QUARTERLY GROUNDWATER MONITORING REPORT
Fourth Quarter 2008

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

PREPARED FOR:
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SUBMITTED TO:
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February 2, 2009

Project No. 6022

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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 users. Any use or reuse of this document or its findings, conclusions or recommendations presented herein is at the sole risk of said user.

Tom Henderson
President

David W. Janney, P.G.
Senior Geologist

PROFESSIONAL CERTIFICATION

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Tom Henderson President	David W. Janney, P.G. Senior Geologist

ACRONYMS AND ABBRREVIATIONS

ACEHS	Alameda County Environmental Health Services
AEI	All Environmental, Inc.
amsl	above mean sea level
ASE	Aqua Science Engineers, Inc.
BTEX	benzene, toluene, ethyl-benzene, xylenes
COC	chain-of-custody
DCA	1,2-dichloroethane
DIPE	di-isopropyl ether
EDB	ethylene di-bromide
EDF	electronic data file
ESL	Environmental Screening Level
EtBE	ethyl tert-butyl ether
FS/CAP	Feasibility Study/Corrective Action Plan
Geotracker	Geographical Information Management System
Matriks	Matriks Corporation
MtBE	methyl tert-butyl ether
O&G	oil and grease
µg/L	micrograms per liter
mg/Kg	milligrams per kilogram
ml	milliliter
MW	monitoring well
PDF	portable document format
RWQCB	Regional Water Quality Control Board
SC	specific conductance
tAME	tert-amyl methyl ether
tBA	tert butyl alcohol
UST	underground storage tank
VOA	volatile organic analysis

INTRODUCTION

This report presents the results of the third quarter 2008 groundwater monitoring event conducted by Matriks at Alaska Gas (the "Site"), located at 1310 Central Avenue in Alameda, California. The quarterly groundwater monitoring event described in this report was conducted on December 30, 2008 and is part of an ongoing subsurface investigation of petroleum hydrocarbons in soil or groundwater that was caused by an unauthorized release of petroleum fuels from the underground storage tank (UST) system (tanks, associated piping and dispensers) formerly located at the Site. Matriks is conducting this investigation on behalf of the responsible parties, Mr. Leon Zektser, Mr. Nissan Saidian, and Mr. Joe Zadik. The Alameda County Environmental Health Services (ACEHS) is the lead regulatory agency overseeing Site investigation and remediation and the ACEHS case number is RO0000022. The quarterly groundwater monitoring program consists of the collection and laboratory analysis of groundwater samples from five groundwater monitoring wells to assess concentrations of petroleum hydrocarbon compounds in shallow groundwater.

Site Description and Physical Setting

The Site is currently a retail gasoline fueling station located in an area of mixed commercial and residential properties in the south-central part of the island 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 and groundwater 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 to the south. Due to the topography of the island and proximity to San Francisco Bay, groundwater beneath the Site is tidally influenced and has a very shallow gradient.

Site History

In May 1996, Petrotek removed three gasoline USTs including one 10,000-gallon, one 7,500-gallon and one 5,000-gallon UST from the western corner of the Site. A 500-gallon waste oil UST adjacent to the building, was also removed from the southern portion of the Site. Fuel dispensers and associated product piping were also removed.

Free-phase petroleum hydrocarbons were observed floating on the groundwater surface in the gasoline UST excavation following removal of the USTs. According to the laboratory analysis, a groundwater sample collected from the gasoline UST excavation contained 2,800 micrograms per liter (µg/L) of total petroleum hydrocarbons as gasoline (TPH-g) and 100 µg/L benzene. Soil

samples collected from the same excavation contained up to 5,000 milligrams per kilogram (mg/Kg) of THP-g and 31mg/Kg benzene. Soil samples collected beneath the former dispenser island contained up to 6,800 mg/Kg TPH-g and 63 mg/Kg benzene. A ground water sample collected in the waste oil UST excavation contained 35,000 µg/L of total petroleum hydrocarbons as diesel (TPH-d) and motor oil range hydrocarbons, and 1,300 µg/L of TPH-g. A records search at ACEHS did not identify any tank removal reports or subsequent remedial action reports.

Petrotek reportedly excavated and disposed of approximately 600 cubic yards of petroleum hydrocarbon-impacted soil from the UST excavations. It does not appear that confirmation soil samples were collected following removal of the petroleum hydrocarbon-impacted soil. Approximately 15,000 gallons of ground water were also removed from the excavations, treated and discharged to the sanitary sewer. Two new gasoline USTs, dispensers and product piping were installed in the same UST excavation after the petroleum hydrocarbon-impacted soil and ground water were removed.

In November 1998, All Environmental Inc. (AEI) advanced 14 soil borings on the Site, collected soil and groundwater samples from the borings, and submitted them for laboratory analysis. The boring soil samples contained up to 5,900 mg/Kg of TPH-g. The boring grab groundwater samples contained up to 120,000 µg/L TPH-g and 7,200 µg/L benzene.

On May 16, 2000, Aqua Science Engineers (ASE) collected groundwater samples from the three wells. Hydrocarbon concentrations detected in the May 16 groundwater samples were less than those detected in the November 1999 sampling event, especially with respect to MW-2. The reason for this is unclear. Sample results are presented in **Table 1**.

On July 28, 2000, ASE advanced 12 Geoprobe borings (borings BH-A through BH-L) to further delineate the lateral and vertical extent of petroleum hydrocarbons and collected soil and grab groundwater samples from each borings. Laboratory analysis detected 0.00061 mg/Kg of MtBE in a soil samples collected from 3.0 feet (ft) below ground surface in boring BH-K. There were no petroleum hydrocarbons or oxygenates detected in soil samples from the other 11 borings, however, petroleum hydrocarbons and oxygenates were detected in grab groundwater samples collected from borings BH-A, B, C, D, I , J, K, and L.

In December 2002, ASE conducted an investigation to assess whether subsurface utility line trenches may provide a groundwater movement pathway. ASE concluded that it did not appear that the utility line trenches act as groundwater movement pathways. This conclusion was based on ASE's assumption that the utility line trench backfill material is native sandy soil and that the highest concentrations of petroleum hydrocarbons in the 12 Geoprobe borings soil samples were located beyond the utility line trenches. Although ASE concluded that the utility line trenches did not provide a groundwater movement pathway, the ACEHS requested that water samples be collected from the sewer in one of the trenches to assess whether petroleum hydrocarbon-impacted groundwater may have entered the sewer line through seams or cracks.

In January 2004, ASE drilled four additional soil borings, BH-M through BH-P and the soil samples collected from each boring contained concentrations of TPH-d, with the highest concentration of 68 mg/Kg detected in BH-M. No TPH-d, BTEX or oxygenates were detected in any of the other soil samples. The groundwater samples collected from the borings contained TPH-d concentrations as high as 170 µg/Land the groundwater sample collected from boring BH-O also contained 19 µg/L MtBE. None of the other groundwater samples contained detectable concentrations of TPH-g, BTEX or oxygenates. Groundwater samples were also collected from the sewer line beneath Central Avenue, both up gradient and down gradient 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 with ½ mile radius of the Site. A total of 25 wells were located within the search radius. The results included three domestic wells, 10 irrigation wells, one industrial well, two cathodic protection wells, four groundwater monitoring wells, and five vapor extraction wells. The nearest well is located more than 1,000 feet east of the Site. The nearest, potentially down gradient, well is located approximately 1,260 feet northwest of the Site. Based on the records search, ASE proposed additional soil and groundwater assessment for the Site.

In April 2006, ASE advanced two additional borings and installed two groundwater monitoring wells. 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. Petroleum hydrocarbons were detected by laboroatory analysis at a concentration of 11 mg/Kg TPH-d in a soil sample from BH-Q and 1.7 mg/Kg TPH-d in a soil sample from the boring MW-5. The laboratory noted that the hydrocarbons reported as TPH-D in each sample did not exhibit a typical diesel chromatogram pattern. None of the soil samples contained detectable concentrations of TPH-g, BTEX or oxygenates. Well construction details are presented in **Table 2.**

Groundwater samples collected from BH-Q and BH-R contained detectable concentrations of petroleum hydrocarbon of 220 µg/L TPH-d and 770 µg/L TPH-d, respectively. 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 this investigation, ASE recommended no further delineation of the extent of petroleum hydrocarbons in soil or groundwater.

