# **TECHNICAL MEMO**

# East Bay Municipal Utility District Adeline Maintenance Center Oakland, California

June 30, 2015

Prepared for:

East Bay Municipal Utility District 375 11<sup>th</sup> Street; M.S. 704 Oakland, California 94607

Prepared by:

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# Adeline Maintenance Center Technical Memo Oakland, California

### **EXECUTIVE SUMMARY**

The East Bay Municipal Utility District (EBMUD) retained AECOM to prepare a technical memorandum that presents the results from the Alisto Engineering Group (Alisto) May 20, 2009 *Site Investigation Report* as well as evaluates historical soil and groundwater data to assess potential data gaps for the EBMUD Adeline Maintenance Center (AMC), located at 1200 21st Street in Oakland, California (Figure 1). EBMUD requested AECOM to review historical data to assess the limits or extent of potential constituents of concern in soil and groundwater from previous site activities. The memorandum references the three previously identified areas of concern (AOCs):

- AOC-1, the former gasoline station located on the north side of the property;
- AOC-2, the former auto shop located on the southeast portion of the property; and
- AOC-3, the former waste oil tank located on the southwest portion of the property.

AECOM compared the 2009 soil sampling results to State Water Resources Control Board Low-Threat Underground Storage Tank Case Closure Policy to assess whether further characterization of soil, groundwater, or soil vapor is warranted at the site. No concentrations of benzene, ethylbenzene, or naphthalene in soil exceeded threshold concentrations for direct contact or outdoor exposure in shallow soils (State Water Board's Low Threat Closure Policy Table 1). Based on these results no further soil characterization is recommended.

Based on the 2009 grab groundwater analytical results, the hydrocarbon contaminant plumes in AOC-1 and AOC-3 are not defined laterally. The total petroleum hydrocarbons (TPH) plume at AOC-2 is defined to the east, south, and west by nondetections for TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) in surrounding borings. The northern extent is next to the current onsite Shops Building and thus further sampling is limited. Further characterization should be determined by groundwater sampling in AOC-1 and AOC-3, which are on the downgradient sides of the Shops Building relative to AOC-2. AECOM recommends installing groundwater monitoring wells in areas AOC-1 and AOC-3 to determine the lateral extent of the hydrocarbon plume in each area. A follow on work plan will discuss installation of a sufficient number of groundwater monitoring wells to define the extent of the plumes and allow determination of groundwater flow direction and gradient.

Concentrations of benzene, ethylbenzene, and naphthalene were below the respective San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for evaluation of potential vapor intrusion, indicating the potential for the site concentrations to have a soil vapor risk is low. No soil vapor sampling is recommended.

AECOM recommends a Conceptual Site Model be prepared and evaluated after additional groundwater characterization has been completed at the site.

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A 2009 EBMUD Laboratory Reports

# List of Acronyms and Abbreviations

ACEH Alameda County Department of Environmental Health

Alisto Engineering Group

AMC Adeline Maintenance Center

AOC areas of concern

bgs below ground surface
DPT Direct Push Technology

EBMUD East Bay Municipal Utility District

EPA US Environmental Protection Agency

ESLs Environmental Screening Levels

GEMS General Environmental Management Services

GeoPlexus, Inc.

HPT hydrologic profiling tool mg/kg milligram per kilogram

MIP membrane interface probe

PCE tetrachloroethene
QC quality control

RWQCB Regional Water Quality Control Board – San Francisco Bay Region

State Water Board State Water Resources Control Board

TCE trichloroethene

TOG total oil and grease

TPH-d total petroleum hydrocarbons as diesel
TPH-g total petroleum hydrocarbons as gasoline
TPH-mo total petroleum hydrocarbons as motor oil

μg/L micrograms per liter

USTs underground storage tanks
VOCs volatile organic compounds

The East Bay Municipal Utility District (EBMUD) retained AECOM to prepare a technical memorandum that presents the results from the Alisto Engineering Group (Alisto) May 20, 2009 *Site Investigation Report* as well as evaluates historical soil and groundwater data to assess potential data gaps for the EBMUD Adeline Maintenance Center (AMC), located at 1200 21st Street in Oakland, California (Figure 1). EBMUD requested AECOM to review historical data to assess the extent of potential constituents of concern in soil and groundwater from the previous site activities. The memorandum references the three previously identified areas of concern (AOCs):

- AOC-1, the former gasoline station located on the north side of the property;
- AOC-2, the former auto shop located on the southeast portion of the property; and
- AOC-3, the former machine shop and waste oil tank located on the southwest portion of the property.

A site vicinity map is shown on Figure 1. A site plan showing historical boring locations is shown on Figure 2. The 2009 soil and groundwater analytical data are summarized in Tables 1 through 8, and shown graphically on Figures 3 through 8. The finalized laboratory reports from the 2009 site investigation are included as Attachment A.

# 1. Site Description and Background

The site, located at 1200 21st Street in Oakland, California (Figure 1), is owned by EBMUD and currently houses the Central Warehouse and Shops Building. Historically, the site has been used for vehicle and equipment maintenance and fuel storage/distribution for EBMUD vehicles and equipment since the 1930s. Current AOCs include a former gasoline and service station (AOC-1), a former auto shop (AOC-2) and a former machine shop and waste oil tank (AOC-3). The locations of former and current structures are presented on Figure 2.

### 1.1 Investigation and Remediation History

Six underground storage tanks (USTs) in AOC-1 were removed and over-excavated in November 1994. A seventh UST was removed from AOC-3 in August 1998. The excavated UST volumes and contents are presented in Table 1-1:

Table 1-1: List of Removed USTs									
Location	Volume (Gallons)	Contents	Year						
AOC-1	4,000	Gasoline	1994						
AOC-1	6,000	Gasoline	1994						
AOC-1	500	Oily fluid	1994						
AOC-1	350	Water	1994						
AOC-1	350	Water	1994						
AOC-1	300	Unknown	1994						
AOC-3	2,500	Waste oil	1998						

Soil samples collected and analyzed during the 1994 UST excavations contained concentrations of total petroleum hydrocarbons as gasoline (TPH-g) along the north and east sides of the

excavation at a maximum of 2,800 milligrams per kilogram (mg/kg) at depths of 4 feet to 8 feet below ground surface (bgs) when the excavations were completed (General Environmental Management Services [GEMS], 1994).

Two site-wide subsurface investigations were conducted by GeoPlexus, Inc. (GeoPlexus) in January 1995 and October 1996 (GeoPlexus, 1995; GeoPlexus, 1997), which included soil borings in AOC-1, AOC-2, and AOC-3, as shown on Figure 2. Eighteen (18) soil borings were advanced in 1995 and 15 additional borings were completed in 1996. These investigations concluded that shallow soils in AOC-1 and AOC-2 required excavation. The final remedial excavation took place in June 1997, and removed approximately 1,300 cubic yards of soil from AOC-1 and 200 cubic yards from AOC-2 (GeoPlexus, 1998).

The Adeline Maintenance Center was re-constructed in 1998, and included a remedial excavation of AOC-3 with the removal of a UST. Samples collected during the excavation contained concentrations of TPH-g, total petroleum hydrocarbons as diesel (TPH-d), and total oil and grease (TOG) at maximums of 85 mg/kg, 2,500 mg/kg, and 26,000 mg/kg, respectively (Alisto, 2009). Further information on this excavation effort could not be located.

In May 2008, Alameda County Department of Environmental Health (ACEH) requested that EBMUD conduct an additional investigation, which was completed by Alisto. Thirty eight (38) soil borings were advanced in 2009 for the collection of soil and groundwater samples for analyses. Additional details of the drilling and sampling methodology and boring log details can be located in the Alisto 2009 Site Investigation Report. The final 2009 EBMUD laboratory reports are included as Attachment A.

# 1.2. Regional Geology and Hydrogeology

The site is part of the Oakland sub-area of the East Bay Plain. Regional lithology beneath the site consists of Holocene and late Pleistocene alluvial fan deposits. Local lithology at the site is mostly clay, silty clay or sandy clay to a maximum explored depth of 26 feet bgs.

Groundwater in the East Bay Plain basin is designated as a potential drinking water source; however, groundwater in the basin is not currently used as a municipal drinking water supply due to readily available imported water provided by EBMUD. There are no known active drinking water supply wells located within 1,500 feet of the site; and the nearest natural surface water is San Francisco Bay, which is 1.1 miles to the northwest.

In 2009, groundwater at the site was encountered at approximately 9 to 12 feet bgs. Groundwater flow direction is anticipated to be to the west toward San Francisco Bay. However, there are currently no groundwater monitoring wells at the site to determine actual groundwater flow direction and gradient.

# 2.0 Summary of the 2009 Soil Investigation Results

AECOM has reviewed and compared the 2009 site data with the State Water Resources Control Board (State Water Board) Low-Threat Underground Storage Tank Case Closure Policy criteria. A discussion of this review is presented below.

### 2.1. Area of Concern 1: Former Gasoline and Service Station

In 2009, fifteen soil borings (1709 through 3109) were advanced within AOC-1. The borings consisted of eight direct push technology borings (DPT), four hydrologic profiling tool (HPT), and three membrane interface probe (MIP) borings. Eight soil samples and ten grab groundwater samples were collected for laboratory analysis (Figures 3 and 4).

Six of the eight soil samples contained concentrations of TPH-g and TPH-d in soil at depths between 7 and 12 feet bgs, with a maximum concentration of 2,500 mg/kg (3009-7 at 7 feet bgs). Volatile organic compounds (VOCs) were detected in soil; however, no benzene was detected above the laboratory reporting limit of 0.48 mg/kg, which is below the threshold concentrations presented in the table below. Ethylbenzene and naphthalene were detected at maximum concentrations of 1.8 mg/kg (3109-12, at 12 feet bgs) and 4.1 mg/kg (3109-8, at 8 feet bgs), respectively, which is below the thresholds for residential direct contact and outdoor air exposure presented in Table 1 of the Low-Threat Underground Storage Tank Case Closure Policy, and shown below in Table 2-1.

