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September 16, 2009

Paresh C. Khatri
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

SUBJECT: Fuel Leak Case No. RO0000022
1310 Central Avenue
Alameda, CA
Report Submittal – Site Investigation Work Plan, 09/16/09

Dear Mr. Khatri:

Please find enclosed the *Site Investigation Work Plan, 09/16/09*, prepared by Matriks for Nissan Saidian, Joe Zadik, and Leon Zektser

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document are true and correct to the best of my knowledge.

Please call me at 530-406-1760 or email thenderson@matrikscorp.com if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tom Henderson".

Tom Henderson
President

SITE INVESTIGATION WORKPLAN

**Alaska Gas
1310 Central Avenue
Alameda, California 94501
LOP Case No. RO0000022**

PREPARED FOR:
Nissan Saidian
5733 Medallion Court
Castro Valley, California 94520

SUBMITTED TO:
Alameda County Environmental Health Services
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

September 16, 2009

Project No. 6022



PREPARED BY:
Matriks Corporation
321 Court Street
Woodland, California 95695

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PROFESSIONAL CERTIFICATION

SITE INVESTIGATION WORKPLAN

**Alaska Gas
1310 Central Avenue
Alameda, California 94501
LOP Case No. RO0000022**



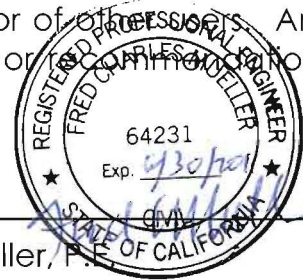
**Project No. 6022
September 16, 2009**

Matriks Corporation prepared this document under the professional supervision of the person whose seal and signature appears hereon. No warranty, either expressed or implied, is made as to the professional advice presented herein. The analysis, conclusions, and recommendations contained in this document are based upon site conditions at the time of the investigation, which are subject to change.

The conclusions presented in this document are professional opinions based solely upon visual observations of the site and vicinity, and interpretation of available information as described in this report. The limited scope of services performed in execution of this investigation may not be appropriate to satisfy the needs, or requirements of other regulatory agencies, or of other professionals. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.

A handwritten signature in blue ink, appearing to read "Tom Henderson", written over a horizontal line.

Tom Henderson
President



Fred Mueller, P.E.
Senior Engineer

ACRONYMS AND ABBREVIATIONS

ACEHS	Alameda County Environmental Health Services
AEI	All Environmental, Inc.
amsl	above mean sea level
ASE	Aqua Science Engineers, Inc.
bgs	below grade surface
BTEX	benzene, toluene, ethyl-benzene, xylenes
DCA	1,2-dichloroethane
DIPE	di-isopropyl ether
EDB	ethylene di-bromide
EDC	ethylene dichloride
EtBE	ethyl tert-butyl ether
Matriks	Matriks Corporation
MtBE	methyl tert-butyl ether
µg/L	micrograms per liter
mg/Kg	milligrams per kilogram
MW	monitoring well
PID	photo-ionization detector
PVC	polyvinyl chloride
tAME	tert-amyl methyl ether
tBA	tert butyl alcohol
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
USA	Underground Service Alert
UST	underground storage tank

INTRODUCTION

This *Site Investigation Work Plan* (Work Plan) has been prepared by Matriks Corporation for Alaska Gas, located at 1310 Central Avenue in Alameda, California. The Work Plan was requested by Alameda County Environmental Health Services (ACEHS) in an August 13, 2009 letter to the responsible parties. The purpose of the Work Plan is to provide a description of drilling techniques that will be used to install soil borings at the Site. These borings will be used to define the vertical extent of contamination and help evaluate potential remedial methods to address fuel-related contamination in soil and shallow groundwater. The contamination was caused by a release of petroleum hydrocarbons from former underground storage tanks (USTs) and/or the associated piping formerly at the Site. ACEHS is the lead regulatory agency overseeing this investigation. The case number for the Site is RO0000022. This Work Plan has been prepared in accordance with the requirements of the California Code of Regulations Title 23, Division 3, Chapter 16, Article 11.

Site Description and Physical Setting

The Site is currently a gas station located in an area of mixed commercial and residential properties in the south-central part of Alameda. The Site is located at the intersection of Encinal Avenue, Sherman Street and Central Avenue. A Site location map is shown on **Figure 1** and a site plan showing physical features, boring and monitoring well locations is shown on **Figure 2**.

The Site is relatively flat and the investigation area has a surface elevation of approximately 25 feet above mean sea level (amsl). San Francisco Bay and the Alameda Estuary are located approximately one half mile from the Site.