From April 2006 to present, groundwater monitoring well samples have been collected and analyzed on a quarterly basis. In June 2008, the Site owners contracted with Matriks to conduct quarterly groundwater monitoring and prepare for further Site remediation.

SCOPE OF WORK

The scope of work conducted for this quarterly groundwater monitoring event included the following tasks:

- Measurement of static water levels in five groundwater monitoring wells;
- Collection of field water quality parameters including pH, temperature, and specific conductance (SC) from groundwater in each well;
- Purging at least three casing volumes from each well;
- Collection and analysis of groundwater water samples from each well for THP-d, TPH-g, BTEX, MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, and DCA (see the *Monitoring Well Purging and Sampling* section of this report for analytical methods used);
- Update of the Geotracker database; and
- Preparation of this *Quarterly Monitoring Report*.

METHODS AND PROCEDURES

Groundwater Level Measurements

Prior to measuring the depth to groundwater, the cap of each well was removed and the water level was given an opportunity to equilibrate with atmospheric pressure for approximately 30 minutes before recording measurements using an electronic water depth indicator. The static water levels were referenced to the surveyed marks notched into the top of each well casing and the depth-to-water measurements were used to calculate the purge volume of for each monitoring well.

Monitoring Well Purging and Sampling

At least three well volumes were purged from each well using a new disposable bailer. Groundwater temperature, pH, and SC were measured intermittently during purging with a Hanna multimeter water quality instrument which was calibrated by the equipment rental service prior to on-site use. Water quality measurements were recorded on monitoring well sampling logs, copies of which are included in **Appendix A**. Well purge water was placed into labeled and sealed 55-gallon, DOT-approved steel drums and temporarily stored on-site.

A new disposable bailer dedicated to each well, was used to remove the groundwater samples and transfer them to the appropriate laboratory prepared containers. Care was taken to remove the headspace in each container. Each sample container was labeled with the project number, sample ID, and collection date. The same information was recorded on the laboratory

chain-of-custody (COC) form. Samples were stored in a cooler filled with ice for transport to the laboratory.

Samples were transported and submitted to McCampbell Analytical, Inc. of Pittsburg, California (DHS ELAP Certification No. 1644) and analyzed for TPH-g and TPH-d by EPA Method 8015 modified; for BTEX by EPA Method 8021B; and for MtBE, DIPE, EtBE, tAME, tBA, methanol, ethanol, EDB, and DCA by EPA Method 8260B.

RESULTS

Groundwater Levels and Gradient

Depth-to-water was measured in each monitoring well. The groundwater flow direction for this monitoring event was calculated to be N20ºW with a gradient of 0.005. Well construction details are presented in **Table 2**. Groundwater levels and elevations are summarized in **Table 3**. Groundwater elevation contours are depicted on **Figure 3**. Graphs of groundwater elevation versus time for selected monitoring wells are presented on **Figure 4**.

Groundwater Analytical Results

TPH-g, BTEX, and MtBE were detected by laboratory analysis in the highest concentrations in groundwater monitoring wells MW-1 and MW-3. TPH-g was detected in MW-1 and MW-3 at concentrations of 5,300 µg/L and 9,100 µg/L, respectively. TPH-g was also detected in MW-5 at a concentration of 210 µg/L. TPH-g was not detected in groundwater samples collected from the other monitoring wells.

Benzene was also detected in MW-1 at concentrations of 12 µg/L and MW-3 at a concentration of 160 µg/L. Benzene was not detected in samples collected from the other groundwater monitoring wells. MtBE was detected in MW-1, MW-2, MW-3, MW-4, and MW-5 at concentrations of 7.1 µg/L, 13 µg/L, 150 µg/L, 1.2 µg/L, and 610 µg/L, respectively.

Groundwater analytical results are summarized in **Table 3**. A copy of the laboratory analytical report is included in **Appendix B**. **Figure 5** shows TPH-g and benzene concentration trends in well MW-1 and **Figure 6** shows these same concentration trends in MW-3.

Geotracker Requirements

All analytical data were submitted electronically to the California State Water Resources Control Board Geotracker database as required by AB2886 (Water Code Section 13195-13198). EDFs are prepared and formatted by the laboratory and submitted by Matriks. Well latitudes, longitudes (GEO_XY files), and elevations (GEO_Z files) were previously submitted to the database. A well status and usage report (GEO_WELL file) is submitted for each monitoring

event. A complete electronic copy of this report (GEO_REPORT file) in PDF format was also submitted. Update maps (GEO_MAP files) are submitted when site features such as monitoring wells or soil borings are added.

DISCUSSION

In general, petroleum hydrocarbon concentrations have decreased since groundwater monitoring began in September 1999. This appears to indicate that natural attenuation and degradation are occurring.

The highest concentrations of petroleum hydrocarbons were detected in monitoring wells MW-1 and MW-3. TPH-g, TPH-d, and benzene in these wells was detected above the environmental screening limits (ESLs) of 100 µg/L, 100 µg/L, and 1.0 µg/L, respectively, established by the San Francisco Bay RWQCB. MtBE was also detected above the ESL in MW-3.

TPH-g, benzene, and MtBE were also detected above the ESLs in well MW-5. This appears to indicate that petroleum hydrocarbons are migrating down gradient from the Site.

MtBE was detected in down gradient well MW-4 at a concentration of 1.1 µg/L. This concentration is less than the ESL for MTBE of 5 µg/L but this also appears to indicate that petroleum hydrocarbons are migrating down gradient within groundwater. Petroleum hydrocarbon concentrations detected in MW-1 and MW-2 appear to be consistent with their spatial relationship to the former USTs.

AEI reported in December 1998, that TPH-d was detected in soil in boring BH-10 only, at a concentration of 300 mg/Kg. The laboratory analytical results in the appendix of their report indicated diesel was detected at a concentration of 300 mg/Kg, at a depth of 8 feet in boring BH-6, not in boring BH-10. Furthermore, AEI also reported that TPH-d was detected in groundwater samples collected from each boring, with the highest concentration detected in boring BH-11, apparently upgradient of the former waste oil UST. AEI also reported that petroleum as O&G was detected in soil in borings BH-9 through BH-11, at a concentrations ranging between 16 and 3,100 mg/Kg. No O&G was detected in groundwater samples collected from these same borings. If the former waste-oil UST was the source of the diesel, it would be reasonable to expect the highest concentrations of O&G in groundwater and soil proximal to the former waste-oil UST. It would also be reasonable to expect the highest concentrations in groundwater to be immediately down gradient of the former waste-oil UST. With the exception of boring B-11, the AEI results have relatively low concentrations of TPH-d proximal to the former waste-oil UST and high concentrations of TPH-d in groundwater samples distal from the former waste-oil UST. All of these factors combined may indicate an off-site and presently unidentified source for TPH-d in groundwater contamination of the samples in the field or in the laboratory. It does not appear that a trip blank was used while transporting the samples from the field to the lab.

While benzene and MtBE appear to be migrating in the down gradient direction in low concentrations, the possibility of vapor intrusion into down gradient buildings must be considered.

RECOMMENDATIONS

We recommend the preparation of a Feasibility Study/Corrective Action Plan (FS/CAP) to address remedial alternatives for petroleum hydrocarbons primarily in groundwater but remedial consideration should also be given to the soil proximal to the former USTs. Our preliminary analysis indicates that ozone sparging will be an effective remedial action given the soil and groundwater conditions at the Site and its small apparent lateral extent. The FS/CAP may also include limited additional characterization of soil or groundwater to further assess the concentrations of TPH-d. We also recommend continued quarterly groundwater monitoring.