<b>Table 2-1. Concentrations of Petroleum Constituents in Soil That Will Have No Significant</b>
Risk of Adversely Affecting Human Health

	Resi	idential	Commerci	al/Industrial	Utility Worker
Chemical	0 to 5 feet bgs (mg/kg)	Volatilization to outdoor air (5 to 10 feet bgs) (mg/kg)	0 to 5 feet bgs (mg/kg)	Volatilization to outdoor air (5 to 10 feet bgs) (mg/kg)	0 to 5 feet bgs (mg/kg)
Benzene	1.9	2.8	8.2	12	14
Ethylbenzene	21	32	89	134	314
Naphthalene	9.7	9.7	45	45	219

- 1) State Water Board Low Threat Closure Policy Table 1
- 2) The area of impacted soil where a particular exposure occurs is 25 by 25 meters (approximately 82 by 82 feet) or less.
- 3) NA = not applicable
- 4) mg/kg = milligrams per kilogram

Grab groundwater samples collected during the 2009 site investigation contained TPH-g in seven of the eight groundwater samples analyzed for TPH-g. TPH-d was detected in five of the ten grab groundwater samples, and total petroleum hydrocarbons as motor oil (TPH-mo) was detected in only one sample. Benzene concentrations in the grab groundwater samples ranged from 3.9 micrograms per liter ( $\mu$ g/L) to 22  $\mu$ g/L. The extent of TPH-g in groundwater in AOC-1, based on the 2009 grab groundwater analytical results, is not defined to the north, east, south, or west.

To assess potential soil vapor risk, maximum groundwater concentrations of benzene, ethylbenzene, and napthalene in AOC-1 were compared to the San Francisco Bay Regional Water Quality Control Board's (RWQCB) Environmental Screening Levels (ESLs) in the table below. All detected concentrations of benzene, ethylbenzene, and naphthalene in groundwater were below the vapor intrusion ESLs.

Table 2-2. Maximum Concentrations in AO	C-1 and Groundwater ESLs for Evaluation
of Vapor Intrusion	

Analyte	Sample ID	Maximum Concentration in AOC-1 (μg/L)	Groundwater ESL for Vapor Intrusion <sup>1</sup> (µg/L)		
Benzene	2309	22	27		
Ethylbenzene	2109	24	310		
Naphthalene	2309	45	160		

<sup>1.</sup> Environmental Screening Levels, Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, Table E-1, Residential Land Use, Fine-Coarse Mix. San Francisco Bay Regional Water Quality Control Board, File No. 1210.40. December 2013.

# 2.2. Area of Concern 2: Former Auto Shop

Thirteen borings (1109 through 1609, and 3209 through 3809) were advanced within AOC-2. The borings consisted of seven DPT, four HPT and two MIP borings. Ten soil samples and nine grab groundwater samples were collected for the laboratory analysis (Figures 5 and 6).

Three of the ten soil samples contained TPH-g in soil at depths of 5 to 10 feet bgs, with a maximum concentration of 110 mg/kg (3209-8 at 10 feet bgs). No TPH-d was detected above the laboratory reporting limit of 1.5 mg/kg. Eight of the ten soil samples contained TPH-mo at depths from 5 to 10 feet bgs, with a maximum concentration of 12,000 mg/kg (3509-5 at 5 feet bgs). VOCs were detected in soil, however, no benzene, ethylbenzene, or naphthalene concentrations were detected above the laboratory reporting limit of 0.52 mg/kg, which is below the residential direct contact and outdoor air exposure criteria (Section 2, Table 2-1).

With the exception of TPH-g at 120  $\mu$ g/L in sample 1509, grab groundwater samples analyzed during the 2009 site investigation did not contain TPH-g or TPH-d above laboratory reporting limits of 20  $\mu$ g/L and 260  $\mu$ g/L, respectively. TPH-mo was detected in three of the nine grab groundwater samples at concentrations ranging from 32  $\mu$ g/L (3608) to 7,000  $\mu$ g/L (1309). The extent of TPH-mo in AOC-2, based on the 2009 grab groundwater analytical results, is defined to the east, south and west. The contaminant plume is not defined to the north; however, the current Shops Building is immediately adjacent to sample location 3509 to the north and additional sampling in that area is not feasible. Further characterization should be determined by groundwater sampling in AOC-1 and AOC-3, which are on the downgradient sides of the Shops Building relative to AOC-2. The TPH-mo plume in AOC-2 appears to be is less than 100 feet, and is upgradient from areas AOC-1 and AOC-3.

To assess potential soil vapor risk, maximum groundwater concentrations of benzene, ethylbenzene, and napthalene in AOC-2 were compared to the vapor intrusion ESLs in the table below. All detected concentrations of benzene, in groundwater were below the vapor intrusion ESLs. Ethylbenzene and naphthalene were not detected in groundwater in AOC-2.

Table 2-3. Maximum Concentrations in AOC-1 and Groundwater Environmental Screening Levels (ESL) for Evaluation of Vapor Intrusion								
Analyte	Sample ID	Maximum Concentration in	Groundwater ESL for Vapor					

Analyte	Sample ID	Maximum	Groundwater ESL
		Concentration in	for Vapor
		<b>AOC-2</b> (μg/L)	Intrusion¹ (μg/L)
Benzene	3709	0.76	27
Ethylbenzene	$NA^2$	<0.51	310
Naphthalene	$NA^2$	< 0.79	160

Environmental Screening Levels, Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, Table E-1, Residential Land Use, Fine-Coarse Mix. San Francisco Bay Regional Water Quality Control Board, File No. 1210.40. December 2013.

### 2.3. Area of Concern 3: Former Waste Oil Tank

Ten borings (0109 through 1009) were advanced within AOC-3. The borings consisted of four DPT, three HPT and three MIP borings. Six soil samples and ten grab groundwater samples were collected for laboratory analysis (Figures 7 and 8).

No TPH-g was detected in soil samples in area AOC-3. One of the six soil samples (0909-16 at 16 feet bgs) contained concentrations of TPH-d and TPH-mo at 26 mg/kg and 490 mg/kg, respectively. VOCs were detected in soil, however, no benzene, ethylbenzene, or naphthalene was detected above the laboratory reporting limit of 0.52 mg/kg which is below the residential direct contact and outdoor air exposure criteria (Section 2, Table 2-1).

Grab groundwater samples collected during the 2009 investigation contained concentrations of TPH-g in three of the nine groundwater samples analyzed. Concentrations of TPH-d were detected in two of the ten groundwater samples, and TPH-mo was detected in seven of ten grab groundwater samples. The extent of TPH-mo in AOC-3, based on the 2009 grab groundwater analytical data, is not defined to the north, east, south, or west.

To assess potential soil vapor risk, maximum groundwater concentrations of benzene, ethylbenzene, and naphthalene in AOC-3 were compared to the vapor intrusion ESLs in the table below. All detected concentrations of benzene and naphthalene in groundwater were below the vapor intrusion ESLs. Ethylbenzene was not detected in groundwater in AOC-3.

<sup>2.</sup> Not applicable – all samples had the same reporting limit.

Analyte	Sample ID	Maximum Concentration in AOC-3 (μg/L)	Groundwater ESL for Vapor Intrusion <sup>1</sup> (μg/L)		
Benzene	0109	1.6	27		
Ethylbenzene	NA <sup>2</sup>	< 0.51	310		
Naphthalene	0109	1.6	160		

- Environmental Screening Levels, Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, Table E-1, Residential Land Use, Fine-Coarse Mix. San Francisco Bay Regional Water Quality Control Board, File No. 1210.40. December 2013.
- 2. Not applicable all samples had the same reporting limit.

# 3. Historical Results of Tetrachloroethane (PCE) and Trichloroethene (TCE)

Analytical results from the 1995 soil assessment indicated the presence of PCE and TCE in boring B2-7 at concentrations of 1.9 mg/kg, and 0.870 mg/kg respectively. The GeoPlexus 1995 Preliminary Site Assessment Report misreported the PCE result in the text of the report as 1,900 mg/kg (parts per million). A review of the laboratory analytical report, included as an appendix to the assessment report, indicated the PCE results were reported by the laboratory in µg/kg (parts per billion), as such, it is correct here in this discussion.

Boring B2-7 was near the former waste oil tank in AOC-3 and near the 2009 boring 0509 (Figure 2). The 1996 soil assessment detected concentrations of PCE and TCE in boring B9 at 5 to 6.5 feet bgs (3.7 mg/kg and 1.7 mg/kg, respectively) and B10 at 5 to 6.5 feet bgs (2.6 mg/kg and nondetect, respectively). Samples from B9 and B10 collected at 10 to 11.5 feet bgs did not contain concentrations of PCE or TCE above laboratory reporting limits. Borings B9 and B10 were located near the previous boring EB2-7 and near the former waste oil tank in AOC-3 and near the current location of 0509. PCE and TCE concentrations were not detected in the five soil samples analyzed for VOCs in area AOC-3 during the 2009 investigation. Concentrations of PCE and TCE were below laboratory reporting limits in the 2009 grab-groundwater samples collected in area AOC-3.

# 4. Laboratory Quality Assurance / Quality Control

EBMUD Laboratory's certified analytical reports for the 2009 site investigation soil data were subjected to a quality assurance / quality control review and data validation. The program includes standard sample collection procedures in the field and established analytical methodologies in the laboratory. Laboratory and field quality control (QC) sample results were evaluated to assess the quality of the individual sample results and overall method performance. Analytical performance was evaluated on a "batch QC" basis by evaluating the QC sample results for groups of samples that were prepared and analyzed together. The data evaluation performed included review of the following:

• Spikes (laboratory control spikes, blank spikes, matrix control spikes and surrogate spikes)

- Duplicates (laboratory control spike duplicates, blank spike duplicates, matrix control spike duplicates and field duplicates)
- Sample integrity (chain-of-custody documentation, sample preservation and holding time compliance)

According to the EBMUD laboratory report, all reported laboratory control spike sample recoveries, blank spike sample recoveries, and matrix control spike sample recoveries were within laboratory QC limits with some exceptions, as noted by qualifiers in Tables 1-8.

Chain-of-custody documentation was found to be complete and consistent. Samples were preserved as required per method specifications and all samples were analyzed within the method-specified holding times. This suggests that the sample handling and shipping processes did not contribute to sample contamination.

Based on the data quality evaluation, no systematic problems were detected and the overall data objectives for sample contamination, precision, accuracy, and sample integrity were met.

### 5. Conclusions and Recommendations

Based on the comparison of the 2009 soil sampling analytical results in to the Low-Threat Underground Storage Tank Case Closure Policy criteria, no concentrations of benzene, ethylbenzene, or naphthalene in soil exceeded thresholds for direct contact or outdoor exposure in shallow soils. Based on this, no further soil characterization is recommended.

