting this response to an ACHCSA letter of October 16, 2002. A copy of this letter is presented as Attachment A. Cambria has recently become Chevron's consultants on projects in Alameda County. We have reviewed available data from previous investigations at this site and have developed this proposal. A brief background and site history follow.

## **SITE BACKGROUND AND HISTORY**

A preliminary site assessment was performed by CET Environmental Services and summarized in a report dated January 13, 1995. The report indicated that a Signal Oil and Gas Company fuel distribution facility operated at the site from at least 1930 until about 1961. Figure 1 shows the location of the former Signal Oil facility.

Eight aboveground storage tanks, concrete secondary containment walls, underground piping, offices and storage buildings, a loading rack and pumping station were used to store and distribute fuels and lubricants. Storage and distribution operations were located on the western quarter of the site. Between 1957 and 1963, the buildings at the site were reportedly removed. From 1973 to 1983, the northwestern portion of the site was used as a construction yard and for boat repair services. A

**Cambria  
Environmental  
Technology, Inc.**

5900 Hollis Street  
Suite A  
Emeryville, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

August 25, 2003

restaurant and paved parking area, and possibly an automobile sales lot reportedly occupied the southeastern portion of the site during this time. Since 1987, the site has been used as an office center and marina. Existing improvements include office buildings, a paved parking lot, walking paths landscaping and a concrete seawall and boat slips along the Alameda Canal.

Several phases of environmental investigations have been performed at the site and are summarized below. Sample locations and results are illustrated on figures presented in Attachment B.

On February 17 and 20, 1995, Geomatrix advanced eight soil borings (SB-1 through SB-8) at the site. Total Petroleum Hydrocarbons as gasoline (TPHg; up to 2,000 parts per million, or ppm), Total Petroleum Hydrocarbons as diesel (TPHd; up to 250 ppm) and benzene (up to 3.7 ppm) were detected in soil samples from the borings. The historical information supplied by Chevron did not contain analytical results for groundwater samples collected from the borings, but did indicate that groundwater beneath the site was impacted.

Geomatrix collected additional groundwater samples from ten shallow borings (GWS-7 through GWS-16) in April 1995. TPHg (up to 22,000 parts per billion, or ppb) were detected in five borings, TPHd (up to 1,200 ppb) were detected in four borings, and benzene (up to 6,200 ppb) were detected in three borings. The borings containing detectable hydrocarbon concentrations are located in the northern corner of the site, with the highest concentrations detected in boring GWS-9.

Four additional borings (SB-9 through SB-12) were advanced at the site by RRM, Inc. on October 28 and 29, 1998, as part of a Tier 2 Risk Based Corrective Action (RBCA) assessment. TPHg (up to 2,200 ppm), TPHd (up to 2,900 ppm) and benzene (up to 3.3 ppm) were detected in soil samples from borings SB-9, SB-10 and SB-11. MTBE was detected in boring SB-9 in a soil sample collected at 13 feet below grade (fbg) at a concentration of 12 ppm by EPA method 8020. TPHg (up to 14,000 ppb), TPHd (up to 83,000 ppb) and benzene (up to 1,400 ppb) were detected in groundwater samples from borings SB-9, SB-10 and SB-11. The highest hydrocarbon concentrations in soils and groundwater were detected in boring SB-9. Water samples collected from Alameda Canal, adjacent to the site, were non-detect for TPHg, TPHd, benzene and MTBE. Based on depth to water data collected from the borings which were temporarily cased and monitored over a 2-day period, groundwater flow was to the north toward Alameda Canal at an approximate gradient of 0.01.

As indicated above, an area defined as "the northwestern portion" of the site had been used as a construction yard and for boat repair services from 1973 until 1983. The true extent of the area used for these purposes is poorly defined. Data indicate that in 1998, samples collected from boring SB-9 contained 12 ppm MTBE at 13 fbg. MTBE is a chemical that was first developed in 1973 and not blended into fuel in northern California until the mid-1980s. Therefore, its presence beneath the site cannot be attributed to any operations conducted prior to that time. This indicates that, at least



partially, the impacts observed to the subsurface are attributable to activities conducted on the site after Signal Oil (Chevron) ceased its operations. This may have resulted from operations on the site described above or perhaps from fill material being brought to the site as it was being redeveloped in 1987.

The hydrograph (RRM, 1998) presented in Attachment C illustrates that tidal fluctuations have minimal influence on groundwater flow beneath the site. Additionally, Table 3 (RRM, 1998) in Attachment A indicate total organic carbon concentrations that would tend to stabilize hydrocarbons by adsorption. Data from water samples collected from both MW-1 and from Alameda Canal suggest that the plume is stable and migration toward and into the canal is not occurring.