PROJECT BACKGROUND AND DATA SUMMARY

In May 1996, Petrotek removed four USTs from the Site. One 10,000-gallon, one 7,500-gallon and one 5,000-gallon UST formerly containing gasoline were removed from the western corner of the Site. A 500-gallon waste oil tank was removed from next to the building in the southern portion of the Site. Pump dispensers and related product piping were also removed.

Free product was observed floating on the groundwater in the gasoline UST excavation. A water sample from the gasoline UST excavation yielded 2,800 microgram per liter ($\mu\text{g}/\text{L}$) of TPH-g and 100 $\mu\text{g}/\text{L}$ benzene. Soil samples collected from this same excavation yielded up to 5,000 milligrams per kilogram (mg/Kg) of total petroleum hydrocarbons as gasoline (THP-g) and 31 mg/Kg benzene. Soil samples collected from beneath the pump island yielded up to 6,800 mg/Kg TPH-g and 63 mg/Kg benzene. A water sample from the waste oil excavation yielded

35,000 µg/L of diesel and motor oil range hydrocarbons, and 1,300 µg/L of TPH-g. These results are documented in a *UST Closure Report* submitted by Petrotek in May 1996.

Petrotek reportedly excavated and disposed of approximately 600 cubic yards of contaminated soil from both UST excavations. Approximately 15,000 gallons of water were pumped from the excavations, treated and discharged to the sanitary sewer. Two new USTs, dispensers and product piping were installed after the excavation work was completed.

In November 1998, All Environmental, Inc. (AEI) drilled 14 soil borings at the Site and collected soil and groundwater samples for analysis. Up to 5,900 mg/Kg of TPH-g was detected in soil samples collected from the borings. Up to 120,000 µg/L TPH-g and 7,200 µg/L benzene were detected in groundwater samples from the borings.

In October 1999, HerSchy Environmental installed three monitoring wells at the Site. The initial sampling yielded up to 43,000 µg/L TPH-g, 8,700 µg/L total petroleum hydrocarbons as diesel (TPH-d), 480 µg/L benzene, and 1,600 µg/L methyl tert-butyl ether (MtBE) were detected in groundwater samples from the wells. The groundwater flow direction was southwesterly under a gradient of 0.0085. Well construction details are presented in **Table 1**.

On May 16, 2000, Aqua Science Engineers (ASE) began quarterly monitoring at the Site. Groundwater samples collected from MW-1 contained 20,000 µg/L TPH-g, 38 µg/L benzene, 6.3 µg/L toluene, 740 µg/L ethyl benzene, and 1,600 µg/L total xylenes. No MtBE or other oxygenates were detected in the sample from MW-1. No hydrocarbons were detected in the groundwater sample taken from MW-2. The groundwater sample from MW-3 contained 17,000 µg/L TPH-g, 2,800 µg/L benzene, 60 µg/L toluene, 380 µg/L ethyl benzene, 190 µg/L total xylenes, 990 µg/L MtBE, 9.1 µg/L tert-amyl methyl ether (TAME), and 350 µg/L tert butyl alcohol (tBA).

On July 28, 2000, ASE collected soil and groundwater samples from 12 Geoprobe borings (borings BH-1 through BH-L) to delineate the extent of down gradient contamination. The soil samples collected from 3.0 feet below grade surface (bgs) in boring BH-J contained 0.00061 mg/Kg of MtBE. There were no hydrocarbons or oxygenates detected in soil samples from the remaining borings. The groundwater samples collected from boring BH-A contained 0.7 µg/L toluene and 0.9 µg/L total xylenes. The groundwater samples collected from boring BH-B contained 1,800 µg/L TPH-g, 270 µg/L benzene, 8.8 µg/L toluene, 18 µg/L ethyl benzene, 13 µg/L total xylenes, 4,100 µg/L MtBE, 5.6 µg/L TAME, and 440 µg/L TBA. The groundwater samples collected from boring BH-C contained 230 µg/L TPH-g, 11 µg/L benzene, 1.2 µg/L toluene, 0.98 µg/L total xylenes, 760 µg/L MtBE, 6.6 µg/L TAME, and 130 µg/L TBA. The groundwater sample collected from boring BH-D contained 72 µg/L TPH-d and 1.7 µg/L MtBE. The groundwater sample collected from boring BH-I contained 0.55 µg/L MtBE. The groundwater sample collected from boring BH-J contained 200 µg/L TPH-d. The groundwater sample collected from boring BH-K contained 520 µg/L TPH-d and 0.77 µg/L MtBE. The groundwater sample collected from boring BH-L contained 2.5 µg/L MtBE. Historical analytical results for soil and groundwater investigations are presented in **Tables 2** and **Table 3**, respectively.