Based on the 2009 grab groundwater analytical results, the hydrocarbon contaminant plumes in AOC-1 and AOC-3 are not defined laterally. The TPH plume at AOC-2 is defined to the east, south, and west by nondetections for TPH-mo in surrounding borings. The extent of the contaminant plume is not defined to the north. Further characterization should be determined by groundwater sampling in AOC-1 and AOC-3, which are on the downgradient sides of the Shops Building relative to AOC-2. AECOM recommends installing groundwater monitoring wells in areas AOC-1 and AOC-3 to determine the lateral extent of the hydrocarbon plume in each area. A follow on work plan will discuss installation of a sufficient number of groundwater monitoring wells to define the extent of the plumes and allow determination of groundwater flow direction and gradient. Future groundwater samples should be analyzed for TPH-g, TPH-d, TPH-mo, and VOCs.

Concentrations of benzene, ethylbenzene, and naphthalene were below their respective RWQCB ESLs for vapor intrusions resulted in the potential for the site concentrations to have a soil vapor risk is low. No soil vapor sampling is recommended.

After additional groundwater characterization has been completed, AECOM recommends a Conceptual Site Model be prepared and evaluated.

# 6. Limitations

Background information and other data have been furnished to AECOM by EBMUD and/or its third party subcontractors, which AECOM has used in preparing this report. AECOM has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information.

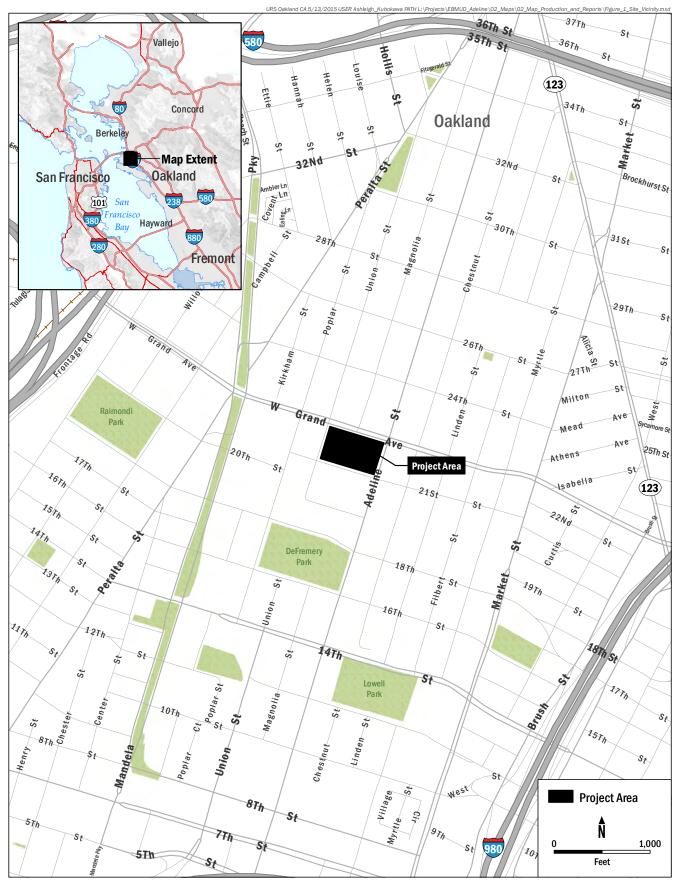
This report is conceptual or preliminary in nature and is not to be used as the sole basis for remedial action, or as a basis for major capital decisions. Further investigations may be required to fill data gaps identified during the document review process prior to such decisions.

### 7. References

- Alisto Engineering Group, 2009. Site Investigation Report for Bay Municipal Utility District Adeline Maintenance Center, 1200 21st Street, Oakland, California. May 21.
- General Environmental Management Services (GEMS), 1994. Interim Remedial Action Summary Report for EBMUD Facility located at 1200 21st Street, Oakland, California. December 29.
- GEMS, 1998. Tank Removal Summary Report for EBMUD Adeline Maintenance Facility, 1198 21st Street, Oakland CA. September 15.
- GeoPlexus, Inc. (GeoPlexus), 1995. Preliminary Site Assessment Report for Adeline Maintenance Facility. March 2. September 12.
- GeoPlexus, 1997. Subsurface Investigation Report and Response to Agency Comments on Addendum No. 2 to Materials Management Plan for EBMUD Adeline Maintenance Facility, Oakland, CA. January 22.
- GeoPlexus, 1998. Transmittal of Phase II Construction Materials Management Final Report for EBMUD Adeline Maintenance Center, Oakland CA. June 30.

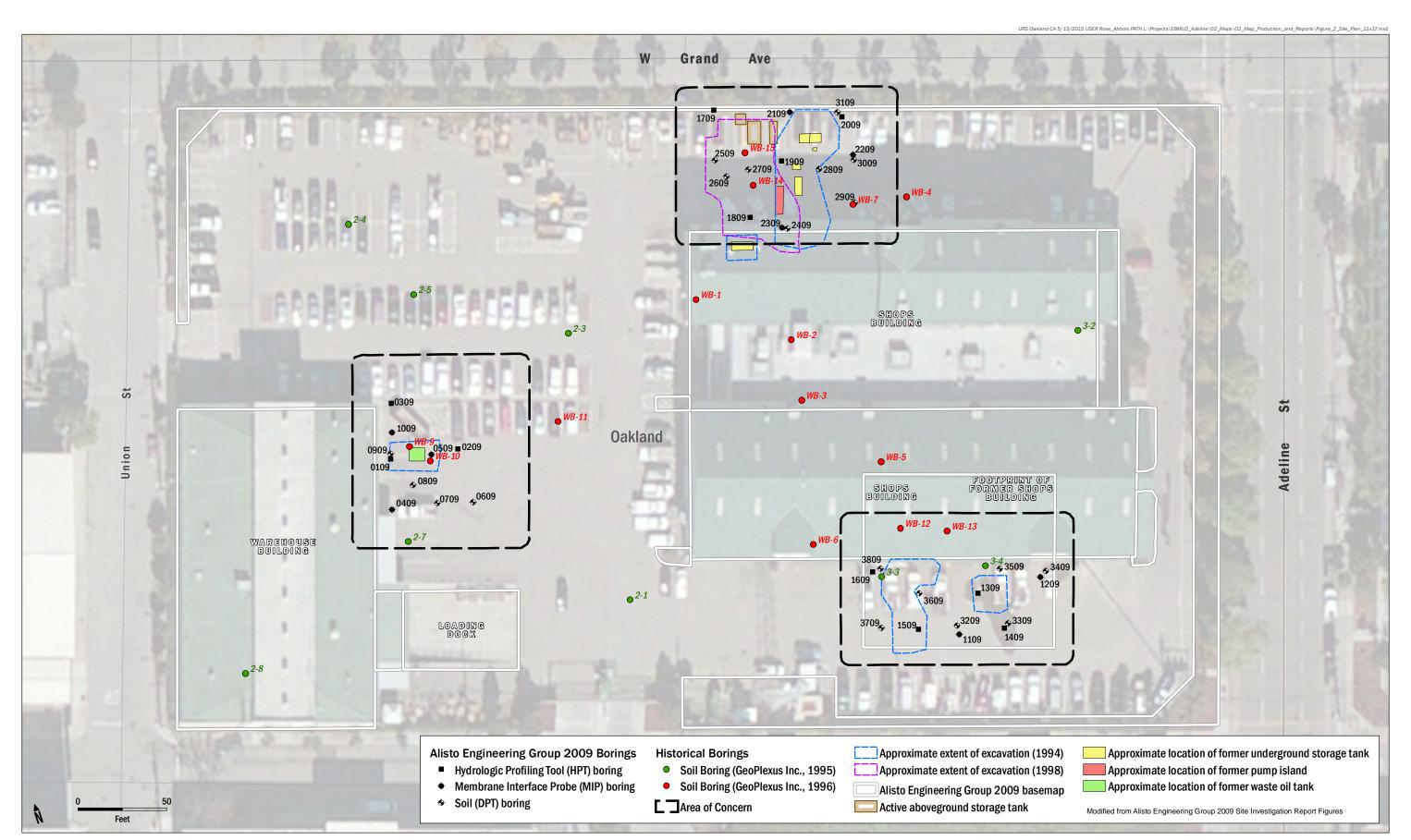
San Francisco Bay Regional Water Quality Control Board, 2013. Environmental Screening Levels. December 23.





# **A=COM EBMUD**Adeline Maintenance Center 1200 21st Street, Oakland

**FIGURE 1**Site Vicinity



Site Plan

EBMUD

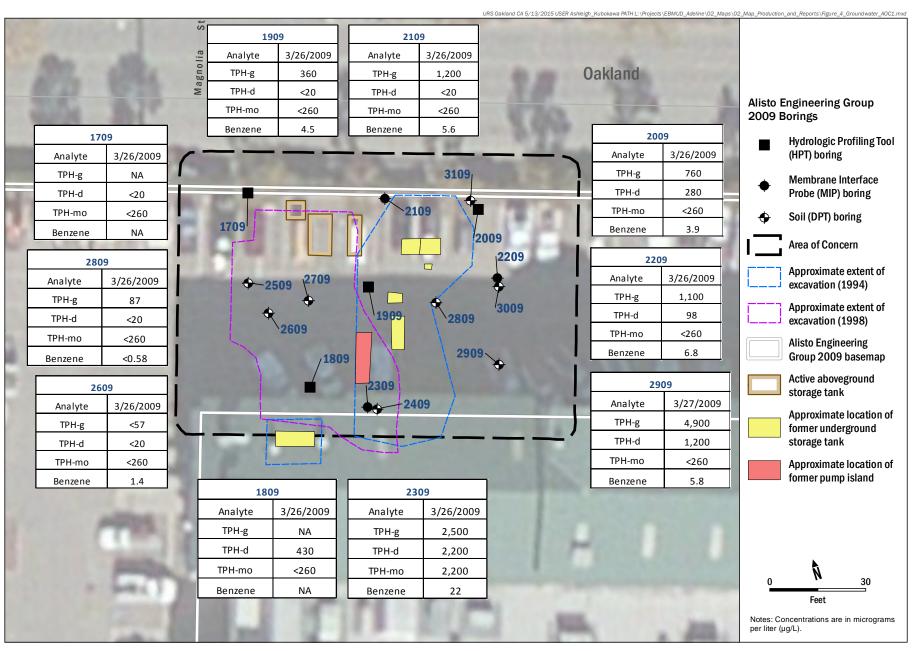
Adeline Maintenance Center
1200 21st Street, Oakland

# FIGURE 3

Notes: Concentrations are in milligrams

per kilogram (mg/kg).

