PHASE II SUPPLEMENTAL SITE INVESTIGATION REPORT

BP Oil Company Service Station No. 11105
3519 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138

1/96

January 1996

BP OIL

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
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February 5, 1996

MR. SCOTT SEERY
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

RE: **BP OIL FACILITY #11105**
3515 Castro Valley Blvd
Castro Valley, CA

Attached please find our **PHASE II SUPPLEMENTAL SITE INVESTIGATION REPORT DATED January 1996** for the above referenced facility.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,

Scott T. Hooton
Environmental Resources Management
Corrective Action Manager

STH:sb msword\ERM11105

cc: Mr. Eddy So, CRWQCB, San Francisco Bay Region, 2101 Webster Street, Suite 200, Oakland, CA 94612

Mr. Brady Nagle, Alisto Engineering Group, 1777 Oakland Blvd., Suite 200, Walnut Creek, CA 94596

Mr. Michael Ahern, MW Associates, c/o American Title Co., 2641 Crow Canyon Rd, San Ramon, CA 94583

Mr. Greg Cahill, 3551 "B" Castro Valley Blvd, Castro Valley, CA 94546

Site File

PHASE II SUPPLEMENTAL SITE INVESTIGATION REPORT

BP Oil Company Service Station No. 11105
3519 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138-03-004

Prepared for:

BP Oil Company
Environmental Resources Management
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington 98055

Prepared by:

Alisto Engineering Group
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Walnut Creek, California

January 10, 1996

Brady Nagle
Project Manager

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STATE OF CALIFORNIA

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(continued)

APPENDICES

1.0 INTRODUCTION

BP Oil Company retained Alisto Engineering Group to conduct a Phase II supplemental site investigation at former BP Oil Station No. 11105, 3519 Castro Valley Boulevard, Castro Valley, California. The work was performed under BP Oil Contract Release No. G393629 dated September 26, 1994. A site vicinity map is shown in Figure 1.

1.1 Purpose and Scope of Work

This work was performed to further assess the nature and extent of hydrocarbons in the subsurface soil and/or groundwater at the site and to comply with applicable regulations of the Alameda County Health Care Services Agency (ACHCSA) and the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). The scope of work for this investigation which was presented in the approved work plan dated June 3, 1994 (Alisto 1994a) is included the following tasks:

- Drilled and logged five exploratory soil borings and collected soil samples during installation of groundwater Monitoring Wells MW-6, MW-7, and MW-8 and Soil Borings SB-1 and SB-2.
- Developed Wells MW-6, MW-7, and MW-8 and surveyed the existing onsite wells.
- Collected groundwater samples from Monitoring Wells ESE-1 through ESE-5 and MW-6, MW-7 and MW-8.
- Analyzed the soil and groundwater samples for specific hydrocarbon constituents.
- Evaluated the data and analytical results and prepared this report.

The above tasks and related field and sampling activities were performed in accordance with the technical specifications of BP Oil Company, and the requirements of the ACHCSA and the RWQCB.

1.2 Site Location and Description

The former BP Oil station is on the southeast corner of the intersection of Castro Valley Boulevard and Redwood Road, Castro Valley, California. The site is currently doing business as Chevron Service Station No. 203566, with three underground fuel storage tanks and a used oil tank. Figure 2 shows the layout of the site and the locations of the tanks and dispenser islands.

Properties neighboring the site are commercial developments. Located to the south of the site is Audio Emporium and Napa Auto Parts, and to the east is an American Title Insurance Company office. Across Castro Valley Boulevard to the north is Golden West Savings and Loan Association, and across the intersection of Castro Valley Boulevard and Redwood Road is Safeway Shopping center. Directly to the west and across Redwood Road is an operating Xtra Oil Company service station.

1.3 Project Background

The site was operated by Mobil Oil Corporation as a retail fuel station until 1989, when it operated as a BP Oil service station. In July 1993, the site began operation as a Chevron station. In 1984, three single-walled underground storage tanks were installed at the site while branded as a Mobil Oil station, 3515 Crow Canyon Road, Castro Valley Boulevard, Castro Valley (ACHCSA, 1991), and a used oil tank was installed in 1986 (BP, 1990).

In September 1992, five groundwater monitoring wells, ESE-1 through ESE-5, were installed at the site. Analysis of soil samples collected at depths of approximately 10 to 15 feet detected up to 220 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPH-G) and 1.4 mg/kg benzene in ESE-3. Total oil and grease (TOG) and halogenated volatile organic compounds (HVOCs) were not detected above the reported detection limits in the soil samples collected from ESE-1. The results of soil analysis are presented in Table 1.

Analysis of the groundwater samples collected from all the monitoring wells detected TPH-G, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) at concentrations of up to 2100, 370, 150, 17, and 110 micrograms per liter (ug/l) (ESE, 1992).

In April 1993, BP Oil retained Alisto to perform groundwater monitoring and sampling on a quarterly basis. Analysis of groundwater samples collected from the wells from April 1993 through May 1995 detected TPH-G at concentrations of up to 1300 ug/l and benzene at concentrations of up to 2900 ug/l (Alisto 1993a, b, and c; Alisto 1994b, c, d, and e; Alisto 1995a and b). The results of groundwater analysis during this and previous activities are presented in Table 2.

Directly to the west and across Redwood Road is an operating Xtra Oil service station branded as a Shell station. Three monitoring wells, MW-1 through MW-3, were installed at the site at the Xrta Oil site as part of an ongoing environmental assessment. Analysis of soil samples collected during construction detected up to 1400 mg/kg TPH-G and 1.5 mg/kg benzene. TOG was detected at concentrations of up to 200 mg/kg in samples collected in MW-3 near the former waste oil tank. Analysis of groundwater samples collected from all the wells detected up to 210,000 ug/l TPH-G and 38,000 ug/l benzene (WEGE, 1990).

In December 1994, 23 soil borings, B1 through B23, were drilled by the Alameda County Public Works Agency (ACPWA) prior to proposed road expansion activities. Soil samples collected from depths of between two and eight feet were analyzed for TPH-G and BTEX constituents. Analysis of soil samples collected along the former BP Oil service station detected up to 59 mg/kg TPH-G and 0.016 mg/kg benzene. Analysis of soil samples collected along the Xtra Oil service station detected up to 86 mg/kg TPH-G and 0.67 mg/kg benzene. Soil samples collected from B23, located in Redwood Road between the two sites, detected up to 33 mg/kg TPH-G and 9.2 mg/kg benzene. A summary of results of the soil sampling performed by ACPWA, including tables, figures, and laboratory results, is attached as Appendix A.

2.0 FIELD METHODS

Before drilling, offsite access was obtained from and a permit to install monitoring wells was acquired from the ACHCSA, a copy of which is presented in Appendix B. The methods and procedures used during field activities are described in the following sections.

2.1 Drilling and Soil Sampling

On July 18 and 19, 1995, four soil borings were drilled onsite and one offsite to the southeast of the property. The borings were drilled to depths ranging from 15 to 31.5 feet. Drilling was performed by Soils Exploration Services, Benicia, California, using a CME 75 drilling rig equipped with 8-inch-diameter hollow-stem augers. Soil samples were collected at 5-foot intervals beginning at 5 feet to the total depth of Borings MW-6 and MW-7, and continuously in Borings MW-8, SB-1, and SB-2. The drilling and soil sampling procedures are presented in Appendix C.

Boring logs were prepared using the Unified Soil Classification System, including a description of soil characteristics such as color, moisture, density, and consistency. The logs are presented in Appendix D.

2.2 Monitoring Well Installation and Construction

Three of the soil borings were converted into Monitoring Wells MW-6, MW-7, and MW-8 in accordance with the field procedures for groundwater monitoring well installation presented in Appendix C. The wells were constructed of 2-inch-diameter, flush-threaded, Schedule 40 PVC casing. Blank casing was installed from the surface to 8 and 18 feet below grade, and 0.010-inch slotted casing was installed from 8 to 20 and 18 to 30 feet below grade. Well construction details are included on the boring logs in Appendix D.

2.3 Monitoring Well Development and Sampling

Well development and sampling was performed in accordance with the guidelines of the governing regulatory agencies (State Water Resources Control Board, 1989 and United States Environmental Protection Agency, 1986). The field procedures for groundwater monitoring well development and sampling are presented in Appendix E.

During well construction, after placing the filter pack and before installing the bentonite pellets and cement seal, water and sediments were removed from Monitoring Wells MW-6, MW-7, and MW-8 using a surge block. On July 24, 1995, the wells were developed by removing at least 10 casing volumes and until groundwater was relatively free of sediment, by using a bailer. The well development data are presented in the field survey forms in Appendix F.

On July 28, 1995, groundwater samples were collected from Monitoring Wells ESE-1 through ESE-5 and MW-6 through MW-8. The wells were purged of at least 3 casing volumes before sample collection, while monitoring pH, specific conductivity, and temperature. The samples were transported in an iced cooler to a state-certified laboratory following chain of custody procedures. The groundwater sampling data are included in Appendix F.

2.4 Groundwater Level Monitoring and Well Surveying

Monitoring Wells MW-6, MW-7, and MW-8 were surveyed to the top of the well casing by a licensed land surveyor, PLS Surveys, Alameda, California, in reference to an existing survey plot with an elevation of 179.95 feet above mean sea level. On July 28, 1995, the depth to groundwater in the wells was measured from the top of the casing to the nearest 0.01 foot using an electronic water level indicator. The survey data and relative groundwater elevation measurements are presented in Table 2.

PLS Surveys also surveyed groundwater Monitoring Well MW-1 at the neighboring Xtra Oil(Shell) service station, 3495 Castro Valley Boulevard. Depth to groundwater was measured concurrently at the Xtra Oil site. The survey data and relative groundwater elevation measurements are presented in Table 3. The graphical interpretation of the groundwater gradient beneath the BP Oil and Xtra Oil sites is shown in Figure 3. The well elevation survey maps are presented in Appendix G.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The site is in the Coast Range Geomorphic Province, on the eastern side of San Francisco Bay, approximately 1 mile to the west of the Hayward Fault. The uppermost geologic member consists primarily of Quaternary alluvial deposits. The Quaternary alluvium, composed of unconsolidated to semi-consolidated bay mud, silt, sand, and gravel may be up to 200 feet thick. The units generally overlie Franciscan bedrock in the upland coastal area and Tertiary sediments of the bay basin.

The site is an isolated, structural basin surrounded to the west, north, and east by folded and faulted uplands comprised of Cretaceous sandstone, shale and conglomerate of marine origin approximately 180 feet above mean sea level, as shown in Figure 1. The topography of the area slopes gently the north to south through the valley to the southwest, toward San Francisco Bay.

Soils types encountered while drilling during this and previous investigations consisted primarily of clayey silts and sandy silts. The clayey to sandy silt layers were occasionally underlain by clayey silts to silty clays and sandy silts to silty sands across the site.

The depth to groundwater measured in the monitoring wells ranged from approximately 8 to 10.5 feet and was used to develop the groundwater potentiometric surface map shown on Figure 3. The groundwater gradient estimated from these measurements is approximately 0.02 foot per foot across the BP site in a general southeasterly direction and 0.01 foot per foot across the Xtra Oil site in a general northeasterly direction.

4.0 ANALYTICAL METHODS

The soil and groundwater samples collected during this investigation were analyzed by Analytical Technologies, a state-certified laboratory, using standard test methods of the United States Environmental Protection Agency (EPA) and the California Department of Health Services.

The soil samples collected from MW-6, MW-7, and MW-8 and the groundwater samples collected from all the wells were analyzed for the following:

- TPH-G using EPA Methods 5030/8015
- BTEX using EPA Methods 5030/8020

The laboratory results for the soil and groundwater samples are summarized in Tables 1 and 2. The field procedures for chain of custody documentation and the laboratory reports and chain of custody records are presented in Appendix H. The concentrations of petroleum hydrocarbons detected in the groundwater are also shown in Figure 4.

5.0 RESULTS AND FINDINGS

The results of this Phase II supplemental site investigation, based on field observations and laboratory analysis, are discussed below:

- Soil types encountered in the borings appears contiguous across the site and generally consisted of clayey silts and sandy silts from the surface to approximately 8 to 12 feet below grade, underlain by sandy silts to silty sands and clayey silts from approximately 12 to 25 feet, which is underlain by clay to the total depth of the borings.
- Groundwater was measured at approximately 8 to 10.5 feet below the top of the well casings.
- TPH-G was detected in the soil samples collected from MW-8, SB-1, and SB-2 at concentrations of up to 310 mg/kg at approximately 1.5 to 8 feet below grade. Benzene was detected only in SB-1 at 0.88 mg/kg at approximately 7 feet.
- TPH-G and BTEX constituents were not detected above the reported detection limits in the soil samples collected from MW-6 and MW-7.
- Separate-phase product was not observed in any of the monitoring wells during this investigation or previous monitoring events.
- Groundwater elevations measured on July 28, 1995 indicate a gradient of approximately 0.02 foot per foot in a southeasterly direction across the site and 0.007 and 0.02 foot per foot across the Xtra Oil site in a general northerly to southeasterly direction.

- TPH-G and BTEX constituents were not detected above the reported detection limits in the groundwater samples collected from ESE-3, ESE-4, and MW-6.

- TPH-G was detected at concentrations of up to 2000 ug/l in the groundwater samples collected from ESE-1, ESE-2, ESE-5, and MW-8. Benzene was detected in the samples collected from ESE-5 and MW-7 at concentrations 15 and 0.54 ug/l.

6.0 CONCLUSIONS

Based on the findings of this and previous investigations, it does not appear that further investigation is warranted at this time except for continued quarterly groundwater monitoring and sampling in accordance with the requirements of the governing regulatory agencies.

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Alisto, 1994a. Work Plan for Phase II - Supplemental Site Investigation. Alisto Engineering Group. June 3.

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ESE, 1992. Preliminary Site Assessment Report. Environmental Science & Engineering, Inc.. November 23.

State Water Resources Control Board, 1989. Leaking Underground Fuel Tank Field Manual. October.

United States Environmental Protection Agency, 1986. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document. September.

WEGE, 1990. Preliminary Assessment Report. WEGE Western Geo-Engineers. March 28.

TABLE 1 - SUMMARY OF RESULTS OF SOIL SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

SOIL SAMPLE ID	SAMPLE DEPTH (feet)	DATE OF SAMPLING	TPH-G (mg/kg)	TPH-D (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	TOG (mg/kg)	HVOC (mg/kg)	LAB
ESE-1	15.0	09/29/92	70	ND	0.87	2	1.2	5.7	ND	ND	PACE
ESE-1	20.0	09/29/92	ND	ND	ND	ND	ND	ND	ND	ND	PACE
ESE-2	10.5	09/28/92	ND	---	ND	ND	ND	ND	---	---	PACE
ESE-2	20.0	09/28/92	ND	---	ND	ND	ND	ND	---	---	PACE
ESE-3	10.5	09/29/95	220	---	1.4	8.2	3.3	18	---	---	PACE
ESE-3	20.0	09/29/95	ND	---	ND	ND	ND	ND	---	---	PACE
ESE-4	6.5	09/28/92	ND	---	ND	ND	ND	ND	---	---	PACE
ESE-4	10.0	09/28/92	24	---	0.15	0.17	0.23	0.82	---	---	PACE
ESE-5	10.0	09/28/92	51	---	0.25	0.24	0.30	0.17	---	---	PACE
ESE-5	14.0	09/28/92	ND	---	ND	ND	ND	ND	---	---	PACE
MW-6	6.0-6.5	07/18/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
MW-6	11.0-11.5	07/18/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
MW-7	6.0-6.5	07/18/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
MW-7	11.0-11.5	07/18/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
MW-8	3.5-4.5	07/19/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
MW-8	7.5-8.0	07/19/95	8.8	---	ND<0.025	ND<0.025	0.046	0.11	---	---	ATI
SB-1	1.5-2.0	07/19/95	140	---	ND<0.10	ND<0.10	1.4	4.1	---	---	ATI
SB-1	3.5-4.0	07/19/95	190	---	ND<0.25	0.33	4.5	18	---	---	ATI
SB-1	7.0-7.5	07/19/95	310	---	0.88	0.88 (a)	0.41	2.0	---	---	ATI

TABLE 1 - SUMMARY OF RESULTS OF SOIL SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

SOIL SAMPLE ID	SAMPLE DEPTH (feet)	DATE OF SAMPLING	TPH-G (mg/kg)	TPH-D (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	TOG (mg/kg)	HVOC (mg/kg)	LAB
SB-2	1.5-2.0	07/19/95	ND<2.5	---	ND<0.025	ND<0.025	ND<0.025	ND<0.050	---	---	ATI
SB-2	3.5-4.0	07/19/95	20	---	ND<0.025	ND<0.025	0.93	0.12	---	---	ATI
SB-2	5.5-6.0	07/19/95	140	---	ND<0.025	ND<0.025	1.2	1.4	---	---	ATI
SB-2	7.5-8.0	07/19/95	230	---	ND<0.025	ND<0.025	3.9	5.1	---	---	ATI

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
TOG	Total oil and grease
HVOC	Halogenated volatile organic compounds
mg/kg	Milligrams per kilogram
ND	Not detected above reported detection limits
---	Not analyzed
PACE	Pace Incorporated
ATI	Analytical Technologies, Inc.

NOTES:

(a) Sample result may be falsely represented due to matrix interference.

