



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

April 29, 2014

Saidian & Zektser LLC & G & Z Inc.  
5977 Skyfarm Drive  
Castro Valley, CA 94552-1636

Leon Zektser  
239 Brennan #70  
San Francisco, CA 94107

Nissan Saidian  
5733 Medallion Court  
Castro Valley, CA 94522

Joseph Zadik  
8255 San Leandro Street  
Oakland, CA 94621

Pritpaul Sappal  
Alaska Gas  
872 Coral Drive  
Rodeo, CA 94572

Shivcharanjit Lal  
Alaska Gas  
695 Harbour Way  
Richmond, CA 94801

John Rutherford  
Desert Petroleum  
3781 Telegraph Road  
Ventura, CA 93003-3420

Subject: Case Closure for Fuel Leak Case No. RO0000022 and GeoTracker Global ID  
T06000102128, Alaska Gasoline, 1310 Central Avenue, Alameda, CA 94501

Dear Gentlemen:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25296.10[g]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (<http://geotracker.waterboards.ca.gov>) and the Alameda County Environmental Health website (<http://www.acgov.org/aceh/index.htm>).

#### **SITE INVESTIGATION AND CLEANUP SUMMARY**

Please be advised that the following conditions exist at the site:

- Residual petroleum hydrocarbon pollution in soil and groundwater remain in place at this site. In November 2010 four soil borings were placed in the vicinity of the existing USTs to a maximum depth of 20 feet below ground surface. Residual contaminated soil with elevated concentrations up to 26,000 mg/kg Total Petroleum Hydrocarbons (TPH) as Gasoline, 4,400 mg/kg TPH as diesel, and 54 mg/kg benzene remain. Elevated concentrations up to 120,000 micrograms per liter (ug/l) TPHG, 1,100,000 ug/l TPHD, and 6,300 ug/l benzene remain in groundwater. Free product was observed in three of the four borings.

- Because soil data indicate that free product may extend off-site beneath the adjacent streets, excavation or construction activities in areas of residual contamination both on- and off-site require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.
- Due to residual contamination, the site is closed with Site Management Requirements that limit future land use to the current commercial land use as an active fueling station. Site Management Requirements are further described in section IV of the attached Case Closure Summary. If a change in land use to any residential or other conservative land use scenario occurs at this site, ACEH must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans.

If you have any questions, please call the Caseworker Karel Detterman at (510) 567-6708. Thank you.

Sincerely,



Dilan Roe, P.E.  
LOP and SCP Program Manager

Enclosures:           1.       Remedial Action Completion Certification  
                          2.       Case Closure Summary

cc with enclosures:

Ms. Cherie McCaulou (w/enc.), SF- Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612, (sent via electronic mail to [CMacaulou@waterboards.ca.gov](mailto:CMacaulou@waterboards.ca.gov))

Andrew Thomas, City of Alameda Planning and Building Department, 2263 Santa Clara Avenue, Room 190, Alameda, CA 94501-4477 (Sent via E-mail to: [athomas@ci.alameda.ca.us](mailto:athomas@ci.alameda.ca.us))

Ken Minn, East Bay Municipal Utility District, P.O. Box 24055, Oakland, CA 94623 (Sent via E-mail to: [kminn@ebmud.com](mailto:kminn@ebmud.com))

Tim Cook, Cook Environmental Services, Inc., 1485 Treat Boulevard, Suite 203A, Walnut Creek, CA 94597 (Sent via E-mail to: [tcook@cookenvironmental.com](mailto:tcook@cookenvironmental.com))

Karel Detterman (sent via electronic mail to: [karel.detterman@acgov.org](mailto:karel.detterman@acgov.org))

eFile, GeoTracker

# ENCLOSURE 1



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**REMEDIAL ACTION COMPLETION CERTIFICATION**

April 29, 2014

Saidian & Zektser LLC & G & Z Inc.  
5977 Skyfarm Drive  
Castro Valley, CA 94552-1636

Leon Zektser  
239 Brennan #70  
San Francisco, CA 94107

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872 Coral Drive  
Rodeo, CA 94572

Shivcharanjit Lal  
Alaska Gas  
695 Harbour Way  
Richmond, CA 94801

John Rutherford  
Desert Petroleum  
3781 Telegraph Road  
Ventura, CA 93003-3420

Subject: Case Closure for Fuel Leak Case No. RO0000022 and GeoTracker Global ID T06000102128,  
Alaska Gasoline, 1310 Central Avenue, Alameda, CA 94501

Dear Gentlemen:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Please be aware that claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi  
Director

# ENCLOSURE 2

**CASE CLOSURE SUMMARY  
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

**I. AGENCY INFORMATION**

Date: April 29, 2014

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6708
Responsible Staff Person: Karel Detterman	Title: Hazardous Materials Specialist

**II. CASE INFORMATION**

Site Facility Name: Alaska Gasoline		
Site Facility Address: 1310 Central Avenue, Alameda, CA 94501		
RB Case No.: 01-2313	STiD No.: 3828	LOP Case No.: RO0000022
URF Filing Date: 02/01/1996	Geotracker ID: T06000102128	APN: 72-341-1
Current Land Use: Active Fueling Station		
Responsible Parties	Addresses	Phone Numbers
Leon Zektser	239 Brennan # 70 San Francisco, CA 94107	None Provided
Nissan Saidian	5733 Medallion Court Castro Valley, CA 94522	None Provided
Joseph Zadik	8255 San Leandro Street Oakland, CA 94621	None Provided

This Case Closure Summary along with the Case Closure Transmittal letter and the Remedial Action Completion Certification provides documentation of the case closure. This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions. Additional information on the case can be viewed in the online case file. The entire case file can be viewed over the Internet on the Alameda County Environmental Health (ACEH) website (<http://www.acgov.org/aceh/lop/ust.htm>) or the State of California Water Resources Control Board GeoTracker website (<http://geotracker.waterboards.ca.gov>). Not all historic documents for the fuel leak case may be available on GeoTracker. A more complete historic case file for this site is located on the ACEH website.

### III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Release from underground storage tank (UST) system.		
Number of monitoring wells installed: Five	Number of monitoring wells destroyed: Five	Number of monitoring wells remaining: None
Highest Groundwater Depth Below Ground Surface: 1.90 feet bgs	Lowest Depth: 6.64 feet bgs	Flow Direction: North-Northeast
Most Sensitive Current Groundwater Use: Potential drinking water source		

<p>Summary of Production Wells in Vicinity: The groundwater gradient direction appears to be to the north-northwest; There were no water supply wells found to be located within a radius of 2,000 feet downgradient of the site. There are a number of irrigation wells located cross and upgradient of the site and the closest irrigation well appears to be located at 1200 San Antonio Avenue, Alameda, a distance of approximately 600 feet south southwest of the site. Based on the location of the well with respect to the site, the well is not expected to be a receptor for the site.</p>	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest Surface Water Name: The San Francisco Bay is approximately 1,792 feet southwest of the site.

**LOW-THREAT CLOSURE POLICY (LTCP) GROUNDWATER SPECIFIC CRITERIA**

LTCP Groundwater Specific Scenario under which case was closed: Scenario 3

Site Data		LTCP Scenario 1 Criteria (ppb)	LTCP Scenario 2 Criteria (ppb)	LTCP Scenario 3 Criteria (ppb)	LTCP Scenario 4 Criteria (ppb)
Plume Length	120 feet	<100 feet	<250 feet	<250 feet	<1,000 feet
Free Product	Removed to maximum extent practicable	No free product	No free product	Removed to maximum extent practicable	No free product
Plume Stable or Decreasing	Stable	Stable or decreasing	Stable or decreasing	Stable or decreasing for minimum of 5 Years	Stable or decreasing
Distance to Nearest Water Supply Well	600 feet (cross-gradient) and > 2,000 feet downgradient	>250 feet	>1,000 feet	>1,000 feet	>1,000 feet
Distance to Nearest Surface Water and Direction	1,792 feet upgradient	>250 feet	>1,000 feet	>1,000 feet	>1,000 feet
Property Owner Willing to Accept a Land Use Restriction?	Yes	Not applicable	Not applicable	Yes	Not applicable

**GROUNDWATER CONCENTRATIONS**

Constituent	Historic Site Maximum (ppb)	Current Site Maximum (ppb)	LTCP Scenario 1 Criteria (ppb)	LTCP Scenario 2 Criteria (ppb)	LTCP Scenario 3 Criteria (ppb)	LTCP Scenario 4 Criteria (ppb)
Benzene	6,300	41	No criteria	3,000	No criteria	1,000
Methyl <i>tert</i> -butyl ether (MTBE)	120,000	250	No criteria	1,000	No criteria	1,000
<i>List other chemicals of specific concern</i>	---	---				

Scenario 5: If the site does not meet scenarios 1 through 4, has a determination been made that under current and reasonably expected future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame?

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**LTCP VAPOR SPECIFIC CRITERIA**

LTCP Vapor Specific Scenario under which case was closed: Active fueling station exempt from vapor specific criteria.

Active Fueling Station      Active as of 03/12/2014

Site Data		LTCP Scenario 1 Criteria	LTCP Scenario 2 Criteria	LTCP Scenario 3A Criteria	LTCP Scenario 3B Criteria	LTCP Scenario 3C Criteria	LTCP Scenario 4 Criteria
Unweathered Non-Aqueous Phase Liquid (NAPL)	----	LNAPL in groundwater	LNAPL in soil	No NAPL	No NAPL	No NAPL	No criteria
Thickness of Bioattenuation Zone Beneath Foundation	<5 feet	≥30 feet	≥30 feet	≥5 feet	≥10 feet	≥5 feet	≥5 feet
Total Petroleum Hydrocarbons (TPH) in Bioattenuation Zone	26,000 ppm	<100 ppm	<100 ppm	<100 ppm	<100 ppm	<100 ppm	<100 ppm
Maximum Current Benzene Concentration in Groundwater	41 ppb	No criteria	No criteria	<100 ppb	≥100 and <1,000 ppb	<1,000 ppb	No criteria
Oxygen Data within Bioattenuation Zone	No oxygen data	No criteria	No criteria	No oxygen data or <4%	No oxygen data or <4%	≥4% at lower end of zone	≥4% at lower end of zone
Depth of soil vapor measurement beneath foundation	---	No criteria	No criteria	No criteria	No criteria	No criteria	≥5 feet

**SCENARIO 4 DIRECT MEASUREMENT OF SOIL VAPOR CONCENTRATIONS**

Site Soil Vapor Data			No Bioattenuation Zone		Bioattenuation Zone	
Constituent	Historic Maximum (µg/m³)	Current Maximum (µg/m³)	Residential	Commercial	Residential	Commercial
Benzene	---	---	<85	<280	<85,000	<280,000
Ethylbenzene	---	---	<1,100	<3,600	<1,100,000	<3,600,000
Naphthalene	---	---	<93	<310	<93,000	<310,000

If the site does not meet scenarios 1 through 4, does a site-specific risk assessment for the vapor intrusion pathway demonstrate that human health is protected?