Area of Concern 1 – Total Petroleum Hydrocarbons Soil Analytical Results – March 2009

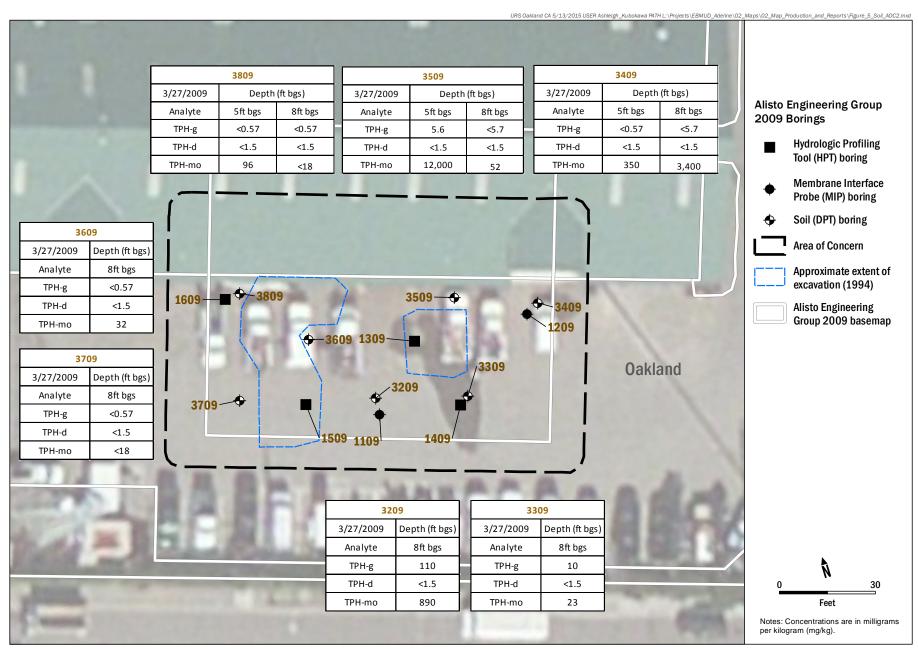


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Adeline Maintenance Center 1200 21st Street, Oakland

# FIGURE 4

Area of Concern 1 – Total Petroleum Hydrocarbons Groundwater Analytical Results – March 2009



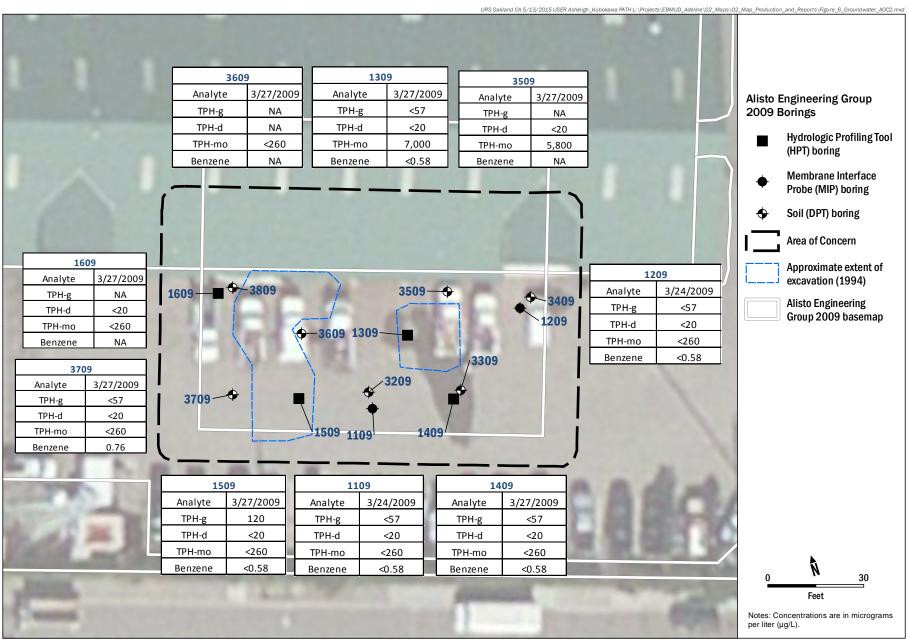
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Adeline Maintenance Center 1200 21st Street, Oakland

# FIGURE 5

Area of Concern 2 – Total Petroleum Hydrocarbons Soil Analytical Results – March 2009



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Adeline Maintenance Center 1200 21st Street, Oakland

# FIGURE 6

Area of Concern 2 – Total Petroleum Hydrocarbons Groundwater Analytical Results – March 2009

EBMUD

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1200 21st Street, Oakland

TPH-d

TPH-mo

<1.5

<18

<1.5

<18

TPH-d

TPH-mo

<1.5

<18

<1.5

<18

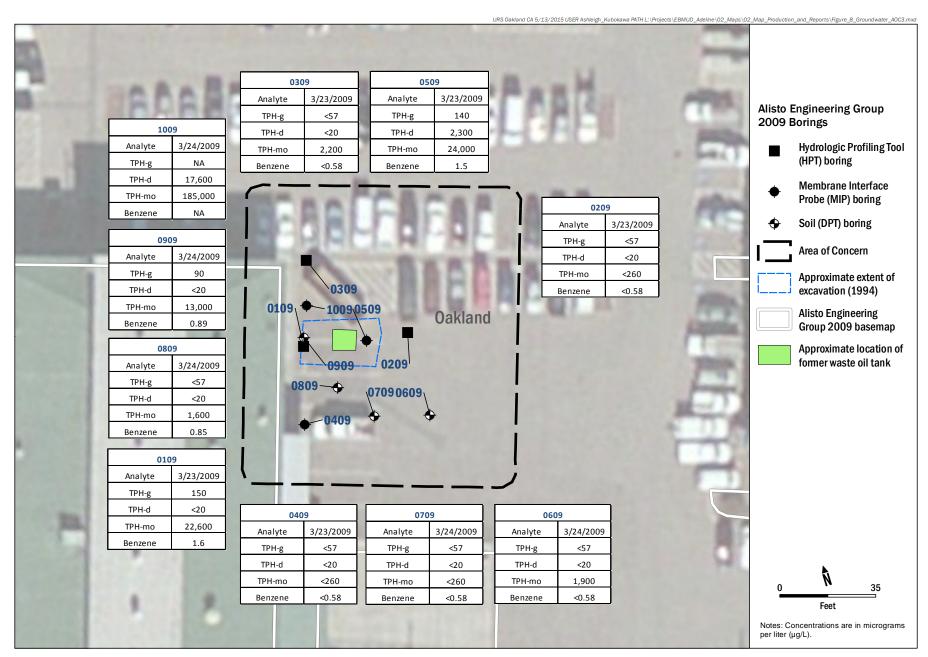
# FIGURE 7

Feet

Notes: Concentrations are in milligrams

per kilogram (mg/kg).

Area of Concern 3 – Total Petroleum Hydrocarbons Soil Analytical Results – March 2009



**EBMUD** 

Adeline Maintenance Center 1200 21st Street, Oakland

# FIGURE 8

Area of Concern 3 – Total Petroleum Hydrocarbons Groundwater Analytical Results – March 2009



Table 1
2009 Soil Analytical Results - Metals
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chroming		Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	EPA I	Method		6010B	6010B	6010B	6010B	6010B	6010B	WET	6010B	6010B	6010B	7471	6010B	6010B	6010B	7761	6010B	6010B	6010B
		nits		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		(mg/kg)		500	500	10,000	75	100	2,5	00	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
Area of Con	cern 1																				
2509-8	2509	8	03/26/09	< 0.963	4.45	132	0.363	0.243	40.8		8.33	26.1	88.9	0.20	<0.193	32.9	<1.25	0.086	<1.06	35.5	84.2
2609-8	2609	8	03/26/09	<0.929	2.32	83.5	0.301	0.112	44.1		4.78	12.1	7.62	0.037	2.67	29.5	<1.21	0.04	<1.02	38.1	32.8
2909-10	2909	10	03/26/09	<0.882	1.36	272	0.522	<0.0794	40.8		3.5	13.4	2.65	0.027	0.201	27.9	<1.15	0.017	<0.97	26.2	27.4
2909-7	2909	7	03/26/09	<0.899	2.83	50.7	0.356	0.089	50.4		6.32	17.1	18.2	0.16	<0.18	33.7	<1.17	0.089	<0.989	37.7	37.6
3009-7	3009	7	03/26/09	<0.778	2.08	52.3	0.313	0.131	39.7		6.59	12.0	12.6	0.23	<0.156	34	<1.01	0.065	<0.855	31.0	42.8
3009-10		10	03/26/09	<0.921	14.5	339	0.422	0.397	35.4		27.4	6.63	3.9	0.028	0.433	48.6	<1.2	0.065	<1.01	32.1	24.0
3109-8	3109	8	03/26/09	<0.958	<0.958	833	0.434	<0.0862	45.8		3.94	12.1	4.0	0.027	1.44	34.1	<1.25	0.019	<1.05	37.2	29.6
3109-12		12	03/26/09	1.42	<1	84	0.244	0.126	29.5		3.61	6.86	4.11	0.035	<0.201	22.4	<1.31	0.059	<1.1	19.0	17.8
Area of Con	cern 2																				
3209-8	3209	10	03/27/09	<0.931	3.12	69.6	0.235	0.258	33.4		7.14	12.2	19.9	0.45	<0.186	24.3	<1.21	0.049	<1.02	25.2	43.7
3309-8	3309	10	03/27/09	< 0.963	1.3	105	0.269	0.112	39.5		5.59	7.93	3.81	0.038	<0.193	19.4	<1.25	0.025	<1.06	27.3	23.5
3409-5	3409	5	03/27/09	< 0.904	1.3	39.7	0.368	<0.0814	68.4	0.871	7.62	21.9	8.6	0.081	<0.181	41.1	<1.18	0.067	<0.995	55.6	55.1
3409-8	0400	8	03/27/09	<0.673	1.78	50.7	0.223	<0.0606	36.6		5.66	7.26	3.7	0.038	0.566	19.6	<0.875	0.021	<0.74	26.4	19.5
3509-5	3509	5	03/27/09	<0.945	8.1	50.7	0.34	0.2	62.6	0.784	7.78	24.4	19.1	0.16	0.432	40.6	<1.23	0.063	<1.04	52.8	68.9
3509-8	3303	8	03/27/09	<0.912	7.82	154	0.363	0.248	32.2		5.5	8.64	3.36	0.032	0.439	28.2	<1.19	0.061	<1	30.2	26.5
3609-8	3609	10	03/27/09	<0.898	1.21	84.1	0.223	0.184	34.9		6.28	7.85	14.2	0.055	<0.18	19.2	<1.17	0.031	<0.987	24.4	27.2
3709-8	3709	10	03/27/09	<0.998	5.24	258	0.563	0.234	45.5		9.68	14.7	4.2	0.043	<0.2	55.6	<1.3	0.16	<1.1	41.2	40.0
3809-5	3809	5	03/27/09	<0.909	5.02	74.1	0.365	0.11	58.7	0.766	7.26	22.2	20.3	0.13	0.514	39.9	<1.18	0.057	<1	48.7	48.0
3809-8		8	03/27/09	<0.919	1.21	87.5	0.2	0.219	32.2		7	7.45	3.47	0.038	<0.184	24.6	<1.19	0.029	<1.01	22.6	26.0
Area of Con	icern 3	0	02/27/00	.0.000	2.67	40.0	0.405	0.462	20 E		E 40	40.4	44.0	0.000	0.470	24.4	.4.40	0.025	.0.000	22.2	20.0
0609-8 0609-20	0609	8 20	03/27/09 03/24/09	<0.893 <0.825	<b>2.67</b> <0.825	19.8 44.9	0.185 0.253	<b>0.163</b> < 0.0743	29.5 30.5		5.42 4.34	10.4 5.75	11.9 2.12	0.083 0.038	<b>0.179</b> <0.165	24.4 18.2	<1.16 <1.07	0.035 0.034	<0.982 <0.908	22.2 21.2	36.0 19.7
0709-8		8	03/24/09	<0.849	1.44	84.2	0.25	<b>0.136</b>	34.2		26	6.67	13.5	0.036	<b>0.188</b>	27.1	<1.07	0.034	<0.906	27.0	25.8
0709-16	0709	16	03/24/09	<0.951	<0.951	260	0.479	<0.0856	46.3		5.66	10.5	3.94	0.042	0.100	28.6	<1.24	0.012	<1.05	44.3	51.3
0809-16	0809	18	03/24/09	<0.962	1.29	272	0.514	<0.0865	28.0		5.9	20.2	4.07	0.051	<0.192	41.4	<1.25	0.1	<1.06	21.7	43.4
0909-16	0909	18	03/24/09	<1.02	<1.02	166	0.42	<0.0915	28.9		2.92	10.0	4.14	0.045	<0.203	20.4	<1.32	0.047	<1.12	18.9	20.3