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TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TOG (ug/l)	1,2-DCA (ug/l)	DO (ppm)	LAB
ESE-1	10/05/92	177.69	11.22	166.47	2100	96	370	150	17	110	ND	1.8	---	---
ESE-1D (c)	10/05/92	---	---	---	2300	---	370	160	16	110	---	---	---	---
ESE-1	04/01/93	177.69	8.79	168.90	5900	---	1500	410	110	390	---	---	---	PACE
ESE-1	06/29/93	177.69	10.34	167.35	7600	---	2900	390	130	460	---	---	---	PACE
ESE-1	09/23/93	177.69	10.91	166.78	2000	---	490	40	20	56	---	---	---	PACE
QC-1 (c)	09/23/93	---	---	---	1500	---	420	39	19	56	---	---	---	PACE
ESE-1	12/10/93	177.69	9.93	167.76	1800	---	480	42	19	66	---	---	3.2	PACE
QC-1 (c)	12/10/93	---	---	---	1500	---	380	38	17	55	---	---	---	PACE
ESE-1	02/17/94	177.69	9.64	168.05	1900	---	380	48	24	80	---	---	---	PACE
QC-1 (c)	02/17/94	---	---	---	2200	---	430	42	19	65	---	---	---	PACE
ESE-1	08/08/94	177.69	11.72	165.97	2100	---	450	46	16	50	---	---	5.1	PACE
ESE-1	10/12/94	177.69	10.48	167.21	760	---	240	16	51	39	---	---	3.5	PACE
ESE-1	01/19/95	177.69	7.77	169.92	840	---	600	120	22	58	---	---	8.0	ATI
ESE-1	05/02/95	177.69	8.69	169.00	2000	---	640	67	24	98	---	---	8.5	ATI
ESE-1	07/28/95	177.69	10.12	167.57	190	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	7.9	ATI
ESE-2	10/05/92	178.23	11.68	166.55	300	---	5.4	16	3.9	45	---	---	---	---
ESE-2	04/01/93	178.23	9.17	169.06	240	---	27	ND<0.5	17	2.6	---	---	---	PACE
ESE-2	06/29/93	178.23	10.88	167.35	1700	---	260	24	110	23	---	---	---	PACE
QC-1 (c)	06/29/93	---	---	---	1300	---	240	17	110	25	---	---	---	PACE
ESE-2	09/23/93	178.23	11.56	166.67	240	---	3.1	0.5	0.6	2.5	---	---	---	PACE
ESE-2	12/10/93	178.23	10.48	167.75	250	---	2.4	2.4	1.5	11	---	---	2.6	PACE
ESE-2	02/17/94	178.23	10.06	168.17	900	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
ESE-2	08/08/94	178.23	11.11	167.12	750	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	5.1	PACE
ESE-2	10/12/94	178.23	11.31	166.92	1700	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.6	PACE
ESE-2	01/19/95	178.23	8.25	169.98	300	---	2	0.9	0.7	1	---	---	8.1	ATI
ESE-2	05/02/95	178.23	9.21	169.02	1200	---	4.0	ND<2.5	ND<2.5	ND<5.0	---	---	8.4	ATI
ESE-2	07/28/95	178.23	10.64	167.59	2000	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	---	---	7.7	ATI

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TOG (ug/l)	1,2-DCA (ug/l)	DO (ppm)	LAB
ESE-3	10/05/92	178.20	10.58	167.62	430	---	57	31	3.6	34	---	---	---	---
ESE-3	04/01/93	178.20	8.14	170.06	2400	---	460	220	74	210	---	---	---	PACE
ESE-3	06/29/93	178.20	9.72	168.48	280	---	56	14	15	13	---	---	---	PACE
ESE-3	09/23/93	178.20	10.46	167.74	72	---	13	3.5	1.7	4.1	---	---	---	PACE
ESE-3	12/10/93	178.20	9.30	168.90	270	---	71	32	6.1	33	---	---	2.7	PACE
ESE-3	02/17/94	178.20	8.97	169.23	520	---	140	10	20	33	---	---	---	PACE
ESE-3	08/08/94	178.20	10.02	168.18	ND<50	---	8.8	1.6	1.6	2.3	---	---	6.2	PACE
ESE-3	10/12/94	178.20	10.32	167.88	470	---	190	6.4	15	18	---	---	3.5	PACE
ESE-3	01/19/95	178.20	7.40	170.80	330	---	260	27	21	20	---	---	6.7	ATI
ESE-3	05/02/95	178.20	8.26	169.94	530	---	180	30	23	44	---	---	8.6	ATI
ESE-3	07/28/95	178.20	9.54	168.66	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	8.8	ATI
ESE-4	10/05/92	177.73	10.33	167.40	98	---	7.2	1.3	1.1	6.1	---	---	---	---
ESE-4	04/01/93	177.73	7.88	169.85	550	---	93	20	23	33	---	---	---	PACE
ESE-4	06/29/93	177.66 (d)	8.33	169.33	150	---	23	0.6	5.4	0.5	---	---	---	PACE
ESE-4	09/23/93	177.66	10.05	167.61	110	---	14	1.7	3.2	4.6	---	---	---	PACE
ESE-4	12/10/93	177.66	8.95	168.71	110	---	21	7.2	4.2	10	---	---	2.8	PACE
ESE-4	02/17/94	177.66	8.65	169.01	210	---	26	1.2	4.7	11	---	---	---	PACE
ESE-4	08/08/94	177.66	9.76	167.90	76	---	9.6	ND<0.5	2.0	ND<0.5	---	---	7.0	PACE
ESE-4	10/12/94	177.66	9.62	168.04	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.2	PACE
ESE-4	01/19/95	177.66	6.97	170.69	140	---	56	14	24	23	---	---	6.9	ATI
ESE-4	05/02/95	177.66	7.85	169.81	130	---	21	2.8	8.6	8.2	---	---	9.1	ATI
ESE-4	07/28/95	177.66	9.20	168.46	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	8.1	ATI

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TOG (ug/l)	1,2-DCA (ug/l)	DO (ppm)	LAB
ESE-5	10/05/92	176.08	9.22	166.86	1300	---	200	3.8	1.2	18	---	---	---	---
ESE-5	04/01/93	176.08	7.02	169.06	13000	---	2200	26	730	1000	---	---	---	PACE
QC-1 (c)	04/01/93	---	---	---	13000	---	2500	25	740	1100	---	---	---	PACE
ESE-5	06/29/93	176.08	10.21	165.87	7600	---	1500	9.3	170	100	---	---	---	PACE
ESE-5	09/23/93	176.08	10.64	165.44	560	---	19	1.2	0.9	1.8	---	---	---	PACE
ESE-5	12/10/93	176.08	9.42	166.66	1700	---	300	3.0	76	110	---	---	2.5	PACE
ESE-5	02/07/94	176.08	9.35	166.73	3500	---	640	7.8	90	130	---	---	---	PACE
ESE-5	08/08/94	176.08	8.76	167.32	2600	---	210	4.6	9.4	4.4	---	---	5.8	PACE
QC-1 (c)	08/08/94	---	---	---	2500	---	230	4.6	13	4.8	---	---	---	PACE
ESE-5	10/12/94	176.08	8.95	167.13	5600	---	560	9.5	75	21	---	---	3.6	PACE
QC-1 (c)	10/12/94	---	---	---	6000	---	550	10	78	22	---	---	---	PACE
ESE-5	01/19/95	176.08	5.40	170.68	1900	---	620	ND<5	95	15	---	---	7.6	ATI
QC-1 (c)	01/19/95	---	---	---	1600	---	620	ND<5	93	17	---	---	---	ATI
ESE-5	05/02/95	176.08	6.48	169.60	5700	---	1100	ND<10	180	58	---	---	8.2	ATI
QC-1 (c)	05/02/95	---	---	---	5300	---	1100	ND<10	180	58	---	---	---	ATI
ESE-5	07/28/95	176.08	7.97	168.11	520	---	15	ND<0.50	1.7	1.3	---	---	8.2	ATI
QC-1 (c)	07/28/95	---	---	---	460	---	7.2	ND<0.50	1.9	1.5	---	---	---	ATI
MW-6	07/28/95	179.24	10.00	169.24	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	8.1	ATI
MW-7	07/28/95	176.55	9.25	167.30	ND<50	---	0.54 (e)	0.54	ND<0.50	ND<1.0	---	---	7.1	ATI
MW-8	07/28/95	176.34	7.80	168.54	1100	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	---	---	7.2	ATI

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TOG (ug/l)	1,2-DCA (ug/l)	DO (ppm)	LAB
QC-2 (f)	04/01/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	06/29/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	09/23/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	12/10/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	02/17/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	08/08/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	10/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	01/19/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
QC-2 (f)	05/02/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
QC-2 (f)	07/28/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
TOG	Total oil and grease
1,2-DCA	1,2-Dichloroethane
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not applicable/available/measured/analyzed
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.

NOTES:

(a) Top of casing elevations surveyed relative to mean sea level.

(b) Groundwater elevations in feet relative to mean sea level.

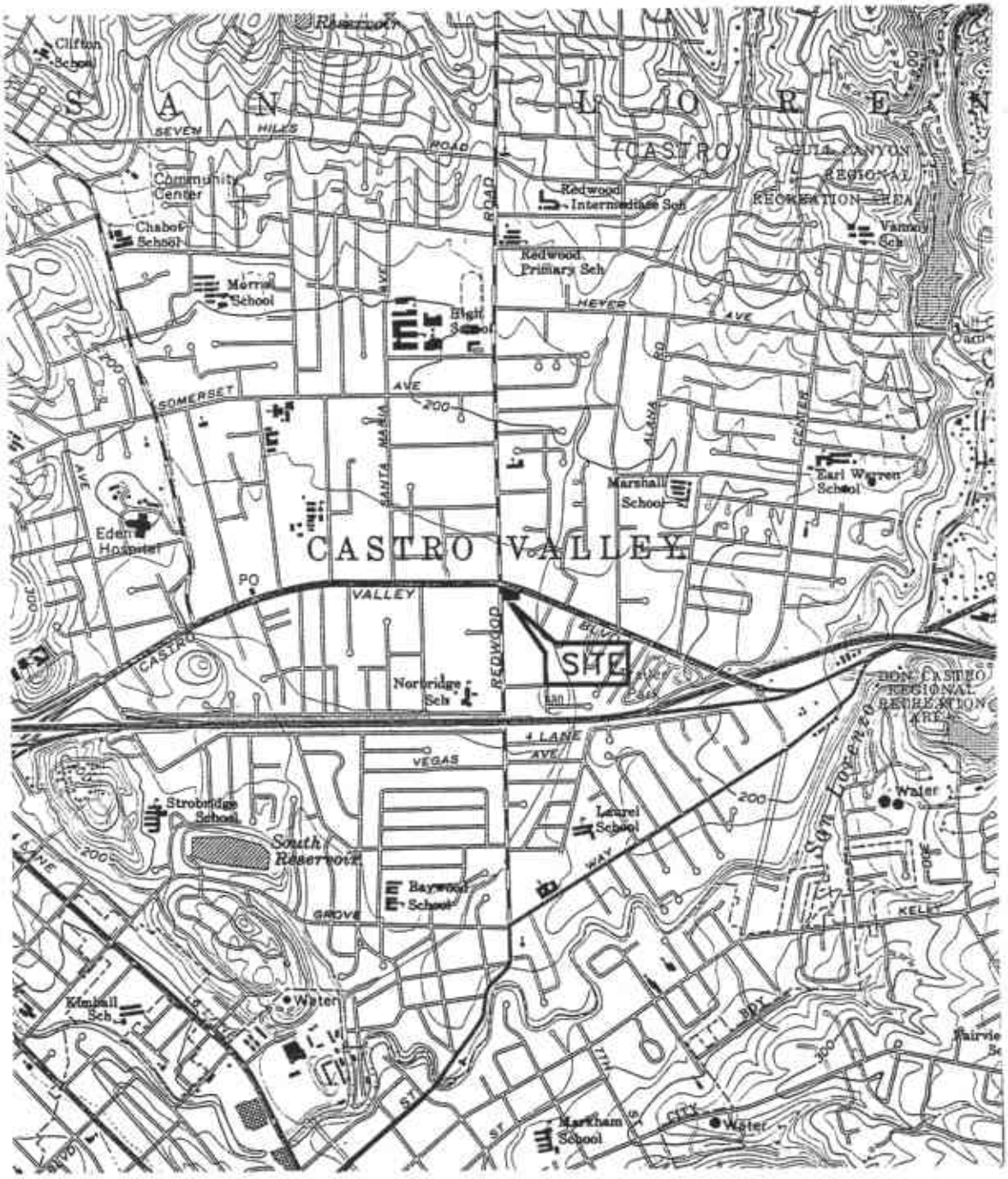
(c) Blind duplicate.

(d) Top of casing lowered by 0.07 foot after the monitoring event on 4/01/93.

(e) Sample result may be falsely elevated due to matrix interference.

(f) Travel blank.

E:\0\10-138\138SSI-W.WQ2



SOURCE:
USGS MAP, HAYWARD QUADRANGLE, CALIFORNIA. 7.5 MINUTE SERIES. 1959. PHOTOREVISED 1980.

N

0 1000' 2000'

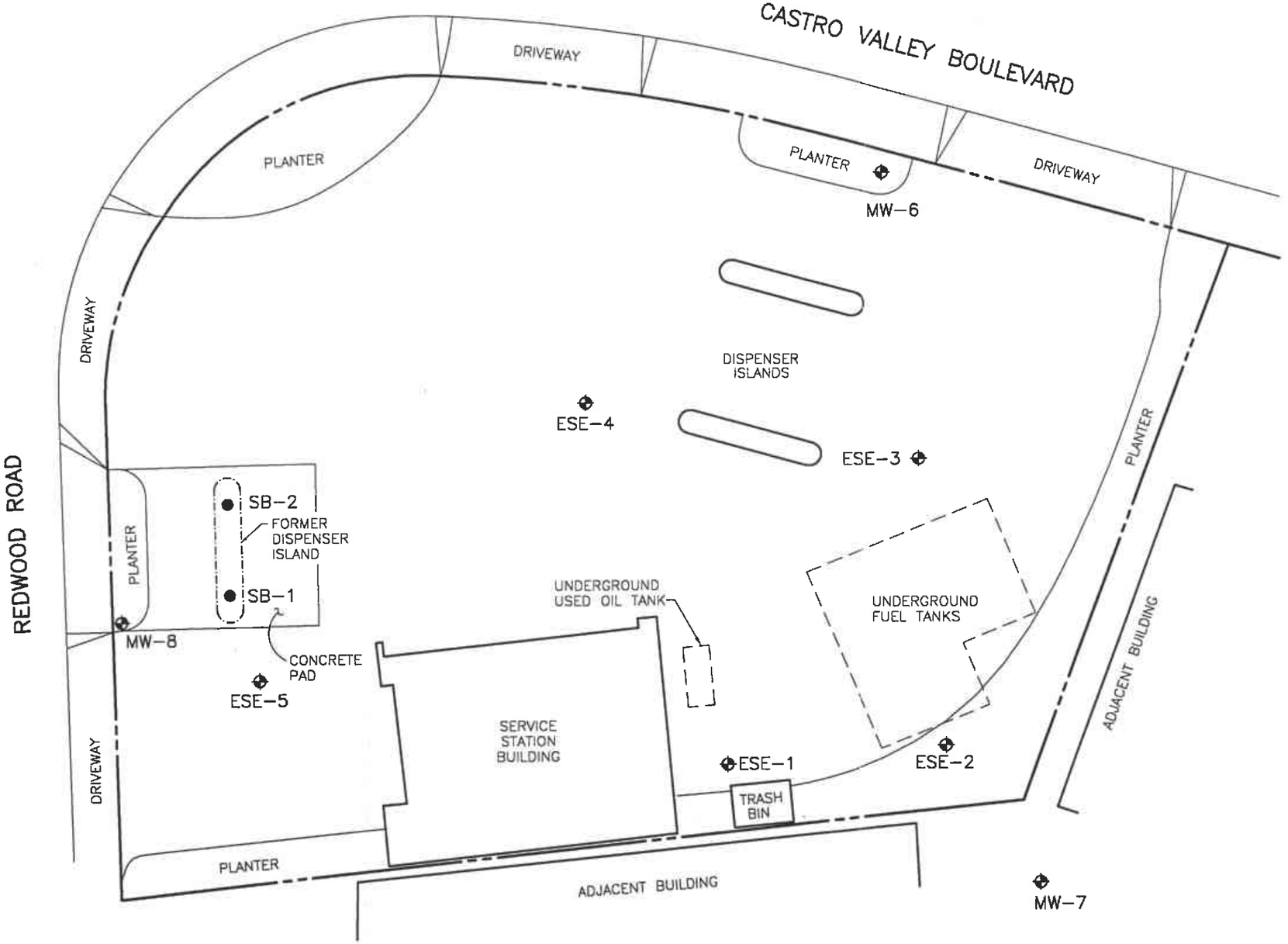
FIGURE 1

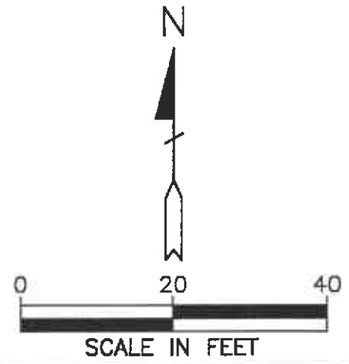
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