In December 2002, ASE performed a conduit study to investigate whether subsurface utility lines could provide a pathway for the movement of groundwater. ASE requested Underground Service Alert (USA) to mark underground utilities in the Site vicinity as well as reviewed sewer line maps at the Alameda City Public Works Agency. ASE also called other agencies whose marks were not visible in the street areas to confirm that no lines were present in those areas. Results of the conduit study indicate that while groundwater is likely present in the utility trenches, it does not appear that the utility lines act as a conduit for the movement of groundwater. This conclusion was based on the reasonable assumption that the backfill of the utility trenches is the exact same sandy material as the native material and that the Geoprobe borings containing the highest hydrocarbon concentrations are located beyond the conduits and their associated trenches. Although ASE concluded that the utility lines did not provide a pathway for the movement of groundwater, the ACEHS requested that water samples be collected from the sewer to determine whether contaminated groundwater may have entered the sewer line through seams or cracks.

In January 2004, ASE drilled four soil borings at the Site, BH-M through BH-P. The soil samples from all four borings contained very low concentrations of TPH-d, with the highest concentration from BH-M being 68 mg/Kg. No TPH-d, benzene, toluene, ethyl-benzene, xylenes (BTEX) or oxygenates were detected in any of the other soil samples. The groundwater samples collected from all four borings contained TPH-d at concentrations up to 170 µg/L. The groundwater sample collected from boring BH-O contained 19 µg/L MtBE. None of the other samples contained detectable concentrations of TPH-g, BTEX or oxygenates.

Groundwater samples were also collected from the sewer line beneath Central Avenue, both upgradient and downgradient of the Site. Low concentrations of TPH-g were detected in both samples. No BTEX or oxygenates were detected in either of these samples.

In December 2005, ASE conducted a records search at the Alameda City Public Works Agency and the California Department of Water Resources to identify water wells within a ½ mile radius of the Site. A total of 25 wells were located in the search area. The results include three domestic wells, 10 irrigation wells, one industrial, two cathodic protection wells, four are monitoring wells, and five are vapor extraction wells. The closest well is located more than 1,000 feet east of the Site. The closest, potentially downgradient, well is located approximately 1,260 feet northwest of the Site. ASE proposed additional soil and groundwater assessment for the Site.

In April 2006, ASE installed two additional borings and two monitoring wells at the Site. Borings BH-Q, BH-R and monitoring wells MW-4 and MW-5 were installed using a drill rig equipped with an 8-inch hollow-stem auger. The only hydrocarbons detected were 11 mg/Kg TPH-d in the sample from BH-Q and 1.7 mg/Kg TPH-d from the boring for MW-5. For both samples, the laboratory noted that the hydrocarbons reported as TPH-D did not exhibit a typical diesel chromatogram pattern. None of the soil samples contained detectable concentrations of TPH-g, BTEX or oxygenates.

Groundwater samples collected during this phase of the investigation detected hydrocarbon concentrations in samples taken from BH-Q and BH-R. BH-Q yielded 220 µg/L TPH-d and BH-R yielded 770 µg/L TPH-d. Similar to the soil samples, the laboratory noted the hydrocarbons reported as TPH-d did not exhibit a typical diesel chromatogram pattern. Based on the results of their investigation, ASE did not recommend further definition of the extent of hydrocarbons.

From April 2006 to present, the Site has been monitored on a quarterly basis. Analytical results from groundwater monitoring events are presented in **Table 4**.

The ACEHS requested the preparation of a work plan to further investigate the extent of the release, define the contaminate plume, and evaluate on and off-site risks. This Work Plan has been prepared in accordance with an ACEHS directive issued in a letter dated August 13, 2009.

SCOPE OF WORK

The following scope of work will be performed as part of this investigation:

- Prepare a *Site-specific Health and Safety Plan* describing the anticipated or potential hazards normally associated with similar projects;
- Obtain a drilling permit from Alameda County;
- Obtain an encroachment permit from the City of Alameda (if necessary);
- Mark the outline of the work area in white paint and notify USA of the proposed work a minimum of 48 hours in advance;
- Install four soil borings to a maximum depth of 20 feet bgs;
- Collect soil samples from each boring, a minimum of four samples per boring;
- Collect groundwater samples from each boring, if possible;
- Submit the soil and groundwater samples for analysis of TPH-g, TPH-d, BTEX, MtBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (EtBE), tAME, tBA, methanol, ethanol, ethylene dibromide (EDB), 1,2-dichloroethane (DCA), ethylene dichloride (EDC), and total iron; and
- Prepare and submit a technical report certified by a California Registered Engineer or Geologist describing the results of the Site Investigation.