### Abbreviations:

ft bgs = feet below ground surface

mg/kg = milligram per kilogram

TTLC = Total Threshold Limit Concentration

# Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

1. California Code of Regulations, Title 22, Chapter 11, Article 3, Table II. List of Inorganic Persistent and Bioaccumulative Toxic Substances and Their Soluble Threshold Limit Concentration: (STLC) and Total Threshold Limit Concentration (TTLC) Values.

Table 2 2009 Soil Analytical Results - Total Petroleum Hydrocarbons Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	тРН-9	TPH-d	TPH-mo	Oil and Grease
	EPA Meti	hod		8015B	8015B	8015B	1644
	Units			mg/kg	mg/kg	mg/kg	mg/kg
Area of Concern	n 1						
2509-8	2509	8	03/26/09	<5.7	27	270	2,700
2609-8	2609	8	03/26/09	<5.7	<1.5	34 T	176
2909-7	2909	7	03/26/09	600	140 T	76 T	42.4
2909-10	2909	10	03/26/09	320	<1.5	<18	333
3009-7	3009	7	03/26/09	2,500	600 T	230 T	865
3009-10	3009	10	03/26/09	660	120	37 T	48.1
3109-8	3109	8	03/26/09	2,100	170 T	66 T	37.1
3109-12	3109	12	03/26/09	2,400	120 T	53	81.9
Area of Concern	1 2						
3209-8	3209	10	03/27/09	110	<1.5	890	564
3309-8	3309	10	03/27/09	10	<1.5	23 T	55.3
3409-5	3409	5	03/27/09	<0.57	<1.5	350	147
3409-8	3403	8	03/27/09	<5.7	<1.5	3,400	2,340
3509-5	3509	5	03/27/09	5.6	<1.5	12,000	2,230
3509-8	3303	8	03/27/09	<5.7	<1.5	52 T	38.8
3609-8	3609	10	03/27/09	<0.57	<1.5	32 T	60.5
3709-8	3709	10	03/27/09	<0.57	<1.5	<18	333
3809-5	3809	5	03/27/09	<0.57	<1.5	96 T	89.9
3809-8		8	03/27/09	<0.57	<1.5	<18	36.8
Area of Concern	1 3						
0609-8	0609	8	03/27/09	<0.57	<1.5	<18	43.6
0609-20	0000	20	03/24/09	<0.57	<1.5	<18	333
0709-8	0709	8	03/24/09	<0.57	<1.5	<18	43.5
0709-16	0,00	16	03/24/09	<0.57	<1.5	<18	26.3
0809-16	0809	18	03/24/09	<0.57	<1.5	<18	30.7
0909-16	0909	18	03/24/09	<0.57	26 T	490	37.4

# **Abbreviations**

ft bgs = feet below ground surface

mg/kg = milligram per kilogram

T = A "T" qualifier indicates that diesel/gasoline pattern is atypical.

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

#### Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Table 3
2009 Soil Analytical Results - Volatile Organic Compounds
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Date	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	1-CHLOROBUTANE	2-BUTANONE	ACETONE	ACROLEIN	BENZENE	CARBON DISULFIDE	CHLOROACETONITRILE	CHLOROETHANE	CHLOROMETHANE	DIBROMOCHLOROPROPANE
	EPA Mo			8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
	Uni	ts		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Area of Concern		-													2.22
2509-8	2509	8	03/26/09	<0.17	<0.19	<0.25	<0.64	<0.75	<0.68	<0.23	<0.32	<0.29	<0.48	<0.53	<0.32
2609-8	2609	8	03/26/09	<0.17	<0.19	<0.25	<0.64	<0.75	<0.68	<0.23	<0.32	<0.29	<0.48	<0.53	<0.32
2909-7	2909	10	03/26/09 03/26/09	<0.17	<0.19 <0.22	<0.25 <0.75	<0.64 <0.23	<0.75	<0.68	<0.23	<0.32 <0.27	<0.29	<0.48 <b>7.3</b>	<0.53	<0.32 <0.18
2909-10 3009-7		7	03/26/09	<0.25 <0.17	<0.22	<0.75	<0.23	<1.2 <0.75	<0.32 <0.68	<0.48 <0.23	<0.27	<0.22 <0.29	<0.48	<0.52 <0.53	<0.18
3009-10	3009	10	03/26/09	<0.17	<0.19	<0.25	<0.04	<1.2	<0.86	<0.23	<0.32	0.29	5.2	<0.53	0.42
3109-8		8	03/26/09	<0.25	<0.22	<0.75	<0.23	<0.75	<0.52	<0.48	<0.27	<0.29	<0.48	<0.52	<0.32
3109-0	3109	12	03/26/09	9.0	2.0	<0.25	<0.64	<0.75	<0.68	<0.23	<0.32	<0.29	<0.48	<0.53	<0.32
Area of Concern	2	12	03/20/09	9.0	2.0	₹0.25	<b>\0.04</b>	<0.73	₹0.00	₹0.25	<0.5Z	₹0.29	₹0.40	₹0.55	<0.32
3209-8	3209	10	03/27/09	<0.17	<0.19	<0.25	<0.64	<0.75	<0.68	<0.23	<0.32	<0.29	<0.48	<0.53	<0.32
3309-8	3309	10	03/27/09	<0.17	<0.19	<0.25	<0.64	<0.75	<0.68	<0.23	<0.32	<0.29	<0.48	<0.53	<0.32
3409-5		5	03/27/09	<0.017	<0.019	<0.025	<0.064	0.79	<0.068	<0.023	<0.032	<0.029	<0.048	0.071	<0.032
3409-8	3409	8	03/27/09	<0.25	<0.22	<0.75	<0.23	<1.2	<0.32	<0.48	<0.27	<0.22	6.0	<0.52	<0.18
3509-5	0500	5	03/27/09	0.053	0.03	<0.025	0.13	0.46	<0.068	<0.023	<0.032	<0.029	<0.048	0.07	<0.032
3509-8	3509	8	03/27/09	<0.25	<0.22	<0.75	<0.23	<1.2	<0.32	<0.48	<0.27	<0.22	9.8	<0.52	<0.18
3609-8	3609	10	03/27/09	<0.017	<0.019	<0.025	<0.064	0.19	<0.068	<0.023	0.075	<0.029	0.048	0.053	<0.032
3709-8	3709	10	03/27/09	<0.017	<0.019	<0.025	<0.064	0.22	<0.068	<0.023	<0.032	<0.029	<0.048	<0.053	<0.032
3809-5		5	03/27/09	<0.017	<0.019	<0.025	0.12	0.59	<0.068	<0.023	<0.032	<0.029	<0.048	< 0.053	<0.032
3809-8	3809	8	03/27/09	<0.025	<0.022	0.15	<0.023	<0.12	0.097	<0.048	<0.027	<0.022	3.0	<0.021	<0.018
<b>Area of Concern</b>	3														
0609-8	0609	8	03/27/09	<0.017	<0.019	<0.025	<0.064	0.23	<0.068	<0.023	<0.032	<0.029	<0.048	<0.053	<0.032
0609-20	0009	20	03/24/09	<0.025	<0.022	0.21	<0.023	<0.12	<0.032	<0.048	<0.027	<0.022	2.2	<0.021	<0.018
0709-8	0709	8	03/24/09	<0.017	<0.019	<0.025	<0.064	0.13	<0.068	<0.023	<0.032	<0.029	<0.048	<0.053	<0.032
0709-16		16	03/24/09	<0.025	<0.022	0.25	<0.023	<0.12	<0.032	<0.048	<0.027	<0.022	5.7	<0.021	<0.018
0809-16	0809	18	03/24/09	<0.017	<0.019	<0.025	<0.064	0.27	<0.068	<0.023	<0.032	<0.029	<0.048	<0.053	<0.032
0909-16	0909	18	03/24/09	0.029	<0.019	<0.025	<0.064	1.9	<0.068	<0.023	<0.032	<0.029	<0.048	<0.053	<0.032