A site-specific risk assessment has not been prepared.

If the site does not meet scenarios 1 through 4, has a determination been made that petroleum vapors from soil or groundwater will have no significant risk of adversely affecting human health as a result of controlling exposure through the use of mitigation measures or through the use of institutional controls?

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**LTCP DIRECT CONTACT AND OUTDOOR AIR EXPOSURE CRITERIA**

LTCP Direct Contact and Outdoor Air Exposure Specific Scenario under which case was closed: This case is an active service station.

Are maximum concentrations less than those in Table 1 below?

No

Constituent		Residential		Commercial/Industrial		Utility Worker
		0 to 5 feet bgs (ppm)	Volatilization to outdoor air (5 to 10 feet bgs) ppm	0 to 5 feet bgs (ppm)	Volatilization to outdoor air (5 to 10 feet bgs) ppm	0 to 10 feet bgs (ppm)
Site Maximum	Benzene	27	54	27	54	54
LTCP Criteria	Benzene	≤1.9	≤2.8	≤8.2	≤12	≤14
Site Maximum	Ethylbenzene	110	520	110	520	520
LTCP Criteria	Ethylbenzene	≤21	≤32	≤89	≤134	≤314
Site Maximum	Naphthalene	---	---	---	---	---
LTCP Criteria	Naphthalene	≤9.7	≤9.7	≤45	≤45	≤219
Site Maximum	Poly Aromatic Hydrocarbons (PAHs)	---	---	---	---	---
LTCP Criteria	PAHs	≤0.063	NA	≤0.68	NA	≤4.5

If maximum concentrations are greater than those in Table 1, are they less than levels from a site-specific risk assessment?

A site-specific risk assessment was not prepared.

If maximum concentrations are greater than those in Table 1, has a determination been made that the concentrations of petroleum in soil will have no significant risk of adversely affecting human health as a result of controlling exposure through the use of mitigation measures or through the use of institutional controls?

Yes

**IV. CLOSURE**

Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, closure of this site appears to be consistent with the policies established by the State Water Resources Control Board's (SWRCB's) Low-Threat Underground Storage Tank Closure Policy (LTCP) which became effective on August 17, 2012.

**Site Management Requirements:**

**1) VAPOR ISSUE – INDOOR AIR**

This fuel leak case has been evaluated for closure consistent with the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP). Historic soil and groundwater data indicate the potential for vapor intrusion to indoor air for future buildings at the site. Under the current land use as an active fueling station, the site is not required to meet media-specific criteria for vapor intrusion to indoor air. Therefore, case closure is granted for the current commercial land use as an active fueling station.

**2) DIRECT CONTACT ISSUE – SITE DOES NOT MEET COMMERCIAL, RESIDENTIAL, OR UTILITY WORKER**

This fuel leak case has been evaluated for closure consistent with the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP). Benzene and ethylbenzene concentrations in shallow soil exceed the numerical criteria for direct contact and outdoor air exposure prescribed in the LTCP for residential, commercial land use and for utility workers. Under the current land use as an active fueling station, most of the site is paved with minor landscaped areas near the site boundaries resulting in a low potential for direct exposure under the current land use. Therefore, case closure is granted for the current commercial land use as an active fueling station.

**3) LAND USE CHANGE**

If a change in land use to any residential, commercial other than as a commercial fueling station, or conservative land use, or if any redevelopment occurs, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. Due to the potential for vapor intrusion to indoor air for future buildings, and direct contact and outdoor air exposure, ACEH will re-evaluate the case upon receipt of approved development/construction plans.

**4) HEALTH AND SAFETY DURING CONSTRUCTION**

Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during onsite excavation and construction activities. Additionally, precautions should be taken during excavation or other invasive activities because soil and groundwater data indicate free product may extend offsite beneath the adjacent streets.

Should corrective action be reviewed if land use changes? Yes

Was a deed restriction or deed notification filed? No

Date Recorded: ---

## V. ADDITIONAL COMMENTS AND CONCLUSION

### **Additional Comments:**

The Site fails the LTCP's Media-Specific Criteria for Direct Contact and Outdoor Air Exposure for Residential, Commercial/Industrial, and Utility Worker for benzene and ethylbenzene at all depths. Soil data indicate that free product may extend off site beneath the adjacent streets. Soil samples BH-1 collected at 4 feet below ground surface (bgs) contained benzene at 27 milligrams per kilogram (mg/kg), exceeding the 1.9 mg/kg for residential and 8.2 mg/kg for commercial/industrial for 1-5 feet bgs. Soil samples BX-3 collected at 5.5 feet bgs contained benzene at 54 mg/kg, exceeding the 2.8 mg/kg for residential for 5-10 feet bgs, 12 mg/kg for commercial/industrial for 5-10 feet bgs, and 14 mg/kg for utility worker for 0-10 feet bgs. Soil samples BX-3 collected at 5.5 feet bgs contained ethylbenzene at 110 mg/kg exceeding the 21 mg/kg for residential and 89 mg/kg for commercial/industrial for 5-10 feet bgs. Soil samples BX-3 collected at 5.5 feet bgs contained ethylbenzene at 520 mg/kg exceeding the 32 mg/kg for residential for 5-10 feet bgs, 134 mg/kg for commercial/industrial for 5-10 feet bgs, and 314 mg/kg for utility worker for 0-10 feet bgs. Naphthalene and Polycyclic Aromatic Hydrocarbons (PAHs) under the LTCP's Media-Specific Criteria for Direct Contact and Outdoor Air Exposure for Residential, Commercial/Industrial, and Utility Worker is not possible because neither were included in the analytes for soil samples taken during the UST removal or subsequent site investigations.

Benzene and ethylbenzene concentrations of grab groundwater samples from onsite soil borings BX-1, BX-3, and BX-4 provide indirect evidence for the potential for vapor intrusion to indoor air if the site is ever redeveloped other than as a commercial fueling station. Benzene concentrations of 6,300 micrograms per liter (ug/l) in BX-1, 1,400 ug/l in BX-3, and 950 ug/l in BX-4 exceed the benzene groundwater screening level of 12 ug/l (Commercial Use, All Sand) found in Table E-1, *Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion* (San Francisco Bay Regional Water Quality Control Board [SFBRWQCB], December 2013). Ethylbenzene concentrations of 1,700 ug/l in BX-1, 4,900 ug/l in BX-3, and 3,700 ug/l in BX-4 exceed the ethylbenzene groundwater screening level of 130 ug/l (Commercial Use, All Sand) found in Table E-1, *Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion* (SFBRWQCB, December 2013).

Although the site meets the media-specific criteria for vapor intrusion to indoor air because it is an active gasoline service station, the site is located in a residential neighborhood. A review of the site data and ACEH's observations of the foundation of the apartment building located at the corner of Central Avenue and Sherman Street, immediately downgradient of and in the footprint of the off-site plume as defined by MW-5 and MW-4, indicates a low risk of vapor intrusion to indoor air in the apartment building due to the existence of the apartment building's subterranean open-air parking garage.

### **Conclusion:**

#### **LAND USE RESTRICTIONS**

Alameda County Environmental Health staff believe that the site meets the conditions for case closure under the State Water Resources Control Board Low-Threat Underground Storage Tank Closure Policy. Based upon the information available in our files to date, no further investigation or cleanup for the fuel leak case is necessary at this time. However, as specified in the Site Management Requirements, re-evaluation of this case is required if land uses changes to any residential or other conservative land use, or any redevelopment occurs. Additionally, precautions should be taken during both on-and off-site excavation or other invasive activities.

**VI. LOCAL AGENCY REPRESENTATIVE DATA**

Prepared by: Karel Detterman, P.G.	Title: Hazardous Materials Specialist
Signature: <i>Karel Detterman</i>	Date: <i>4/29/2014</i>
Approved by: Dilan Roe, P.E.	Title: LOP and SCP Program Manager
Signature: <i>Dylan Roe</i>	Date: <i>4/29/2014</i>

**VII. REGIONAL BOARD AND PUBLIC NOTIFICATION**

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Regional Board Notification Date: 10/25/2013	
Public Notification Date: 10/25/2013	

**VIII. MONITORING WELL DESTRUCTION**

Date Requested by ACEH: 10/25/2013	Date of Well Destruction Report: 1/15/2014	
All Monitoring Wells Destroyed: Yes	Number Destroyed: Five	Number Retained: None
Reason Wells Retained: ----		
Additional requirements for submittal of groundwater data from retained wells: ----		
ACEH Concurrence - Signature: <i>Karel Dette</i>	Date: <i>4/29/2014</i>	

Attachments:

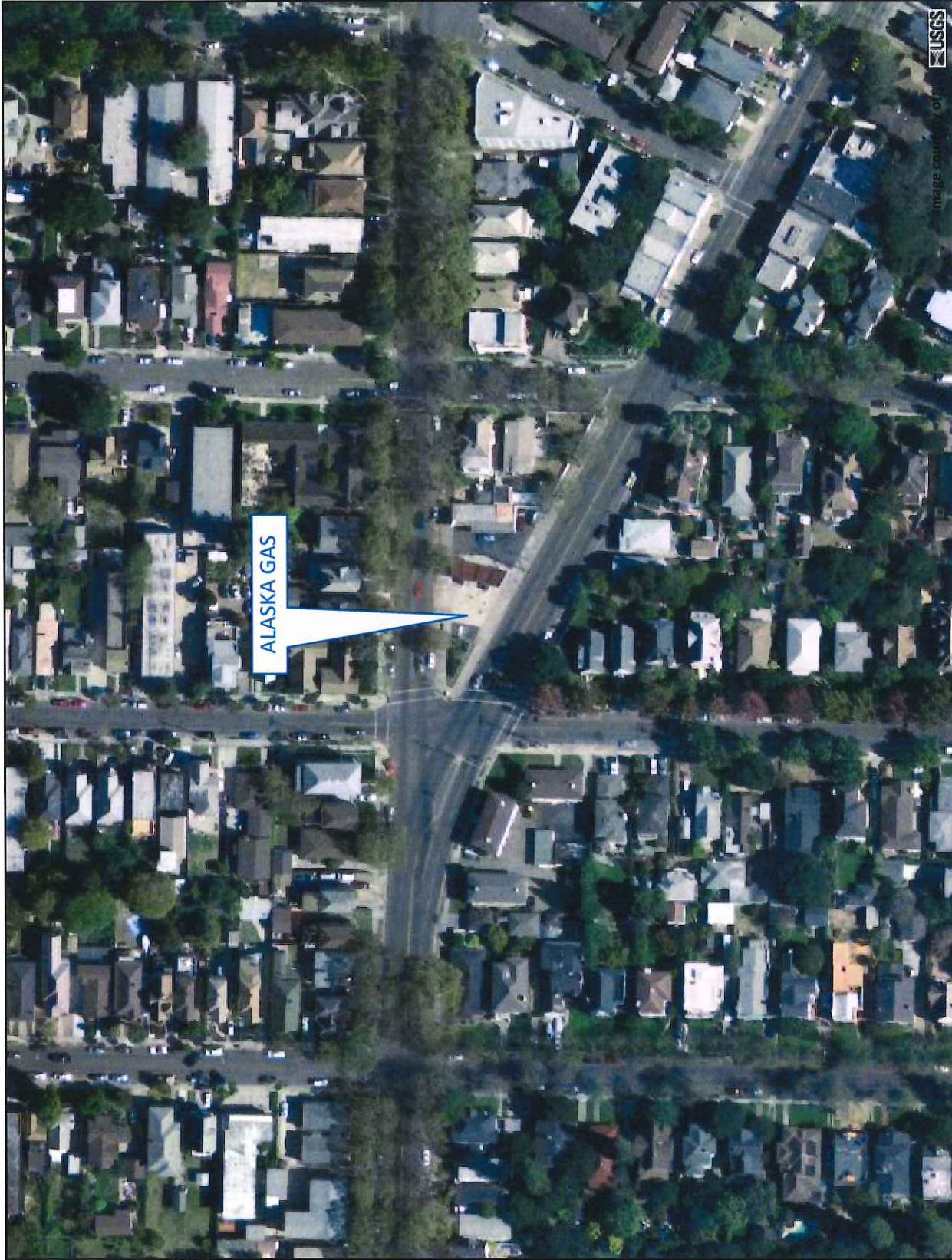
1. Site Vicinity Map and Aerial Photo (2 pp)
2. Site Plan (1 p)
3. Groundwater Contour and Chemical Concentration Maps (3 pp)
4. Soil and Soil Vapor Analytical Data (5 pp)
5. Groundwater Analytical Data (4 pp)
6. Cross Sections (4 pp)
7. Concentration Graphs (5 pp)

# ATTACHMENT 1









**Site Location Map**  
**Alaska Gas**  
**1310 Central Avenue, Alameda, CA**

**FIGURE 1**

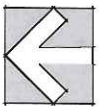


321 Court Street  
Woodland, CA 95695  
(530) 406-1760  
Lic. No. 933586  
Fax No. (530) 406-1071



# ATTACHMENT 2

**NORTH**



Residential



Sherman Street

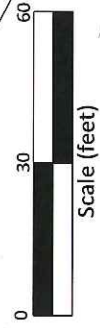
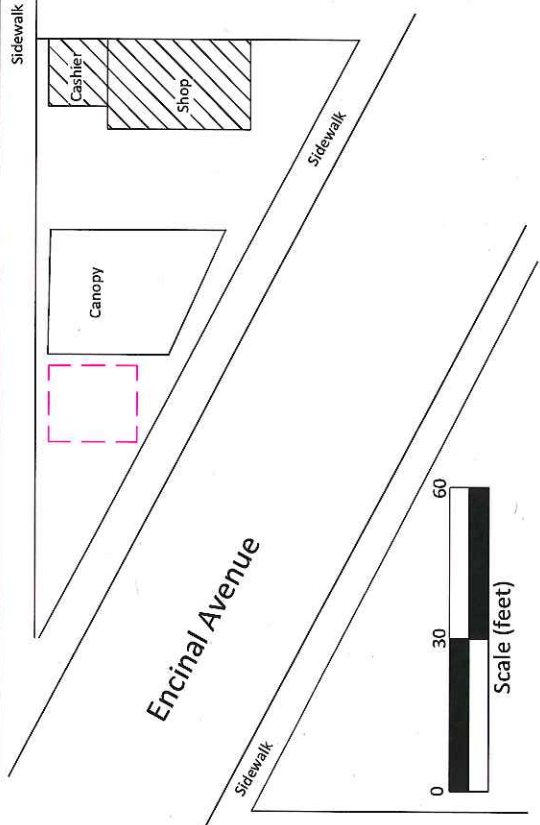
Residential

Central Avenue

Sidewalk

**Legend**

-  Building
-  Approximate Location of Current and Former USTs



**Cook Environmental Services, Inc.**

1485 Treat Blvd, Ste 203A  
Walnut Creek, CA 94597  
(925) 478-8390  
tcook@cookenvironmental.com

**Site Plan**

Alameda Gas  
1310 Central Avenue  
Alameda, California

Project #: 1035

Date: 8/30/13

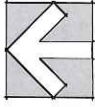
Scale: as shown

Figure:

**2**

# ATTACHMENT 3

NORTH



MW-4  
23.88

24.00

24.25

MW-5  
24.29

24.38

24.75

25.00

25.25

MW-3  
25.39

MW-1  
25.38

MW-2  
25.55

Encinal Avenue

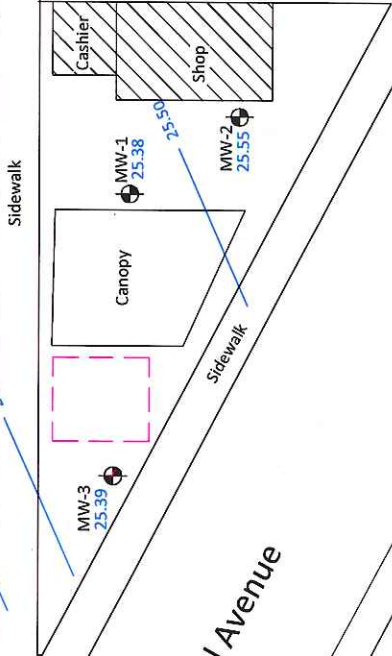
Central Avenue

Residential

Residential

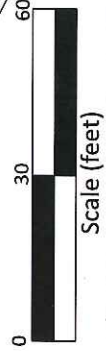
Residential

Sherman Street



**Legend**

- Groundwater Monitoring Well
- Groundwater Elevation (fams)
- Groundwater Elevation Contour
- Building
- Approximate Location of Current and Former USTs