### **PROPOSED INTERIM ACTION**

Analytic results of TPHg, TPHd and BTEX in samples collected from well MW-1 have illustrated overall downward trends since groundwater monitoring began in January 2001. Analysis of sample CS-2, collected from Alameda Canal, have shown no detectable concentrations of all analyzed constituents until the July 2003 sampling event. Laboratory reports for this sampling event indicate the presence of toluene and xylenes slightly above the detection limits at concentrations of 0.7 ppb and 0.6 ppb, respectively. Considering the proximity of the dock and the condition of some vessels moored there, these concentrations are more likely attributable to contaminants entering the canal from other sources than the subject site.

Interim corrective action has been requested in your letter of October 16, 2002. Due to the proximity of previous borings and well MW-1 to the rip-rap slope along the edge of the canal, Cambria proposes to continue monitoring groundwater conditions beneath the site in MW-1 and continue to collect water samples from the Alameda Canal to verify that conditions beneath the site are not negatively impacting water quality of the canal. The water sample from the canal (CS-2) will continue to be collected directly opposite well MW-1 at the approximate location indicated on Figure 2. Due to the historically industrial nature of activities along the canal, two additional samples will be collected in the approximate locations of CS-1 and CS-3 as a comparison to results seen in sample CS-2. All samples will be analyzed for TPHg, TPHd and BTEX/MTBE and results will be reported to your office as soon as available.

Additionally, a site visit revealed a water seep on the slope above the canal at a level approximately consistent with the water level in MW-1. Cambria proposes to collect a soil sample from this slope and conduct the same analyses as conducted on groundwater samples from MW-1. Due to the historically industrial nature of activity, as mentioned above, we will collect two additional samples

on the slope, north and south of MW-1 for comparison. Locations of these proposed soil samples are indicated on Figure 2.

Upon receipt of soil sample analytic results, we will evaluate conditions and recommend any appropriate changes to the current scope.

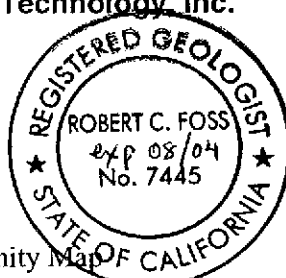
**CLOSING**



Please review the proposal presented in this response to the September 10, 2002 letter. We will implement the recommended action upon receipt of your written concurrence. Please direct any questions or comments you may have to me at (510) 420-3348.

Sincerely,  
**Cambria Environmental Technology, Inc.**

*Robert Foss*  
Robert Foss, R.G.  
Senior Project Geologist



Figures: 1- Site Vicinity Map  
2 - Site Plan with Proposed Grab Soil Sample Locations

Attachments: A - October 16, 2002 ACHCSA letter  
B - Figures from Previous Environmental Investigations  
C - RRM Hydrograph (10/98) and RRM Table of Physical Properties of Soils

cc: Ms. Karen Streich, Chevron Products Company

I:\206127 Alameda\206127 Reg Resp 8-03.wpd

**ATTACHMENT B**

**Laboratory Analytical Report**

## ANALYTICAL RESULTS

Prepared for:

ChevronTexaco  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

925-842-8582

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425SAMPLE GROUP

The sample group for this submittal is 881143. Samples arrived at the laboratory on Wednesday, January 14, 2004. The PO# for this group is 99011184 and the release number is STREICH.


<u>Client Description</u>			<u>Lancaster Labs Number</u>
S1-S-3-040113	NA	Soil	4197840
S2-S-3-040113	NA	Soil	4197841
S3-S-3-040113	NA	Soil	4197842

1 COPY TO Cambria Environmental  
ELECTRONIC Cambria Environmental  
COPY TO

Attn: Bob Foss  
Attn: Melissa Terry

Questions? Contact your Client Services Representative  
Alison M O'Connor at (717) 656-2300.