FIGURES

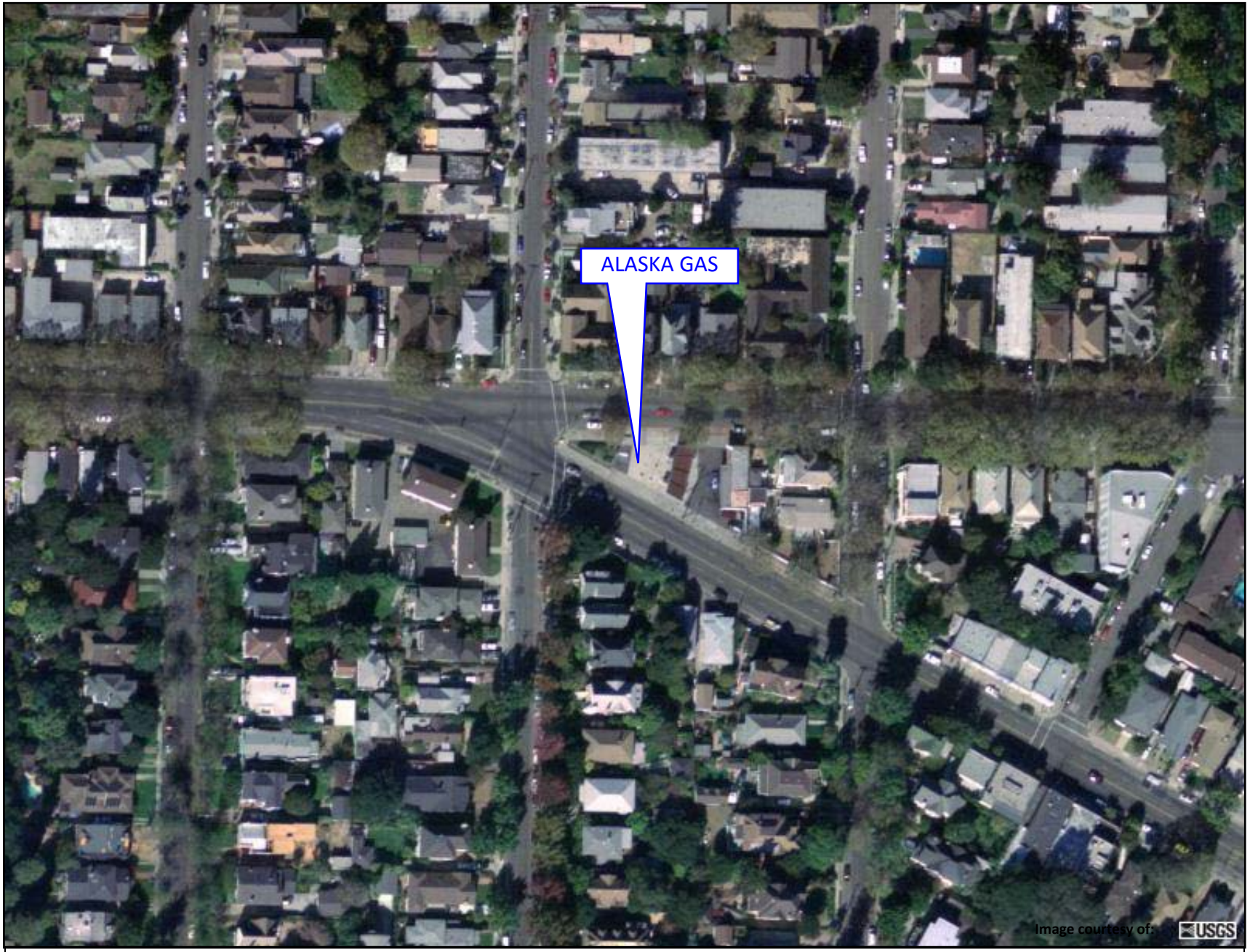
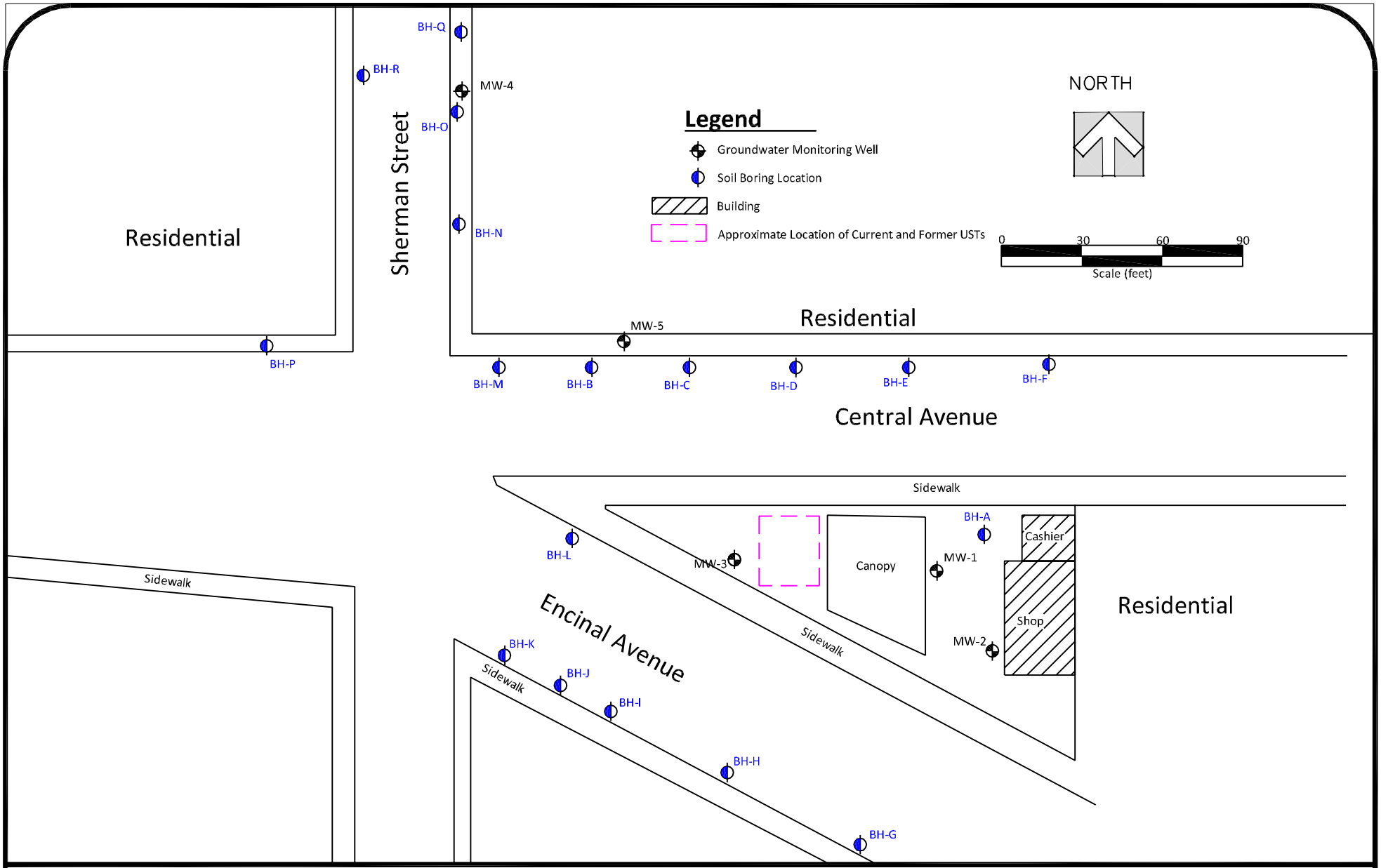