Table 3
2009 Soil Analytical Results - Volatile Organic Compounds
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Date	DIBROMOMETHANE	DICHLORODIFLUOROMETHANE	ETHYL ACETATE	ETHYL BENZENE	ISOPROPYLBENZENE	M+P XYLENES	METHYLENE CHLORIDE	NAPHTHALENE	N-BUTYLBENZENE	N-PROPYLBENZENE	O-XYLENE	TERT-BUTYLBENZENE
	EPA Me			8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
A	Uni	ts		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Area of Concern		0	00/00/00	0.04	0.05	0.00	0.07	0.00	0.00	4.0	0.50	0.40	0.40	0.00	0.40
2509-8 2609-8	2509 2609	<u>8</u> 8	03/26/09 03/26/09	<0.24 <0.24	<0.35 <0.35	<0.38 <0.38	<0.27 <0.27	<0.22 <0.22	<0.29 <0.29	1.2 1.8	<0.52 <0.52	<0.19 <0.19	<0.18 <0.18	<0.23 <0.23	<0.16 <0.16
2909-7		7	03/26/09	<0.24	<0.35	<0.38	<0.27	0.42	<0.29	6.9	<0.52	<0.19	1.1	<0.23	<0.16
2909-10	2909	10	03/26/09	<0.17	<0.33	<0.33	<0.2	<0.22	<0.29	7.3	<0.52	<0.19	<0.18	<0.23	<0.16
3009-7		7	03/26/09	<0.24	<0.35	<0.38	<0.27	1.9	<0.29	8.8	<0.52	<0.19	<0.18	<0.23	<0.16
3009-10	3009	10	03/26/09	<0.17	<0.33	<0.33	<0.2	0.28	<0.29	5.2	<0.52	<0.19	0.42	<0.23	<0.16
3109-8	0400	8	03/26/09	<0.24	< 0.35	<0.38	<0.27	1.0	<0.29	6.3	4.3	<0.19	2.3	<0.23	<0.16
3109-12	3109	12	03/26/09	<0.24	<0.35	<0.38	1.8	0.6	3.3	0.82	2.4	<0.19	1.6	0.81	0.3
Area of Concern	2														
3209-8	3209	10	03/27/09	<0.24	< 0.35	<0.38	<0.27	<0.22	<0.29	3.9	<0.52	<0.19	<0.18	<0.23	<0.16
3309-8	3309	10	03/27/09	<0.24	< 0.35	<0.38	<0.27	<0.22	<0.29	1.2	<0.52	<0.19	<0.18	<0.23	<0.16
3409-5	3409	5	03/27/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	6.7	<0.052	<0.019	<0.018	<0.023	<0.016
3409-8	0400	8	03/27/09	<0.17	<0.33	<0.33	<0.2	<0.22	<0.29	6.0	<0.52	<0.19	<0.18	<0.23	<0.16
3509-5	3509	5	03/27/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	4.5	<0.052	0.069	<0.018	<0.023	<0.016
3509-8		8	03/27/09	<0.17	<0.33	<0.33	<0.2	<0.22	<0.29	9.8	<0.52	<0.19	<0.18	<0.23	<0.16
3609-8	3609	10	03/27/09	<0.024	0.035	<0.038	<0.027	<0.022	<0.029	3.1	<0.052	<0.019	<0.018	<0.023	<0.016
3709-8	3709	10	03/27/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	5.0	<0.052	<0.019	<0.018	<0.023	<0.016
3809-5 3809-8	3809	5 8	03/27/09 03/27/09	<0.024 <0.017	<0.035 <0.033	<0.038 <0.033	<0.027 <0.02	<0.022 <0.022	<0.029 <0.029	8.6 3.0	<0.052 <0.052	<0.019 <0.019	<0.018 <0.018	<0.023 <0.023	<0.016 <0.016
Area of Concern	2	0	03/27/09	<0.017	<0.033	<0.033	<∪.U∠	<0.022	<0.029	3.0	<0.052	<0.019	<0.010	<0.023	<0.016
0609-8	<u>.                                    </u>	8	03/27/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	3.6	<0.052	<0.019	<0.018	<0.023	<0.016
0609-20	0609	20	03/24/09	<0.024	<0.033	<0.033	<0.027	<0.022	<0.029	2.2	<0.052	<0.019	<0.018	<0.023	<0.016
0709-8		8	03/24/09	<0.017	<0.035	<0.038	<0.027	<0.022	<0.029	5.1	<0.052	<0.019	<0.018	<0.023	<0.016
0709-16	0709	16	03/24/09	<0.017	<0.033	<0.033	<0.02	<0.022	<0.029	5.7	<0.052	<0.019	<0.018	<0.023	<0.016
0809-16	0809	18	03/24/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	7.6	<0.052	<0.019	<0.018	<0.023	<0.016
0909-16	0909	18	03/24/09	<0.024	<0.035	<0.038	<0.027	<0.022	<0.029	4.6	<0.052	0.046	<0.018	<0.023	<0.016

# Table 3 2009 Soil Analytical Results - Volatile Organic Compounds Adeline Maintenance Center Technical Memo

# Abbreviations:

ft bgs = feet below ground surface mg/kg = milligram per kilogram

### Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Only analytes with detections are shown.

Table 4
2009 Soil Analytical Results - Semivolatile Organic Compounds
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Date	1,4-DICHLOROBENZENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(GHI)PERYLENE	BENZO(K)FLUORANTHENE	BIS(2-ЕТНҮСНЕХҮС)РНТНАСАТЕ	CHRYSENE	FLUORANTHENE	FLUORENE	INDENO(1,2,3-CD)PYRENE	NAPHTHALENE	PHENANTHRENE	PHENOL	PYRENE
	EPA M			8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C
	Uni	its		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Area of Conce			1 00/00/00	2.222	2.222	2 22=	2.42	2.4=	2.12		2.42	2 2 2 5		2.22	2 2 2 2	2 2 2 2			2.22	
2509-8	2509	8	03/26/09	<0.022	<0.063	<0.027	0.16	0.17	0.12	0.14	0.16	0.085	0.26	0.32	<0.039	0.098	0.035	0.22	0.38	0.41
2609-8	2609	8	03/26/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.36	<0.15
2909-7	2909	, , , , , , , , , , , , , , , , , , ,	03/26/09 03/26/09	<0.022	<b>0.082</b> <0.063	<0.027	<0.078	<0.065 <0.065	< 0.05	<0.12 <0.12	<0.042	<0.076 <0.076	<0.061	<0.2	<0.039 <0.039	<0.068	0.083	<0.062 <0.062	0.22 0.97	<0.15
2909-10 3009-7		10 7	03/26/09	<0.28 <0.022	<b>2.2</b>	<0.027 <b>0.057</b>	<0.078 <0.078	<0.065	<0.05 <0.05	<0.12	<0.042 <0.042	<0.076	<0.061 <b>0.071</b>	<0.2 <0.2	<b>0.039</b>	<0.068 <0.068	<0.52 <b>0.32</b>	<0.06∠ <b>0.12</b>	0.33	<0.15 <b>0.19</b>
3009-10	3009	10	03/26/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	< 0.039	<0.068	<0.52	<0.062	0.33	<0.15
3109-8		8	03/26/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	0.89	<0.062	0.093	<0.15
3109-12	3109	12	03/26/09	<0.28	0.47	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	2.4	<0.062	0.14	<0.15
ea of Concern	1.2		0 0. = 0. 0 0																• • • • • • • • • • • • • • • • • • • •	10110
3209-8	3209	10	03/27/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.17	<0.15
3309-8	3309	10	03/27/09	<0.022	< 0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.35	<0.15
3409-5		5	03/27/09	<0.022	< 0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.17	<0.15
3409-8	3409	8	03/27/09	<0.28	< 0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.52	< 0.062	0.61	<0.15
3509-5	3509	5	03/27/09	<0.022	< 0.063	<0.027	<0.078	<0.065	< 0.05	<0.12	<0.042	0.23	<0.061	<0.2	<0.039	<0.068	<0.021	0.077	0.31	<0.15
3509-8		8	03/27/09	<0.28	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.52	<0.062	0.35	<0.15
3609-8	3609	10	03/27/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.74	<0.15
3709-8	3709	10	03/27/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.26	<0.15
3809-5	3809	5	03/27/09	0.022	< 0.063	<0.027	<0.078	<0.065	< 0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.15	<0.15
3809-8		8	03/27/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	<0.045	<0.15
ea of Concern	1 3											-	-							
0609-8	609	8	03/27/09	<0.022	<0.063	<0.027	0.15	0.21	0.12	0.13	0.19	<0.076	0.19	<0.2	<0.039	0.1	<0.021	<0.062	0.14	0.16
0609-20		20	03/24/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.66	<0.15
0709-8	709	8	03/24/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	1.7	<0.15
0709-16		16	03/24/09	<0.022	<0.063	<0.027	<0.078	<0.065	< 0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.76	<0.15
0809-16	809	18	03/24/09	<0.022	<0.063	<0.027	<0.078	<0.065	< 0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.52	<0.15
0909-16	909	18	03/24/09	<0.022	<0.063	<0.027	<0.078	<0.065	<0.05	<0.12	<0.042	<0.076	<0.061	<0.2	<0.039	<0.068	<0.021	<0.062	0.67	<0.15

Abbreviations:

Notes:

ft bgs = feet below ground surface mg/kg = milligram per kilogram

Values in bold indicate analyte detected above the laboratory reporting limit.

Only analytes with detections are shown.