**Cook Environmental Services, Inc.**

1485 Treat Blvd. Ste 203A  
Walnut Creek, CA 94597  
(925) 478-8390  
tcook@cookenvironmental.com

**Groundwater Elevations**

**March 29, 2012**

Alameda Gas  
1310 Central Avenue  
Alameda, California

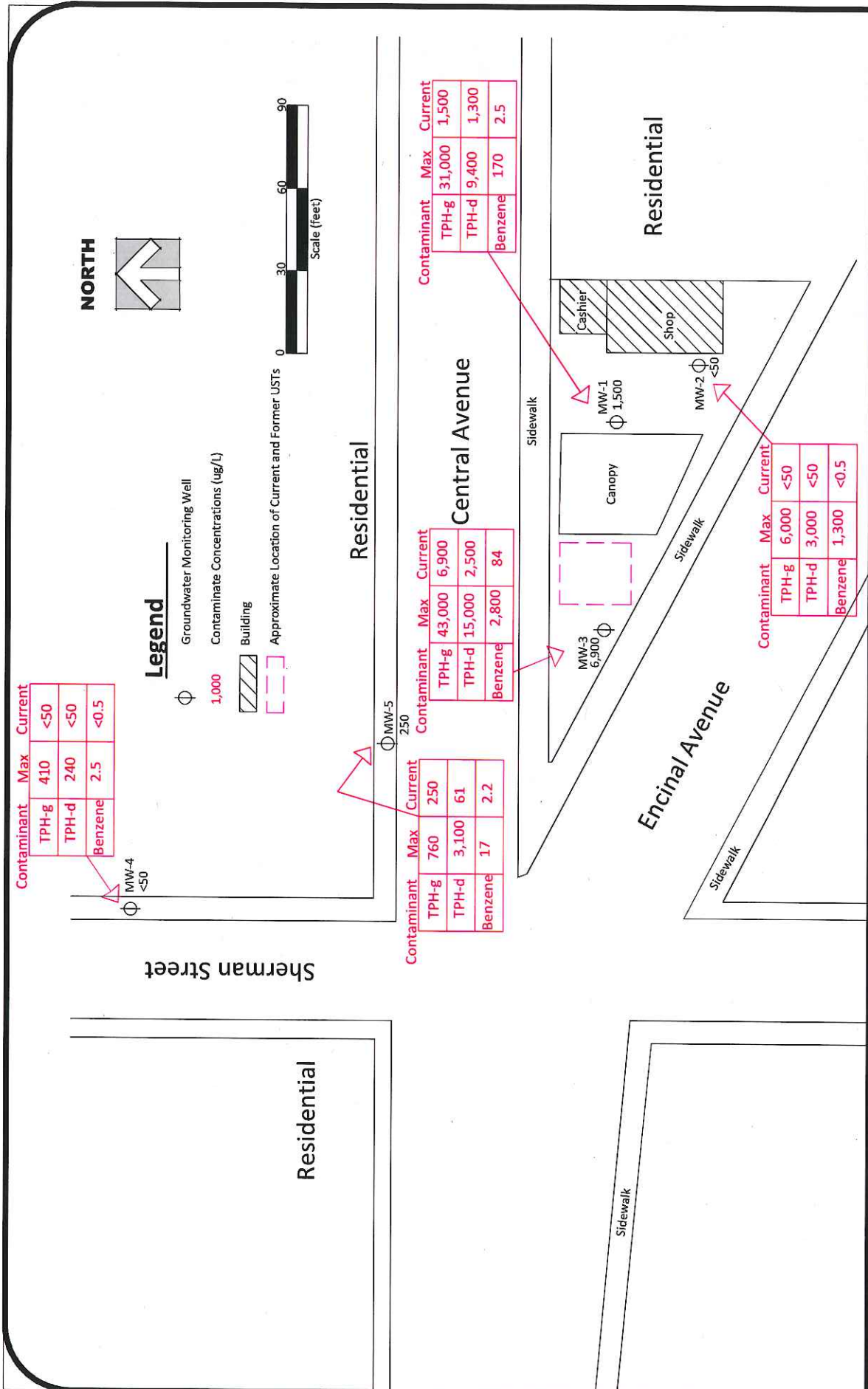
Project #: 1035

Date: 8/30/13

Scale: as shown

Figure:

**3**



**Cook Environmental Services, Inc.**

1485 Treat Blvd. Ste 203A  
Walnut Creek, CA 94597  
(925) 478-8390  
tcook@cookenvironmental.com

**Maximum and Current Concentrations in Groundwater**

**TPH-d, TPH-g, Benzene**

Alameda Gas  
1310 Central Avenue  
Alameda, California

Project #: 1035

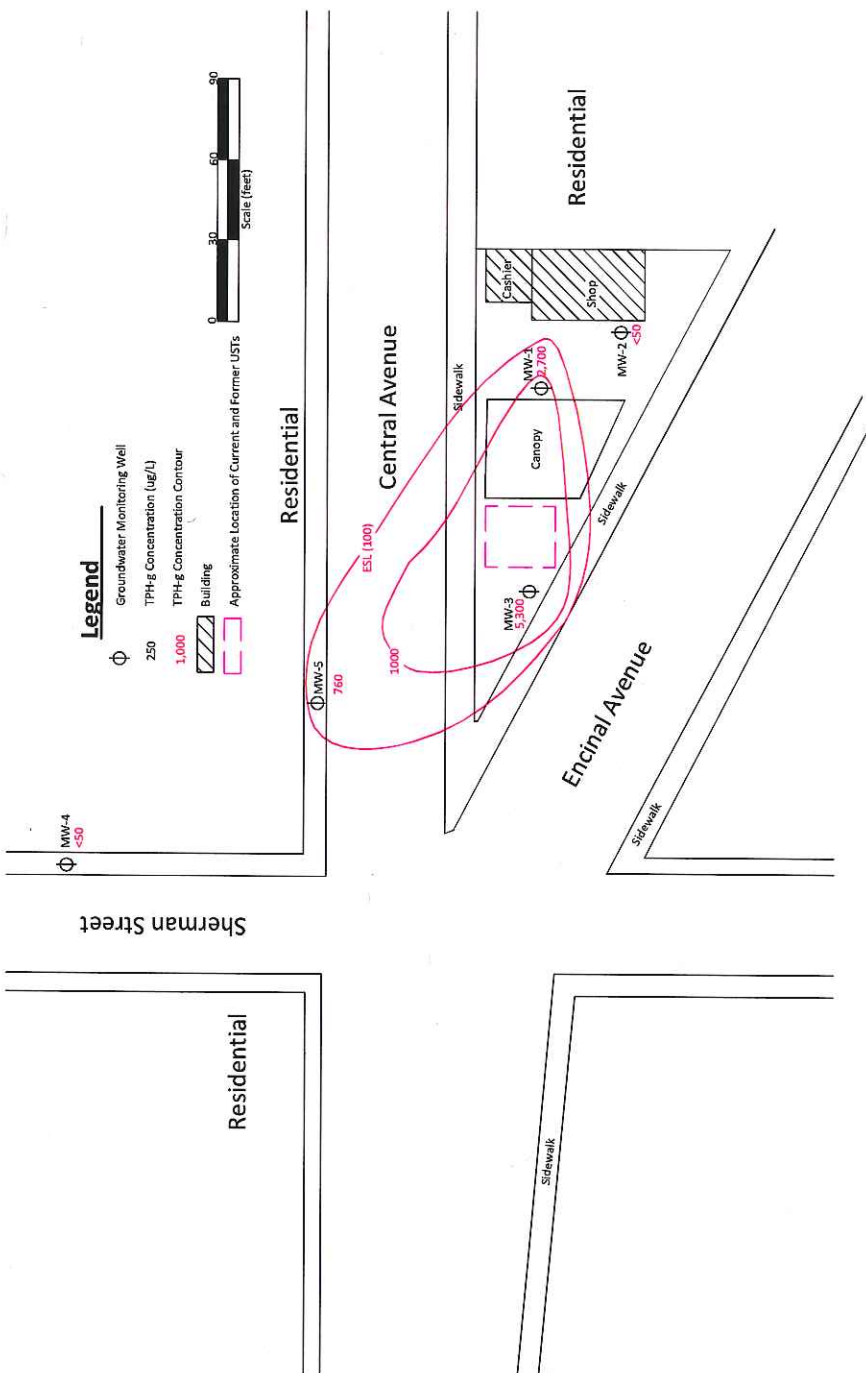
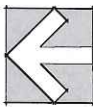
Date: 8/30/13

Scale: as shown

Figure:

**14**

NORTH



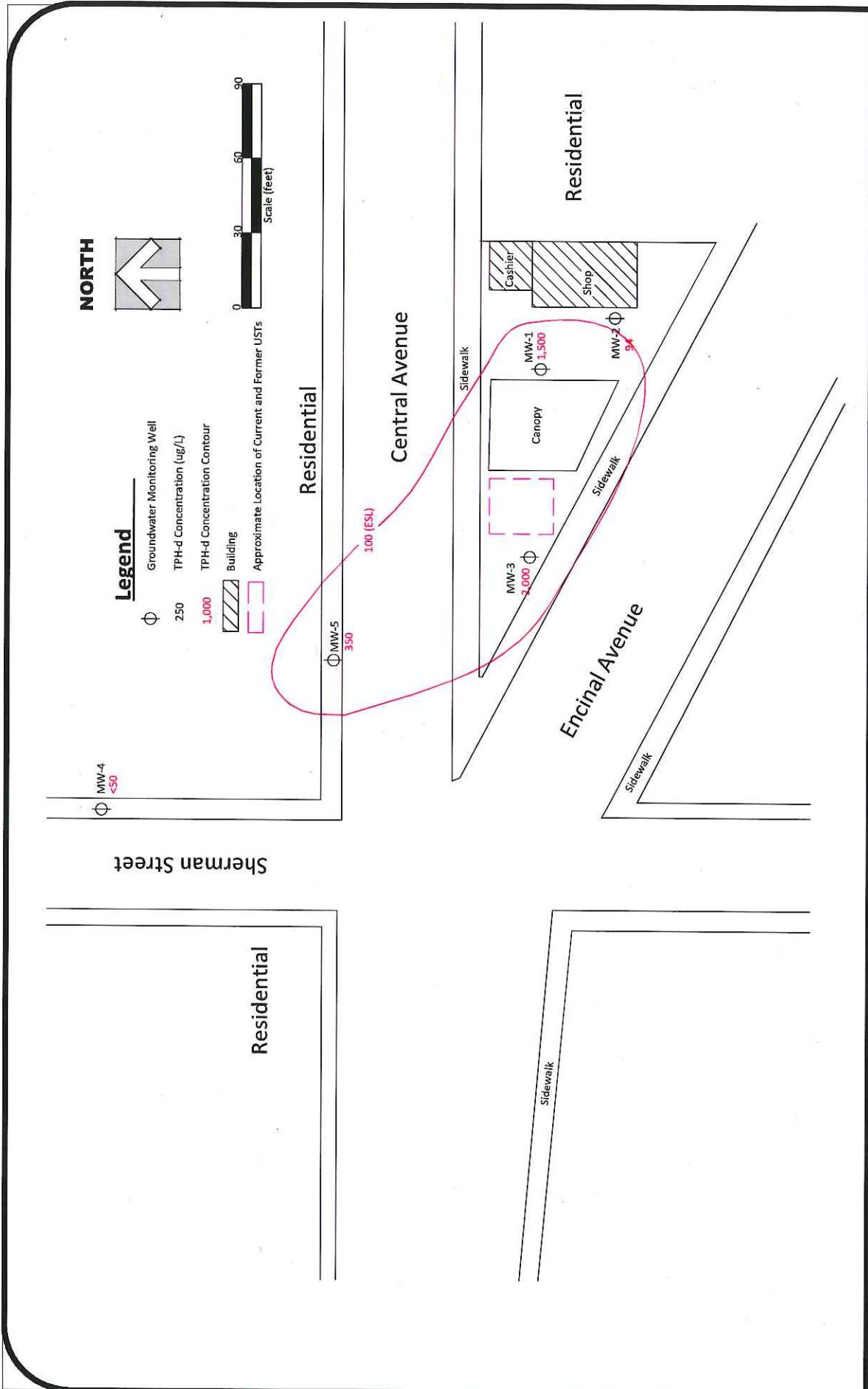
**Cook Environmental Services, Inc.**  
 1485 Treat Blvd. Ste 203A  
 Walnut Creek, CA 94597  
 (925) 478-8390  
 tcook@cookenvironmental.com