FIGURE 1

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

MATRIKS
321 Court Street
Woodland, CA 95695
Lic. 909563



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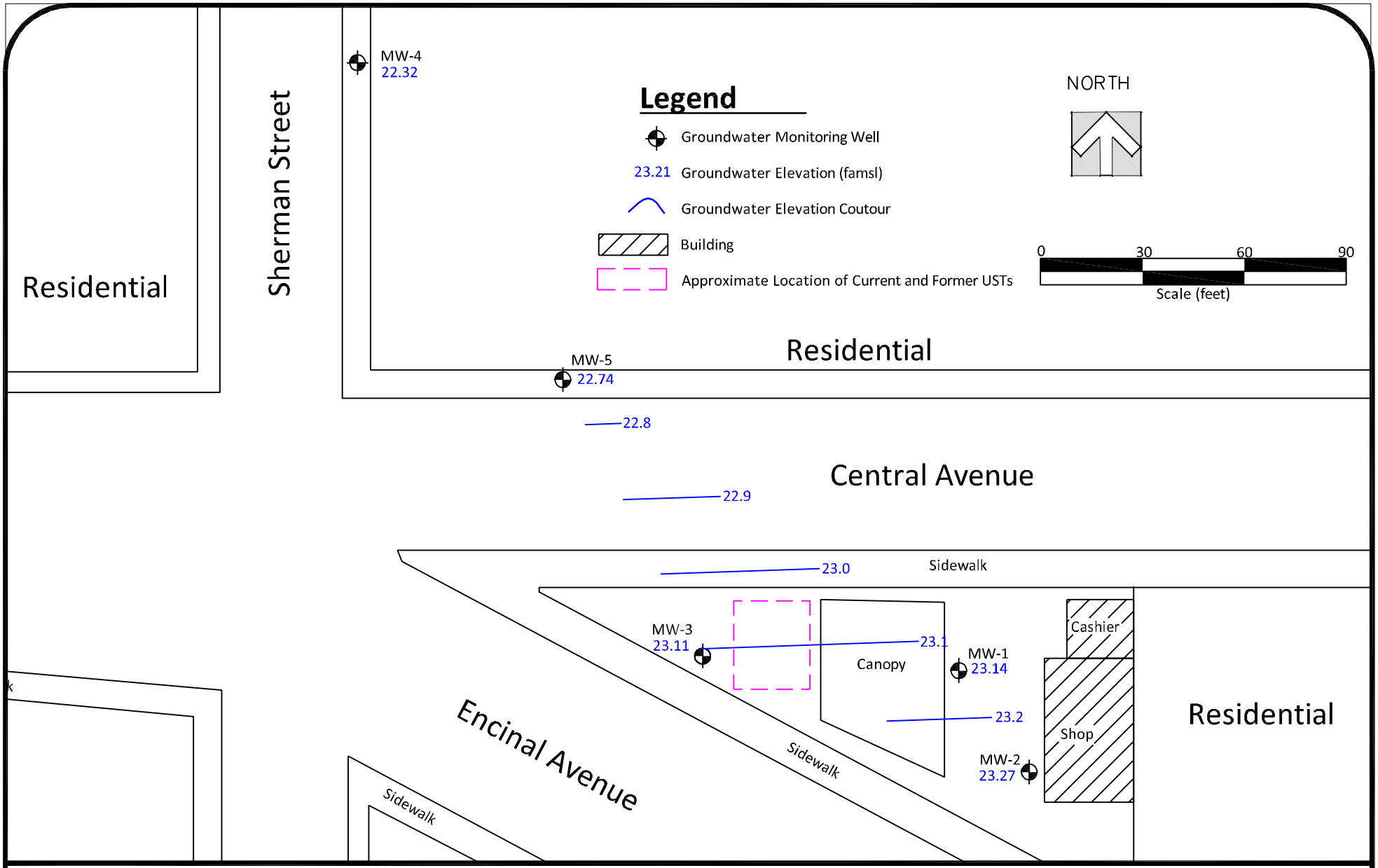
Site Map

Alaska Gasoline
1310 Central Avenue
Alameda, California

Project #: 6022	Figure: 2
Date: 2/02/2009	
Scale: as shown	



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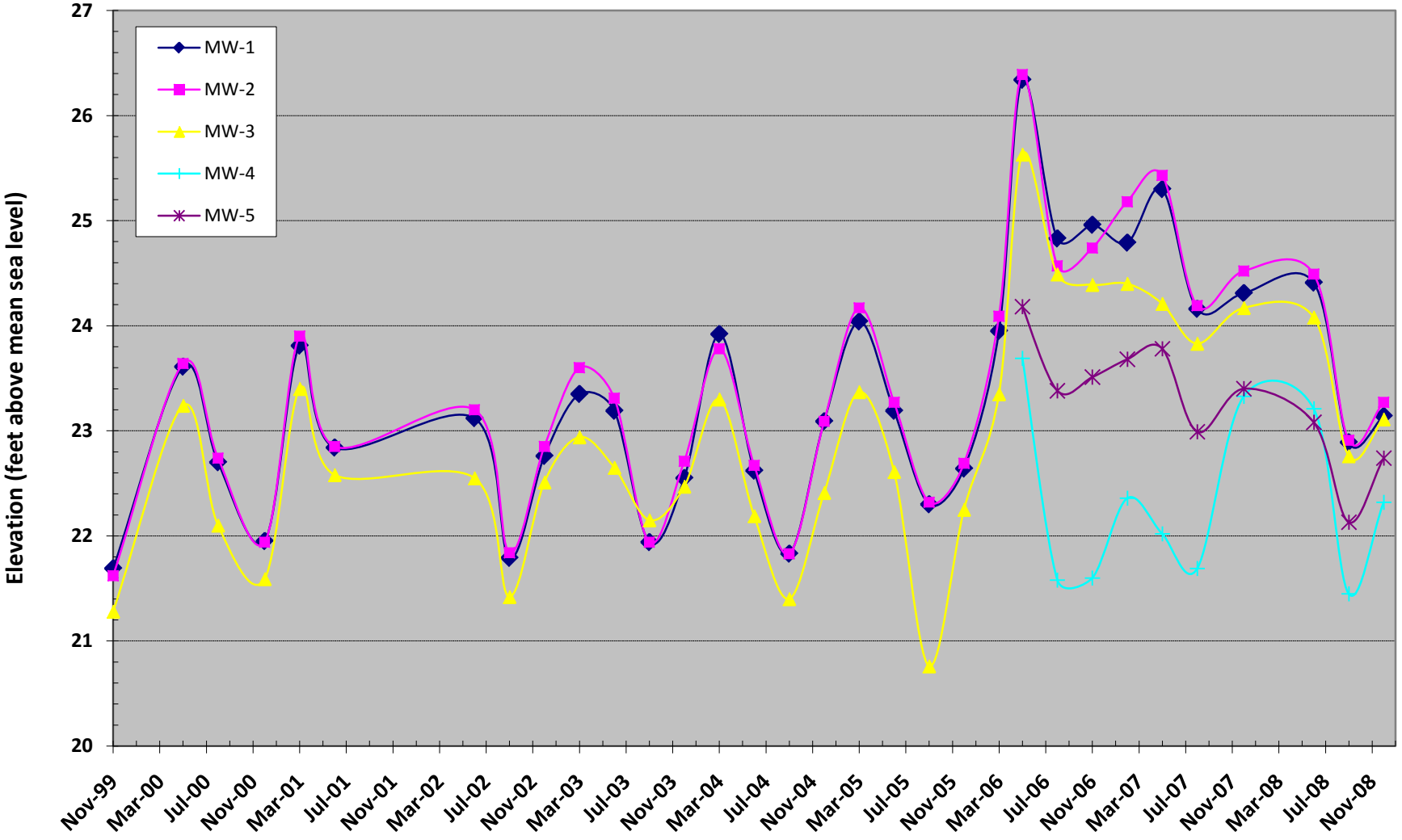
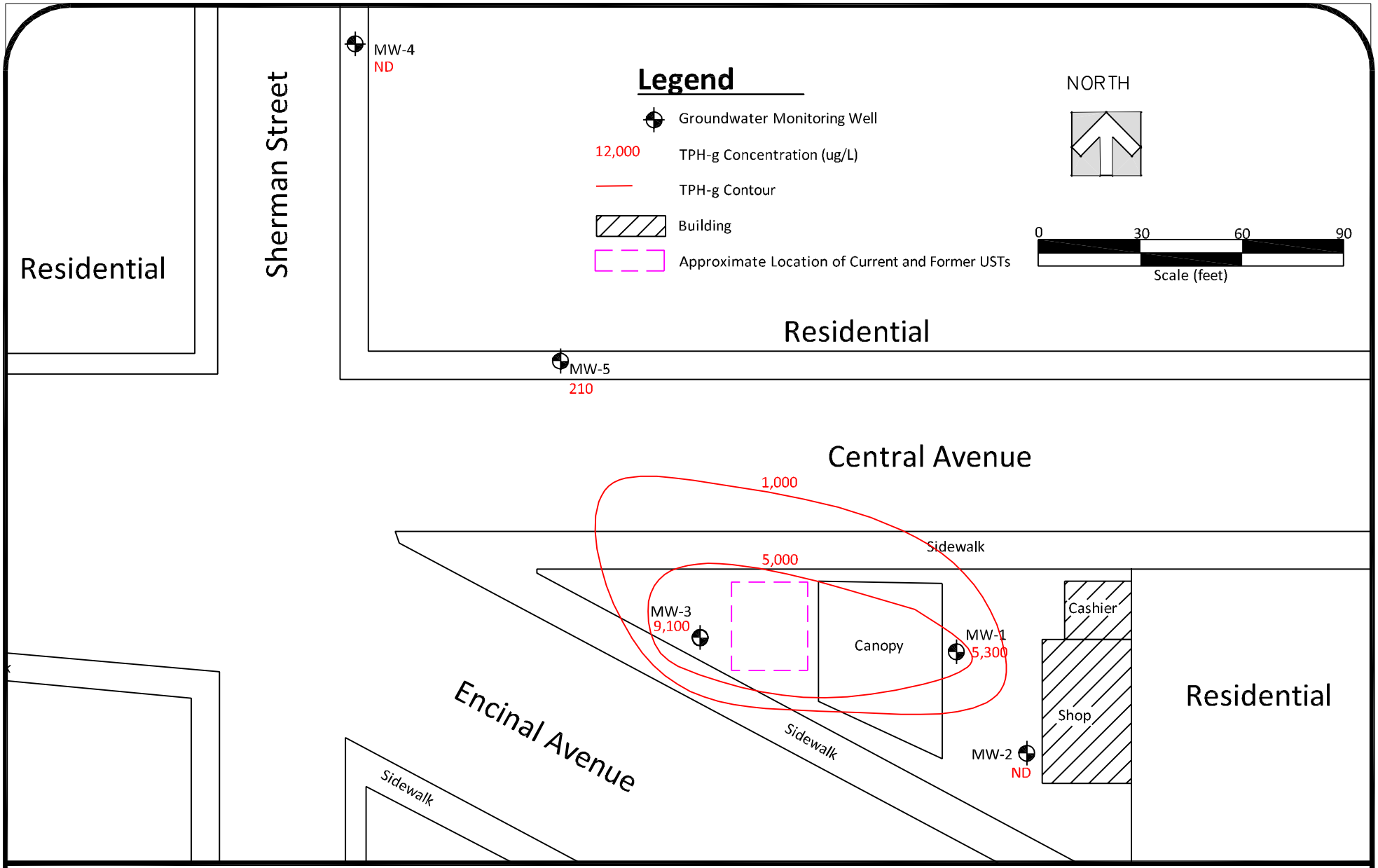
Groundwater Elevations on December 30, 2008