Table 5
2009 Groundwater Analytical Results - Metals
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	7470	6010B	6010B	6010B	7761	6010B	6010B	6010B
		Units		μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Area of	Concern 2																			
1109	1109	13	03/24/09	<13.2	<12.1	227	<0.55	1.12	<3.3	1.5	<3.3	<5.5	<0.02	6.25	8.29	<9.9	<0.04	<14.3	<4.4	<4.4
1209	1209	13	03/24/09	<13.2	12.2	459	<0.55	2.33	86.4	16.5	32	7.51	0.089	8.89	77.8	<9.9	0.16	<14.3	64.6	52.3
1309	1309	13	03/27/09	<13.2	<12.1	261	<0.55	<0.99	8.07	3.52	<3.3	<5.5	<0.02	12.9	12.2	<9.9	<0.04	<14.3	<4.4	6.66
1409	1409	13	03/27/09	<13.2	<12.1	224	<0.55	<0.99	42.6	15.5	28.6	25.4	0.12	11.8	36.2	<9.9	0.06	<14.3	28.1	76.6
1509	1509	13	03/27/09	<13.2	18	3,770	2.75	2.55	370	100	77.3	32.5	0.26	6.49	384	<9.9	0.34	<14.3	311	207
1609	1609	13	03/27/09							ľ	Not analyze	ed - insuffic	ient volum	е						
3509	3509	13	03/27/09							ľ	Not analyze	ed - insuffic	ient volum	е						
3609	3609	13	03/27/09							ľ	Not analyze	ed - insuffic	ient volum	е						
3709	3709	13	03/27/09							ľ	Not analyze	ed - insuffic	ient volum	е						
Area of	Concern 3																			
0109	0109	13	03/23/09	<13.2	<12.1	716	<0.55	< 0.99	79.7	10.5	22	<5.5	0.11	7.47	52	<9.9	0.09	<14.3	55.1	61.9
0209	0209	13	03/23/09							ľ	Not analyze	ed - insuffic	ient volum	е						
0309	0309	13	03/23/09	<13.2	66	3,870	3.91	2.66	606	85.3	132	40.5	0.29	<2.2	414	<9.9	0.58	<14.3	452	325
0409	0409	13	03/23/09		Not analyzed - insufficient volume															
0509	0509	13	03/23/09	<13.2	<12.1	690	<0.55	< 0.99	29.2	4.07	5.72	<5.5	0.036	10	21.1	<9.9	0.06	<14.3	14.5	12.8
0609	0609	13	03/24/09		Not analyzed - insufficient volume															
0709	0709	13	03/24/09	Not analyzed - insufficient volume																
0809	0809	13	03/24/09	<13.2	<12.1	729	<0.55	<0.99	14.4	1.18	5.7	<5.5	0.024	2.57	11.4	<9.9	0.041	<14.3	7.52	13.7
0909	0909	13	03/24/09	<13.2	<12.1	392	<0.55	< 0.99	7.98	<1.1	<3.3	<5.5	0.023	4.54	6.09	<9.9	<0.04	<14.3	<4.4	<4.4
1009	1009	13	03/24/09							1	Not analyze	ed - insuffic	ient volum	е						

# Abbreviations:

ft bgs = feet below ground surface

μg/L = micrograms per liter

#### Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Table 6 2009 Groundwater Analytical Results - Total Petroleum Hydrocarbons Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	TPH-g		PH-4		TPH-mo	Oil and Grease
	EPA Me			8015B		8015B		8015B	1644
	Unit	S		μg/L		μg/L		μg/L	μg/L
Area of Concern									
1709	1709	13	03/26/09			<20		<260	<17
1809	1809	13	03/26/09			430	Т	<260	
1909	1909	13	03/26/09	360		<20		<260	<7.1
2009	2009	13	03/26/09	760		280	Т	<260	<9.1
2109			03/26/09	1,200		<20		<260	<9.3
2209	2209	13	03/26/09	1,100		98	Т	<260	<9.1
2309	2309	13	03/26/09	2,500		2,200		2,200	<10
2609	2609	13	03/27/09	<57		<20		<260	<8
2809	2809	13	03/26/09	87	T	<20		<260	<7.1
2909	2909	13	03/27/09	4,900	J	1,200	Т	<260	<7.8
Area of Concern 2	2								
1109	1109	13	03/24/09	<57		<20		<260	<7.3
1209	1209	13	03/24/09	<57		<20		<260	<8
1309	1309	13	03/27/09	<57		<20		7,000	<7
1409	1409	13	03/27/09	<57		<20		<260	<8
1509	1509	13	03/27/09	120		<20		<260	<8
1609	1609	13	03/27/09			<20		<260	
3509	3509	13	03/27/09			<20		5,800	<9.4
3609	3609	13	03/27/09					<260	<11
3709	3709	13	03/27/09	<57		<20		<260	<11
Area of Concern	3								
0109	0109	13	03/23/09	150		<20		22,600	<7.3
0209	0209	13	03/23/09	<57		<20		<260	<8
0309	0309	13	03/23/09	<57		<20		<b>2,200</b> T	<8.3
0409	0409	13	03/23/09	<57		<20		<260	<8
0509	0509	13	03/23/09	140	J	2,300		24,000	<8
0609	0609	13	03/24/09	<57		<20		<b>1,900</b> T	<8.2
0709	0709	13	03/24/09	<57		<20		<260	<7.4
0809	0809	13	03/24/09	<57		<20		<b>1,600</b> T	<8
0909	0909	13	03/24/09	90		<20		13,000	<7.1
1009	1009	13	03/24/09			17,600		185,000	7.8

### **Abbreviations**

ft bgs = feet below ground surface

TPH-g = total petroleum hydrocarbons as gasoline

mg/kg = milligram per kilogram

TPH-d = total petroleum hydrocarbons as diesel

mg/kg = milligram per kilogram

TPH-d = total petroleum hydrocarbons as diesel

T = A "T" qualifier indicates that diesel/gasoline pattern is atypical.

TPH-mo = total petroleum hydrocarbons as motor oil

J = The result is an estimate quantity. The assoicated numberical value is the approximate concentration of the analyte in the sample.

#### Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Table 7
2009 Groundwater Analytical Results - Volatile Organic Compounds
Adeline Maintenance Center Technical Memo

	•	_	•		1	•	1						T		1	T	1	•		
Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	1,1-DICHLORO-2-PROPANONE	1,2,3-TRICHLOROBENZENE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	2-BUTANONE	ACETONE	BENZENE	BROMODICHLOROMETHANE	CARBON DISULFIDE	CHLOROFORM	CIS-1,2-DICHLOROETHENE	ETHYL BENZENE	ETHYL ETHER	HEXACHLOROBUTADIENE	HEXACHLOROETHANE	ISOPROPYLBENZENE	M+P XYLENES
	EPA Method			8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
	Units			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Area of Concern 1																				
1709	1709	13	03/26/09								- sample									
1809	1809	13	03/26/09		1						- sample						1			
1909	1909	13	03/26/09	<0.38	<0.82	<0.81	<0.69	<1.7	2.4	4.5	0.73	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	1.3	<1
2009	2009	13	03/26/09	<0.38	<0.82	9.1	1.4	2.9	7.3	3.9	<0.58	0.69	<0.57	<0.58	5.7	<0.66	<0.84	<0.82	3.4	8.1
2109	2109	13	03/26/09	<0.38	<0.82	59	19	5.2	12	5.6	<0.58	<0.61	<0.57	<0.58	24	<0.66	<0.84	<0.82	2.6	81
2209	2209	13	03/26/09	<0.38	<0.82	1.1	<0.69	4.2	12	6.8	<0.58	0.74	<0.57	<0.58	<0.51	2.1	<0.84	<0.82	7.3	1.3
2309	2309	13	03/26/09	<0.38	<0.82	2.6	1.1	<1.7	7.0	22	<0.58	<0.61	<0.57	<0.58	21	<0.66	<0.84	<0.82	13	6.6
2609	2609	13	03/27/09	<0.38	<0.82	<0.81	<0.69	3.3	15	1.4	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
2809	2809	13	03/26/09	<0.38	<0.82	<0.81	<0.69	<1.7	<2	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
2909	2909	13	03/27/09	<0.38	<0.82	<0.81	<0.69	22	32	5.8	<0.58	<0.61	<0.57	<0.58	2.8	1.4	<0.84	<0.82	43	7.2
Area of Concern 2	1400	10	00/04/00	0.00	0.00	0.04	0.00	4 7	0	0.50	0.50	0.04	0.57	0.50	0.54	1 0 00	0.04	0.00	0.5	
1109	1109	13	03/24/09	<0.38	<0.82	<0.81	<0.69	<1.7	<2	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
1209	1209	13	03/24/09	<0.38	<0.82	<0.81	<0.69	<1.7	<2	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
1309	1309	13	03/27/09	<0.38	<0.82	<0.81	<0.69	23	5.4	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
1409	1409	13	03/27/09	<0.38	<0.82	<0.81 UJ	<0.69 UJ		4.3	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84 UJ	<0.82 UJ	<0.5	<1
1509	1509	13	03/27/09	<0.38	<0.82	<0.81	<0.69	7.0	6.0	<0.58	<0.58	<0.61	1.5	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
1609	1609 3509	13	03/27/09					N			zed - insu			10/ coil						
3509 3609	3609	13 13	03/27/09					<u>l'</u>			ple conta			/0 SUII						
3709	3709	13	03/27/09	<0.38	<0.82	<0.81	<0.69	13	13	<b>0.76</b>	zed - insu	<0.61		<0.58	<0.51	<b>√</b> 0.66	<0.84	<0.82	<0.5	<1
Area of Concern 3	3709	13	03/21/09	<0.50	<0.02	<0.01	<0.09	13	13	0.70	<b>VU.30</b>	<0.01	<b>VU.31</b>	<b>&lt;0.30</b>	<b>VU.J1</b>	<0.00	<0.04	<0.02	<b>VU.</b> 3	
0109	0109	13	03/23/09	<0.38	1.2	6.5	<0.69	77	17	1.6	<0.58	0.83	<0.57	1.2	<0.51	<0.66	1.0	<0.82	<0.5	1.4
0209	0209	13	03/23/09	<0.38	<0.82	<0.81	<0.69	170	20	<0.58	<0.58	0.70	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1 <1
0309	0309	13	03/23/09	<0.38	<0.82	<0.81	<0.69	2.3	<b>&lt;</b> 2	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
0409	0409	13	03/23/09	<0.38	<0.82	<0.81	<0.69	<1.7	<2	<0.58	<0.58	0.98	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
0509	0509	13	03/23/09	<0.38	<0.82	4.7	0.83	<1.7	3.9	1.5	<0.58	1.4	<0.57	0.72	<0.51	<0.66	<0.84	<0.82	<0.5	6.7
0609	0609	13	03/23/09	<0.38	<0.82 UJ		<0.69	<1.7	4.3	<0.58	<0.58	0.62	<0.57	<0.58	<0.51	<0.66	<0.84 UJ	<0.82	<0.5	<1
0709	0709	13	03/24/09	<0.38	<0.82	<0.81	<0.69	30	9.7	<0.58	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
0809	0809	13	03/24/09	<0.38	<0.82	<0.81	<0.69	<1.7	5.7	0.85	<0.58	<0.61	<0.57	<0.58	<0.51	<0.66	<0.84	<0.82	<0.5	<1
0909	0909	13	03/24/09	0.49	<0.82	2.1	<0.69	2.4	9.0	0.89	<0.58	<0.61	<0.57	1.7	<0.51	<0.66	<0.84	0.88	<0.5	<1
1009	1009	13	03/24/09	0.70	<b>₹0.0</b> 2	<u> </u>	₹0.09	4.7			zed - inst			1.7	\U.U1	<b>\0.00</b>	₹0.04	1 0.00	\0.0	
1000	1003	10	03/24/03							wor arrary	200 - 1113C	ATTIOIGHT V	Julie							