- ◈ GROUNDWATER MONITORING WELL
- ● SOIL BORING LOCATION

FIGURE 2

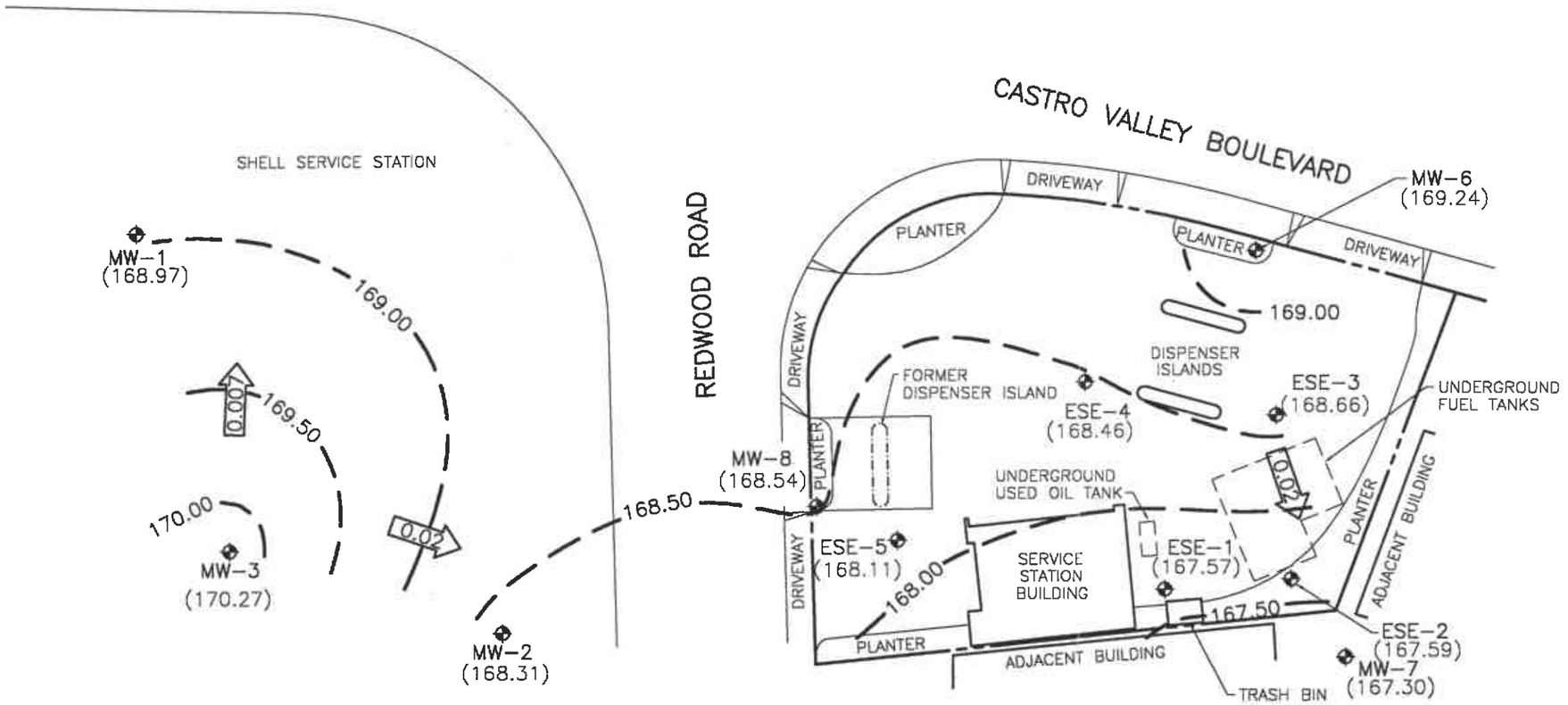
SITE PLAN

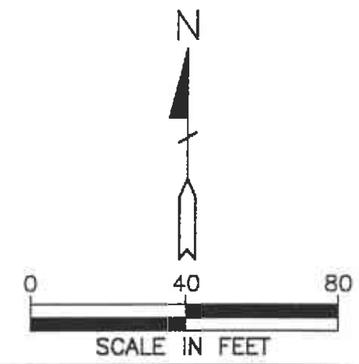
BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10138CC-DWG 10-16-95 RKW 1=20





LEGEND

- GROUNDWATER MONITORING WELL
- (167.30) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 168.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.02 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

JULY 28, 1995

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10–138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

101380-D.DWG 1-2-96 MAP 1=40

CASTRO VALLEY BOULEVARD

DRIVEWAY

PLANTER

DRIVEWAY

PLANTER

MW-6
ND<50
ND<0.50|ND<0.50
ND<0.50| ND<1.0
8.1

DRIVEWAY

REDWOOD ROAD

PLANTER

FORMER DISPENSER ISLAND

DISPENSER ISLANDS

ESE-4
ND<50
ND<0.50|ND<0.50
ND<0.50| ND<1.0
8.1

ESE-3
ND<50
ND<0.50|ND<0.50
ND<0.50| ND<1.0
8.8

PLANTER

0.01

UNDERGROUND USED OIL TANK

UNDERGROUND FUEL TANKS

ADJACENT BUILDING

MW-8
1100
ND<2.5|ND<2.5
ND<2.5|ND<5.0
7.2

ESE-5
520
15 | ND<0.50
1.7 | 1.3
8.2

DRIVEWAY

SERVICE STATION BUILDING

ESE-1
190
ND<0.50|ND<0.50
ND<0.50| ND<1.0
7.9

TRASH BIN

PLANTER

ADJACENT BUILDING

ESE-2
2000
ND<2.5|ND<2.5
ND<2.5|ND<5.0
7.7

MW-7
ND<50
0.54 | 0.54
ND<0.50| ND<1.0
7.1

N

0 20 40

SCALE IN FEET

LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / DO	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
DO	DISSOLVED OXYGEN
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
0.02	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 4

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

JULY 28, 1995

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

APPENDIX A

SUMMARY OF RESULTS OF REDWOOD ROAD EXPANSION TESTING PERFORMED BY ALAMEDA COUNTY PUBLIC WORKS AGENCY

File 11105
10-139

SUMMARY RESULTS
REDWOOD ROAD EXPANSION

Analytical Results, Shell

Boring/ Sample Number	Depth (feet)	TPH-gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
B1-4	4	4.9	<5	<5	<5	5.2
B2-4	4	<1	<5	<5	<5	<5
B3-4	4	26	40	<5	93	42
B3-6	6	86	<5	<5	960	1800
B4-2	2	<1	8.6	<5	<5	<5
B4-4	4	28	670	47	88	240
B5-4	4	<1	<5	<5	<5	6.8
B6-4	4	<1	<5	<5	<5	<5
B6-6	6	<1	<5	<5	<5	<5
B7-4	4	<1	<5	<5	<5	<5
B7-6	6	<1	<5	<5	<5	<5
B8-4	4	1.8	100	<5	38	35
B21-6	6	<1	<5	<5	<5	<5
B22-5	5	<1	<5	<5	<5	<5
B23-5	5	33	130	120	4100	1600
B23-8	8	0.087	9200	2500	1400	6300

Notes: TPH = Total Petroleum Hydrocarbons
ppm = parts per million (mg/Kg)
ppb = parts per billion (ug/Kg)
NT = not tested

Analytical Results, Chevron

Boring/ Sample Number	Depth (feet)	TPH-gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
B9-2	2	9.9	16	<5	67	230
B9-4	4	1.0	5.8	<5	6.5	9.0
B10-4	4	59	<50	<50	220	540
B11-2	2	<1	<5	<5	<5	<5
B12-4	4	<1	<5	<5	<5	<5
B12-6	6	<1	<5	<5	<5	<5
B20-3	3	<1	<5	<5	<5	<5
B20-5	5	<1	<5	<5	<5	<5

Notes: TPH = Total Petroleum Hydrocarbons
ppm = parts per million (mg/Kg)
ppb = parts per billion (ug/Kg)

Analytical Results, Former Chevron

Boring/ Sample Number	Depth (feet)	TPH-gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
B13-5	5	<1	<5	<5	<5	<5
B14-3	3	<1	<5	<5	<5	<5
B14-5	5	<1	<5	<5	<5	<5
B15-5	5	<1	<5	<5	<5	<5

Notes: TPH = Total Petroleum Hydrocarbons
ppm = parts per million (mg/Kg)
ppb = parts per billion (ug/Kg)

Analytical Results, Keith's Transmission

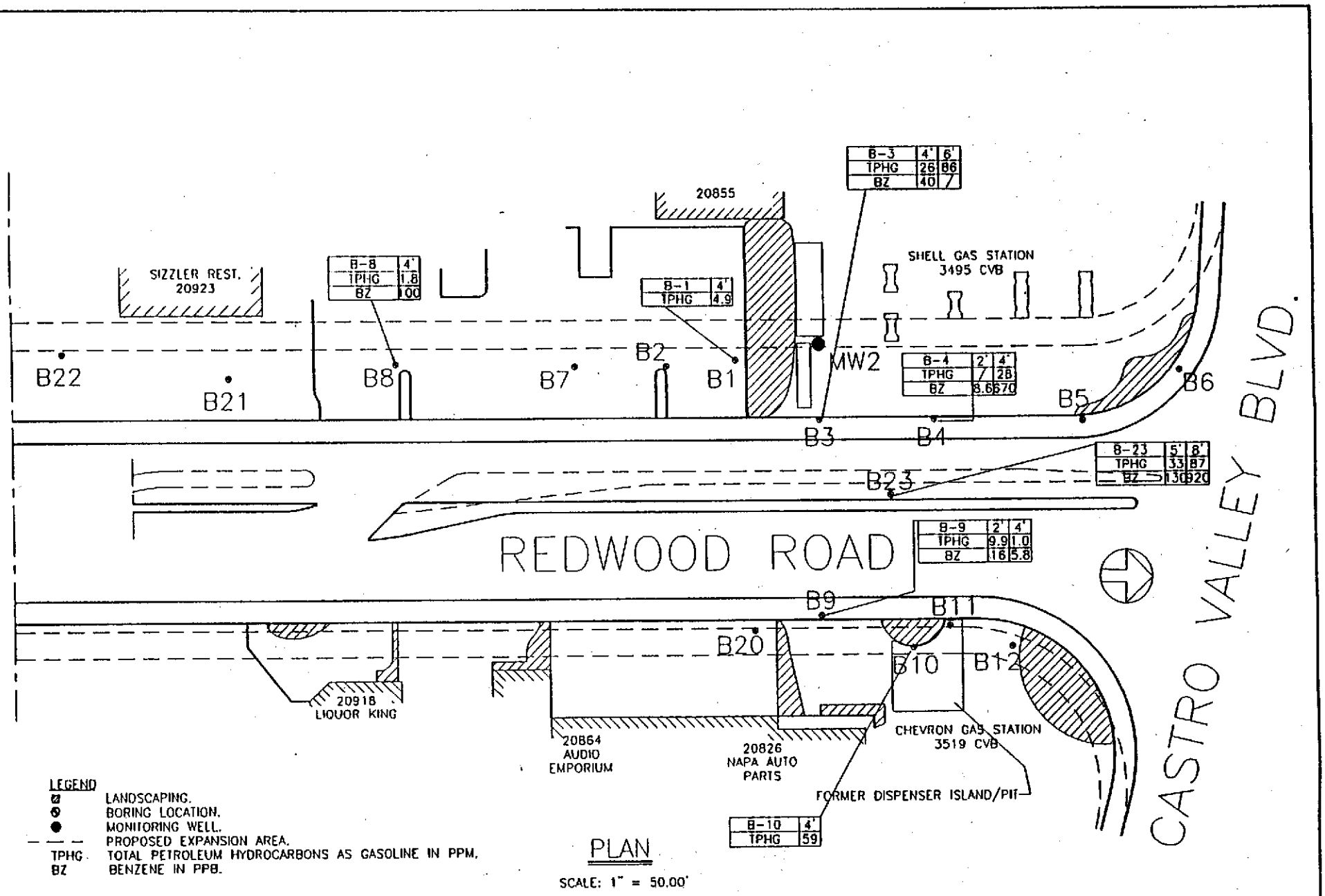
Boring/ Sample Number	Depth (feet)	TPH-gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH (ppm)
B16-4	4	<1	<5	<5	<5	<5	<1

Notes: TPH = Total Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons as diesel, kerosene, motor oil
ppm = parts per million (mg/Kg)
ppb = parts per billion (ug/Kg)

Table 8-1 - Analytical Results, Former Beacon Station

Boring/ Sample Number	Depth (feet)	TPH-gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TPH-diesel (ppm)
B17-3	3	<1	<5	<5	<5	<5	<1
B17-5	5	<1	<5	<5	<5	<5	<1
B18-3	3	<1	<5	<5	<5	<5	<1
B18-5	5	<1	<5	<5	<5	<5	<1
B19-4	4	<1	<5	<5	<5	<5	<1

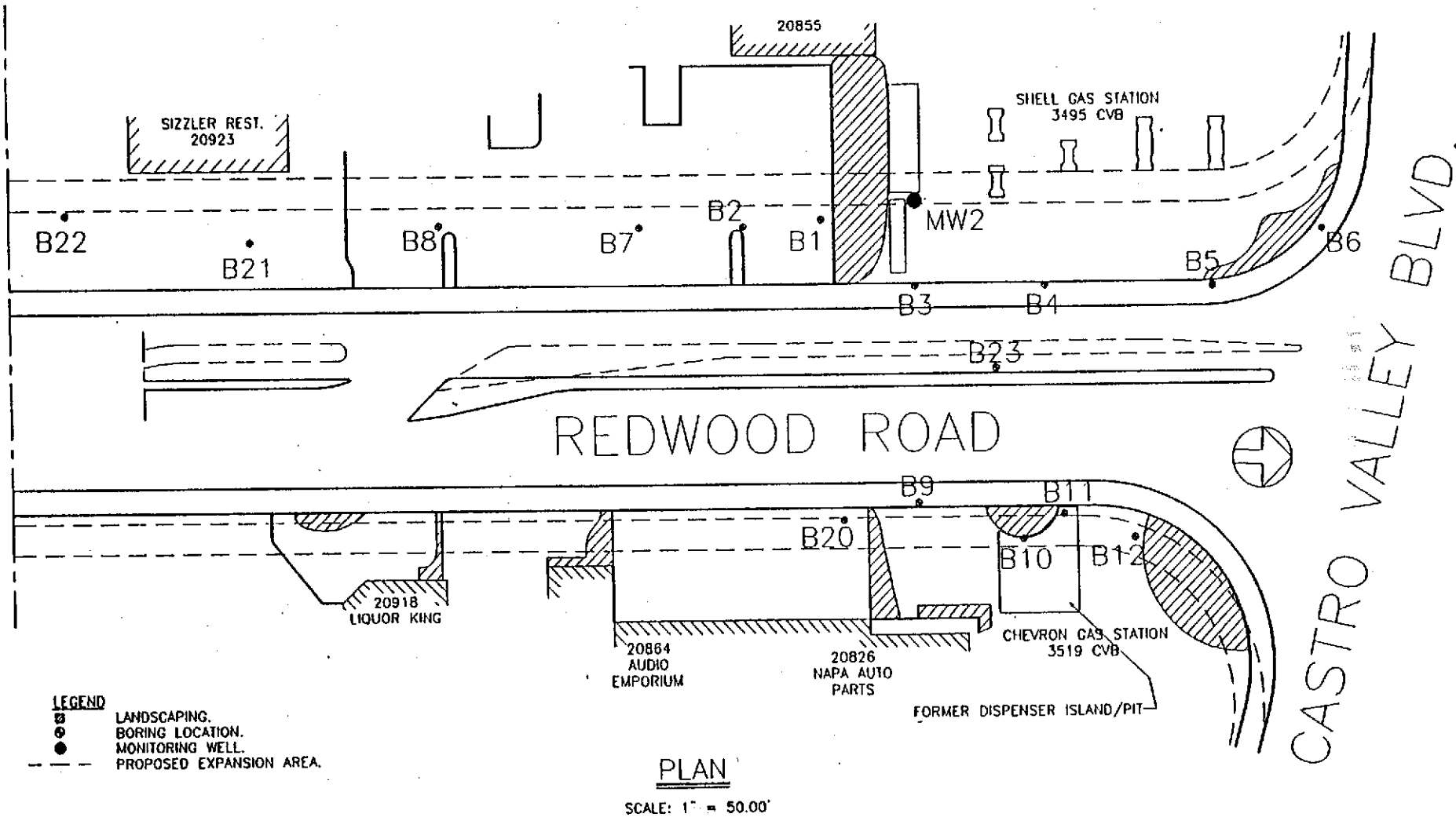
Notes: TPH = Total Petroleum Hydrocarbons
ppm = parts per million (mg/Kg)
ppb = parts per billion (ug/Kg)



PLAN

SCALE: 1" = 50.00'