Alaska Gasoline
1310 Central Avenue
Alameda, California

Project #: 6022	Figure: 3
Date: 02/02/2009	
Scale: as shown	

Figure 4. Monitoring Well Hydrographs
Alaska Gas
Alameda, CA





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TPH-g Concentrations on December 30, 2008

Alaska Gasoline
1310 Central Avenue
Alameda, California

Project #: 6022	Figure: 5
Date: 02/02/2009	
Scale: as shown	

Figure 6. TPH-g and Benzene vs. Time in Well MW-1
Alaska Gas
Alameda, California

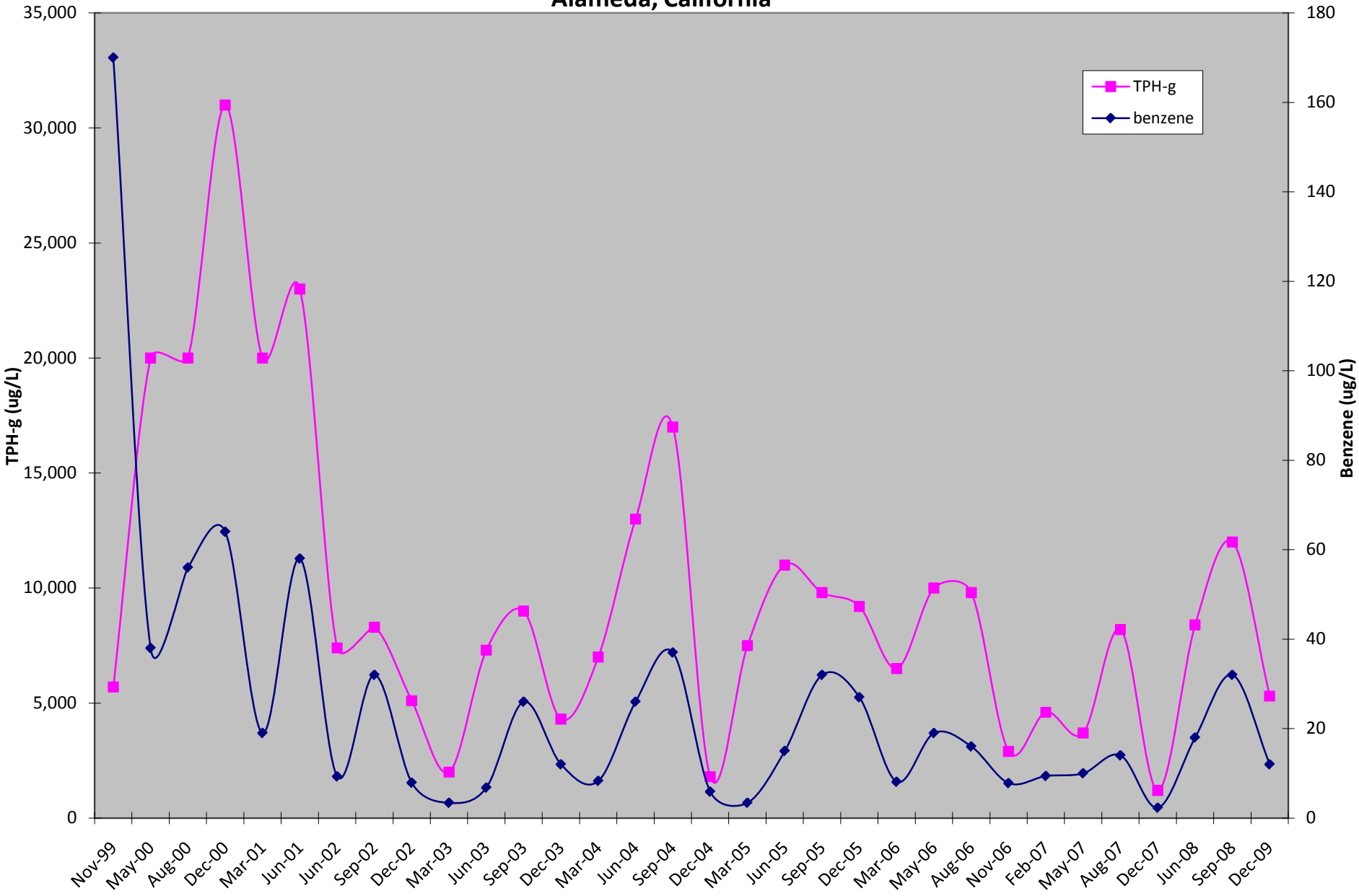
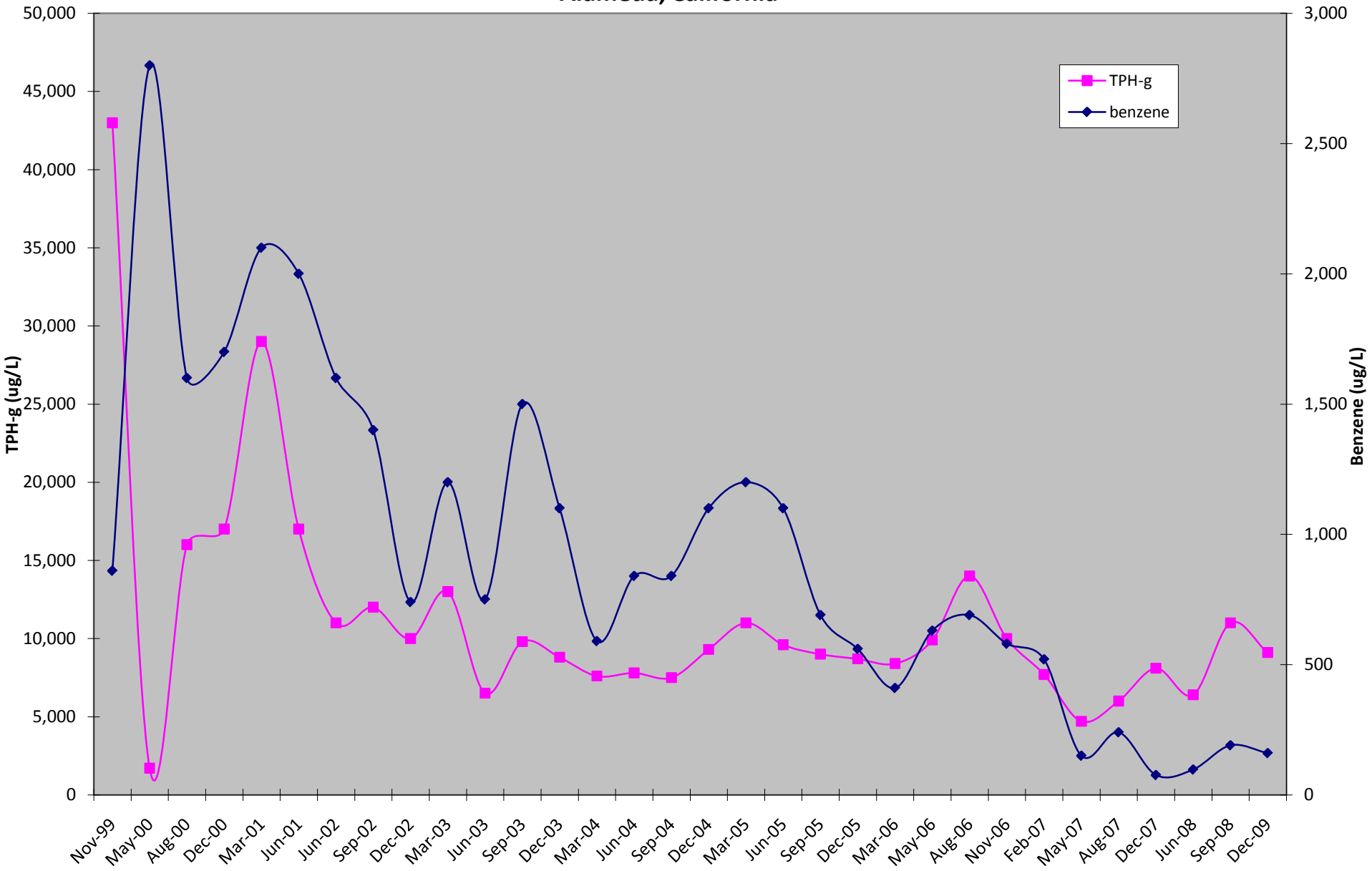


Figure 7. TPH-g and Benzene vs Time in Well MW-3
Alaska Gas
Alameda, California



TABLES

Table 1
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	**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
	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
	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

Table 1
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	**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
	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

Table 1
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	**43,000**	**870**	**860**	70	<0.5	65	**120,000**	NA	NA	NA
	05/16/00	**1,700**	<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
	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

Table 1
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-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
	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	11/21/06	**410**	<80	<2.5	<2.5	<2.5	<2.5	**1,800**	28	44	<2.5
	05/25/06	55	<50	<0.5	<0.5	<0.5	<0.5	**1,100**	19	9.1	<0.5
	08/10/06	<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
	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
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

Table 2
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 3
Groundwater Elevation Data
Alaska Gas
Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-1	11/06/99	26.85	5.16	21.69
	05/16/00		3.24	23.61
	08/03/00		4.15	22.70
	12/05/00		4.90	21.95
	03/05/01		3.04	23.81
	06/04/01		4.01	22.84
	06/05/02		3.73	23.12
	09/09/02		5.06	21.79
	12/19/02		4.09	22.76