Respectfully Submitted,

  
Robin C. Runkle  
Senior Chemist

**Lancaster Laboratories Sample No. SW 4197840**

**S1-S-3-040113 NA Soil**  
**Facility# 206127 CETR**  
**2301 Blanding Ave Alameda NA S-1**  
 Collected: 01/13/2004 11:20 by MT Account Number: 10880

Submitted: 01/14/2004 10:40  
 Reported: 01/27/2004 at 14:16  
 Discard: 02/27/2004

ChevronTexaco  
 6001 Bollinger Canyon Rd L4310  
 San Ramon CA 94583

127S1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received		Dilution Factor
				Method	Units	
01725	TPH-GRO - Soils	n.a.	N.D.	Detection Limit 1.0	mg/kg	25
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
05547	TPH - DRO CA LUFT (Soils)	n.a.	14.	10.	mg/kg	1
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). The observed sample pattern is not typical of diesel/#2 fuel oil.					
07360	BTEX+MTBE by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	mg/kg	1
05460	Benzene	71-43-2	N.D.	0.0005	mg/kg	1
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	1
05474	Ethylbenzene	100-41-4	N.D.	0.001	mg/kg	1
06301	Xylene (Total)	1330-20-7	N.D.	0.001	mg/kg	1

State of California Lab Certification No. 2116

### Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis		Analyst	Dilution Factor
				Date and Time			
01725	TPH-GRO - Soils	N. CA LUFT Gasoline method	1	01/15/2004 12:58		Stephanie A Selis	25
05547	TPH - DRO CA LUFT (Soils)	CALUFT-DRO/8015B, Modified	1	01/19/2004 13:36		Tracy A Cole	1
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/15/2004 19:37		Marla S Lord	1
00374	GC/MS VOA Soil Prep	SW-846 5030A	1	01/15/2004 18:07		Marla S Lord	n.a.
01150	GC VOA Soil Prep	SW-846 5035	1	01/15/2004 04:45		Stephanie A Selis	n.a.
07004	Extraction - DRO (Soils)	TPH by CA LUFT	1	01/15/2004 17:30		Sally L Appleyard	1

Lancaster Laboratories Sample No. SW 4197841

S2-S-3-040113 NA Soil CETR  
 Facility# 206127  
 2301 Blanding Ave Alameda NA S-2  
 Collected: 01/13/2004 11:30 by MT Account Number: 10880

Submitted: 01/14/2004 10:40 ChevronTexaco  
 Reported: 01/27/2004 at 14:16 6001 Bollinger Canyon Rd L4310  
 Discard: 02/27/2004 San Ramon CA 94583

127S2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	20.	mg/kg	500
	The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time. A poor surrogate recovery was observed due to the dilution needed to perform the analysis.  Due to excessive foaming of the sample, normal reporting limits were not attained.					
05547	TPH - DRO CA LUFT (Soils)	n.a.	220.	50.	mg/kg	5
	According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons). The observed sample pattern is not typical of diesel/#2 fuel oil.					
07360	BTEX+MTBE by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	mg/kg	0.99
05460	Benzene	71-43-2	N.D.	0.0005	mg/kg	0.99
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	0.99
05474	Ethylbenzene	100-41-4	N.D.	0.001	mg/kg	0.99
06301	Xylene (Total)	1330-20-7	N.D.	0.001	mg/kg	0.99

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Surrogate recoveries were outside of QC limits for the GC/MS volatile fraction. The analysis was repeated and out of specification surrogate recoveries were again observed indicating a matrix effect.

State of California Lab Certification No. 2116

### Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	N. CA LUFT Gasoline method	1	01/15/2004 11:00	Stephanie A Selis	500

Lancaster Laboratories Sample No. SW 4197841

S2-S-3-040113 NA Soil  
 Facility# 206127 CETR  
 2301 Blanding Ave Alameda NA S-2  
 Collected: 01/13/2004 11:30 by MT

Account Number: 10880

Submitted: 01/14/2004 10:40  
 Reported: 01/27/2004 at 14:16  
 Discard: 02/27/2004

ChevronTexaco  
 6001 Bollinger Canyon Rd L4310  
 San Ramon CA 94583

127S2

05547	TPH - DRO CA LUFT (Soils)	CALUFT-DRO/8015B, Modified	1	01/16/2004 17:11	Tracy A Cole	5
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/15/2004 15:30	Joshua P Schaeffer	0.99
00374	GC/MS VOA Soil Prep	SW-846 5030A	1	01/15/2004 12:40	Joshua P Schaeffer	n.a.
01150	GC VOA Soil Prep	SW-846 5035	1	01/15/2004 04:45	Stephanie A Selis	n.a.
07004	Extraction - DRO (Soils)	TPH by CA LUFT	1	01/15/2004 17:30	Sally L Appleyard	1

Lancaster Laboratories Sample No. SW 4197842

 S3-S-3-040113 NA Soil CETR  
 Facility# 206127  
 2301 Blanding Ave Alameda NA S-3  
 Collected: 01/13/2004 11:45 by MT Account Number: 10880

 Submitted: 01/14/2004 10:40 ChevronTexaco  
 Reported: 01/27/2004 at 14:16 6001 Bollinger Canyon Rd L4310  
 Discard: 02/27/2004 San Ramon CA 94583