PREPARATORY PROCEDURES

Site-Specific Health and Safety Plan

Matriks will prepare a *Site-Specific Health and Safety Plan* in accordance with 29 CFR 1910.120. All personnel entering the work area will be asked to indicate that they understand the plan. At a minimum, the health and safety plan will specify the nature of the physical and chemical

hazards associated with the site, routes of exposure, first aid procedures associated with the expected hazards, and contact information for, and a map to, the nearest emergency medical facility.

Permits and Utility Clearance

Drilling and encroachment permits will be obtained prior to the installation of the soil borings. The appropriate regulatory agency will be given at least 72 hours notice prior to the installation of borings.

Matriks will mark the proposed boring locations in white paint and notify USA a minimum of two working days in advance of the drilling. USA will notify public and private utility companies to mark the location of underground utilities owned and maintained by each company.

Work in the public right-of-way may require both active (personnel) and passive (signs, cones, barricades, etc.) measures for traffic control. If required, an engineered traffic control plan will be prepared and submitted with an encroachment permit application to the City of Alameda, Department of Public Works. At a minimum, traffic control personnel, cones, barricades, flagging, and signs will be used as specified in the traffic plan. Work will occur only in daylight hours.

Field Procedures

Soil Borings

Four soil borings will be advanced using a truck-mounted drilling rig using direct push. A California C-57 licensed well driller will advance all borings. The proposed boring locations are shown on **Figure 3**. The proposed soil boring locations are either downgradient or immediately adjacent to the former and existing UST locations. A California Registered Engineer, Geologist, or technician under the direct supervision of a Registered Engineer or Geologist will supervise drilling and sampling operations. The soil borings will be continuously logged using the Unified Soil Classification System and shall include significant changes in soil type, color, grain size, relative density, and relative moisture content. The borings will be advanced to a minimum of 20 feet bgs or below any obvious petroleum contamination.

The first five feet of each boring will be cleared with a hand auger to ensure the hole is clear of buried utilities. Soil samples will be collected using a 4-foot long steel sampler lined with a 1½-inch diameter acrylic sampling sleeve. Soil samples will be collected from each soil boring at 5-foot intervals and at the capillary fringe. Samples will be selected for chemical analysis based on visual observation and screened using a photo-ionization detector (PID). Part of the soil

sample will be placed in a glass jar sealed with a Teflon-lined lid or a self-sealing plastic bag and allowed to volatilize. The ends of the sample tube will be sealed with Teflon coated tape and plastic end caps.

The samples will be labeled indicating sample ID, sample depth, project ID, and date collected. The samples will be placed on ice in an ice chest for transport and submittal under documented chain-of-custody control to a State of California certified analytical laboratory within 72 hours of collection. The soil samples will be analyzed for TPH-g, TPH-d, BTEX, MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, EDC, DCA, and iron. Iron will be analyzed to evaluate Fenton's reagent as a potential remediation method.

Groundwater Sampling

Discrete groundwater samples will be collected from at least 18 feet bgs. The groundwater sampler operates by advancing 1 ¾ inch hollow push rods with the filter tip in a closed configuration to the base of the desired sampling interval. Once at the desired sample depth, the push rods are retracted; exposing the encased filter screen and allowing groundwater to infiltrate hydrostatically from the formation into the inlet screen. A small diameter bailer or clean tubing (approximately ½ or ¾ inch) is lowered through the push rods into the screen section for sample collection. Upon completion of sample collection, the push rods and sampler, with the exception of the PVC screen and steel drop off tip are retrieved to the ground surface, decontaminated and prepared for the next sampling event.

Groundwater samples will be decanted into laboratory supplied vials. Care will be taken to ensure that the vials are completely full and that no air bubbles are present after capping. Groundwater samples will be labeled with the project ID, sample ID, sample depth, and date collected. Groundwater samples will be placed in an ice chest cooled with ice pending delivery to a DHS certified laboratory. The samples will be submitted under chain-of-custody control within 72 hours of collection, to McCampbell Analytical (DHS certification number 1644) of Pittsburg, California. The samples will be analyzed for TPH-g, TPH-d, BTEX, MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, EDC, DCA, and iron.

Abandonment of Borings

The borings will be abandoned on the same day they are advanced by backfilling with Portland type I-II cement. The surface will be backfilled with concrete or asphalt to match the existing grade. A high-pressure grout pump will be used to pump grout into the probe hole as the screen and rods are extracted.