	03/10/03		3.50	23.35
	06/03/03		3.66	23.19
	09/19/03		4.91	21.94
	12/22/03		4.30	22.55
	03/12/04		2.93	23.92
	06/11/04		4.23	22.62
	09/13/04		5.02	21.83
	12/16/04		3.76	23.09
	03/21/05		2.81	24.04
	06/23/05		3.66	23.19
	09/30/05		4.55	22.30
	12/08/05		4.21	22.64
	03/01/06		2.90	23.95
	05/25/06	29.18	2.84	26.34
	08/10/06		4.35	24.83
	11/21/06		4.22	24.96
	02/06/07		4.39	24.79
	05/08/07		3.88	25.30
	08/06/07		5.02	24.16
	12/26/07		4.87	24.31
	06/28/08		4.77	24.41
	09/27/08		6.29	22.89
	12/30/08		6.04	23.14

Table 3
Groundwater Elevation Data
Alaska Gas
Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-2	11/06/99	27.18	5.56	21.62
	05/16/00		3.54	23.64
	08/03/00		4.44	22.74
	12/05/00		5.24	21.94
	03/05/01		3.28	23.90
	06/04/01		4.33	22.85
	06/05/02		3.98	23.20
	09/09/02		5.34	21.84
	12/19/02		4.33	22.85
	03/10/03		3.58	23.60
	06/03/03		3.87	23.31
	09/19/03		5.24	21.94
	12/22/03		4.47	22.71
	03/12/04		3.40	23.78
	06/11/04		4.51	22.67
	09/13/04		5.35	21.83
	12/16/04		4.09	23.09
	03/21/05		3.01	24.17
	06/23/05		3.91	23.27
	09/30/05		4.86	22.32
	12/08/05		4.49	22.69
	03/01/06		3.09	24.09
	05/25/06	29.55	3.16	26.39
	08/10/06		4.98	24.57
	11/21/06		4.81	24.74
	02/06/07		4.37	25.18
	05/08/07		4.12	25.43
	08/06/07		5.36	24.19
	12/26/07		5.03	24.52
	06/28/08		5.06	24.49
	09/27/08		6.64	22.91
	12/30/08		6.28	23.27

Table 3
Groundwater Elevation Data
Alaska Gas
Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-3	11/06/99	25.3	4.02	21.28
	05/16/00		2.06	23.24
	08/03/00		3.20	22.10
	12/05/00		3.71	21.59
	03/05/01		1.90	23.40
	06/04/01		2.72	22.58
	06/05/02		2.75	22.55
	09/09/02		3.88	21.42
	12/19/02		2.79	22.51
	03/10/03		2.36	22.94
	06/03/03		2.65	22.65
	09/19/03		3.15	22.15
	12/22/03		2.83	22.47
	03/12/04		2.00	23.30
	06/11/04		3.11	22.19
	09/13/04		3.90	21.40
	12/16/04		2.89	22.41
	03/21/05		1.93	23.37
	06/23/05		2.69	22.61
	09/30/05		4.54	20.76
	12/08/05		3.05	22.25
	03/01/06		1.95	23.35
	05/25/06	27.74	2.11	25.63
	08/10/06		3.25	24.49
	11/21/06		3.35	24.39
	02/06/07		3.34	24.40
	05/08/07		3.53	24.21
	08/06/07		3.91	23.83
	12/26/07		3.57	24.17
	06/28/08		3.66	24.08
	09/27/08		4.98	22.76
	12/30/08		4.63	23.11