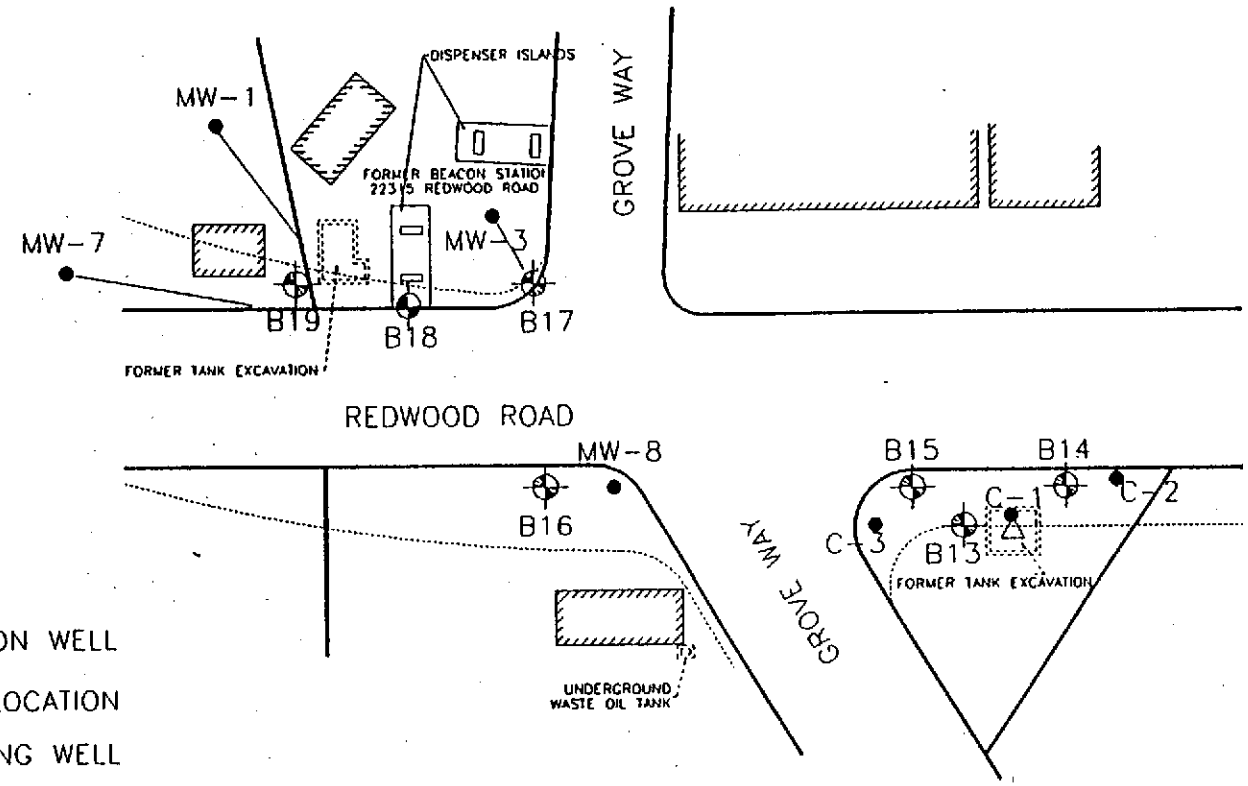
FIG. No. 3	ACC ENVIRONMENTAL CONSULTANTS, INC. 1000 ATLANTIC AVENUE SUITE 110 ALAMEDA, CA 94501 (510) 522-8188 • FAX: (510) 865-5731	CONCENTRATION MAP REDWOOD RD. CASTRO VALLEY, CA	DATE JAN 1995
PRJ. No. 6163-1			DRAWN KMN



PLAN

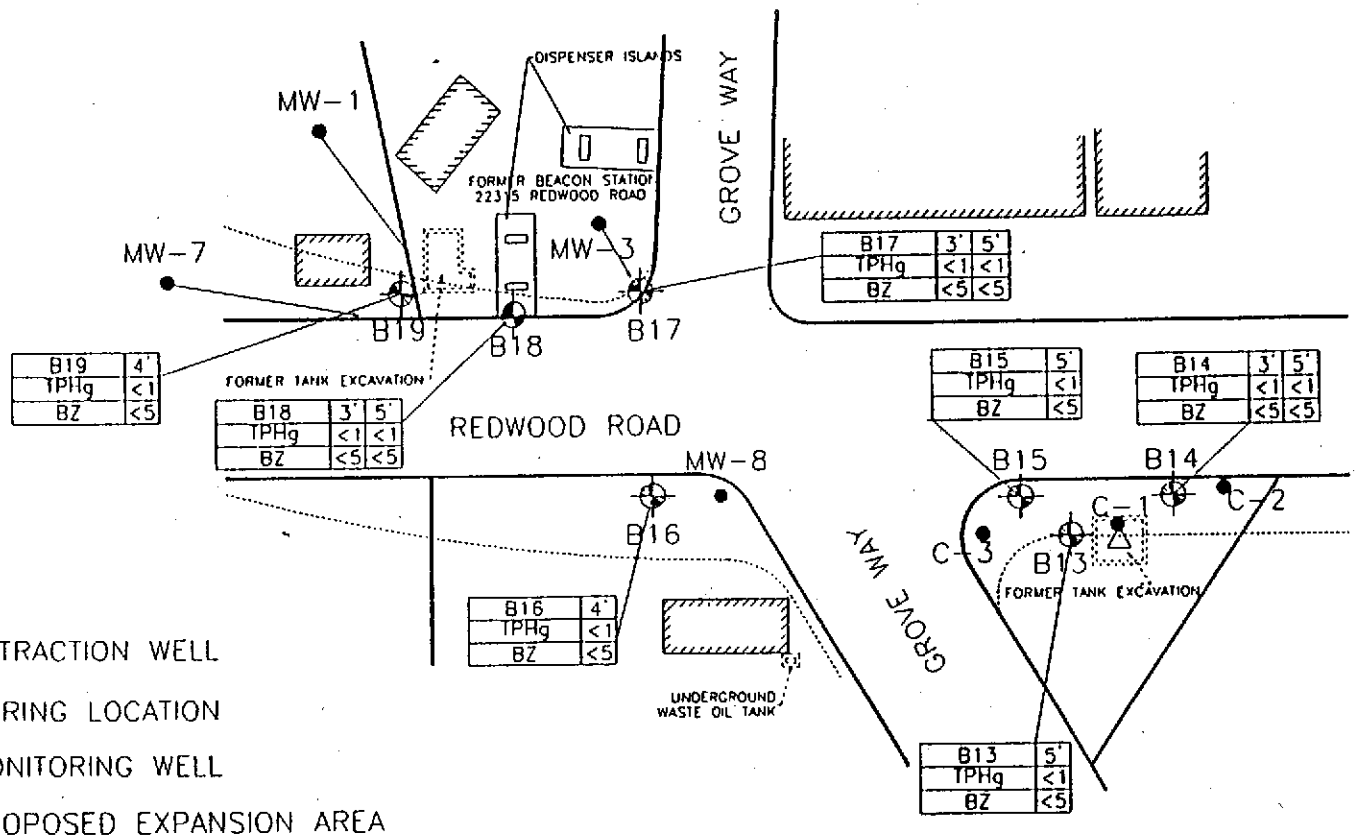
SCALE: 1" = 50.00'

FIG. No. 2 PRJ. No. 6163-1	ACC ENVIRONMENTAL CONSULTANTS, INC. 1000 ATLANTIC AVENUE SUITE 110 ALAMEDA, CA 94501 (510) 522-8188 • FAX: (510) 865-5731	SITE PLAN REDWOOD RD. CASTRO VALLEY, CA	DATE JAN 1995 DRAWN KMN



SCALE: 1' = 100"

FIG. No. 4 PRJ. No. 6163-1	ACC ENVIRONMENTAL CONSULTANTS, INC. 1000 ATLANTIC AVENUE SUITE 110 ALAMEDA, CA 94501 (510) 522-8188 • FAX: (510) 865-5731	SITE PLAN REDWOOD ROAD CASTRO VALLEY, CA	DATE FEB 1995 DRAWN KMN



LEGEND

△ EXTRACTION WELL

⊕ BORING LOCATION

● MONITORING WELL

..... PROPOSED EXPANSION AREA

▭ EXISTING BUILDING

TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN PPM

BZ BENZENE IN PPB

SCALE: 1' = 100"

FIG. No. 5 PRJ. No. 6163-1	ACC ENVIRONMENTAL CONSULTANTS, INC. 1000 ATLANTIC AVENUE SUITE 110 ALAMEDA, CA 94501 (510) 522-8188 • FAX: (510) 865-5731	CONCENTRATION MAP REDWOOD ROAD CASTRO VALLEY, CA	DATE FEB 1995 DRAWN KMN

CHROMALAB, INC.

Environmental Services (SDB)

December 12, 1994 *Submission #:* 9412134

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: 3 samples for Gasoline and BTEX analysis.

Matrix: SOIL
Sampled: December 5, 1994 *Run#:* 4815 *Analyzed:* December 12, 1994
Method: EPA 5030/8015M/8020

Spl # CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72277 B8-4	1.8	100	N.D.	38	35

Matrix: SOIL
Sampled: December 7, 1994 *Run#:* 4815 *Analyzed:* December 12, 1994
Method: EPA 5030/8015M/8020

Spl # CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72295 B20-3	N.D.	N.D.	N.D.	N.D.	N.D.
72296 B20-5	N.D.	N.D.	N.D.	N.D.	N.D.
Reporting Limits	1.0	5.0	5.0	5.0	5.0
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	100	113	112	108	110

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

QC JACK 14:39:22

CHROMALAB, INC.

Environmental Services (SDB)

December 15, 1994 *Submission #:* 9412134

CC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: 30 samples for Gasoline and BTEX analysis.

Matrix: SOIL
Sampled: December 5, 1994 *Run#:* 4815 *Analyzed:* December 12, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72277	B8-4	1.8	100	N.D.	38	35

Matrix: SOIL
Sampled: December 7, 1994 *Run#:* 4815 *Analyzed:* December 12, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72295	B20-3	N.D.	N.D.	N.D.	N.D.	N.D.
72296	B20-5	N.D.	N.D.	N.D.	N.D.	N.D.

Matrix: SOIL
Sampled: December 5, 1994 *Run#:* 4838 *Analyzed:* December 13, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72267	B1-4	4.9	N.D.	N.D.	N.D.	5.2
72268	B2-4	N.D.	N.D.	N.D.	N.D.	N.D.
72269	B3-6	86	N.D.	N.D.	960	1800
72270	B3-4	26	40	N.D.	93	42
72271	B4-2	N.D.	8.6	N.D.	N.D.	N.D.

Matrix: SOIL
Sampled: December 5, 1994 *Run#:* 4846 *Analyzed:* December 13, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72272	B4-4	28	670	47	88	240
72273	B5-4	N.D.	N.D.	N.D.	N.D.	6.8
72274	B6-4	N.D.	N.D.	N.D.	N.D.	N.D.

CHROMALAB, INC.
Environmental Services (SDB)

December 15, 1994 *Submission #:* 9412134

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: 30 samples for Gasoline and BTEX analysis.

Matrix: SOIL
Sampled: December 5, 1994 *Run#:* 4879 *Analyzed:* December 14, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72275	B6-6	N.D.	N.D.	N.D.	N.D.	N.D.
72276	B7-4	N.D.	N.D.	N.D.	N.D.	N.D.
72278	B7-6	N.D.	N.D.	N.D.	N.D.	N.D.
72279	B9-2	9.9	16	N.D.	67	230
72280	B9-4	1.0	5.8	N.D.	6.5	9.0

Matrix: SOIL
Sampled: December 6, 1994 *Run#:* 4879 *Analyzed:* December 14, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72281	B10-4	59	N.D.	N.D.	220	540
Note: DETECTION LIMIT: BTEX=50UG/KG & GASOLINE=10MG/KG						
72282	B11-2	N.D.	N.D.	N.D.	N.D.	N.D.
72283	B12-4	N.D.	N.D.	N.D.	N.D.	N.D.
72284	B12-6	N.D.	N.D.	N.D.	N.D.	N.D.
72285	B13-5	N.D.	N.D.	N.D.	N.D.	N.D.
72286	B14-3	N.D.	N.D.	N.D.	N.D.	N.D.
72287	B14-5	N.D.	N.D.	N.D.	N.D.	N.D.
72288	B15-5	N.D.	N.D.	N.D.	N.D.	N.D.
72289	B16-4	N.D.	N.D.	N.D.	N.D.	N.D.

Matrix: SOIL
Sampled: December 6, 1994 *Run#:* 4885 *Analyzed:* December 15, 1994
Method: EPA 5030/8015M/8020

Spl #	CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72290	B17-5	N.D.	N.D.	N.D.	N.D.	N.D.
72291	B17-3	N.D.	N.D.	N.D.	N.D.	N.D.
72292	B18-3	N.D.	N.D.	N.D.	N.D.	N.D.
72293	B18-5	N.D.	N.D.	N.D.	N.D.	N.D.

CHROMALAB, INC.

Environmental Services (SDB)

December 14, 1994 *Submission #:* 9412134

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: One sample for TEPH analysis

Matrix: SOIL *Extracted:* December 12, 1994
Sampled: December 6, 1994 *Analyzed:* December 13, 1994
Method: 3550/8015

Sample #	Client Sample ID	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
72289	B16-4	N.D.	N.D.	N.D.
Blank		N.D.	N.D.	N.D.
Spike Recovery		----	79%	----
Dup Spike Recovery		----	91%	----
Reporting Limit		1.0	1.0	10

ChromaLab, Inc.

Sirirat Chullakorn
Analytical Chemist

Ali Kharrazi
Organic Manager

cc

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

December 14, 1994 *Submission #:* 9412134

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: Five samples for Diesel analysis

Matrix: SOIL *Extracted:* December 9, 1994
Sampled: SEE COC *Analyzed:* December 9, 1994
Method: EPA 3550/8015

Sample #	Client Sample ID	Diesel (mg/Kg)
72290	B17-5	N.D.
72291	B17-3	N.D.
72292	B18-3	N.D.
72293	B18-5	N.D.
72294	B19-4	N.D.
Blank		N.D.
Blank Spike Recovery		102%
Reporting Limit		1.0

ChromaLab, Inc.

Sirirat Chullakorn
Analytical Chemist

Ali Kharrazi
Organic Manager

at

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

December 15, 1994 *Submission #:* 9412134

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD R *Project#:* 6163-1
Received: December 8, 1994

re: 30 samples for Gasoline and BTEX analysis.

Matrix: SOIL
Sampled: December 6, 1994 *Run#:* 4887 *Analyzed:* December 15, 1994
Method: EPA 5030/8015M/8020

Spl # CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
72294 B19-4	N.D.	N.D.	N.D.	N.D.	N.D.
Reporting Limits	1.0	5.0	5.0	5.0	5.0
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	94	99	101	99	102

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

OC BILLY 17:32:17

CHROMALAB, INC.

Environmental Services (SDB)

December 28, 1994 *Submission #:* 9412285

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD RD. *Project#:* 6163-1
Received: December 20, 1994

re: 4 samples for Gasoline and BTEX analysis.

Matrix: SOIL
Sampled: December 19, 1994 *Run#:* 4979 *Analyzed:* December 27, 1994
Method: EPA 5030/8015M/8020

Spl # CLIENT SMPL ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
73354 B21-6	N.D.	N.D.	N.D.	N.D.	N.D.
73355 B22-5	N.D.	N.D.	N.D.	N.D.	N.D.
73356 B23-5	33	130	120	410	1600
73357 B23-8	87	920	2500	1400	6300
Reporting Limits	1.0	5.0	5.0	5.0	5.0
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	95	101	103	102	104

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

QC JACK 15:58:53

CHROMALAB, INC.

Environmental Services (SDB)

December 27, 1994 *Submission #:* 9412285

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: REDWOOD RD. *Project#:* 6163-1
Received: December 20, 1994

re: Two samples for Diesel analysis

Matrix: SOIL *Extracted:* December 21, 1994
Sampled: December 19, 1994 *Analyzed:* December 21-22, 1994
Method: EPA 3550/8015

Sample #	Client Sample ID	Diesel (mg/Kg)
73356	B23-5	74
73357	B23-8	140
Blank		N.D.
Blank Spike Recovery		105%
Reporting Limit		1.0

ChromaLab, Inc.

Alex Tam
Analytical Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096

CHROMALAB, INC.

DOHS 1094

SUBM #: 9412134
CLIENT: ACC
DUE: 12/12/94 TO 12/15/94
REF #:19672

19672

Chain of Custod

DATE _____ PAGE 1 OF 4

PROJ. MGR. Misty Koltreider
COMPANY ACC Environmental
ADDRESS 1000 Atlantic Ave. Suite 110
Alameda, CA 94501

SAMPLERS (SIGNATURE) Misty Kolthreider (510) 522-2188 (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015),	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
B1-4	12/5/94		S			X																			1
B2-4						X																			1
B3-6						X																			1
B3-4						X																			1
B4-2						X																			1
B4-4						X																			1
B5-4						X																			1
B6-4						X																			1
B6-6						X																			1

PROJECT INFORMATION

PROJECT NAME: Redwood R
PROJECT NUMBER: 6163-1
P.O. # 6163-1
TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS: 9
HEAD SPACE:
REC'D GOOD CONDITION/COLD: yes
CONFORMS TO RECORD: yes

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.
Misty Kolthreider (SIGNATURE) (TIME)
Misty Kolthreider 12/8/94 (PRINTED NAME) (DATE)
ACC Environmental (COMPANY)

RECEIVED BY 1.
(SIGNATURE) 15:30 (TIME)
B Mercau 12-8-94 (PRINTED NAME) (DATE)
Chromalab (COMPANY)

RELINQUISHED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RECEIVED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RELINQUISHED BY
(SIGNATURE) (TI
(PRINTED NAME) (D
(COMPANY)

RECEIVED BY (LABORATORY)
(SIGNATURE) (TI
(PRINTED NAME) (D
(LAB)

CHROMALAB, INC.