Soil cuttings from the drilling operations will be stored on-site in properly labeled, sealed 55-gallon, DOT-approved, steel drums. Drums will be labeled with contents, date filled, generator name, and contact information. After drilling is completed one soil sample will be collected by combining roughly equal amounts of soil from each drum of cuttings. This sample will be analyzed for TPH-g, TPH-d, and BTEX, to determine the appropriate method of disposal. The investigation-derived wastes will be characterized as hazardous or non-hazardous based on the results of the laboratory analysis and disposed of according to applicable regulations.

Field Equipment Decontamination Procedures

Field equipment that comes into contact with soil and groundwater, including the split spoon sampler and drive rods, will be decontaminated before each use by steam cleaning or washing in a laboratory grade detergent solution, followed by a tap water rinse. Potable water will be used for decontamination of drilling equipment.

Rinseate water used in the decontamination process will be stored onsite in 55-gallon drums for subsequent disposal pending analytical results. Disposal of water will conform to applicable requirements.

REPORTING

A report detailing the investigation results will be prepared and submitted to the ACEHS. The report will include a description of the soil boring installations, a figure indicating boring and sample locations and site features, a tabulation of analytical results, laboratory analytical reports, soil boring logs, conclusions, and recommendations for additional investigation or remedial work, if necessary. The report will discuss whether there are potential problems with migration of the volatile substances off the site. The report will also document whether there are concentrations of hydrocarbons in the subsurface, associated with the USTs, at levels that pose an unacceptable risk to human health or the environment. The goal for this report will be to further characterize the contaminate plume and risks and determine the optimal action for the Site.

SCHEDULE

Matriks will obtain well permits and schedule subcontractor services upon approval of this Work Plan by the ACEHS. Soil boring installation and sampling activities could be completed in approximately 14 days after receiving all of the permits. The results of soil and groundwater sample analyses will be obtained within 30 days of sample collection. The *Site Investigation Report* will be submitted to the ACEHS within 30 days after receiving the analytical results.

TABLES

Table 1
Well Construction Details
Alaska Gas
Alameda, California

Well ID	Date Installed	Total Depth (feet bg)	Screened Interval (feet bg)	Water-Bearing Zone	Screen Slot Size (inches)	Filter Pack Interval (feet bg)	Bentonite Interval (feet bg)	Grout Interval (feet bg)	TOC Elevation (feet amsl)	Northing Coordinates (feet)	Westing Coordinates (feet)
MW-1	10/11/99	18	17.35-2.5	Silty Sand	0.02	18-1.5	1.5-0.5	0.5-0	29.18	15.20394	46.13606
MW-2	10/11/99	18	18-4	Silty Sand	0.02	18-3	3-1.5	1.5-0	29.55	14.93558	45.97882
MW-3	10/11/99	20	19-4	Silty Sand	0.02	20-3	3-1.5	1.5-0	27.74	15.28672	47.24157
MW-4	04/03/06	16	15-5	Sand-Clayey Sand	0.02	15-4.5	4.5-4	4-0.5	26.23	17.12115	48.05243
MW-5	04/04/06	17	15-5	Sand-Clayey Sand	0.02	15-4.5	4.5-4	4-0.5	26.78	16.21022	47.48996

Table 2
Soil Analytical Results
Alaska Gas
Alameda, California

Boring	Depth(ft)/ Location	Date	TPH-g	TPH-d	benzene	toluene	ethyl- benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
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
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
BH-O	2.0	01/14/04	<1.0	2.2*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH-P	2.0	01/14/04	<1.0	4.9*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH-Q	2.0	04/03/06	<1.0	11*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BH-R	2.0	04/03/06	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-4	2.0	04/03/06	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MW-5	2.0	04/03/06	<1.0	1.7*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ESL			100	100	0.044	2.9	3.3	1.5	0.023	NE	NE	NE

Notes:

Units are milligrams per kilogram (mg/KG).

NE ESL has not been established

TPH-g total petroleum hydrocarbons as gasoline

TPH-d total petroleum hydrocarbons as diesel

NA Not analyzed

* Laboratory noted that the hydrocarbons reported as
TPH-d exhibited a non-typical diesel pattern.