Table 3
Groundwater Elevation Data
Alaska Gas
Alameda, California

Well ID	Date	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation
MW-4	05/25/06	26.23	2.54	23.69
	08/10/06		4.65	21.58
	11/21/06		4.63	21.60
	02/06/07		3.87	22.36
	05/08/07		4.21	22.02
	08/06/07		4.54	21.69
	12/26/07		2.90	23.33
	06/28/08		3.02	23.21
	09/27/08		4.78	21.45
	12/30/08		3.91	22.32
MW-5	05/25/06	26.78	2.60	24.18
	08/10/06		3.40	23.38
	11/21/06		3.27	23.51
	02/06/07		3.10	23.68
	05/08/07		3.00	23.78
	08/06/07		3.79	22.99
	12/26/07		3.38	23.40
	06/28/08		3.70	23.08
	09/27/08		4.65	22.13
	12/30/08		4.04	22.74

All measurements are in feet. DTW = Depth to water below top of PVC casing.
TOC = Top of casing. ELEV = Elevation above mean sea level.
Wells resurveyed on April 27, 2006

APPENDIX A

MONITORING WELL PURGE LOGS

MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: Alameda PROJECT #:

DATE: 12/30/08 SAMPLER'S INITIALS: CM

WELL ID: MW- 2 WELL DIAMETER (in): 2

WELL DEPTH (ft): 12.2 DEPTH TO WATER (ft): 6.28 WATER COLUMN Ht (ft): 5.92

STANDING WATER VOLUME (gal): 0.98 3 VOLUMES (gal): 2.94

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: (Bailer) or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging
1330	1	64.6	5.93	526		
1331	2	65.4	5.90	541		
1332	3	65.3	5.91	533		
						Sampled @1335

WELL ID: MW- 1 WELL DIAMETER (in): 2

WELL DEPTH (ft): 11.03 DEPTH TO WATER (ft): 6.04 WATER COLUMN Ht (ft): 4.99

STANDING WATER VOLUME (gal): 0.82 3 VOLUMES (gal): 2.48

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: (Bailer) or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging
1310	1	65.1	6.22	560		
1313	2	65.4	6.24	553		
1318	3	66.2	6.25	548		
						sampled @1321

MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: Alameda PROJECT #:

DATE: 12/30/08 SAMPLER'S INITIALS: CM

WELL ID: MW-4 WELL DIAMETER (in): 2

WELL DEPTH (ft): 14.2 DEPTH TO WATER (ft): 3.91 WATER COLUMN Ht (ft): 10.29

STANDING WATER VOLUME (gal): 1.71 3 VOLUMES (gal): 5.12

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: (Bailer) or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging
1226	1	60.7	6.81	400		
1228	2	62.2	6.69	400		
1252	3	64.0	6.71	444		
1253	4	63.0	6.60	401		
						Sampled @ 1258

WELL ID: MW- 5 WELL DIAMETER (in): 2

WELL DEPTH (ft): 14.8 DEPTH TO WATER (ft): 4.04 WATER COLUMN Ht (ft): 10.72

STANDING WATER VOLUME (gal): 1.78 3 VOLUMES (gal): 5.33

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: (Bailer) or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging
1235	1	69.1	6.58	730		
1236	2	64.0	6.54	741		
1238	3	64.9	6.55	734		
1239	4	65.3	6.56	726		
	5	65.1	6.53	723		

MONITORING WELL SAMPLING LOG

SITE NAME/LOCATION: Alameda PROJECT #:

DATE: 12/30/08 SAMPLER'S INITIALS:

WELL ID: MW-3 WELL DIAMETER (in): 2

WELL DEPTH (ft): 16.03 DEPTH TO WATER (ft): 4.63 WATER COLUMN Ht (ft): 11.4

STANDING WATER VOLUME (gal): 1.89 3 VOLUMES (gal): 5.67

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Bailer or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging
1342	2	64.9	5.77	600		
1345	3	65.6	5.81	597		
1347	5	66.6	5.89	591		
1348	6	66.2	5.87	584		
						sampled @ 1350

WELL ID: MW- WELL DIAMETER (in):

WELL DEPTH (ft): DEPTH TO WATER (ft): WATER COLUMN Ht (ft):

STANDING WATER VOLUME (gal): 3 VOLUMES (gal):

To obtain standing volume in gallons, multiply the water column height by 0.17 for 2-inch well or 0.66 for a 4-inch well.

PURGE METHOD: Bailer or Mini-Whaler Pump (circle the correct method) SAMPLING METHOD: disposable PE bailer

PURGE MEASUREMENTS

Time	Gallons Purged	Temp (F)	pH	SC (uS)		Comments
						DO prior to purging

APPENDIX B

LABORATORY ANALYTICAL REPORTS FOR GROUNDWATER SAMPLES

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Matriks Corporation 321 Court Street Woodland, CA 95695	Client Project ID: Alameda	Date Sampled: 12/30/08
		Date Received: 12/31/08
	Client Contact: Clayton Mokri	Date Reported: 01/08/09
	Client P.O.:	Date Completed: 01/08/09

WorkOrder: 0812835

January 08, 2009

Dear Clayton:

Enclosed within are:

1) The results of the **5** analyzed samples from your project: **Alameda,**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

0812835

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☑ 5 DAY

GeoTracker EDF ☑ PDF ☐ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Clayton McKee Bill To: Matriks

Company: Matriks

321 Court St

Woodland CA E-Mail: cmckee@cmi.net

Tele: (530) 902 7106 Fax: ( )

Project #: Project Name: Alameda

Project Location: 1310 Central Ave, Alameda CA

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: ICE	HCL	HNO_3	Other	BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other: 5 oxys
MW-1		12/30/08	1321	5	*	5						5			X	X															X	
MW-2		12/30/08	1335	5																												
MW-3		12/30/08	1350	5																												
MW-4		12/30/08	1258	5																												
MW-5		12/30/08		5																												

Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
	12/31/08	1325	
Relinquished By:	Date:	Time:	Received By:
	12/31/08	1520	Enviro-Tech SR
Relinquished By: Enviro-Tech SR	Date: 12/31	Time: 1700	Received By: K. Burks

ICE/t° 2.0 ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

COMMENTS: * = 4 voa + lumber

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

From: EnviroTech – Rancho Cordova, CA

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0812835 **ClientCode: MCW**

☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☐ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Clayton Mokri
Matriks Corporation
321 Court Street
Woodland, CA 95695
(530) 406-1760 FAX (530) 406-1771

Email: thenderson@matrikscorp.com; Cmokri
cc:
PO:
ProjectNo: Alameda

Bill to:
Robert Neely
Matriks Corporation
321 Court Street
Woodland, CA 95695

Requested TAT: 5 days

Date Received: **12/31/2008**
Date Printed: **12/31/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0812835-001	MW-1	Water	12/30/2008 13:21	☐	C	A	A	B								
0812835-002	MW-2	Water	12/30/2008 13:35	☐	C	A		B								
0812835-003	MW-3	Water	12/30/2008 13:50	☐	C	A		B								
0812835-004	MW-4	Water	12/30/2008 12:58	☐	C	A		B								
0812835-005	MW-5	Water	12/30/2008	☐	C	A		B								

Test Legend:

1	5-OXYS_W	2	G-MBTEX_W	3	PREDF REPORT	4	TPH(D)_W	5	
6		7		8		9		10	
11		12							

Prepared by: Kimberly Burks

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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Telephone: 877-252-9262 Fax: 925-252-9269