DOHS 1094

2239 Omega Road, #1 · San Ramon, California 94583
510/831-1700 · Facsimile 510/831-8700
484-1919 484-1096

19672

Chain of Custody

DATE PAGE 2 OF 4

PROJ. MGR. Misty Kaltreider
COMPANY ACC Environmental
ADDRESS 1000 Atlantic Ave. Suite 110
Alameda, CA 94501

SAMPLERS (SIGNATURE) Misty Kaltreider (510) 522-2188 (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 3015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)		48hr TAT Rush		NUMBER OF CONTAINERS
B7-4 (B7-4)	12/5/94		S			X																			1
B8-4						X																	X		1
B7-6						X																			1
B9-2						X																			1
B9-4						X																			1
B10-4	12/6/94					X																			1
B11-2						X																			1
B12-4						X																			1
B12-6						X																			1

RUSH

PROJECT INFORMATION

PROJECT NAME: Redwood Rd
PROJECT NUMBER: 6163-1
P.O. # 6163-1

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS: 9
HEAD SPACE:
REC'D GOOD CONDITION/COLD:
CONFORMS TO RECORD:

TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:
· 48 hr rush on # B8-4

RELINQUISHED BY 1
Misty Kaltreider (SIGNATURE) (TIME)
Misty Kaltreider 12/8/94 (PRINTED NAME) (DATE)
ACC Environmental (COMPANY)

RECEIVED BY 1
(SIGNATURE) (TIME)
(PRINTED NAME) 12-8-94 (DATE)
Chromalab (COMPANY)

RELINQUISHED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RECEIVED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RELINQUISHED BY 3.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(LAB)

9412134

CHROMALAB, INC.

DOHS 1094

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1700 • Facsimile 510/831-8700
484-1919 484-1096

19672

Chain of Custody

DATE PAGE 3 OF 4

PROJ. MGR. Misty Kolhreider
COMPANY ACC Environmental
ADDRESS 1000 Atlantic Ave. Suite 110
Alameda, CA 94501

SAMPLERS (SIGNATURE) Misty Kolhreider (510) 522-8198 (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 3030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/625, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	TEPH	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)			NUMBER OF CONTAINERS
B13-5	12/6/94		S			X																		1
B14-3						X																		1
B14-5						X																		1
B15-5						X																		1
B16-4						X										X								1
B17-5						X	X																	1
B17-3						X	X																	1
B18-3						X	X																	1
B18-5						X	Y																	1

PROJECT INFORMATION

PROJECT NAME: Redwood Rd
PROJECT NUMBER: 6e1163-1
P.O. # 6e1163-1

TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS: 9
HEAD SPACE:
REC'D GOOD CONDITION/COLD:
CONFORMS TO RECORD:

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Misty Kolhreider (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Misty Kolhreider (DATE) 12/6/94	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) ACC Environmental	(COMPANY)	(COMPANY)
RECEIVED BY 1	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) B Moore (TIME) 1546	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) B Moore (DATE) 1546	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Chromalab	(COMPANY)	(LAB)

CHROMALAB, INC.

DOHS 1094

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1700 • Facsimile 510/831-8708
484-1919 484-1096

19672

Chain of Custody

DATE PAGE 4 OF 4

PROJ. MGR. Misty Kallreider
COMPANY ACC Environmental
ADDRESS 1000 Atlantic Ave. Suite 110
Alameda, CA 94501
SAMPLERS (SIGNATURE) Misty Kallreider (510) 522-2198 (PHONE NO.)

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 3030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 8242)	BASE/NEUTRALS, ACIDS (EPA 625/625, 8270, 8321)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	Rush 48 hr			NUMBER OF CONTAINERS
B19-4	12/6/94		S			X	X																	1
B20-3	12/7/94					X															X			1
B20-5	12/7/94					X															X			1

PUSH

PROJECT INFORMATION

PROJECT NAME: Kalward Rd
PROJECT NUMBER: 60163.1
P.O. # 60163.1

TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	3
HEAD SPACE	
RECD GOOD CONDITION/COLD	
CONFORMS TO RECORD	

SPECIAL INSTRUCTIONS/COMMENTS:

Rush 48hr TAT on samples
B20-3 & B20-5

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Misty Kallreider (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Misty Kallreider (DATE) 12/8/94	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) ACC Environmental	(COMPANY)	(COMPANY)
RECEIVED BY 1.	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME) 1546	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) B. Moran 12-8-94 (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Chromalab	(COMPANY)	(LAB)

285 / 4335 - 4335-4
19848

CHROMALAB, INC.

DOHS 1094

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1700 • Facsimile 510/831-8798
484-1919 484-1096

SUB# #: 9412285
CLIENT: ACC
DUE: 12/28/94
REF #: 19848

PROJ. MGR. Misty Koltreider
COMPANY ACC Environmental
ADDRESS 1000 Atlantic Ave. Suite 110
Alameda, CA 94501
SAMPLERS (SIGNATURE) Misty Kolthreider
(510) (PHONE NO.) 522-2188
DATE

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 3015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/8270, 3520)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
B21-6	12/19/94					X																			1
B22-5	"					X																			1
B23-5	"					X	X																		1
B23-8	"					X	X																		1

PROJECT INFORMATION

PROJECT NAME: Redwood Rd
PROJECT NUMBER: 6116.3-1
P.O. # 6116.3-1

TAT: STANDARD 5-DAY | 24 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:
Standard turn Around Time

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS: 4
HEAD SPACE:
REC'D GOOD CONDITION/COLD:
CONFORMS TO RECORD:

RELINQUISHED BY 1.
Misty Kolthreider (SIGNATURE) (TIME)
Misty Kolthreider 12/19/94 (PRINTED NAME) (DATE)
ACC Environmental (COMPANY)

RECEIVED BY 1.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
Chromalab (COMPANY)

RELINQUISHED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RECEIVED BY 2.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

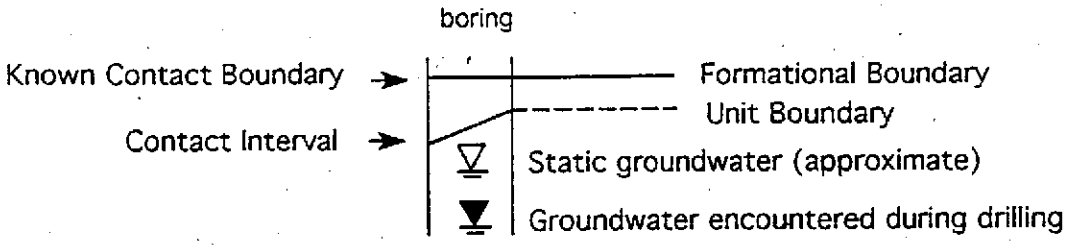
RELINQUISHED BY 3.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(COMPANY)

RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)
(LAB)

UNIFIED SOIL CLASSIFICATION SYSTEM

	MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS more than half > #200 sieve	GRAVELS more than half coarse fraction is larger than No. 4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	G W		well graded gravels, gravel-sand mixtures
			G P		poorly graded gravels, gravel-sand mixtures
		GRAVELS WITH OVER 12% FINES	G M		silty gravels, poorly graded gravel-sand silt mixtures
			G C		clayey gravels, poorly graded gravel-sand clay mixtures
	SANDS more than half coarse fraction is smaller than No. 4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	S W		well graded sands, gravelly sands
			S P		poorly graded sands, gravelly sands
		SANDS WITH OVER 12% FINES	S M		silty sands, poorly graded sand-silt mixtures
			S C		clayey sands, poorly graded sand-clay mixtures
FINE GRAINED SOILS more than half < #200 sieve	SILTS AND CLAYS liquid limit less than 50		M L		inorg. silts and v.fine sands, rock flour silty or clayey sands, or clayey silts w/sl. plasticity
			C L		inorg. clays of low-med plasticity, gravelly clays, sandy clays, silty clays, lean clays
			O L		organic clays and organic silty clays of low plasticity
	SILTY AND CLAYS liquid limit greater than 50		MH		inorganic silty, micaceous or diatomacious fine sandy or silty soils, elastic silts
			C H		inorganic clays of high plasticity, fat clays
			O H		organic clays of medium to high plasticity organic silts
	HIGHLY ORGANIC SOILS		Pt		peat and other highly organic soils

LEGEND FOR BORING LOGS



Date: 1/1/95	Project No. 94-6163-1	Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

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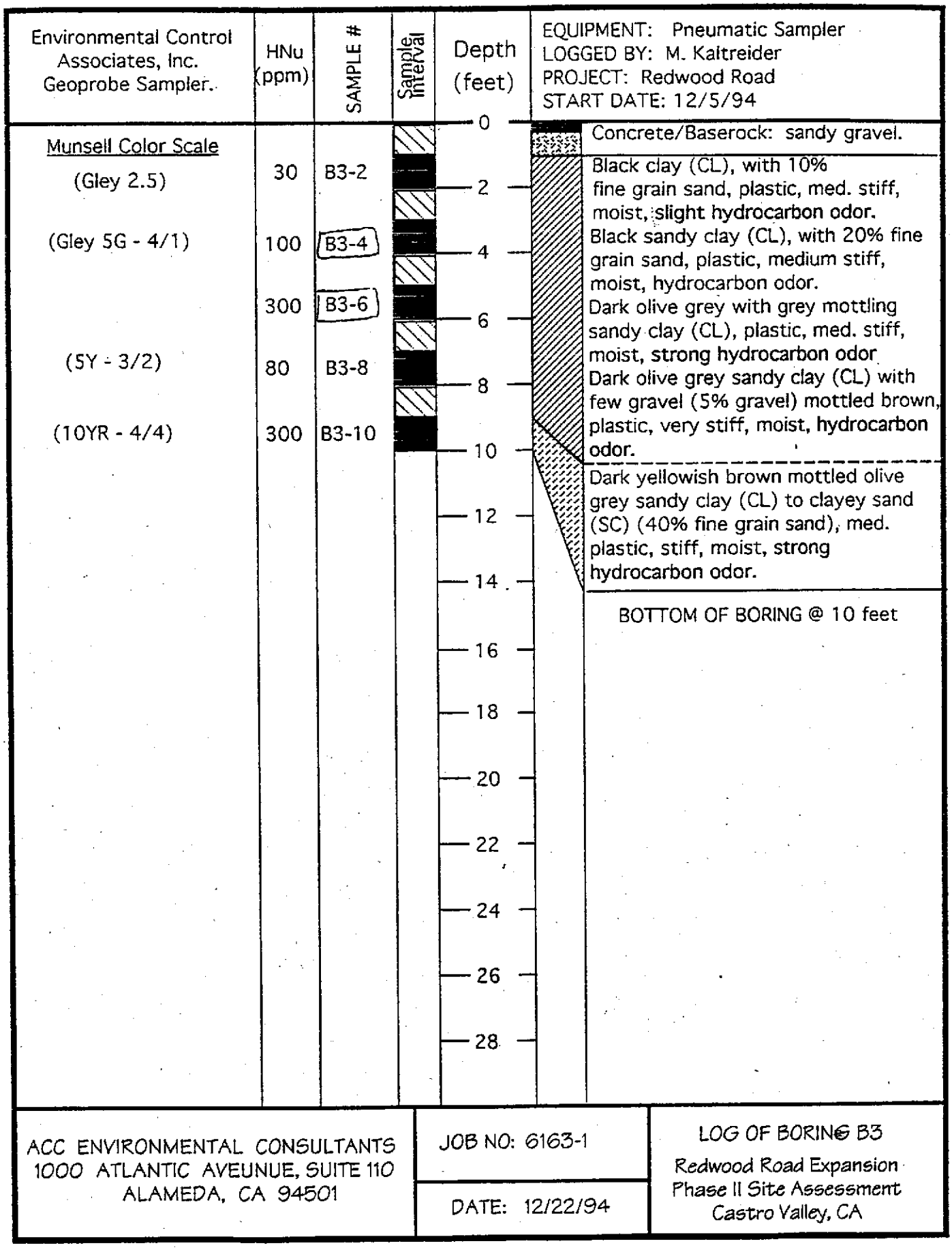
Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
				0	Asphalt/Baserock: silty gravel.
Munsell Color Scale (Gley 2.5)	15	B1-2		2	Black sandy clay (CL), with 20% fine grain sand, plastic, med. stiff, moist, slight mottling, slight hydrocarbon odor.
(Gley 5G - 4/1)	130	B1-4		4	Dark greenish grey sandy clay (CL), with 30% fine grain sand, plastic, medium stiff, slight fracturing, very moist, hydrocarbon odor.
	200	B1-6		6	Dark greenish grey sandy clay (CL) with few gravel (3% gravel), med. plastic, med. stiff, moist, strong hydrocarbon odor.
(Gley 5G - 4/1)	300	B1-8		8	Dark greenish grey, grades to brown clayey sand (SC), med. dense, moist, strong hydrocarbon odor.
				10	BOTTOM OF BORING @ 8 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B1 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale (Gley 2.5) (Gley 5G - 4/1) (Gley 5G - 4/1)	30 100	B2-4 B2-8		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Asphalt/Baserock: silty gravel. Dark olive grey sandy clay (CL), with 10%-15% fine grain sand, slightly plastic, med. stiff, moist, with few roots. Olive brown clayey sand (SC) to sandy clay (CL), 40% fine grain sand with few gravel (<5% gravel), slight grey mottling, dense, moist, hydrocarbon odor. BOTTOM OF BORING @ 8 feet

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B2 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA



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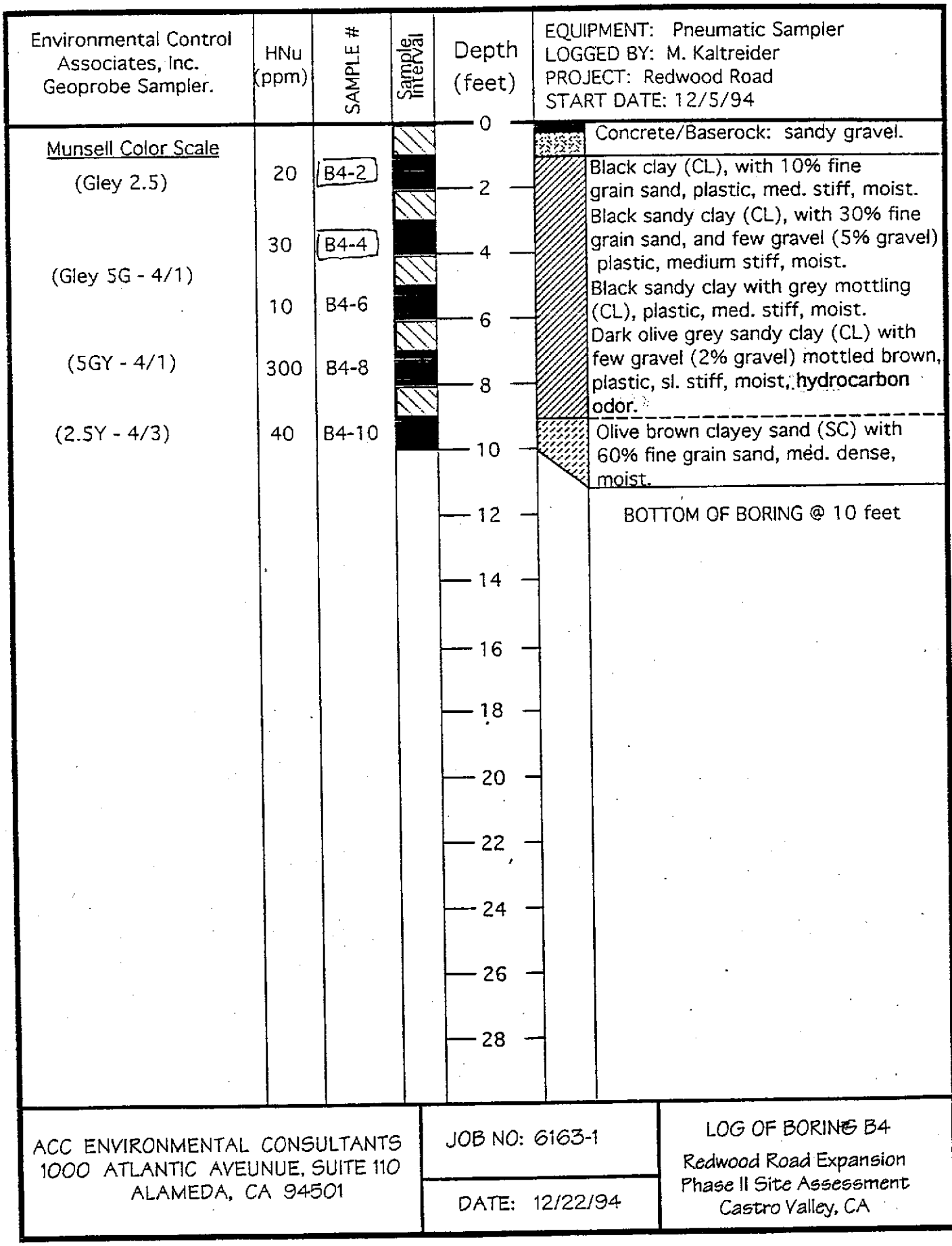
ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B3

Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA



ACC ENVIRONMENTAL CONSULTANTS
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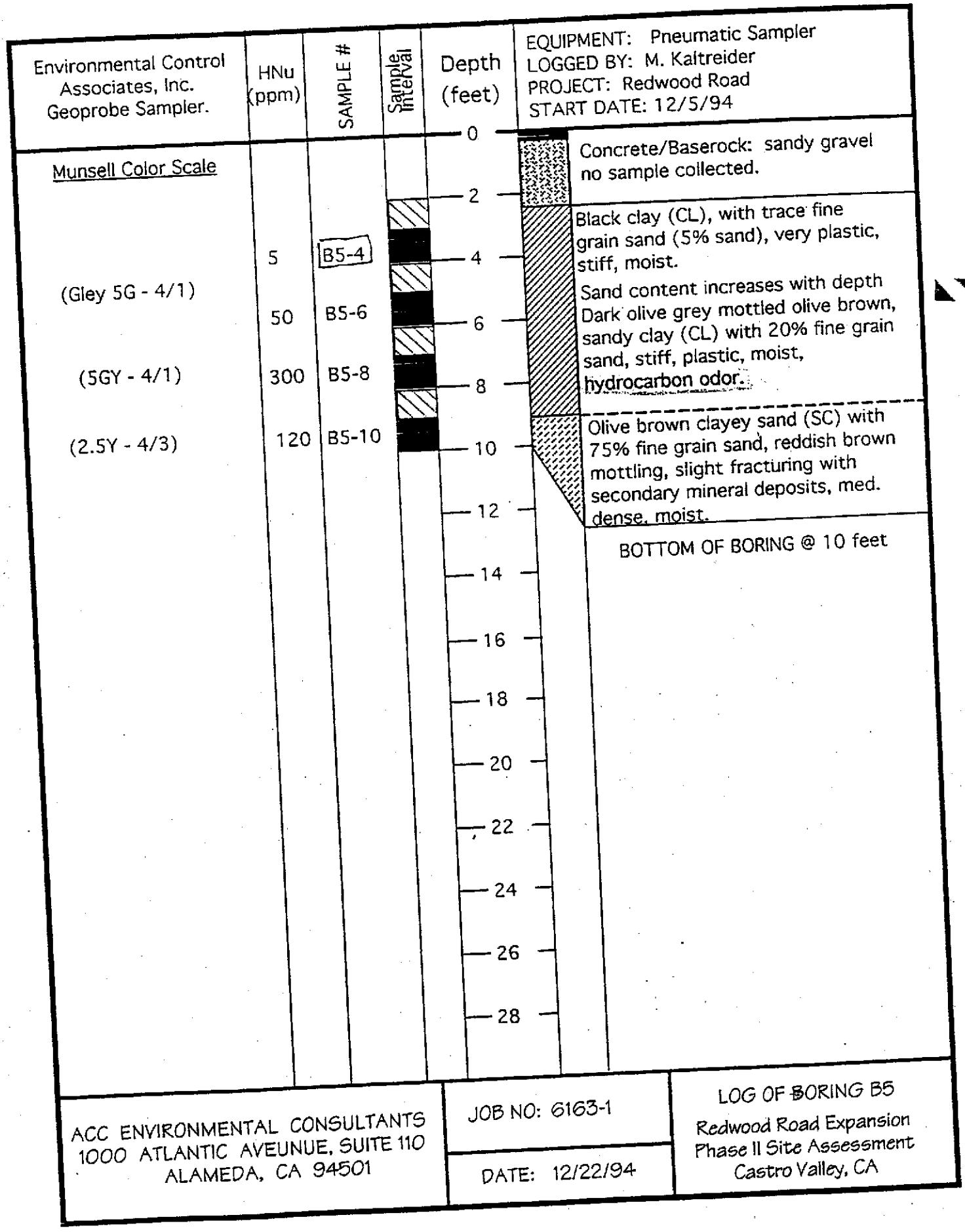
ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B4

Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA


Environmental Control Associates, Inc. Geoprobe Sampler.
HNu (ppm)
SAMPLE #
Sample Interval
Depth (feet)
EQUIPMENT: Pneumatic Sampler
LOGGED BY: M. Kaltreider
PROJECT: Redwood Road
START DATE: 12/5/94
Munsell Color Scale
(Gley 5G - 4/1)
(5GY - 4/1)
(2.5Y - 4/3)
5
50
300
120
B5-4
B5-6
B5-8
B5-10
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Concrete/Baserock: sandy gravel no sample collected.
Black clay (CL), with trace fine grain sand (5% sand), very plastic, stiff, moist.
Sand content increases with depth
Dark olive grey mottled olive brown, sandy clay (CL) with 20% fine grain sand, stiff, plastic, moist, hydrocarbon odor.
Olive brown clayey sand (SC) with 75% fine grain sand, reddish brown mottling, slight fracturing with secondary mineral deposits, med. dense, moist.
BOTTOM OF BORING @ 10 feet
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JOB NO: 6163-1
DATE: 12/22/94
LOG OF BORING B5
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale				0	Concrete/Baserock: sandy gravel
	5	B6-2		2	Black clay (CL), with trace fine grain sand (5% sand), very plastic, stiff, moist.
	5	B6-4		4	Dark olive grey mottled olive brown, clay (CL) with 10% fine grain sand, with roots, slight mottling, stiff, plastic, moist.
(Gley 5G - 4/1)	5	B6-6		6	
(5GY - 4/1)	40	B6-8		8	Dark olive grey sandy clay (CL), medium stiff, very plastic, moist.
(2.5Y - 4/3)	300	B6-10		10	Olive brown clayey sand (SC) with 60% fine grain sand, with 2% gravel, slight oxidation around gravel, med. dense, moist.
				12	BOTTOM OF BORING @ 10 feet
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS
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ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B6
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale				0	Concrete/Baserock: sandy gravel
	5	B7-2		2	Black clay (CL), with trace fine grain sand (5% sand), very plastic, stiff, moist.
(Gley 5G - 4/1)	2	B7-4		4	Dark olive grey mottled olive brown, clay (CL) with 15% fine grain sand, slight mottling, stiff, plastic, moist.
(7.5YR - 4/4)	50	B7-6		6	Dark olive grey mottled brown, sandy clay (CL), with 15% fine grain sand, medium stiff, plastic, moist.
(2.5Y - 4/3)	150	B7-8		8	Brown clayey sand (SC) with 75% fine grain sand, med. dense, moist.
	150	B7-10		10	BOTTOM OF BORING @ 10 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B7 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale				0	Concrete/Baserock: sandy gravel
	5	B8-2		2	Black clay (CL), with trace fine grain sand (10% sand), very plastic, stiff, moist.
	20	B8-4		4	Dark olive grey mottled olive brown, clay (CL) with 10% fine grain sand, slight mottling, stiff, plastic, moist.
(Gley 5G - 4/1)	100	B8-6		6	Dark olive grey mottled brown, sandy clay (CL), with 15% fine grain sand, medium stiff, plastic, moist
(7.5YR - 4/4)	200	B8-8		8	Brown clayey sand (SC) with 70% fine grain sand, med. dense, moist.
(2.5Y - 4/3)	200	B8-10		10	BOTTOM OF BORING @ 10 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS
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ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

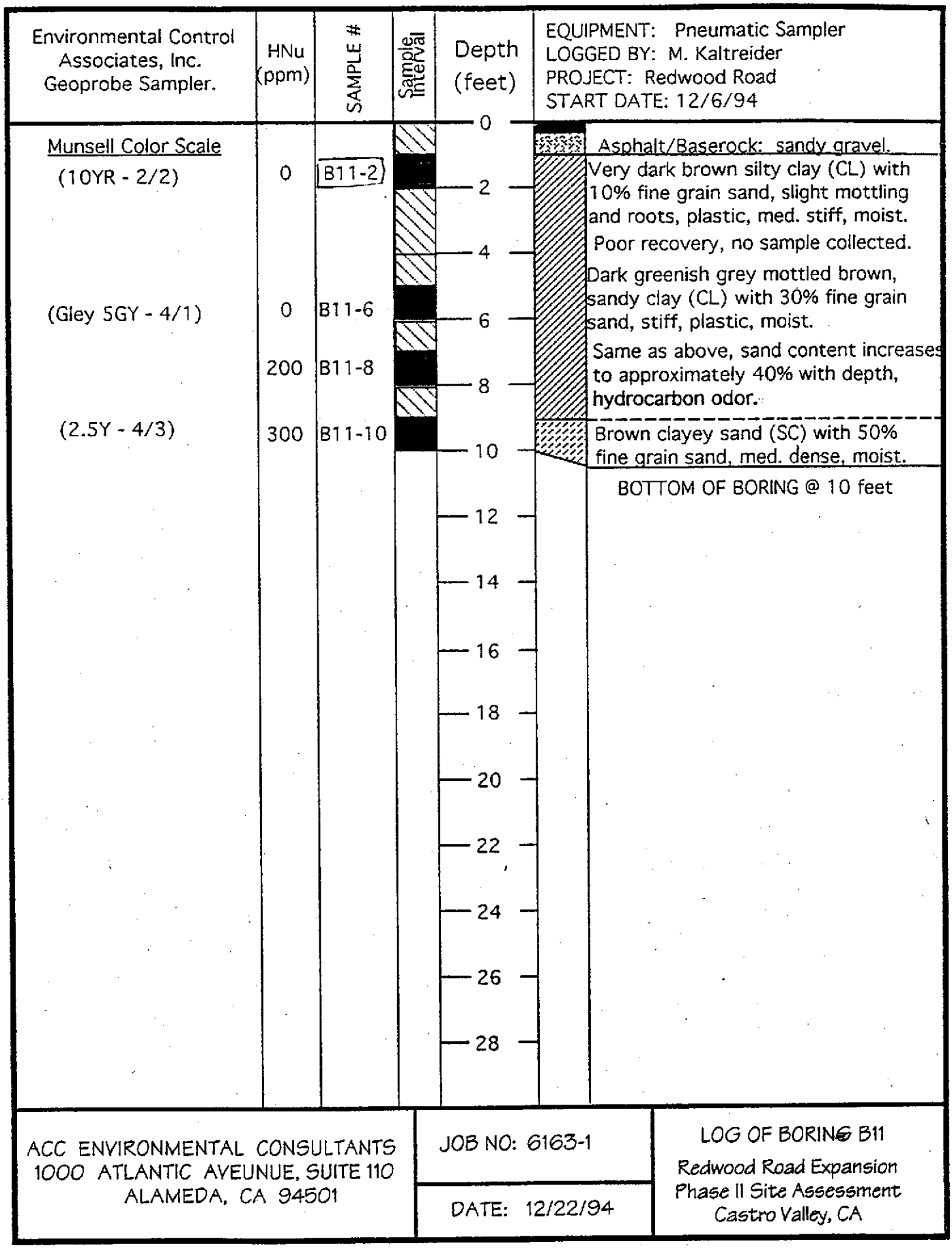
LOG OF BORING B8
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/5/94
Munsell Color Scale				0	Concrete/Baserock: sandy gravel
	100	B9-2		2	Brown mottled olive grey sandy clay (CL), with15% fine grain sand (interperted as fill material) plastic, stiff, moist, hydrocarbon odor.
	15	B9-4		4	
(Gley 5G - 4/1)					Dark olive grey mottled olive brown, clay (CL) with 5% fine grain sand, slight mottling, stiff, plastic, moist.
	50	B9-6		6	
(7.5YR - 4/4)	5	B9-8		8	Dark olive grey mottled brown, sandy clay (CL), with 15% fine grain sand, medium stiff, plastic, moist.
(2.5Y - 4/3)	5	B9-10		10	Brown sandy clay (CL) with 30% fine grain sand, med. stiff, plastic, moist.
				12	BOTTOM OF BORING @ 10 feet
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B9 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale (Gley 5G - 4/1)	10 50	B10-2 B10-4		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Concrete/Baserock: sandy gravel. Black sandy clay (CL), with 30% fine grain sand, very plastic, stiff, moist. Black silty to sandy clay (CL) with 10% sand, plastic, med. stiff, moist. Poor recovery, sand, interperted as fill material, no sample collected. BOTTOM OF BORING @ 6 feet

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B10 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA


Environmental Control Associates, Inc. Geoprobe Sampler.
HNu (ppm)
SAMPLE #
Sample Interval
Depth (feet)
EQUIPMENT: Pneumatic Sampler
LOGGED BY: M. Kaltreider
PROJECT: Redwood Road
START DATE: 12/6/94
Munsell Color Scale
(10YR - 2/2)
0
B11-2
(Gley 5GY - 4/1)
0
B11-6
200
B11-8
(2.5Y - 4/3)
300
B11-10
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt/Baserock: sandy gravel.
Very dark brown silty clay (CL) with 10% fine grain sand, slight mottling and roots, plastic, med. stiff, moist.
Poor recovery, no sample collected.
Dark greenish grey mottled brown, sandy clay (CL) with 30% fine grain sand, stiff, plastic, moist.
Same as above, sand content increases to approximately 40% with depth, hydrocarbon odor.
Brown clayey sand (SC) with 50% fine grain sand, med. dense, moist.
BOTTOM OF BORING @ 10 feet
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6163-1
DATE: 12/22/94
LOG OF BORING B11
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Asphalt/Baserock: sandy gravel.
				2	Poor recovery, no sample collected.
(10YR - 2/2)	0	B12-4		4	Brown sandy clay (CL) with 15% fine grain sand, slight mottling, plastic, soft, very moist.
(Gley 5GY - 4/1)	0	B12-6		6	Dark greenish grey mottled brown, sandy clay (CL) with 40% fine grain sand, stiff, plastic, moist.
(2.5Y - 4/3)	200	B12-8		8	Brown clayey sand (SC) with 50% fine grain sand, med. dense, moist.
				10	BOTTOM OF BORING @ 8 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B12 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

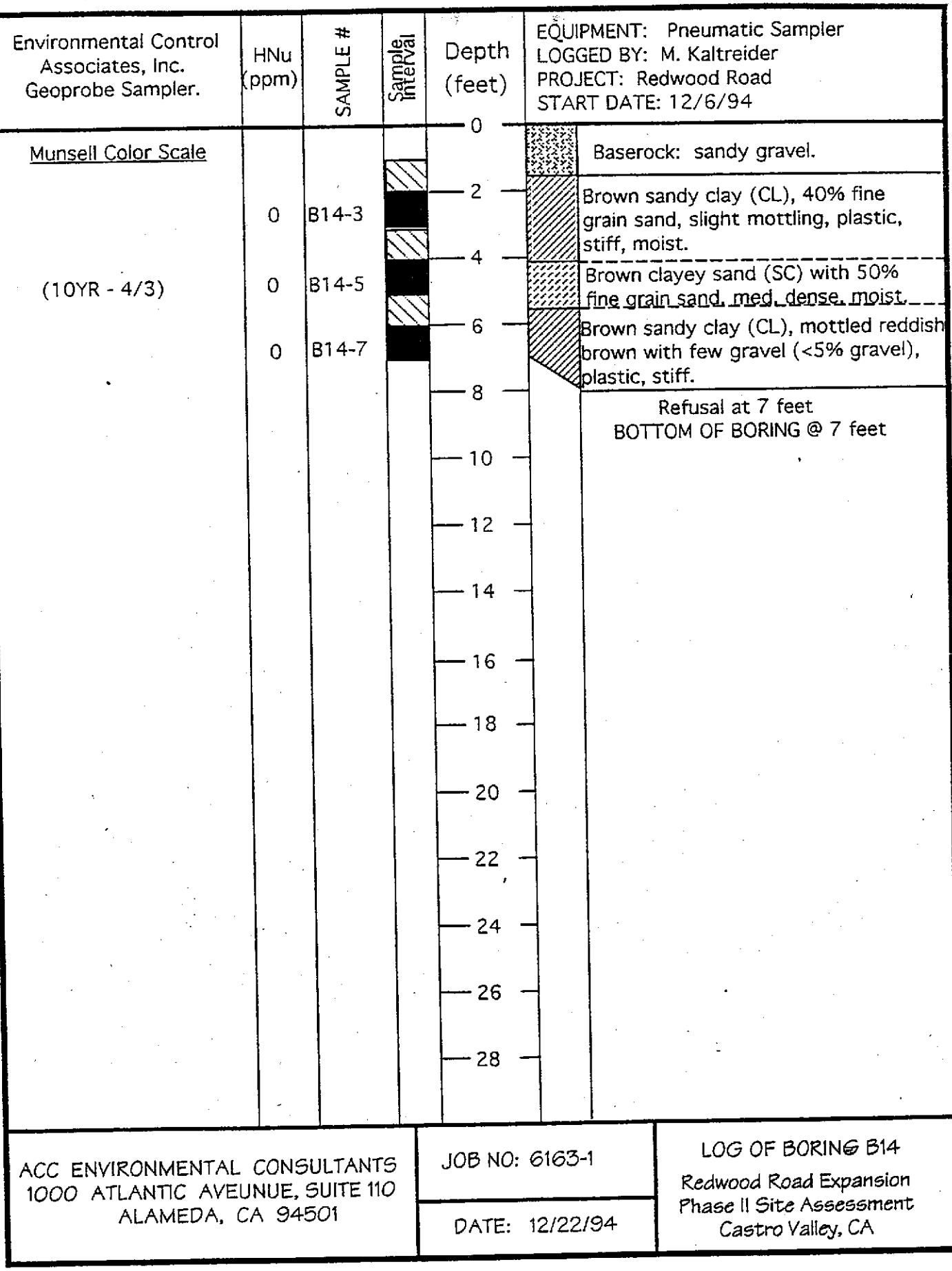
Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Asphalt/Baserock: sandy gravel.
				2	Brown silty sand (SM) with clay and trace gravel, 80% fine grain sand <5% gravel, slight mottling, dense, moist.
(10YR - 4/3)	0	B13-5		4	Brown clayey sand (SC) with 50% fine grain sand, med. dense, moist.
	0	B13-7		6	Brown gravelly sand (SW), dense, moist, interperted at excavation backfill material.
	0	B13-9		8	
				10	BOTTOM OF BORING @ 9 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B13
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA


Environmental Control Associates, Inc. Geoprobe Sampler.
HNu (ppm)
SAMPLE #
Sample Interval
Depth (feet)
EQUIPMENT: Pneumatic Sampler
LOGGED BY: M. Kaltreider
PROJECT: Redwood Road
START DATE: 12/6/94
Munsell Color Scale
(10YR - 4/3)
0 B14-3
0 B14-5
0 B14-7
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Baserock: sandy gravel.
Brown sandy clay (CL), 40% fine grain sand, slight mottling, plastic, stiff, moist.
Brown clayey sand (SC) with 50% fine grain sand, med. dense, moist.
Brown sandy clay (CL), mottled reddish brown with few gravel (<5% gravel), plastic, stiff.
Refusal at 7 feet
BOTTOM OF BORING @ 7 feet
ACC ENVIRONMENTAL CONSULTANTS
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ALAMEDA, CA 94501
JOB NO: 6163-1
DATE: 12/22/94
LOG OF BORING B14
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Baserock: sandy gravel.
				2	Brown sandy clay (CL), 30% fine grain sand with 5% gravel, slight mottling, plastic, stiff, moist.
(10YR - 4/3)	0	B15-5		4	Brown sand (SP) with clay (90% sand) med. dense, moist.
	0	B15-7		6	Brown clayey sand (SC), with 5% gravel, med. dense, moist.
	0	B15-9		8	BOTTOM OF BORING @ 9 feet
				10	
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B15 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale (10YR - 4/3)	0 0 0 0 0	B16-2 B16-4 B16-6 B16-8 B16-10		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Baserock: sandy gravel. Brown clayey sand (SC), 80% fine grain sand, med. dense, moist. Brown sand (SP) with clay (90% sand) med. dense, moist. Brown gravelly sand (SW), with 40% gravel, med. dense, moist. BOTTOM OF BORING @ 10 feet

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ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B16
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale (10YR - 4/3)	0 0 0 0	B17-3 B17-5 B17-7 B17-9		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Concrete/ baserock: sandy gravel. Brown sandy clay (CL), 40% fine grain sand, plastic, stiff, moist. Brown clayey sand (SC), very fine grain sand, med. dense, moist. Brown sand (SP) with clay (90% sand) med. dense, moist. BOTTOM OF BORING @ 9 feet

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B17 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Concrete/ baserock: sandy gravel.
				2	Brown clayey sand (SC), 60% fine grain sand, sl. dense, moist.
	0	B18-3			
				4	
(10YR - 4/3)	0	B18-5			
				6	Brown sand (SP) with clay (90% sand) med. dense, moist.
	0	B18-7			
				8	
	0	B18-9			
				10	BOTTOM OF BORING @ 9 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS
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ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B18
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale				0	Concrete/ baserock: sandy gravel.
				2	Brown sand (SP) with clay (90% sand) med. dense, moist.
	0	B19-4		4	
(10YR - 4/3)					
				6	Brown gravelly sand (SW) with 15% gravel, med. dense, moist.
	0	B19-7			
				8	BOTTOM OF BORING @ 7 feet
				10	
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

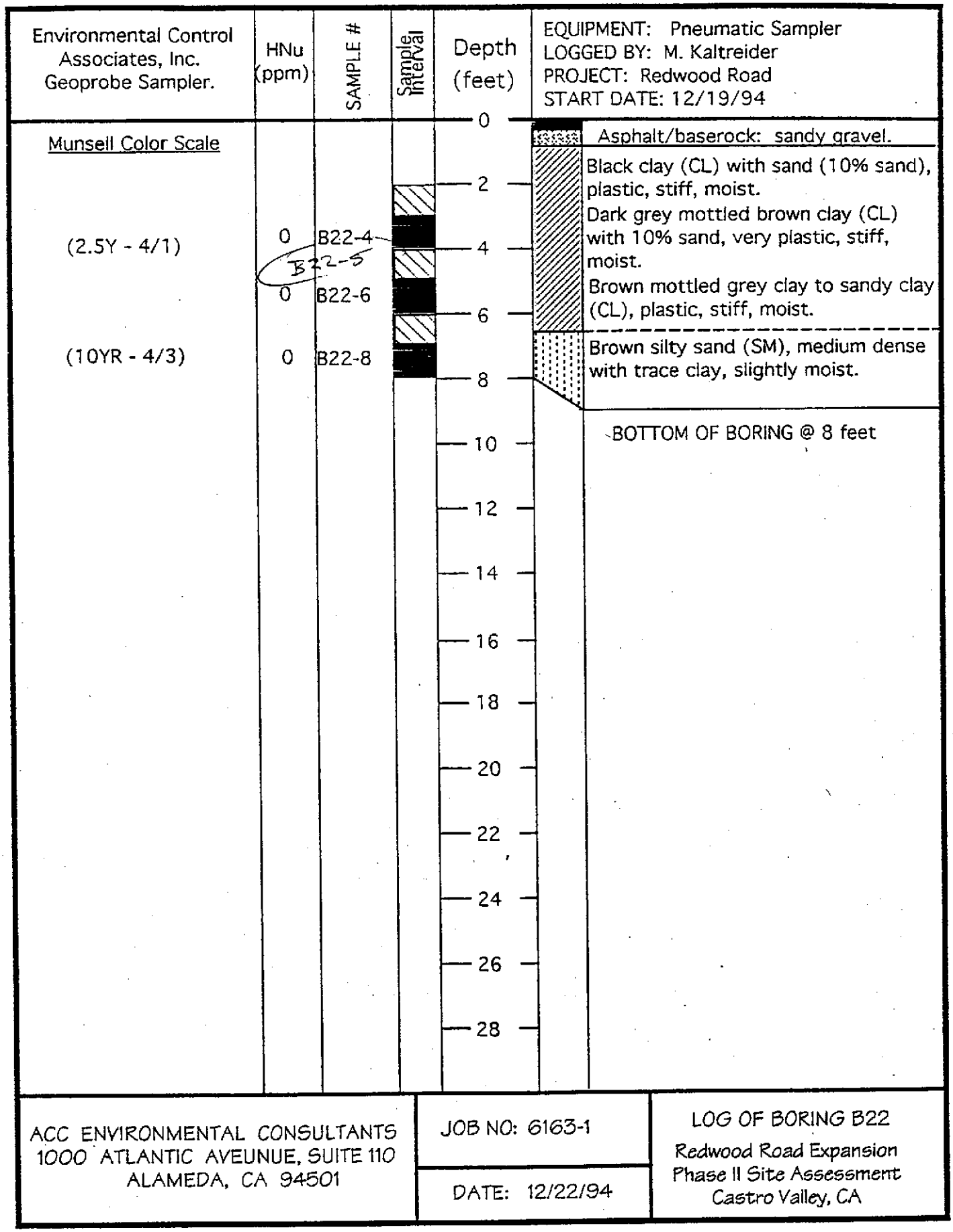
ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B19 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/6/94
Munsell Color Scale (10YR - 4/3)	0 0 0 0	B20-3 B20-5 B20-7 B20-9		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Asphalt/ baserock: sandy gravel. Brown sandy clay (CL) with 15% sand, plastic, slight mottling, stiff, moist. Mottling and sand content (35% fine grain sand), increases with depth. BOTTOM OF BORING @ 9 feet

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B20 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/19/94
Munsell Color Scale				0	Baserock: sandy gravel.
				2	Black clay (CL) with sand (10% sand), plastic, stiff, moist.
(2.5Y - 4/1)	0	B21-4		4	Dark grey mottled brown clay (CL) with 10% sand, very plastic, stiff, moist.
	0	B21-6		6	Brown mottled grey clay to sandy clay (CL), plastic, stiff, moist.
(10YR - 4/3)	20	B21-8		8	Brown silty sand (SM), medium dense with trace clay, slightly moist, slight hydrocarbon odor.
				10	BOTTOM OF BORING @ 8 feet
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501	JOB NO: 6163-1 DATE: 12/22/94	LOG OF BORING B21 Redwood Road Expansion Phase II Site Assessment Castro Valley, CA


Environmental Control Associates, Inc. Geoprobe Sampler.
HNu (ppm)
SAMPLE #
Sample Interval
Depth (feet)
EQUIPMENT: Pneumatic Sampler
LOGGED BY: M. Kaltreider
PROJECT: Redwood Road
START DATE: 12/19/94
Munsell Color Scale
(2.5Y - 4/1)
(10YR - 4/3)
0 B22-4
B22-5
0 B22-6
0 B22-8
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt/baserock: sandy gravel.
Black clay (CL) with sand (10% sand), plastic, stiff, moist.
Dark grey mottled brown clay (CL) with 10% sand, very plastic, stiff, moist.
Brown mottled grey clay to sandy clay (CL), plastic, stiff, moist.
Brown silty sand (SM), medium dense with trace clay, slightly moist.
BOTTOM OF BORING @ 8 feet
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO: 6163-1
DATE: 12/22/94
LOG OF BORING B22
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

Environmental Control Associates, Inc. Geoprobe Sampler.	HNu (ppm)	SAMPLE #	Sample Interval	Depth (feet)	EQUIPMENT: Pneumatic Sampler LOGGED BY: M. Kaltreider PROJECT: Redwood Road START DATE: 12/19/94
Munsell Color Scale				0	Asphalt/baserock: sandy gravel poor recovery, no sample collected.
				2	
				4	Black clay (CL)with trace sand (5%), sl. mottling dark grey, very stiff, plastic, moist, hydrocarbon odor.
(2.5Y - 4/1)	300	B23-5 B23-6		6	
(10YR - 4/3)	300	B23-8		8	Dark brown mottled grey clay (CL), with 10% sand, sl. plastic, very stiff, moiste, strong hydrocarbon odor.
					BOTTOM OF BORING @ 8 feet
				10	
				12	
				14	
				16	
				18	
				20	
				22	
				24	
				26	
				28	

ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501

JOB NO: 6163-1

DATE: 12/22/94

LOG OF BORING B23
Redwood Road Expansion
Phase II Site Assessment
Castro Valley, CA

APPENDIX B

WELL INSTALLATION PERMIT

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT FORMER BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BLVD, CASTRO VALLEY, CA

PERMIT NUMBER 95432
LOCATION NUMBER

CLIENT
Name SCOTT HOOTON
Address 295 S.W. 41st St. Voice
City Renton, WA. Zip 98055

APPLICANT
Name ALISTO ENGINEERING GROUP Fax (510) 295-1651
Address 1575 TREAT BLVD Voice SUITE 201
City WALNUT CREEK, CA Zip 94598

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring X
Geotechnical Investigation
General ___
Contamination X
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other TESTING
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 582696 (SOILS EXPLOR. - ATTON SERVICES)

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 20-30 ft.
Surface Seal Depth ___ ft. Number (3)

GEOTECHNICAL PROJECTS
Number of Borings (3)
Hole Diameter 8 in. Maximum Depth ___ ft.

ESTIMATED STARTING DATE 7/18/95
ESTIMATED COMPLETION DATE 7/19/95

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] Date 7/14/95

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Raport or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 14 Jul 95
Wyman Hong

21002

APPENDIX C

FIELD PROCEDURES FOR DRILLING, SOIL SAMPLING, AND GROUNDWATER MONITORING WELL INSTALLATION

FIELD PROCEDURES
FOR
DRILLING, SOIL SAMPLING,
AND GROUNDWATER MONITORING WELL INSTALLATION

Drilling

The soil borings were drilled using 8-inch-diameter hollow-stem augers. To avoid cross-contamination, drilling equipment in contact with potentially contaminated material was decontaminated by steam cleaning before and after each use. Decontamination fluids were placed into DOT-approved drums for disposal.

Soil Sampling

During drilling, samples were collected continuously from Soil Borings SB-1 and SB-2 and groundwater Monitoring Well MW-8; and at 5-foot intervals starting at 5 feet below grade to the total depth of the borings in MW-6 and MW-7. Before and after each use, the sampler was washed using a phosphate-free detergent followed by tap water and deionized water rinses. Soil was sampled using a California-modified split-spoon sampler lined with stainless steel tubes. A 140-pound slide hammer falling 30 inches was used to advance the sampler 18 inches ahead of the hollow-stem augers into undisturbed soil, and blow counts were recorded for every 18 inches of penetration to evaluate the density of the soil.

After retrieval from the augers, the sampler was split, the sample tubes were removed, and a soil sample was selected for possible chemical analysis. The sample was retained within the stainless steel tube, and both ends were immediately covered with Teflon sheeting and polyurethane caps. The caps were sealed with tape and labeled with the following information: Alisto's project number, boring number, sample depth interval, sampler's initials, and date of collection. The sample was immediately placed in a waterproof plastic bag and stored in a cooler containing blue ice. Possession of the samples was documented from the field to a state-certified analytical laboratory by using a chain of custody form.

Soil samples and, when representative, drill cuttings were described by Alisto's personnel using the Unified Soil Classification System; and field estimates of soil type, color, moisture, density, and consistency were noted on the boring logs. The logs were reviewed by a civil engineer registered in the state of California.

Groundwater Monitoring Well Installation

Construction of the groundwater monitoring wells was based on the stratigraphy encountered in the soil borings. The well construction materials were introduced into the boring through the hollow-stem augers to centralize the well casing and minimize the possibility of native material entering the annular space of the well.

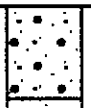
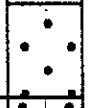
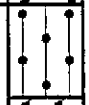
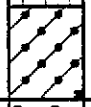
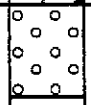
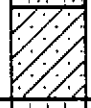
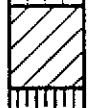
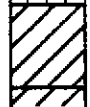
The 2-inch-diameter PVC well casing consisted of 0.010-inch slotted casing from the bottom of the boring to a depth interval above the highest anticipated water level, and solid casing was installed from the top of the slotted casing to approximately 4 inches below grade.

The annular space surrounding the screened portion was backfilled with No. 2/12 Lonestar sand (filter pack) to approximately 1 to 2 feet above the top of the screened section. An approximately 0.5-foot-thick interval of bentonite pellets was added to the annulus above the filter pack and hydrated with approximately 2 to 3 gallons of deionized water to minimize intrusion of well seal into the filter pack. A 6- to 15-foot-thick interval of Portland Type I/II neat cement was placed above the bentonite, and a traffic-rated utility box was installed around the top of the well casing. An expanding, watertight well cap and lock were installed on top of the well casing to secure the well from surface fluid and tampering.

APPENDIX D

BORING LOGS AND WELL CONSTRUCTION DETAILS

GEOLOGIC LEGEND

COARSE-GRAINED SOILS	GRAVELS more than 1/2 of coarse fraction > No. 4 Sieve	LITTLE OR NO FINES		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures
		APPRECIABLE NO FINES		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS more than 1/2 of coarse fraction < No. 4 Sieve	LITTLE OR NO FINES		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sands, little or no fines
		APPRECIABLE NO FINES		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS Liquid limit < 50			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit > 50			MH	Inorganic silts, micaceous or diatomoceous fine sandy or silty soils, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				Pt	Peat and other highly organic soils

SYMBOL LEGEND:


Cement


Sand


Bentonite


Driven Interval of Soil Sample


Sample preserved for possible analysis


No sample recovered

Stabilized water level

Groundwater level encountered during drilling

LEGEND TO BORING LOGS

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10297J--DWG 8-3-95 MAP 1-1

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING [redacted]-6

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/18/95

CLIENT: BP Oil Company

LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

DRILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: 179.24 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				Planter
			SM	**sandy SILT:** brown, dry. Observed from cuttings.
12,16,18	1.4	5	ML	**clayey SILT:** brown, damp, very stiff; minor fines; Fe oxide stain to approximately 3%.
20,43,24	1.7	10		Same: medium brown mottled with Fe oxide stain to 25%, damp, hard; root traces to aproximately 15%; minor fines.
16,19,22	1.1	15		Same: at 15 feet.
12,15,17	1.0	20	CL	**silty CLAY:** brown/gray, damp, hard.
			SM	At 22 feet, observed water on auger.
10,8,7	0	25		**silty SAND:** multi-color browns, saturated, medium dense; fine- to medium-grained sand.
			ML	**clayey SILT:** brown, wet; minor fines.
11,10,13	0	30	CL	**silty-CLAY:** brown, moist, very stiff; minor fines.