127S3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	10.	mg/kg	250
The analysis for volatiles was performed on a sample which was preserved in methanol. The reporting limits were adjusted appropriately. The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.						
Poor surrogate recoveries were observed for this sample due to the dilution needed to perform the analysis.						
Due to excessive foaming of the sample, normal reporting limits were not attained.						
05547	TPH - DRO CA LUFT (Soils)	n.a.	220.	10.	mg/kg	1
According to the California LUFT Protocol, the quantitation for Diesel Range Organics was performed by peak area comparison of the sample pattern to that of our #2 fuel oil reference standard (between C10 and C28 normal hydrocarbons).						
07360	BTEX+MTBE by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	mg/kg	1
05460	Benzene	71-43-2	N.D.	0.0005	mg/kg	1
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	1
05474	Ethylbenzene	100-41-4	N.D.	0.001	mg/kg	1
06301	Xylene (Total)	1330-20-7	N.D.	0.001	mg/kg	1

Surrogate recoveries were outside of QC limits for the GC/MS volatile fraction. The analysis was repeated and out of specification surrogate recoveries were again observed indicating a matrix effect.

State of California Lab Certification No. 2116

### Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	N. CA LUFT Gasoline method	1	01/15/2004 11:38	Stephanie A Selis	250
05547	TPH - DRO CA LUFT (Soils)	CALUFT-DRO/8015B, Modified	1	01/19/2004 15:28	Tracy A Cole	1
07360	BTEX+MTBE by 8260B	SW-846 8260B	1	01/15/2004 16:00	Joshua P Schaeffer	1
00374	GC/MS VOA Soil Prep	SW-846 5030A	1	01/15/2004 12:42	Joshua P Schaeffer	n.a.
01150	GC VOA Soil Prep	SW-846 5035	1	01/15/2004 04:46	Stephanie A Selis	n.a.
07004	Extraction - DRO (Soils)	TPH by CA LUFT	1	01/15/2004 17:30	Sally L Appleyard	1



Lancaster Laboratories Sample No. SW 4197842

S3-S-3-040113 NA Soil CETR  
Facility# 206127  
2301 Blanding Ave Alameda NA S-3  
Collected: 01/13/2004 11:45 by MT

Account Number: 10880

Submitted: 01/14/2004 10:40  
Reported: 01/27/2004 at 14:16  
Discard: 02/27/2004

ChevronTexaco  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

127S3

## Quality Control Summary

 Client Name: ChevronTexaco  
 Reported: 01/27/04 at 02:16 PM

Group Number: 881143

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 04013A33B TPH-GRO - Soils	Sample number(s): 4197840-4197842 N.D.	1.0	mg/kg	102		62-128		
Batch number: 040150006A TPH - DRO CA LUFT (Soils)	Sample number(s): 4197840-4197842 N.D.	10.	mg/kg	76		56-118		
Batch number: D040131AC Methyl Tertiary Butyl Ether	Sample number(s): 4197840-4197842 N.D.	0.5	ug/kg	93		75-125		
Benzene	N.D.	0.5	ug/kg	100		83-118		
Toluene	N.D.	1.	ug/kg	100		81-116		
Ethylbenzene	N.D.	1.	ug/kg	101		82-115		
Xylene (Total)	N.D.	1.	ug/kg	102		82-117		

### Sample Matrix Quality Control

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>BKG MAX</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 04013A33B TPH-GRO - Soils	Sample number(s): 4197840-4197842 115	121*	39-118	5	30			
Batch number: 040150006A TPH - DRO CA LUFT (Soils)	Sample number(s): 4197840-4197842 77	78	34-141	1	20			
Batch number: D040131AC Methyl Tertiary Butyl Ether	Sample number(s): 4197840-4197842 88	94	57-136	7	30			
Benzene	95	92	52-141	3	30			
Toluene	92	91	53-137	2	30			
Ethylbenzene	88	87	50-136	1	30			
Xylene (Total)	88	86	47-139	2	30			

### Surrogate Quality Control

 Analysis Name: TPH-GRO - Soils  
 Batch number: 04013A33B  
 Trifluorotoluene-F

4197840	113
4197841	11*
4197842	18*
Blank	118
LCS	104
MS	117
MSD	118

Limits: 71-122

 Analysis Name: TPH - DRO CA LUFT (Soils)  
 Batch number: 040150006A

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

## Quality Control Summary

Client Name: ChevronTexaco  
Reported: 01/27/04 at 02:16 PM

Group Number: 881143

### Surrogate Quality Control

#### Orthoterphenyl

4197840	71
4197841	65
4197842	107
Blank	67
LCS	88
MS	81
MSD	79

Limits: 54-113

Analysis Name: BTEX+MTBE by 8260B  
Batch number: D040131AC

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4197840	88	78	84	70
4197841	89	79	97	57*
4197842	90	78	86	67*
Blank	86	76	82	72
LCS	83	79	83	76
MS	42*	79	85	78
MSD	34*	82	85	78
Limits:	70-129	70-121	70-130	70-128

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.