Sample Receipt Checklist

Client Name: **Matriks Corporation**
Date and Time Received: **12/31/2008 5:04:45 PM**

Project Name: **Alameda**
Checklist completed and reviewed by: Kimberly Burks

WorkOrder N°: **0812835** Matrix Water
Carrier: EnviroTech

Chain of Custody (COC) Information

Chain of custody present?	Yes ☑	No ☐
Chain of custody signed when relinquished and received?	Yes ☑	No ☐
Chain of custody agrees with sample labels?	Yes ☑	No ☐
Sample IDs noted by Client on COC?	Yes ☑	No ☐
Date and Time of collection noted by Client on COC?	Yes ☑	No ☐
Sampler's name noted on COC?	Yes ☑	No ☐

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☑
Shipping container/cooler in good condition?	Yes ☑	No ☐	
Samples in proper containers/bottles?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 3.2°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

** NOTE: If the "No" box is checked, see comments below.*

Client contacted: Date contacted: Contacted by:

Comments:

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Telephone: 877-252-9262 Fax: 925-252-9269

Matriks Corporation	Client Project ID: Alameda	Date Sampled: 12/30/08
		Date Received: 12/31/08
321 Court Street	Client Contact: Clayton Mokri	Date Extracted: 01/03/09-01/05/09
Woodland, CA 95695	Client P.O.:	Date Analyzed 01/03/09-01/05/09

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0812835

Lab ID	0812835-001C	0812835-002C	0812835-003C	0812835-004C	Reporting Limit for DF =1	
Client ID	MW-1	MW-2	MW-3	MW-4		
Matrix	W	W	W	W		
DF	10	1	10	1	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<5.0	ND	5.0	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<20	ND	100	ND	NA	2.0
Diisopropyl ether (DIPE)	ND<5.0	ND	ND<5.0	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND	ND<5.0	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	7.1	13	150	1.2	NA	0.5
Surrogate Recoveries (%)						
%SS1:	96	98	92	97		
Comments	a3					

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content / matrix interference.

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Telephone: 877-252-9262 Fax: 925-252-9269

Matriks Corporation	Client Project ID: Alameda	Date Sampled: 12/30/08
		Date Received: 12/31/08
321 Court Street	Client Contact: Clayton Mokri	Date Extracted: 01/03/09-01/05/09
Woodland, CA 95695	Client P.O.:	Date Analyzed 01/03/09-01/05/09

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0812835

					Reporting Limit for DF =1	
Lab ID	0812835-005C					
Client ID	MW-5					
Matrix	W					
DF	20				S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	12				NA	0.5
t-Butyl alcohol (TBA)	ND<40				NA	2.0
Diisopropyl ether (DIPE)	ND<10				NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<10				NA	0.5
Methyl-t-butyl ether (MTBE)	610				NA	0.5
Surrogate Recoveries (%)						
%SS1:	97					
Comments						

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

a3) sample diluted due to high organic content / matrix interference.

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Telephone: 877-252-9262 Fax: 925-252-9269

Matriks Corporation	Client Project ID: Alameda	Date Sampled: 12/30/08
		Date Received: 12/31/08
321 Court Street	Client Contact: Clayton Mokri	Date Extracted: 01/06/09-01/08/09
Woodland, CA 95695	Client P.O.:	Date Analyzed 01/06/09-01/08/09

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0812835

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	5300,d1,b6	ND<50	12	31	300	27	10	114
002A	MW-2	W	ND	13	ND	ND	ND	ND	1	98
003A	MW-3	W	9100,d1,b6	ND<400	160	24	31	18	10	101
004A	MW-4	W	ND	ND	ND	ND	ND	ND	1	97
005A	MW-5	W	210,d2,d9	680	ND	0.78	0.99	ND	1	108

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b6) lighter than water immiscible sheen/product is present
d1) weakly modified or unmodified gasoline is significant
d2) heavier gasoline range compounds are significant (aged gasoline?)
d9) no recognizable pattern

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Telephone: 877-252-9262 Fax: 925-252-9269

Matriks Corporation	Client Project ID: Alameda	Date Sampled: 12/30/08
		Date Received: 12/31/08
321 Court Street	Client Contact: Clayton Mokri	Date Extracted: 12/31/08
Woodland, CA 95695	Client P.O.:	Date Analyzed 01/02/09-01/05/09

Total Extractable Petroleum Hydrocarbons*

Extraction method SW3510C Analytical methods: SW8015B Work Order: 0812835

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS
0812835-001B	MW-1	W	3700,e11,b6	1	118
0812835-002B	MW-2	W	100,e7,e2	1	99
0812835-003B	MW-3	W	2300,e4	1	101
0812835-004B	MW-4	W	ND	1	97
0812835-005B	MW-5	W	130,e4,e2	1	94

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

b6) lighter than water immiscible sheen/product is present
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.
e7) oil range compounds are significant
e11) stoddard solvent/mineral spirit (?)

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 40624 WorkOrder: 0812835

EPA Method SW8260B **Extraction SW5030B** **Spiked Sample ID: 0812834-002C**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	10	111	110	0.878	87.7	88.8	1.25	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	103	105	1.89	82.7	82.3	0.481	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	113	111	1.87	94.7	95	0.314	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	128	127	0.951	103	104	0.370	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	0.73	10	124	125	1.05	95.4	97.1	1.77	70 - 130	30	70 - 130	30
%SS1:	97	25	102	106	3.50	98	97	1.17	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 40624 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0812835-001C	12/30/08 1:21 PM	01/03/09	01/03/09 1:46 AM	0812835-002C	12/30/08 1:35 PM	01/03/09	01/03/09 2:29 AM
0812835-003C	12/30/08 1:50 PM	01/03/09	01/03/09 3:11 AM	0812835-004C	12/30/08 12:58 PM	01/03/09	01/03/09 3:54 AM
0812835-005C	12/30/08	01/05/09	01/05/09 2:03 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 40625 WorkOrder 0812835

EPA Method SW8021B/8015Cm **Extraction SW5030B** **Spiked Sample ID: 0901004-002A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	97.6	95.3	2.32	97.3	92.9	4.61	70 - 130	20	70 - 130	20
MTBE	ND	10	97.5	80.7	18.8	88.7	77.7	13.2	70 - 130	20	70 - 130	20
Benzene	ND	10	94.5	83.5	12.4	90.6	96.2	6.04	70 - 130	20	70 - 130	20
Toluene	ND	10	94	87.1	7.61	91.3	97.3	6.44	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	98.3	94.7	3.73	96.9	102	4.93	70 - 130	20	70 - 130	20
Xylenes	ND	30	108	107	1.26	107	113	6.02	70 - 130	20	70 - 130	20
%SS:	102	10	93	94	1.19	93	100	6.97	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 40625 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0812835-001A	12/30/08 1:21 PM	01/06/09	01/06/09 11:47 PM	0812835-002A	12/30/08 1:35 PM	01/07/09	01/07/09 2:55 PM
0812835-003A	12/30/08 1:50 PM	01/08/09	01/08/09 5:15 AM	0812835-004A	12/30/08 12:58 PM	01/07/09	01/07/09 3:26 PM
0812835-005A	12/30/08	01/07/09	01/07/09 3:56 PM	0812835-005A	12/30/08	01/08/09	01/08/09 6:23 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 40623 WorkOrder: 0812835

EPA Method SW8015B **Extraction SW3510C** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	105	98.2	6.96	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	102	101	0.532	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 40623 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0812835-001B	12/30/08 1:21 PM	12/31/08	01/02/09 3:17 PM	0812835-002B	12/30/08 1:35 PM	12/31/08	01/05/09 8:47 PM
0812835-003B	12/30/08 1:50 PM	12/31/08	01/02/09 4:26 PM	0812835-004B	12/30/08 12:58 PM	12/31/08	01/02/09 3:17 PM
0812835-005B	12/30/08	12/31/08	01/02/09 2:09 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

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QA/QC Officer