**TPH-g Concentrations in Groundwater**  
**May 18, 2012**  
 Alameda Gas  
 1310 Central Avenue  
 Alameda, California

Project #: 1035  
 Date: 8/30/13  
 Scale: as shown

Figure: **7**

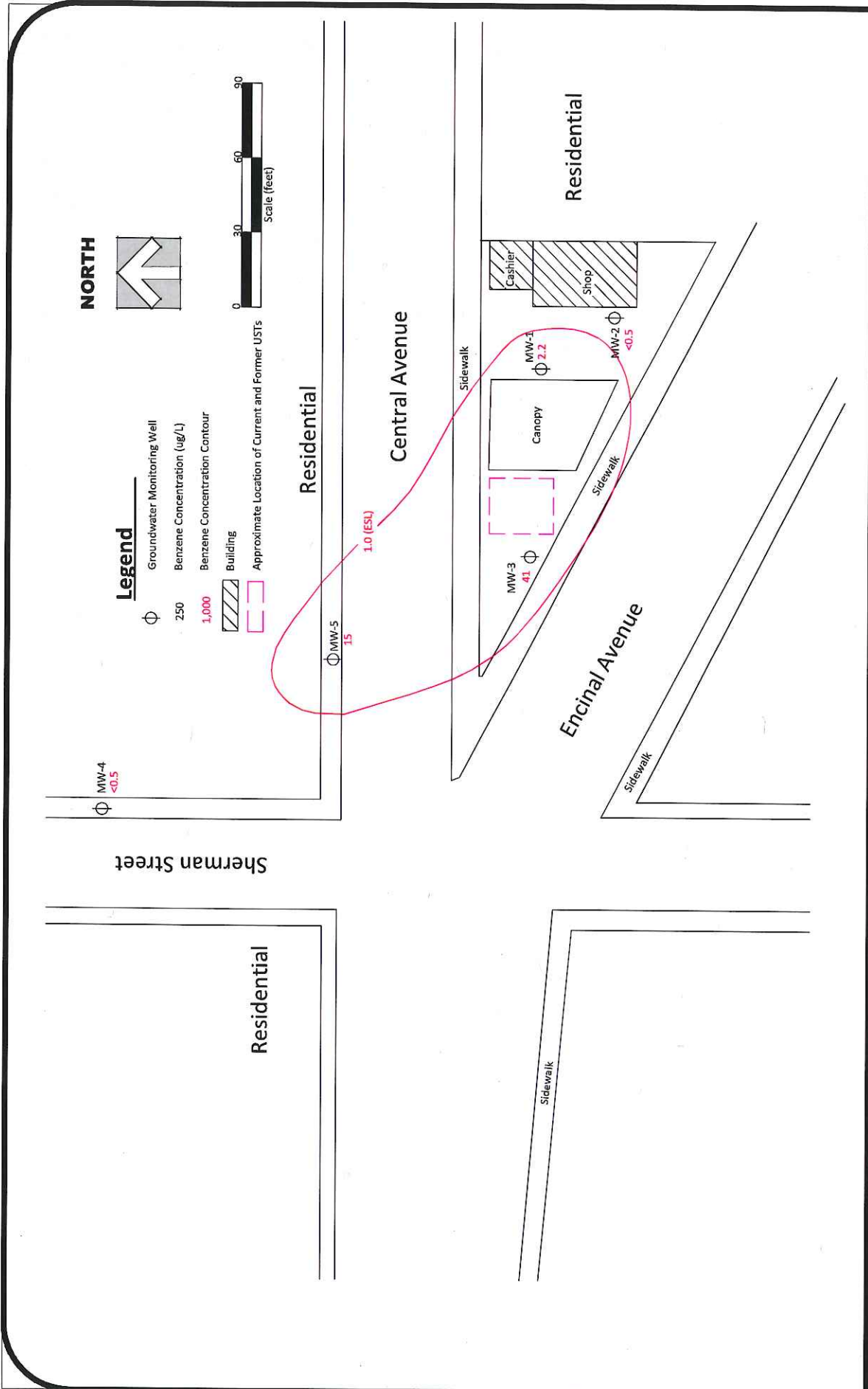




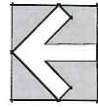
**Cook Environmental Services, Inc.**  
 1485 Treat Blvd. Ste 203A  
 Walnut Creek, CA 94597  
 (925) 478-8390  
 tcook@cookenvironmental.com

**TPH-d Concentrations in Groundwater**  
**May 18, 2012**  
 Alameda Gas  
 1310 Central Avenue  
 Alameda, California

Project #: 1035	Figure: <b>8</b>
Date: 8/30/13	
Scale: as shown	



**NORTH**



**Cook Environmental Services, Inc.**

1485 Treat Blvd. Ste 203A  
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**Benzene Concentrations in Groundwater**

**May 18, 2012**

Alameda Gas  
1310 Central Avenue  
Alameda, California

Project #: 1035

Date: 8/30/13

Scale: as shown

Figure:

**9**



# ATTACHMENT 4

**Table 3. Historical Soil Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Boring	Depth(ft)/Location	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates	Iron
1	Fuel Tank Ex.	05/02/96	5,000	NA	31	250	74	560	<5.0	NA	NA	NA	NA
2	Fuel Tank Ex.	05/02/96	2,900	NA	<2.0	16	8.3	190	<5.0	NA	NA	NA	NA
3	Fuel Tank Ex.	05/02/96	4,400	NA	25	190	75	400	<5.0	NA	NA	NA	NA
4	Fuel Tank Ex.	05/02/96	3,600	NA	2.6	34	21	250	<5.0	NA	NA	NA	NA
5	N. Waste Oil Tank	05/02/96	<5.0	<200	<0.05	<0.05	<0.05	<0.05	<0.10	NA	NA	NA	NA
6	Waste Oil Tank	05/08/96	470	<1,000	<0.25	<0.25	0.3	0.85	<0.50	NA	NA	NA	NA
D1	Beneath Dispenser	05/09/96	6,800	NA	63	370	120	680	<40	NA	NA	NA	NA
D2	Beneath Dispenser	05/09/96	3,700	NA	<10	20	9.7	280	<20	NA	NA	NA	NA
D3	Beneath Dispenser	05/09/96	1,500	NA	<4.0	<4.0	<4.0	20	<8.0	NA	NA	NA	NA
D5	Beneath Dispenser	05/09/96	2,600	NA	<8.0	28	12	200	<16	NA	NA	NA	NA
D6	Beneath Dispenser	05/09/96	<5.0	NA	<0.05	<0.05	<0.05	<0.05	<0.10	NA	NA	NA	NA
T1	Unknown Trench	05/09/96	2,100	NA	<4.0	5.7	<4.0	140	<8.0	NA	NA	NA	NA
T2	Unknown Trench	05/09/96	1,400	NA	<2.0	5.1	<2.0	20	<5.0	NA	NA	NA	NA
BH-1 4'	4	11/12/98	810	<1	27	170	110	560	<0.02	NA	NA	NA	NA
BH-1 8'	8	11/12/98	1,100	<1	9.8	33	11	64	<0.02	NA	NA	NA	NA
BH-2 4'	4	11/12/98	5,900	<1	2.9	76	57	410	1.8	NA	NA	NA	NA
BH-3 4'	4	11/12/98	570	<1	<0.005	0.065	0.073	0.38	<0.02	NA	NA	NA	NA
BH-4 3'	3	11/12/98	4,600	<1	<0.005	13	47	310	<0.02	NA	NA	NA	NA
BH-5 4'	4	11/12/98	3,700	<1	<0.005	3.2	29	190	<0.02	NA	NA	NA	NA
BH-6 4'	4	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-7 4'	4	11/12/98	2,600	<1	<0.005	<0.005	6.9	68	<0.02	NA	NA	NA	NA
BH-8 6'	6	11/11/98	270	<1	0.18	0.11	0.45	1.2	<0.02	NA	NA	NA	NA
BH-8 1 5'	5	11/11/98	<0.05	<1	<0.005	0.008	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-9 5'	5	11/11/98	<0.05	<1	<0.005	0.02	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-10 8'	8	11/11/98	250	300	<0.005	<0.005	0.19	1.4	<0.02	NA	NA	NA	NA
BH-11 5'	5	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-11 1 7'	7	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-12 5'	5	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-13 5'	5	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
BH-14 5'	5	11/11/98	<0.05	<1	<0.005	<0.005	<0.005	<0.015	<0.02	NA	NA	NA	NA
MW-1	4	10/11/99	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	NA	NA
MW-2	5	10/11/99	<1.0	6.8	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	NA	NA	NA	NA
BH-A	3.5	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-B	2.5	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-C	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-D	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-E	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-F	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-G	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-H	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-I	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-J	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	NA
BH-K	3	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-L	3.5	07/28/00	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-M	2.5	01/14/04	<1.0	68	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-N	2.5	01/14/04	<1.0	7.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-O	2	01/14/04	<1.0	2.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-P	2	01/14/04	<1.0	4.9	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-Q	2	04/03/06	<1.0	11	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BH-R	2	04/03/06	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA

**Table 3. Historical Soil Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Boring	Depth(ft)/Location	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates	Iron
MW-4	2	04/03/06	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
MW-5	2	04/03/06	<1.0	1.7	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NA
BX-1	6	11/12/10	860	100	2.5	1.1	11	2.2	<0.20	<0.20	<2.0	<0.20*	26000
BX-1	10	11/12/10	920	52	3.9	<1.0	5.3	8.5	<0.20	<0.20	<2.0	<0.20*	NA
BX-1	15	11/12/10	56	10	0.27	0.042	0.37	0.34	<0.050	<0.050	<0.50	<0.050*	NA
BX-1	20	11/12/10	6	<1.0	0.02	0.0065	0.041	0.032	0.007	<0.005	<0.05	<0.005*	NA
BX-2	5	11/12/10	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005*	NA
BX-2	10	11/12/10	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005*	9400
BX-2	14	11/12/10	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005*	NA
BX-3	5.5	11/12/10	26,000	4400	54	630	520	3400	<2.0	<2.0	<2.0	<2.0*	NA
BX-3	12	11/12/10	1	<1.0	<0.005	0.012	0.014	0.084	<0.005	<0.005	<0.05	<0.005*	NA
BX-3	15	11/12/10	12	<1.0	0.0068	0.23	0.19	1	<0.005	<0.005	<0.05	<0.005*	12000
BX-4	5	11/12/10	5,000	730	3.8	15	48	54	<0.50	<0.50	<5.0	<0.50*	NA
BX-4	10	11/12/10	1,400	170	<0.50	2.6	14	38	<0.20	<0.20	<2.0	<0.20*	18000
BX-4	15	11/12/10	1,100	53	<1.0	1.3	3	5.8	<0.20	<0.20	<2.0	<0.20*	NA
BX-4	20	11/12/10	1,300	73	<0.17	1.7	10	30	<0.20	<0.20	<2.0	<0.20*	NA

All Concentrations are in mg/kg

# ATTACHMENT 5

**Table 4. Historical Groundwater Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethylbenzene	xylene	MtBE	tAME	tBA	Other Oxygenates
MW-1	11/06/99	5,700	8,700	170	59	22	85	20,000	NA	NA	NA
	05/16/00	20,000	<7,500	38	6.3	740	1,600	<5.0	<5.0	<50	<5.0
	08/03/00	20,000	<6,000	56	9.7	920	1,600	<0.5	<0.5	<50	<0.5
	12/05/00	31,000	<4,000	64	27	820	2,200	<10	<5.0	<50	<5.0
	03/05/01	20,000	<4,000	19	<5.0	480	870	<5	<5.0	<50	<5.0
	06/04/01	23,000	<7,000	58	50	710	2,100	5.1	<5.0	<50	<5.0
	09/05/02	7,400	<1,500	9.3	6.7	180	230	<1.0	<1.0	<10	<1.0
	09/09/02	8,300	<3500	32	20	390	670	<2.0	<2.0	<20	<2.0
	12/19/02	5,100	NS	7.9	2.5	56	93	<1.0	<1.0	<10	<1.0
	03/10/03	2,000	<2,000	3.4	2.9	80	98	<0.5	<0.5	<5.0	<0.5
	06/03/03	7,300	<4,000	6.8	9.9	300	1,000	2.3	<0.5	<5.0	<0.5
	09/19/03	9,000	<3,000	26	22	420	1,200	4.5	<1.5	<20	<1.5
	12/22/03	4,300	<2,000	12	6.7	200	290	9.1	<1.0	<10	<1.0
	03/12/04	7,000	<3,000	8.3	8.2	250	760	3.9	<2.0	<20	<2.0
	06/11/04	13,000	<4,000	26	27	530	1,700	<2.5	<2.5	<15	<2.5
	09/13/04	17,000	<4,000	37	42	840	2,000	<5.0	<5.0	<50	<5.0
	12/16/04	1,800	<1,000	5.9	1.9	100	35	16	<0.5	<5.0	<0.5
	03/21/05	7,500	<3,000	3.4	4.2	290	760	<1.5	<1.5	<20	<1.5
	06/23/05	11,000	<8,000	15	11	370	910	2.4	<1.5	<7.0	<1.5
	09/30/05	9,800	<4,000	32	25	540	680	1.6	<1.5	<7.0	<1.5
	12/08/05	9,200	<4,000	27	21	500	490	2.2	<1.5	<7.0	<1.5
	03/01/06	6,500	<4,000	8.1	9.4	370	660	18	<1.5	<6.0	<1.5
	05/25/06	10,000	<3,000	19	14	900	620	<1.5	<1.5	<7.0	<1.5
	08/10/06	9,800	<1,500	16	8.1	640	180	<1.5	<1.5	<7.0	<1.5
	11/21/06	2,900	<1,000	7.8	2.5	160	12	2.5	2.5	<5.0	<0.5
	02/06/07	4,600	<1,500	9.4	6	380	220	1	<0.50	<5.0	<0.50
	05/08/07	3,700	<800	10	4.6	320	86	1.5	<0.50	<5.0	<0.50
	08/06/07	8,200	<2,000	14	8.8	730	180	<0.50	<0.50	<5.0	<0.50
	12/26/07	1,200	<300	2.3	1.1	89	21	4.8	<0.50	<5.0	<0.50
	03/31/08	2,000	<800	2.2	1.6	99	75	1.8	<0.50	<5.0	<0.50
	06/28/08	8,400	3900*	18	26	670	1,100	<2.5	<2.5	<10	<2.5
	09/27/08	12,000	4600*	32	49	1,200	680	<25	<25	<100	<25
12/30/08	5,300	3,700	12	31	300	27	7.1	<5.0	<20	<5.0	
03/28/09	1,900	920*	<1.7	<1.7	77	58	22	<1.7	<6.7	<1.7	
09/12/09	7,800	9,400	34	110	690	200	3.0	<0.5	140	<0.5	
03/30/10	1,700	700*	2.1	14	40	9.5	14	<0.5	7.8	<0.5	
09/30/10	2,300	6,500*	8.5	23	150	29	4	<0.5	2.2	<0.5	
01/20/11	1,100	590	0.85	6.6	34	42	7.7	<0.5	<2.0	<0.5	
12/15/11	3,000	1,700	12	16	230	120	<50	NA	NA	NA	
03/29/12	1,500	1,300	2.5	17	20	17	<10	NA	NA	NA	
05/18/12	2,700	1,500	2.2	18	41	41	ND	NA	NA	NA	

**Table 4. Historical Groundwater Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethylbenzene	xylene	MIBE	tAME	tBA	Other Oxygenates	
MW-2	11/06/99	6,000	70	1,300	92	50	400	6,800	NA	NA	NA	
	05/16/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	08/03/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	12/05/00	<50	1,400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	03/05/01	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	06/04/01	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	06/05/02	<50	2,300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	09/09/02	<50	1,300	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<5.0	<0.5	
	12/19/02	<50	-	<0.5	<0.5	<0.5	<0.5	16	<0.5	<5.0	<0.5	
	03/10/03	<50	3,000	<0.5	<0.5	<0.5	<0.5	1	<0.5	<5.0	<0.5	
	06/03/03	<50	700	<0.5	<0.5	<0.5	<0.5	2	<0.5	<5.0	<0.5	
	09/19/03	<50	1,400	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<5.0	<0.5	
	12/22/03	<50	1,000	<0.5	<0.5	<0.5	<0.5	39	<0.5	<5.0	<0.5	
	03/12/04	<50	250	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	<5.0	<0.5	
	06/11/04	<50	920	<0.5	<0.5	<0.5	<0.5	0.75	<0.5	<5.0	<0.5	
	09/13/04	<50	140	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<5.0	<0.5	
	12/16/04	<50	150	<0.5	<0.5	<0.5	<0.5	12	<0.5	<5.0	<0.5	
	03/21/05	<50	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	06/23/05	<50	1,100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	09/30/05	<50	300	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<5.0	<0.5	
	12/08/05	<50	600	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<5.0	<0.5	
	03/01/06	<50	920	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	05/25/06	<50	160	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	08/10/06	<50	870	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	11/21/06	<50	130	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<5.0	<0.5	
	02/06/07	<50	450	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	05/08/07	<50	160	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	08/06/07	<50	180	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	12/26/07	<50	190	<0.5	<0.5	<0.5	<0.5	2.9	<0.5	<5.0	<0.5	
	03/31/08	Inaccessible Not Sampled										
	06/28/08	<50	180	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<2.0
	09/27/08	<50	78	<0.5	<0.5	<0.5	<0.5	7	<0.5	<2.0	<0.5	
	12/30/08	<50	100	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	<0.5	
03/28/09	<50	60	<0.5	<0.5	<0.5	<0.5	5.4	<0.5	<0.5	<0.5		
09/12/09	<50	91	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<2.0	<0.5		
03/30/10	<50	150	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<2.0	<0.5		
09/30/10	<50	310	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5		
01/20/11	<50	90	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<2.0	<0.5		
12/15/11	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA		
03/29/12	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA		
05/18/12	<50	94	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA		