Table 7
2009 Groundwater Analytical Results - Volatile Organic Compounds
Adeline Maintenance Center Technical Memo

		-													
Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	METHYL-T-BUTYL ETHER	NAPHTHALENE	N-BUTYLBENZENE	NITROBENZENE	N-PROPYLBENZENE	O-XYLENE	P-CHLOROTOLUENE	SEC-BUTYLBENZENE	TERT-BUTYL ALCOHOL	TETRAHYDROFURAN	TOLUENE	VINYL CHLORIDE
	EPA Method			8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
	Units			μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Area of Concern 1															
1709	1709	13	03/26/09								han 30% soil				
1809	1809	13	03/26/09								han 30% soil				
1909	1909	13	03/26/09	<1.2	1.2	<0.79	<1.5	3.4	<0.6	<0.81	<0.68	<5.6	<0.44	0.74	<1.1
2009	2009	13	03/26/09	<1.2	4.2	2.7	<1.5	5.4	2.3	<0.81	1.1	<5.6	<0.44	1.5	<1.1
2109	2109	13	03/26/09	1.4	12	<0.79	<1.5	8.2	34	2.2	<0.68	<5.6	<0.44	7.2	<1.1
2209	2209	13	03/26/09	59	1.4	<0.79	<1.5	7.8	<0.6	<0.81	3.2	<5.6	1.4	0.83	<1.1
2309	2309	13	03/26/09	1.5	45	<0.79	<1.5	34	3.3	6.5	5.2	<5.6	<0.44	4.0	<1.1
2609	2609	13	03/27/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
2809	2809	13	03/26/09	<1.2	1.5	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
2909	2909	13	03/27/09	1.5	<0.79	19	<1.5	60	4.7	<0.81	11	<5.6	<0.44	4.3	<1.1
Area of Concern 2															
1109	1109	13	03/24/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
1209	1209	13	03/24/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
1309	1309	13	03/27/09	1.4	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
1409	1409	13	03/27/09	<1.2	<0.79	<0.79 UJ	<1.5	< 0.63	<0.6	<0.81	<0.68 UJ	<5.6	<0.44	< 0.66	<1.1
1509	1509	13	03/27/09	1.8	<0.79	<0.79	2.9	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
1609	1609	13	03/27/09		•				alyzed - inst					<u>,                                      </u>	•
3509	3509	13	03/27/09				Not a				han 30% soil				
3609	3609	13	03/27/09						alyzed - inst						
3709	3709	13	03/27/09	2.1	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	0.68	<1.1
Area of Concern 3								•	•				•		
0109	0109	13	03/23/09	<1.2	1.6	<0.79	<1.5	< 0.63	4.4	<0.81	<0.68	13	<0.44	<0.66	<1.1
0209	0209	13	03/23/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	<0.66	<1.1
0309	0309	13	03/23/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
0409	0409	13	03/23/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	<0.66	<1.1
0509	0509	13	03/23/09	<1.2	<0.79	<0.79	<1.5	< 0.63	3.9	<0.81	<0.68	17	<0.44	<0.66	1.8
0609	0609	13	03/24/09	<1.2	<0.79 UJ		<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
0709	0709	13	03/24/09	<1.2	<0.79	<0.79	<1.5	< 0.63	<0.6	<0.81	<0.68	<5.6	<0.44	< 0.66	<1.1
0809	0809	13	03/24/09	<1.2	<0.79	<0.79	<1.5	<0.63	<0.6	<0.81	<0.68	19	<0.44	<0.66	<1.1
0909	0909	13	03/24/09	<1.2	<0.79	<0.79	<1.5	< 0.63	0.82	<0.81	<0.68	14	<0.44	< 0.66	<1.1
1009	1009	13	03/24/09		_	-	-		alyzed - inst						
									,						

# Table 7

# 2009 Groundwater Analytical Results - Volatile Organic Compounds Adeline Maintenance Center Technical Memo

### Abbreviations:

ft bgs = feet below ground surface

μg/L = micrograms per liter

UJ = The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

#### Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Only analytes with detections are shown

Table 8
2009 Groundwater Analytical Results - Semivolatile Organic Compounds
Adeline Maintenance Center Technical Memo

Alisto Sample ID	Boring Location	Sample Depth (ft bgs)	Sample Date	2-METHYLNAPHTHALENE	ANTHRACENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZOIC ACID	BENZYL ALCOHOL	BIS(2-ЕТНҮLHEXYL)РНТНАLATE	BUTYLBENZYL PHTHALATE	CHRYSENE	DI-N-BUTYL PHTHALATE	DI-N-OCTYL PHTHALATE	DIETHYL PHTHALATE	FLUORANTHENE	FLUORENE	ISOPHORONE	N-NITROSODIPHENYLAMINE	NAPHTHALENE	PHENANTHRENE	PHENOL	PYRENE
	EPA N	lethod		8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C
		nits		μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
Area of Co	ncern 2																						
1109	1109	13	03/24/09	<0.43	<0.11	<0.11	<0.11	<1.1	<0.21	<0.53	<0.11	<0.053	<0.21	<0.11	<0.11	<0.11	<0.21	<0.11	<0.11	<0.21	<0.11	<0.21	<0.11
1209	1209	13	03/24/09	<0.45	<0.11	<0.11	<0.11	<1.1	<0.22	<0.56	<0.11	<0.056	0.3	<0.11	<0.11	<0.11	<0.22	<0.11	<0.11	<0.22	<0.11	0.54	<0.11
1309	1309	13	03/27/09	<0.48	<0.12	<0.12	<0.12	<1.2	<0.24	<0.6	0.13	<0.06	<0.24	<0.12	<0.12	<0.12	<0.24	<0.12	<0.12	<0.24	<0.12	1.3	<0.12
1409	1409	13	03/27/09	<0.56	<0.14	<0.14	<0.14	<1.4	<0.28	<0.69	<0.14	<0.069	<0.28	<0.14	<0.14	<0.14	<0.28	<0.14	<0.14	<0.28	<0.14	1.2	<0.14
1509	1509	13	03/27/09	<0.49	<0.12	<0.12	<0.12	<1.2	<0.25	<0.62	<0.12	<0.062	<0.25	<0.12	<0.12	<0.12	<0.25	<0.12	<0.12	<0.25	<0.12	1.1	<0.12
1609	1609	13	03/27/09										•	sufficient v									
3509	3509	13	03/27/09										,	sufficient v									
3609	3609	13	03/27/09	2 = 2		0.40	0.40				0.40			sufficient v			2.22						0.40
3709	3709	13	03/27/09	<0.53	<0.13	<0.13	<0.13	<1.3	<0.26	<0.66	<0.13	<0.066	<0.26	<0.13	<0.13	<0.13	<0.26	0.18	<0.13	<0.26	<0.13	0.53	<0.13
Area of Co		40	1 00/00/00	0.4	0.40	0.00	0.40	<b>7</b> 4	0.04	7.4	0.40	0.00	0.40	0.40	0.40	0.00	0.04	0.40	0.40			7.0	0.50
0109	0109	13	03/23/09	2.1	0.19	0.23	<0.12	7.1	<0.24	7.4	<0.12	0.23	0.43	<0.12	<0.12	0.23	<0.24	<0.12	<0.12	1.0	0.4	7.8	0.52
0209	0209	13	03/23/09	<0.43	<0.11	<0.11	<0.11	<1.1	<0.21	< 0.53	0.23	<0.053	<0.21	<0.11	0.17	<0.11	<0.21	<0.11	<0.11	<0.21	<0.11	9.0	<0.11
0309 0409	0309 0409	13 13	03/23/09 03/23/09	<0.51 <0.42	<0.13 <0.11	<0.13 <0.11	<0.13 <0.11	<b>3.6</b> <1.1	<b>0.44</b> <0.21	<0.64 <0.53	0.36 0.2	<b>0.12</b> < 0.053	<0.26 <0.21	<0.13 <0.11	0.14 0.41	<0.13 <0.11	<0.26 <0.21	<0.13 <0.11	<0.13 <0.11	<0.26 <0.21	<0.13 <0.11	<b>3.6</b> <0.21	<0.13 <0.11
0509	0509	13	03/23/09	<0.42	<0.11	<b>0.13</b>	<0.11	19	<0.21	<0.53 <b>3.3</b>	0.2	<b>0.053</b>	<b>0.49</b>	<0.11	0.41	<b>0.11</b>	<b>0.27</b>	<0.11	<0.11	<0.21	<0.11	<0.21 <b>2.7</b>	<b>0.11</b>
0609	0609	13	03/23/09	<0.49	<0.12	<0.097	<0.12	<0.97	<0.24	<0.49	0.71	<0.049	1.2	<0.12	0.43	<0.097	<0.19	0.12 0.14	<0.12	<0.24	<0.12	1.7	<0.097
0709	0709	13	03/24/09	<0.4	<0.097	<0.097	<b>0.12</b>	<1	<0.19	<0.49	0.63	<0.049	0.35	<0.097	0.00	<0.097	<0.19	<0.14	<0.097	<0.19	<0.097	0.3	<0.097
0809	0809	13	03/24/09	<0.39	<0.098	<0.098	<0.098	<0.98	<0.2	<0.49	0.61	<0.049	0.38	<0.098	0.17	<0.098	<0.2	<0.098	<0.098	<0.2	<0.098	5.0	<0.098
0909	0909	13	03/24/09	2.5	<0.1	1.6	<0.030	23	<0.2	40	5.9	1.1	2.3	2.3	<0.1	1.4	1.8	<0.1	<0.030	<0.2	2.4	<0.2	2.9
1009	1009	13	03/24/09	<0.43	<0.11	0.25	<0.11	6.1	<0.22	5.5	1.2	0.22	1.2	<0.11	0.23	<0.11	0.54	<0.11	1.8	4.4	0.63	<0.22	0.46

# Abbreviations:

ft bgs = feet below ground surface  $\mu$ g/L = micrograms per liter

# Notes:

Values in bold indicate analyte detected above the laboratory reporting limit.

Only analytes with detections are shown.