MtBE methyl tert-butyl ether

tAME tert-amyl methyl ether

tBA tert-butanol

Table 3
Groundwater Analytical Results from Boring Installations
Alaska Gas
Alameda, California

Boring	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
BH-1	11/12/98	<50	800	<0.5	<0.5	<0.5	<1.5	<20	NA	NA	NA
BH-2	11/12/98	34,000	1,200	1,500	2,800	500	2,800	190	NA	NA	NA
BH-3	11/12/98	110,000	2,100	7,200	11,000	3,300	21,000	<20	NA	NA	NA
BH-4	11/12/98	110,000	1,700	5,300	13,000	3,100	16,000	<20	NA	NA	NA
BH-6	11/11/98	120,000	3,200	1,700	4,500	4,900	26,000	<20	NA	NA	NA
BH-8.1	11/11/98	2,800	500	11	35	10	64	<20	NA	NA	NA
BH-9	11/11/98	2,500	110	<0.5	4	3	23	<20	NA	NA	<5
BH-10	11/11/98	30,000	480	<0.5	<0.5	13	110	<20	NA	NA	<5
BH-11.1	11/11/98	<50	6,400	<0.5	3	<0.5	<1.5	<20	NA	NA	<5
BH-12	11/11/98	<50	210	<0.5	1	0.7	4.2	<20	NA	NA	NA
BH-13	11/11/98	<50	400	<0.5	<0.5	<0.5	<1.5	<20	NA	NA	NA
BH-14	11/11/98	<50	700	<0.5	<0.5	<0.5	<1.5	<20	NA	NA	NA
BH-A	07/28/00	<50	<50	<0.5	0.7	<0.5	0.9	<0.5	<0.5	<5.0	<0.5
BH-B	07/28/00	1,800	<2000	270	8.8	18	13	4,100	5.6	440	<3.0
BH-C	07/28/00	230	<100	11	1.2	<0.5	0.98	760	6.6	130	<0.5
BH-D	07/28/00	<50	72	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<5.0	<0.5
BH-E	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-F	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-G	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-H	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-I	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	0.55	<0.5	<5.0	<0.5
BH-J	07/28/00	<50	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-K	07/28/00	<50	520	<0.5	<0.5	<0.5	<0.5	0.77	<0.5	<5.0	<0.5
BH-L	07/28/00	<50	<50	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<5.0	<0.5
BH-M	01/14/04	<50	170*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-N	01/14/04	<50	68	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-O	01/14/04	<50	100	<0.5	<0.5	<0.5	<0.5	19	<0.5	<5.0	<0.5
BH-P	01/14/04	<50	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-Q	04/03/06	<50	220*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
BH-R	04/03/06	<50	770*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5
ESL		100	100	1	2.9	3.3	1.5	5	NE	NE	NE

Notes:

Units are milligrams per kilogram (ug/L).

NE ESL has not been established

TPH-g total petroleum hydrocarbons as gasoline

TPH-d total petroleum hydrocarbons as diesel

MtBE methyl tert-butyl ether

tAME tert-amyl methyl ether

tBA tert-butanol

* Laboratory noted that the hydrocarbons reported as TPH-d exhibited a non-typical diesel pattern.

Table 4
Groundwater Analytical Results
Alaska Gas
Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-1	11/06/99	43,000	8,700	160	230	900	5,400	<0.50	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	<5.0	<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
	06/05/02	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	
3/31/008	2,000	<800	2.2	1.6	99	75	1.8	<0.50	<5.0	<0.50	
06/28/08	8,400	3,900	18	26	670	1,100	<2.5	<2.5	<10	<2.5	
09/27/08	12,000	4,600	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	

Table 4
Groundwater Analytical Results
Alaska Gas
Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-2	11/06/99	92	70	11	1.5	7.9	8.4	2.3	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	<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	

Table 4
Groundwater Analytical Results
Alaska Gas
Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylenes	MtBE	tAME	tBA	Other Oxygenates
MW-3	11/06/99	5,800	870	480	21	110	380	1,600	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	<0.90	
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	

Table 4
Groundwater Analytical Results
Alaska Gas
Alameda, California

Well ID	Date	TPH-g	TPH-d	benzene	toluene	ethyl-benzene	xylene	MtBE	tAME	tBA	Other Oxygenates
MW-4	05/25/06	<50	86	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<5.0	<0.5
	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
MW-5	03/28/09	<50	<50	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5
	05/25/06	410	<80	<2.5	<2.5	<2.5	<2.5	1,800	28	44	<2.5
	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	
ESL		100	100	1.0	40	30	20	5	NE	50,000	NA