**Table 4. Historical Groundwater Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Well ID	Date	TPH-g	TPH-d	benzen e	toluen e	ethyl- benzen e	xylene s	MtBE	tAME	tBA	Other Oxygenat es
MW-3	11/06/99	43,000	870	860	70	<0.5	65	120,000	NA	NA	NA
	05/16/00	17,000	<5,000	2,800	60	380	190	990	9.1	350	<5.0
	08/03/00	16,000	<2,000	1,600	29	210	53	1,200	21	260	<2.0
	12/05/00	17,000	5800	1,700	45	460	240	1,100	21	230	<5.0
	03/05/01	29,000	<1,300	2,100	68	280	100	180	<8.0	<80	<8.0
	06/04/01	17,000	<6,000	2,000	56	340	230	300	<10	130	<10
	06/05/02	11,000	<2,000	1,600	46	210	47	790	<10	220	<10
	09/09/02	12,000	<800	1,400	44	130	27	760	<10	160	<5.0
	12/19/02	10,000	NS	740	32	180	38	86	<5.0	<50	<5.0
	03/10/03	13,000	<6,000	1,200	42	240	35	470	5.3	140	<2.5
	06/03/03	6,500	<3,000	750	21	46	15	1,300	<50	280	<10
	09/19/03	9,800	<3,000	1,500	38	170	32	420	<10	150	<5.0
	12/22/03	8,800	<2,000	1,100	32	82	20	330	5.8	52	<2.5
	03/12/04	7,600	<3,000	590	23	69	17	470	9.2	63	<1.5
	06/11/04	7,800	<2,000	840	19	58	15	710	12	140	<2.5
	09/13/04	7,500	<1,500	840	17	23	7.8	730	15	93	<2.5
	12/16/04	9,300	<2,000	1,100	26	76	13	600	12	130	<2.5
	03/21/05	11,000	<3,000	1,200	37	190	24	460	9.3	100	<2.5
	06/23/05	9,600	<4,000	1,100	28	93	23	370	8.2	67	<1.5
	09/30/05	9,000	<3,000	690	18	32	14	380	8.4	72	<1.5
	12/08/05	8,700	<3,000	560	23	38	12	350	6.9	82	<1.5
	03/01/06	8,400	<2,000	410	24	42	13	360	8	58	<1.5
	05/25/06	9,900	<2,000	630	25	13	13	190	5.3	59	<1.5
	08/10/06	14,000	<3,000	690	43	130	26	200	5.4	70	<1.5
	11/21/06	10,000	<3,000	580	37	96	25	240	6.3	72	<1.5
	02/06/07	7,700	<1,000	520	36	90	23	260	7.4	54	<1.5
	05/08/07	4,700	<800	150	0.86	<0.5	<0.5	170	5	52	<0.5
	08/06/07	6,000	<1,000	240	26	34	17	180	5	55	<0.5
	12/26/07	8,100	<1,500	76	14	17	12	150	4.3	37	<0.9
	03/31/08	7,900	<1,500	250	30	62	20	140	4.5	47	<0.90
	06/28/08	6,400	3,100*	97	17	19	13	200	5.6	38	<5.0
	09/27/08	11,000	15,000*	190	24	29	16	160	<5.0	40	<5.0
12/30/08	9,100	2,300*	160	24	31	18	150	5	100	<5.0	
03/28/09	9,200	4,300*	150	25	34	22	120	<5.0	38	<5.0	
09/12/09	6,100	2,700*	110	21	14	18	170	<5.0	38	<0.5	
03/30/10	12,000	12,000*	200	25	35	23	96	<5.0	58	<5.0	
09/30/10	6,300	5,100	110	14	6.2	16	110	3.8	16	<2.5	
01/20/11	7,700	3,500	100	20	20	16	85	3.4	41	<1.7	
12/15/11	6,800	2,500	58	16	18	12	<150	NA	NA	NA	
03/29/12	6,900	2,500	84	16	14	15	<90	NA	NA	NA	
05/18/12	5,300	2,000	41	21	14	24	ND<80	NA	NA	NA	



**Table 4. Historical Groundwater Analytical Results  
Alameda Gas, 1310 Central Avenue, Alameda**

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethylbenzene	xylene	MtBE	tAME	tBA	Other Oxygenates
MW-4	05/25/06	410	<80	<2.5	<2.5	<2.5	<2.5	1800	28	44	<2.5
	08/10/06	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<5.0	<0.5
	11/21/06	<50	<50	<0.5	<0.5	<0.5	<0.5	0.59	<0.5	<5.0	<0.5
	02/06/07	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	05/08/07	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
	08/06/07	<50	<50	<0.5	<0.5	<0.5	<0.5	0.82	<0.5	<5.0	<0.5
	12/26/07	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<5.0	<0.5
	03/31/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<5.0	<0.5
	06/28/08	<50	88	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<2.0	<0.5
	09/27/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<5.0	<0.5
	12/30/08	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5
	03/28/09	<50	<50	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5
	09/12/09	<50	240	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<2.0	<0.5
	03/30/10	<50	<50	<0.5	<0.5	<0.5	<0.5	0.58	<0.5	<2.0	<0.5
	09/30/10	<50	<50	<0.5	<0.5	<0.5	<0.5	0.76	<0.5	<2.0	<0.5
	01/20/11	<50	210	<0.5	<0.5	<0.5	<0.5	0.70	<0.5	<2.0	<0.5
	12/15/11	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
03/29/12	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	
05/18/12	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	
MW-5	05/25/06	<50	86	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<5.0	<0.5
	08/10/06	55	<50	<0.5	<0.5	<0.5	<0.5	1,100	19	9.1	<0.5
	11/21/06	<250	<50	<2.5	<2.5	<2.5	<2.5	1,500	25	28	<2.5
	02/06/07	430	<50	6.9	<2.5	<2.5	<2.5	1,600	26	34	<2.5
	05/08/07	<250	<50	<2.5	<2.5	<2.5	<2.5	1,200	20	38	<2.5
	08/06/07	330	<80	<2.5	<2.5	<2.5	<2.5	1,000	20	39	<2.5
	12/26/07	490	<50	<2.5	<2.5	<2.5	<2.5	1,000	18	28	<2.5
	03/31/08	520	<100	6.0	1.9	<1.5	2.5	520	16	33	<1.5
	06/28/08	510	290*	6.2	1.0	<0.5	2.3	550	11	<40	<10
	09/27/08	670	320*	<17	<17	<17	<17	650	<17	95	<17
	12/30/08	210	130*	<0.5	0.8	0.99	<0.5	610	12	<40	<10
	03/28/09	200	100*	<17	<17	<17	<17	610	<17	<67	<17
	09/12/09	230	130*	1.6	1.3	<0.5	1.4	540	11	<40	<10
	03/30/10	360	170*	2.0	1.7	<0.5	1.3	490	13	<40	<10
	09/30/10	710	310	10	2.6	<1.0	3.1	400	<10	<40	<10
	01/19/11	340	280	3.0	2.0	<0.5	1.2	450	<10	100	<10
	12/15/11	180	87	0.93	0.72	<0.5	0.54	220	NA	NA	NA
03/29/12	250	61	2.2	1.3	<0.5	0.95	250	NA	NA	NA	
05/18/12	760	350	15.00	3.10	0.57	4.3	220	NA	NA	NA	
ESL		100	100	1.0	40	30	20	5	NE	12	NA

**Notes:**

Units are micrograms per liter (ug/L).

NT analyte not tested

TPH-g total petroleum hydrocarbons as gasoline

TPH-d total petroleum hydrocarbons as diesel

\* Laboratory noted that TPH-g range is significant

ESL Environmental Screening Limits

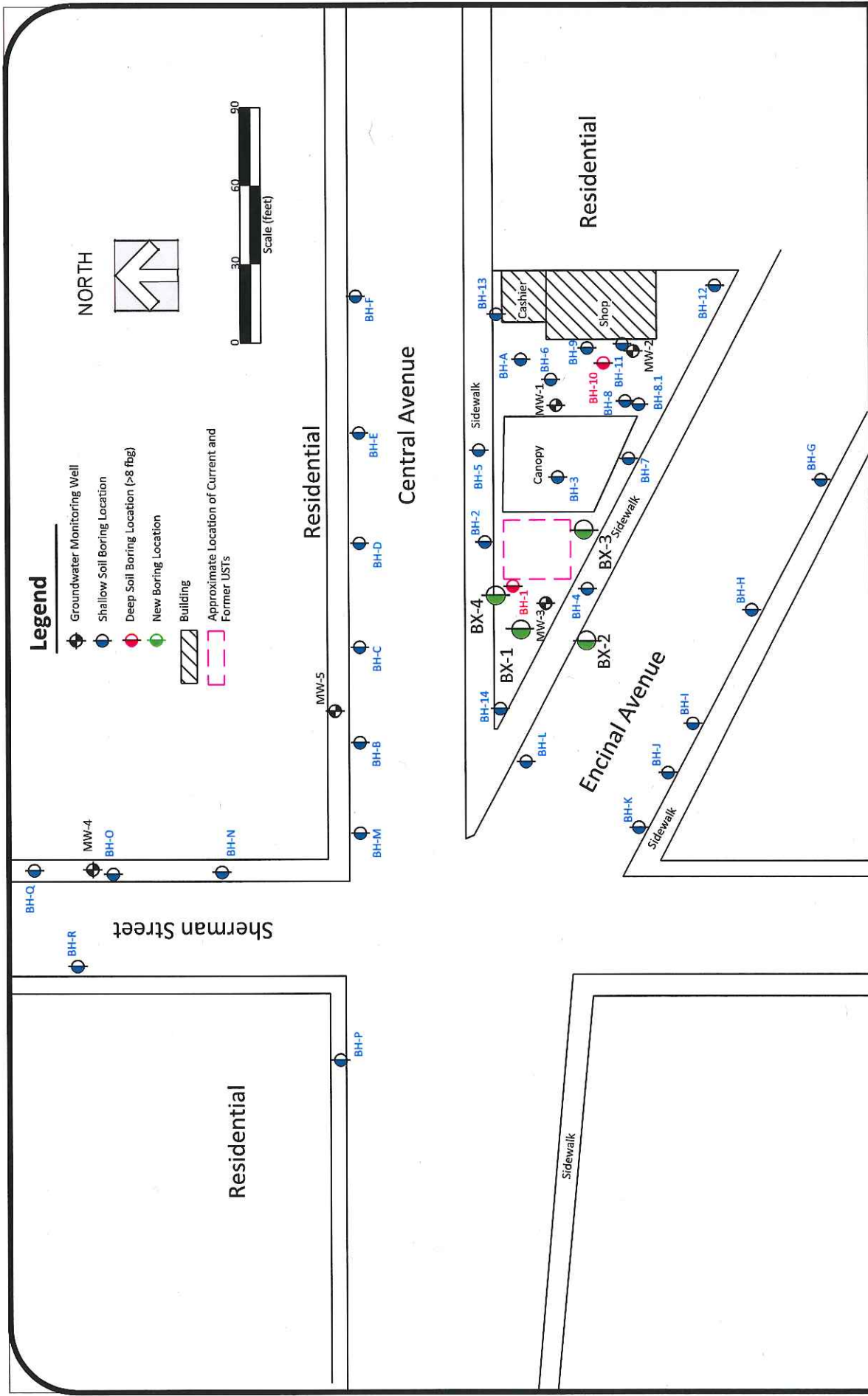
MtBE methyl tert-butyl ether

tAME tert-amyl methyl ether

tBA tert-butanol



# ATTACHMENT 6



Project #: 6022	Figure: <b>3</b>
Date: 11/15/2010	
Scale: as shown	

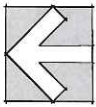
**Boring Locations**

Alaska Gasoline  
 1310 Central Avenue  
 Alameda, California



321 Court Street  
 Lic. No. 933586  
 Woodland, California 95695  
 (530) 406-1760 Fax# (530) 406-1760

NORTH



Residential

Sherman Street

BH-R

BH-P

Residential

Central Avenue

MW-5

BH-M

BH-B

BH-C

BH-D

BH-E

BH-F

Sidewalk

BH-13

BH-5

BH-2

BX-4

BH-1

BH-3

MW-3

BH-4

BX-2

BH-14

BH-1

BH-3

5,730

972

30,700

BX-3

BH-4

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

BH-1

BH-3

Sidewalk

Legend

Groundwater Monitoring Well

Boring Location

Building

Approximate Location of Current and Former USTs



Encinal Avenue

Residential

Sidewalk

BH-K

BH-J

BH-I

BH-H

BH-G

BH-F

BH-E

BH-D

BH-C

BH-B

BH-A

BH-10

BH-11

BH-12

BH-13

BH-14

BH-15

BH-16

BH-17

0

30

60

Scale (feet)

Cook Environmental Services, Inc.