# Chevron California Region Analysis Request/Chain of Custody



011304-01

Acct. # 10880

For Lancaster Laboratories use only  
Sample #: 497840-42

SCR#: \_\_\_\_\_  
**Grab # 881143**

Facility #: 20-6127  
 Site Address: 2301 Blanding Avenue, Alameda  
 Chevron PM: K. Streich Lead Consultant: Cambria  
 Consultant/Office: Cambria / Emeryville  
 Consultant Prj. Mgr.: Bdo Foss  
 Consultant Phone #: 510 420 3348 Fax #: 510 420 9170  
 Sampler: M. Terry

Service Order #: \_\_\_\_\_  Non SAR: \_\_\_\_\_

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.
S1	Sol		3"	04 01 13	1120	
S2	Sol		3"	04 01 13	1130	
S3	Sol		3"	04 01 13	1145	

Analyses Requested

Preservation Codes

<input type="checkbox"/> BTEX + MTBE 8260	<input type="checkbox"/> 8021
<input type="checkbox"/> TPH 8015 MOD GRO	<input type="checkbox"/> Silica Gel Cleanup
<input type="checkbox"/> TPH 8015 MOD DRO	<input type="checkbox"/> 8260 full scan
<input type="checkbox"/> Lead 7420	<input type="checkbox"/> 7421

J value reporting needed  
 Must meet lowest detection limits possible for 8260 compounds  
**8021 MTBE Confirmation**  
 Confirm highest hit by 8260  
 Confirm all hits by 8260  
 Run \_\_\_ oxy's on highest hit  
 Run \_\_\_ oxy's on all hits

Comments / Remarks

**Turnaround Time Requested (TAT) (please circle)**

**STD. TAT** 72 hour      48 hour  
 24 hour             4 day             5 day

**Data Package Options (please circle if required)**

QC Summary      Type I - Full  
 Type VI (Raw Data)       Coelt Deliverable not needed  
 WIP (RWQCB)  
 Disk

Relinquished by: <u>M. Terry</u>	Date: <u>1/13/04</u>	Time: <u>3:40</u>	Received by: <u>Bernardo Lopez</u>	Date: <u>1/13/04</u>	Time: <u>1545</u>	
Relinquished by: <u>Bernardo Lopez</u>	Date: <u>1/13/04</u>	Time: <u>1600</u>	Received by: <u>Airborne</u>	Date: <u>1/13/04</u>	Time: _____	
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____	
Relinquished by Commercial Carrier: <u>Airborne</u>	UPS	FedEx	Other: <u>Airborne</u>	Received by: <u>Bernardo Lopez</u>	Date: <u>1/13/04</u>	Time: <u>1545</u>
Temperature Upon Receipt: <u>15 C</u>	Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					

# Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>ug</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>ml</b>	milliliter(s)	<b>l</b>	liter(s)
<b>m3</b>	cubic meter(s)	<b>ul</b>	microliter(s)
<b>&lt;</b>	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>J</b>	estimated value – The result falls within the Method Detection Limit (MDL) and Limit of Quantitation (LOQ).		
<b>ppm</b>	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

## U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
<b>A</b>	TIC is a possible aldol-condensation product	<b>B</b>	Value is <CRDL, but ≥IDL
<b>B</b>	Analyte was also detected in the blank	<b>E</b>	Estimated due to interference
<b>C</b>	Pesticide result confirmed by GC/MS	<b>M</b>	Duplicate injection precision not met
<b>D</b>	Compound quantitated on a diluted sample	<b>N</b>	Spike sample not within control limits
<b>E</b>	Concentration exceeds the calibration range of the instrument	<b>S</b>	Method of standard additions (MSA) used for calculation
<b>N</b>	Presumptive evidence of a compound (TICs only)	<b>U</b>	Compound was not detected
<b>P</b>	Concentration difference between primary and confirmation columns >25%	<b>W</b>	Post digestion spike out of control limits
<b>U</b>	Compound was not detected	<b>*</b>	Duplicate analysis not within control limits
<b>X,Y,Z</b>	Defined in case narrative	<b>+</b>	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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