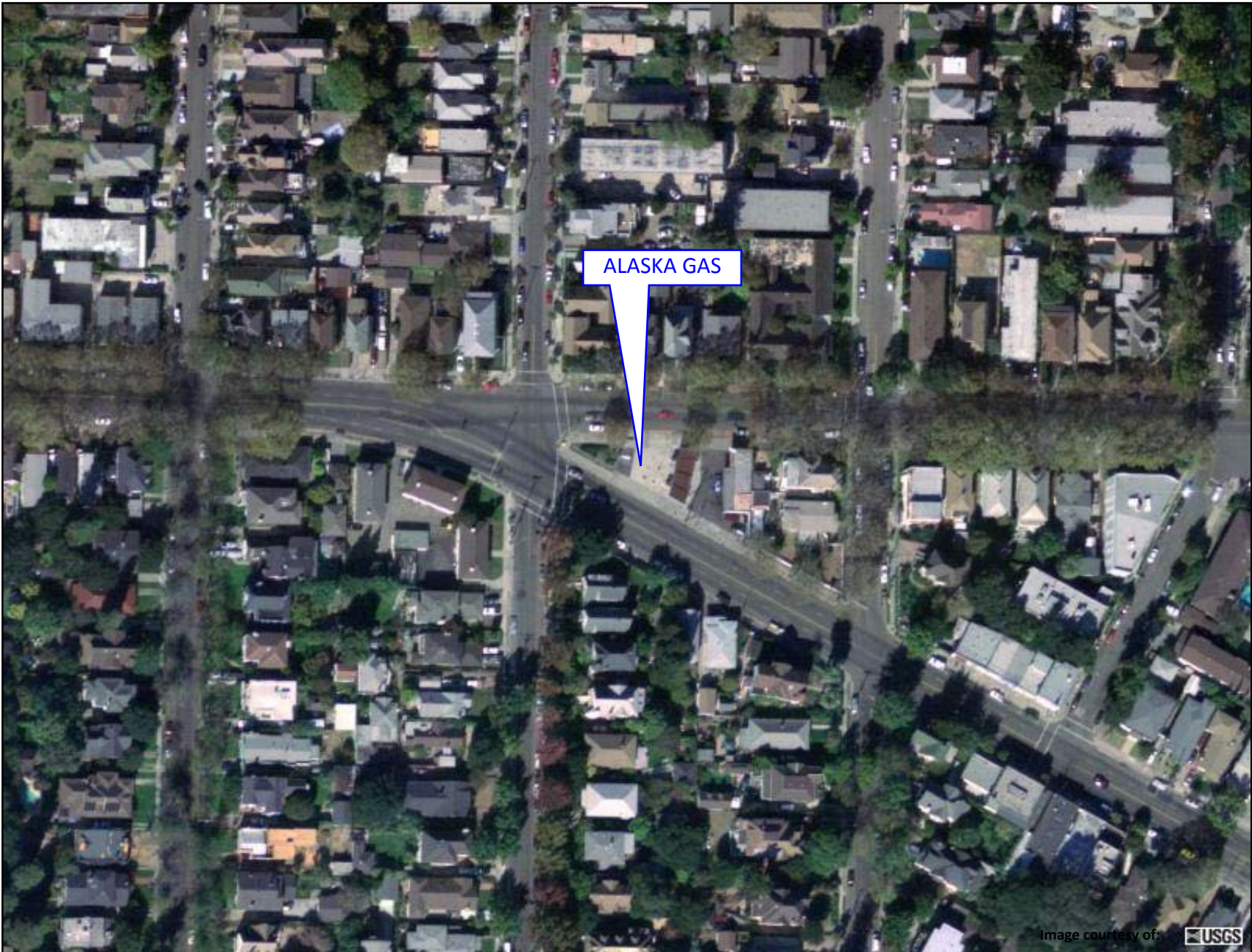
Notes:

Units are micrograms per liter (ug/L).

- | | |
|---|---------------------------------|
| NT analyte not tested | MtBE methyl tert-butyl ether |
| TPH-g total petroleum hydrocarbons as gasoline | tAME tert-amyl methyl ether |
| TPH-d total petroleum hydrocarbons as diesel | tBA tert-butanol |