1485 Treat Blvd. Ste 203A  
Walnut Creek, CA 94597  
(925) 478-8390  
tcook@cookenvironmental.com

Soil Boring and Monitoring Well Locations

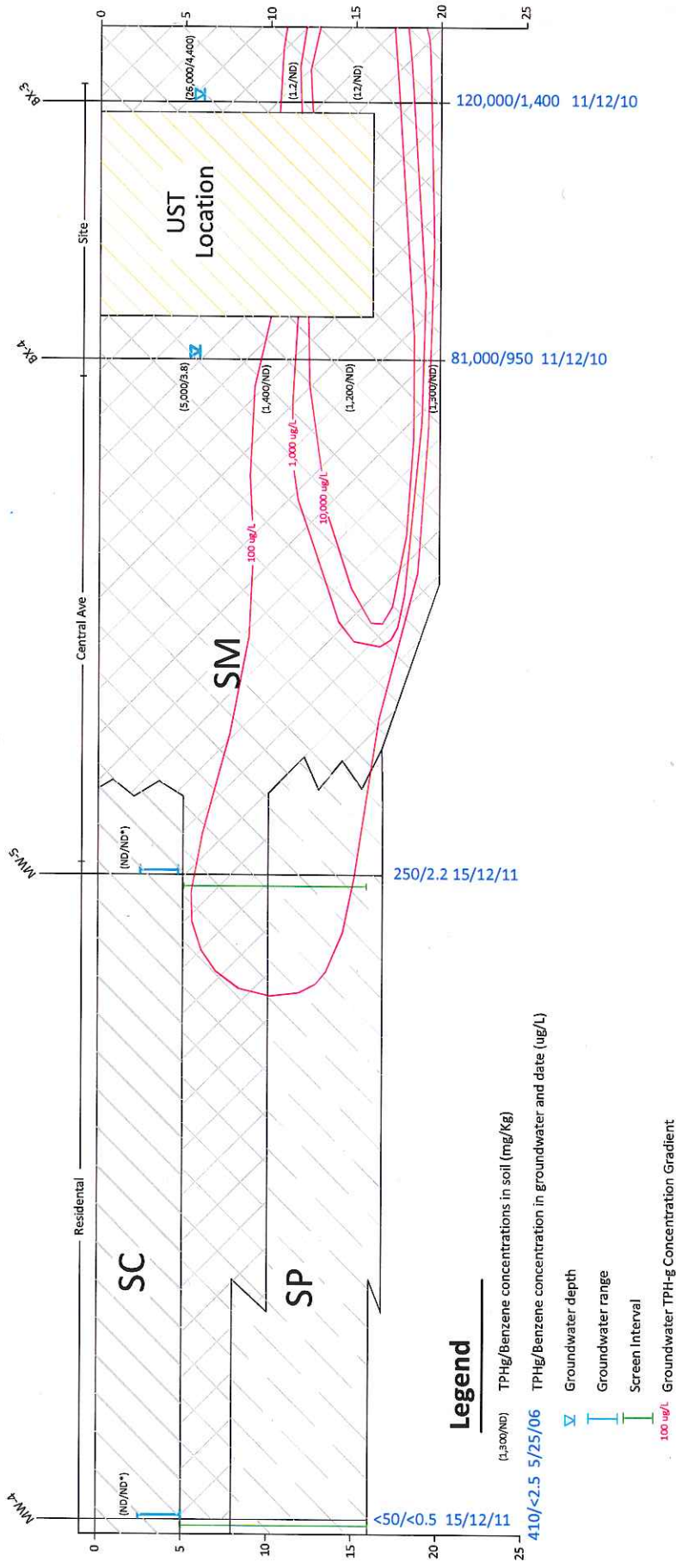
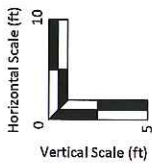
Alameda Gas  
1310 Central Avenue  
Alameda, California

Project #: 1035

Date: 8/30/13

Scale: as shown

Figure: 5



**Cook Environmental Services, Inc.**

1485 Treat Blvd. Ste 203A  
Walnut Creek, CA 94597  
(925) 478-8390  
tcook@cookenvironmental.com

## North-South Geologic Cross Section

Alameda Gas  
1310 Central Avenue  
Alameda, California

Project #: 1035

Date: 8/30/13

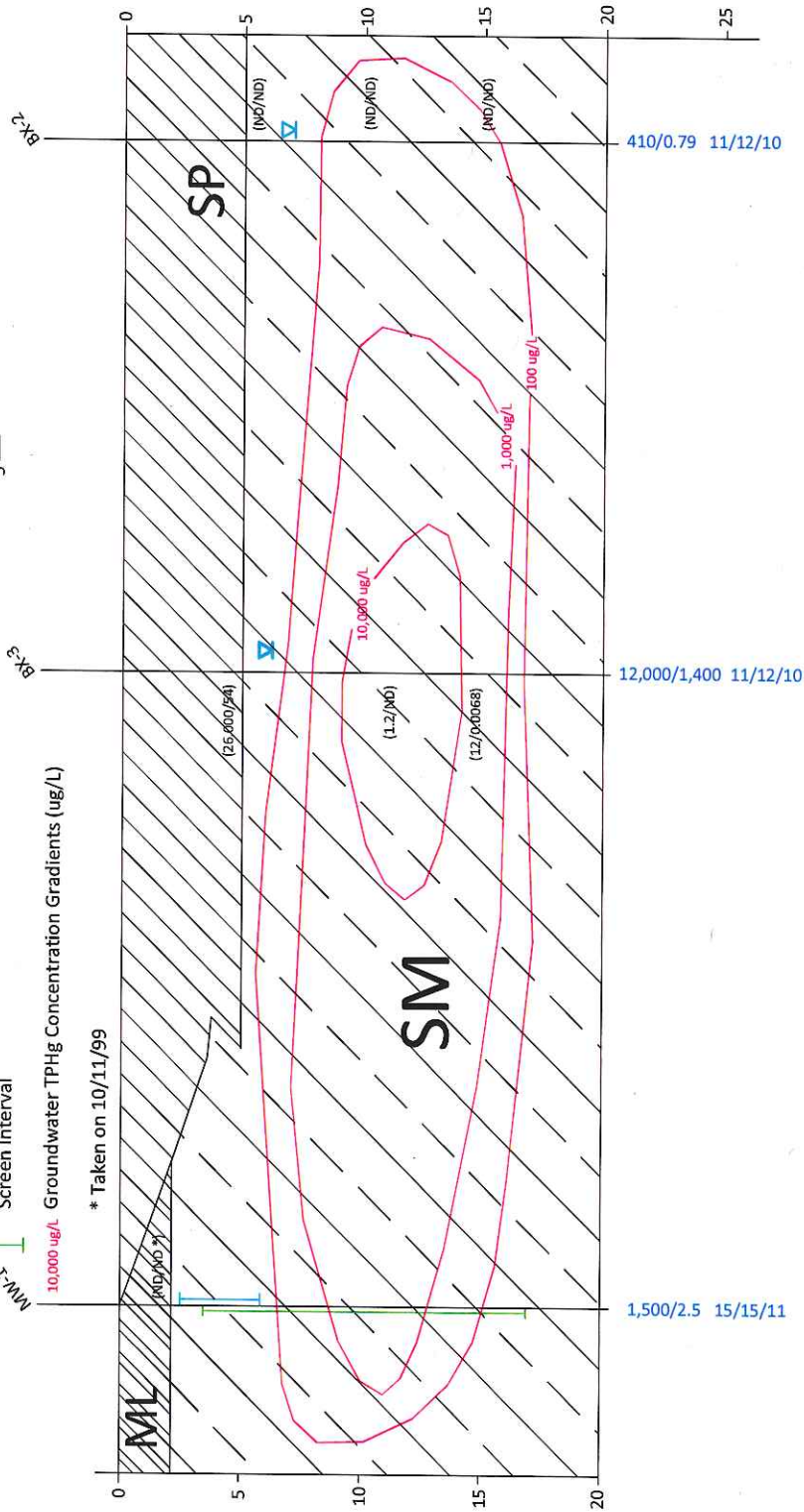
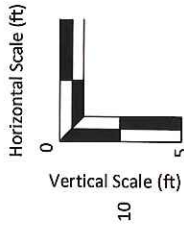
Scale: as shown

Figure:  
**10**



# Legend

- (1,300/ND) TPHg/Benzene concentrations in soil (mg/Kg)
- 410/<2.5 5/25/06 TPHg/Benzene concentration in groundwater and date (ug/L)
- Groundwater depth
- Groundwater range
- Screen Interval



**Cook Environmental Services, Inc.**  
 1485 Treat Blvd. Ste 203A  
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 tocook@cookenvironmental.com

**East-West Geologic Cross Section**  
 Alameda Gas  
 1310 Central Avenue  
 Alameda, California

Project #: 1035  
 Date: 8/30/13  
 Scale: as shown

Figure: **11**

# ATTACHMENT 7

**Figure 12. TPH and Benzene Trends in Well MW-1  
Alameda Gas , 1310 Central Avenue, Alameda**