* Laboratory noted that TPH-g range is significant

FIGURES

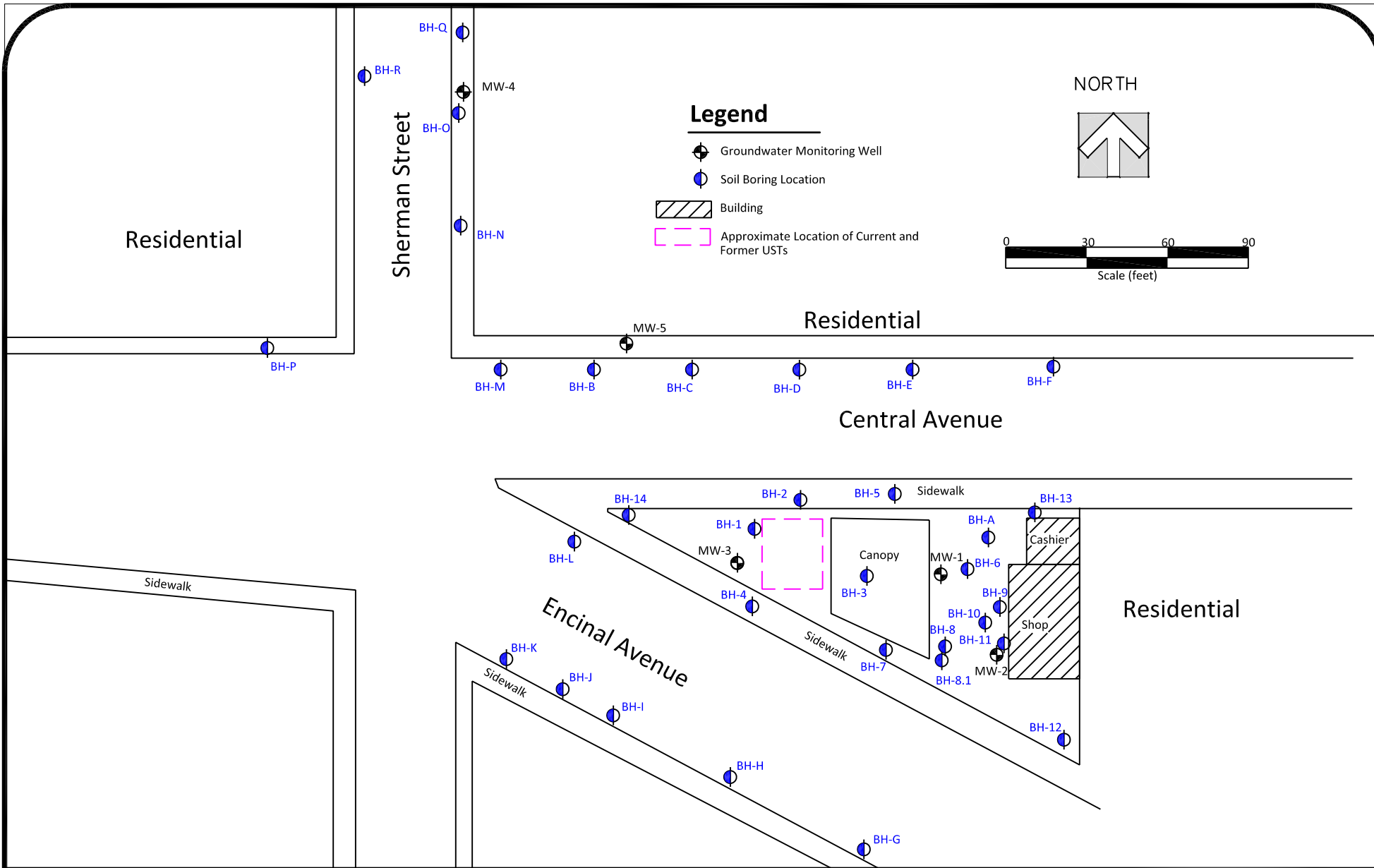


321 Court Street
Woodland, CA 95695
(530) 406-1760

Lic. No. 909563
Fax No. (530) 406-1071

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

FIGURE 1



321 Court Street Lic. No. 909563
 Woodland, California 95695
 (530) 406-1760 Fax# (530) 406-1760

Site Map







Alaska Gasoline
 1310 Central Avenue
 Alameda, California

Project #: 6022	Figure:
Date: 08/31/2009	2
Scale: as shown	

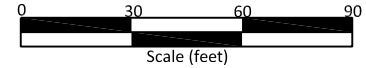
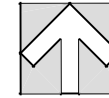
Residential

Sherman Street

Legend

-  Groundwater Monitoring Well
-  Shallow Soil Boring Location
-  Deep Soil Boring Location (>8 fbg)
-  Proposed Boring Location
-  Building
-  Approximate Location of Current and Former USTs

NORTH



Residential

Central Avenue

Residential

Encinal Avenue



321 Court Street Lic. No. 909563
 Woodland, California 95695
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Proposed Boring Locations

Alaska Gasoline
 1310 Central Avenue
 Alameda, California

Project #: 6022	Figure:
Date: 08/31/2009	3
Scale: as shown	