WELL DIAGRAM: 2" Sch.40 PVC; Neat Cement; Bentonite Seal; 2" 0.010" Slotted PVC Screen; #2/12 Lonestar Sand

Stabilized groundwater measured on July 28, 1995.

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING [redacted]-7

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/18/95

CLIENT: BP Oil Company

LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

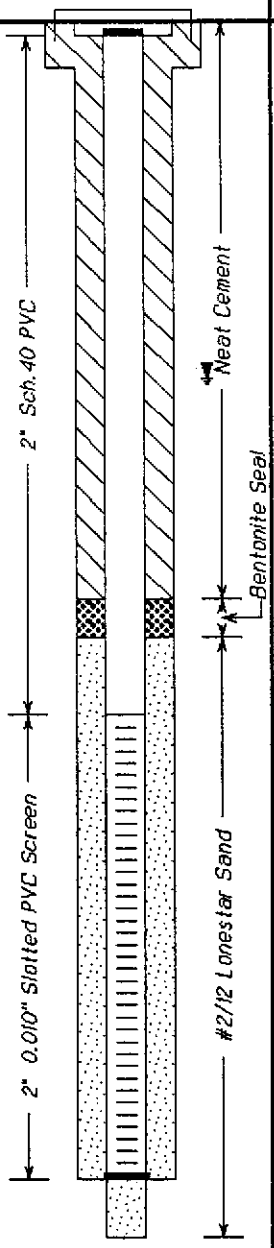
DRILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: 176.55 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				10" Concrete
			ML	
15,18,14	10.0	5		**clayey SILT:** dark brown, damp, very stiff; Fe oxide stain to approximately 5%.
			CL	**silty CLAY:** brown/gray, damp, hard; Fe oxide stain to approximately 10%; rootlets to 10%; very fine-grained minor fines.
14,23,17	10.0	10	ML	**clayey SILT:** red/brown, damp, hard; Fe oxide stain and rootlets; some fine-grained sand; occasional subrounded gravel to 1/4"-diameter.
			CL	
15,20,24	9.7	15		**silty CLAY:** brown, damp, hard; Fe oxide stain; occasional subrounded gravel to 1/4"-diameter; minor fines.
			CL	
17,17,19	8.1	20		**CLAY:** brown/gray, wet, hard; rootlets to 5%; Fe oxide stain to approximately 3%; minor fines.
			SM	
11,11,15	0	25		**silty SAND:** brown, wet, medium dense; fine-grained sand.
			SC	**clayey SAND:** brown/gray, wet to saturated, medium dense; fine- to medium-grained sand; minor fines.
			CL	
9,10,13	0	30		**silty CLAY:** brown/gray, moist, very stiff; some very fine-grained sand.
				Stabilized groundwater measured on July 28, 1995.

WELL DIAGRAN



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING [redacted]-8

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/19/95

CLIENT: BP Oil Company

LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

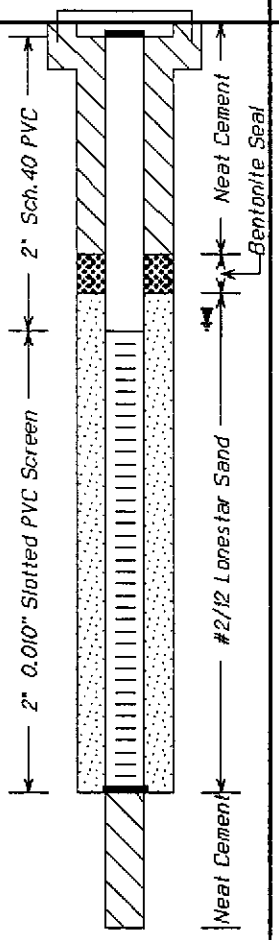
DRILLING METHOD: Hollow-stem auger (8"); 2" split-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: 176.34 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				Planter
9,11,10	8.8		CL	silty CLAY: black, damp, very stiff; Fe oxide stain to 3%; rootlets to 5%.
7,9,11	8.0		ML	clayey SILT: brown, damp, very stiff; Fe oxide stain and root traces.
13,15,18	329	5		Same: gray, damp, very stiff; minor fines.
20,24,28	310			Same: red/brown mottled gray, damp, hard; root traces present; minor fines.
15,21,22	51			Same: at 9.5 feet.
20,17,23	4.8	10	CL	silty CLAY: brown mottled gray, damp, hard.
18,18,23	4.4		SM	silty SAND (dense): red/brown, damp to slightly moist, dense; fine- to medium-grained sand; <1% rootlets.
12,18,22	4.0		ML	clayey SILT at 13.5 feet, light brown to brown, damp, hard; rootlets present; minor fines.
15,15,19	4.0	15		Same: at 15.5 feet, mottled light brown and red.
10,14,12	4.1			Same: at 17.5 feet.
18,18,20	3.5		SM	silty SAND: red/brown, wet to saturated, medium dense; fine- to medium-grained sand; <1% root traces.
18,21,20	4.0	20	SC	clayey SAND: brown, wet, very stiff; root traces 5%.
				silty CLAY: brown, damp, hard; rootlets to approximately 40%; minor fines.
				clayey SILT: brown, damp, hard; some fine- to medium-grained sand.
		25		Stabilized groundwater measured on July 28, 1995.
		30		

WELL DIAGRAM



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING [redacted]

SEE SITE PLAN

ALISTO PROJECT NO: *10-138-03* DATE DRILLED: *07/19/95*

CLIENT: *BP Oil Company*

LOCATION: *3519 Castro Valley Boulevard, Castro Valley, CA.*

DRILLING METHOD: *Hollow-stem auger (8"); 2" split-spoon sampler*

DRILLING COMPANY: *Soils Exploration Srvs.* CASING ELEVATION: *N/A*

LOGGED BY: *C. Ladd* *APPROVED BY: Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							6" Concrete
8,10,10	1008					CL	[redacted]ack, damp, very stiff; medium plasticity.
6,8,14	1998						Same: brown, damp, very stiff; Fe oxide stain; minor fines.
12,16,18	113		5			ML	[redacted] brown mottled gray, damp, hard; Fe oxide staining; minor fines; < 1% subrounded gravel to 1/4"-diameter.
9,14,20	334.2						Same: at 7 feet, root traces; calcium carbonate on fractures.
9,14,21	217	Neat Cement	10			ML	[redacted]red/brown mottled gray, damp, hard; Fe oxide stain; some very fine-grained sand; root traces present.
10,18,20	298						Same: at 11.5 feet.
18,19,23	10.3					CL	[redacted]brown mottled gray, damp, hard; root traces to approximately 3%.
15,19,21	8.4		15				Same: at 15.5 feet.
							Soil boring terminated at 18 feet.
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING [redacted]-2

SEE SITE PLAN

ALISTO PROJECT NO: 10-138-03 DATE DRILLED: 07/19/95

CLIENT: BP Oil Company

LOCATION: 3519 Castro Valley Boulevard, Castro Valley, CA.

DRILLING METHOD: Hollow-stem auger (8"); 2" spilt-spoon sampler

DRILLING COMPANY: Soils Exploration Srvs. CASING ELEVATION: N/A

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				8" Concrete
15,19,21	3.3		CL	[redacted]ck, damp, very stiff; < 1% Fe oxide stain; low plasticity.
15,15,23	10.0		ML	[redacted]: gray mottled brown, damp, hard; Fe oxide stain approximately 5%; minor fines; root traces present.
12,18,21	295.8	5		Same: gray with white calcium voids and red/brown, damp, hard; Fe oxide stain; root traces; minor fines.
16,14,20	222.1		ML	[redacted] red/brown, damp, hard; root traces; fine-grained sand; some clay.
13,15,18	3.4	10		[redacted]: brown mottled gray, damp, hard; root traces to 4%; Fe oxide stain; some very fine-grained sand.
14,18,20	1.1			Same: at 11.5 feet.
19,21,21	0.3		CL	[redacted]: brown mottled gray, damp, hard; root traces to 1%; minor fines.
14,18,20	0	15		Same: at 15.5 feet.
				Soil boring terminated at 16 feet.
		20		
		25		
		30		

WELL DIAGRAM: Neat Cement

APPENDIX E

FIELD PROCEDURES FOR GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING

FIELD PROCEDURES
FOR
GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING

Groundwater Monitoring Well Development

The groundwater monitoring wells were developed to consolidate and stabilize the filter pack to optimize well production and reduce the turbidity of subsequent groundwater samples. Monitoring wells were developed by alternately using a surge block and pump to evacuate the water and sediment. Development continued until the groundwater was relatively free of sediment (approximately 10 casing volumes). Well development fluids were placed into DOT-approved drums for disposal.

Groundwater Level Measurement

Before sampling, the groundwater level in each well was measured from the permanent survey reference point at the top of the well casing. Groundwater in each well was monitored for free-floating product or sheen. The depth to groundwater was measured to an accuracy of 0.01 foot from the top of the PVC well casing using an electronic sounder.

Groundwater Monitoring Well Sampling

To ensure that the groundwater samples were representative of the aquifer, the wells were purged of 3 casing volumes using a bailer, while monitoring stabilization of pH, electrical conductivity, and temperature.

The groundwater samples were collected using a disposable bailer, and transferred into laboratory-supplied containers. The samples were labeled with well number, site identification, date of collection, and sampler's initials, and transported in an iced cooler to a state-certified laboratory following preservation and chain of custody protocol. The sampling technician wore nitrile gloves during purging and well sampling.

APPENDIX F

GROUNDWATER MONITORING WELL DEVELOPMENT AND SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP 03-003 ~~05-001~~
Alisto Project No: 10-138 ~~07-003~~
Service Station No: 11105

Date: 7/24/95
Field Personnel: DC
Address: 3515 (~~Castro~~) Valley Blvd (Castro Valley CA)

Well ID: MW-7 Field Activity: ✓ Well Development ___ Well Sampling ___ Product Bailing

Casing Diameter:

✓ 2 Inch (0.16 Gal/foot)
___ 3 Inch (0.37 Gal/foot)
___ 4 Inch (0.65 Gal/Foot)
___ 4.5 Inch (0.83 Gal/foot)
___ 6 Inch (1.47 Gal/foot)

Purge Method:

✓ Pump (dispos. Poly Tubing)
___ Disposable Bailers
___ Other
___ 1.66 PVC Standard Bailer
___ 3.50 PVC Standard Bailer

Well Data:

D Depth to Product
D Product Thickness
9.19 Depth to Water

Sampling Method:

___ Disposable Bailer
___ Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

28.0 (Total Depth of Well) - 9.19 (Depth to Water) = 18.81 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 3.00 Gal (Casing Vol) X 10 (Vols to Purge) = 30. (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
1212	69.4	7.98	0.97	10	lightbrn	TPH-G/BTEX	VOA	HCL
	68.7	7.92	0.95	20	clearing	TPH-Diesel	Amber Liter	Solvent Rinsed
1230	68.2	7.90	0.96	30	lighter brn	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-138 ~~-05-001~~ 03-003
Service Station No: 11105

Date: 7/24/95
Field Personnel: DC
Address: 3515 Castro Valley Blvd Castro Valley CA

Well ID: MW-8 Field Activity: ✓ Well Development ___Well Sampling ___Product Bailing

Casing Diameter:

✓ 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

✓ Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Φ Depth to Product
Φ Product Thickness
7.74 Depth to Water

Sampling Method:

____Disposable Bailer
____Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
____ Steam Cleaned

Calculated Purge Volume

20.00 (Total Depth of Well) - 7.74 (Depth to Water) = 12.26 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.96 Gal (Casing Vol) X 10 (Vols to Purge) = 19.60 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
1142	72.6	6.21	1.09	10	initial sheen was Dark Silty clear by 10	TPH-G/BTEX	VOA	HCL
	71.6	6.38	1.05	15	clear	TPH-Diesel	Amber Liter	Solvent Rinsed
1150	71.4	6.52	1.06	20	clear	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP ~~05-001~~
Alisto Project No: 10-138-~~03-05~~ 03-003
Service Station No: 11105

Date: 7/24/95
Field Personnel: DC
Address: 3515 Castro Valley Blvd Castro Valley CA

Well ID: mw6 Field Activity: ___Well Development ___Well Sampling ___Product Bailing

Casing Diameter:

✓ 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

✓ Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Φ Depth to Product
Φ Product Thickness
9.88 Depth to Water

Sampling Method:

___Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

28.00 (Total Depth of Well) - 9.88 (Depth to Water) = 18.12 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 2.90 Gal (Casing Vol) X 10 (Vols to Purge) = 29 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
1157	68.5	7.55	0.94	10	light tan/ lots of fines	TPH-G/BTEX	VOA	HCL
	68.7	7.97	0.88	20	lighter tan	TPH-Diesel	Amber Liter	Solvent Rinsed
1210	68.5	7.77	0.86	30	lighter tan	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-138-03-003 (3 3) Date: 7/28/95
Address 3515 Castro Valley Day: M T W TH (F)
Contract No. PENDING City: Castro Valley
Station No. BP 11105 Sampler: LeB

WELL ID	SAMPLE ID	DEPTH TO WATER	TOTAL DEPTH	PRODUCT THICKNESS	TIME	COMMENTS: well ID	Diam	OTW	TD	
ESE-1	S-4	10.12	30.00	Ø		MW-6	2"	10.00	29.43	S-6
ESE-2	S-2	10.64	30.00			MW-7	2"	9.25	28.38	S-7
ESE-3	S-3	9.54	30.00			MW-8	2"	7.80	19.85	S-8
ESE-4	S-1	9.20	25.00							
ESE-5	S-5	7.97	24.00	✓						

FIELD INSTRUMENT CALIBRATION DATA

1 pt
Ph METER ICM 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 1220 WEATHER clear

D.O. METER ICM ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 77°

CONDUCTIVITY METER ICM 10,000 10,000 TURBIDITY METER _____ 5.0 NTU _____ OTHER _____

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-4	9.20	2"	OK	Ø	Y (N)	3	1241	75.5	8.08	444 µS	8.3
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5		74.2	7.98	429 µS	
25.00 - 9.20 = 15.80 X .16 = 2.53 X 3 =	7.59					8	1302	73.1	7.86	422 µS	8.1
Purge Method: (X) Surface Pump O Disp.Tube O Winch O Disp. Bailer(s) ___ O Sys Port											
Comments:											

O EPA 601 ____
(X) TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID: 1315

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-2	10.64	2"	OK	Ø	Y (N)	3	1326	70.3	7.38	472 µS	7.9
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		69.2	7.31	467 µS	
30.00 - 10.64 = 19.36 X .16 = 3.10 X 3 =	9.30					9.5	1355	68.6	7.28	463 µS	7.7
Purge Method: (X) Surface Pump O Disp.Tube O Winch O Disp. Bailer(s) ___ O Sys Port											
Comments:											

O EPA 601 ____
(X) TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID: 1400

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-3	9.54	2"	OK	Ø	Y (N)	3	1410	71.8	7.15	446 µS	8.6
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			7		70.3	7.07	422 µS	
30.00 - 9.54 = 20.46 X .16 = 3.27 X 3 =	9.81					10	1419	70.0	7.00	420 µS	8.8
Purge Method: (X) Surface Pump O Disp.Tube O Winch O Disp. Bailer(s) ___ O Sys Port											
Comments:											

O EPA 601 ____
(X) TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID: 1425

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-138-03-003 (3 3) Date: 7/28/95
Address 3515 Castro Valley Day: M T W TH F
Contract No. PENDING City: Castro Valley
Station No. BP 11105 Sampler: WS

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-1	10.12	2"	OK	Ø	Y (N)	3	1443	69.1	7.02	504 µS	7.5
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		68.3	6.92	500 µS	
30.00-10.12=19.88	X.16=3.18	X3=	9.54			10	1459	67.6	6.90	497 µS	7.9
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601_____
Ø TPH-G/BTEX ALL
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID: 1510

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-5	7.97	2"	OK	Ø	Y (N)	3	1516	73.5	6.93	623 µS	8.2
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		72.7	6.82	617 µS	
24.00-7.97=16.03	X.16=2.56	X3=	7.68			8	1525	72.0	6.73	612 µS	8.2
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments: DC-1 Dup taken from this well											

O EPA 601_____
Ø TPH-G/BTEX ALL
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID: 1530

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-6	10.00	2"	OK	Ø	Y (N)	3	1547	69.4	7.07	432 µS	8.5
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		68.3	7.03	429 µS	
29.43-10.00=19.43	X.16=3.11	X3=	9.33			9.5	1600	67.9	6.95	424 µS	8.1
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601_____
Ø TPH-G/BTEX ALL
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID: 1603

	Purge Time	Diam	Temp	PH	Cond.	Temp	PH	Cond	Temp	PH	Cond.	D.O.
* MW-8	1617-1627	2"	72.2	7.03	579 µS	71.3	7.00	567 µS	70.7	6.96	562 µS	7.0 / 7.2
* MW-7	1641-1653	2"	71.4	7.79	447 µS	70.7	7.62	441 µS	70.1	7.57	4.37 µS	D.O. 7.3 / 7.1

* MW-8 & MW-7 Sampled for TPH-G/BTXE

MW-8 28.38-9.25=19.13 X.16=3.06 X3=9.18 gal.

MW-7 19.85-7.80=12.05 X.16=1.93 X3=5.79 gal.

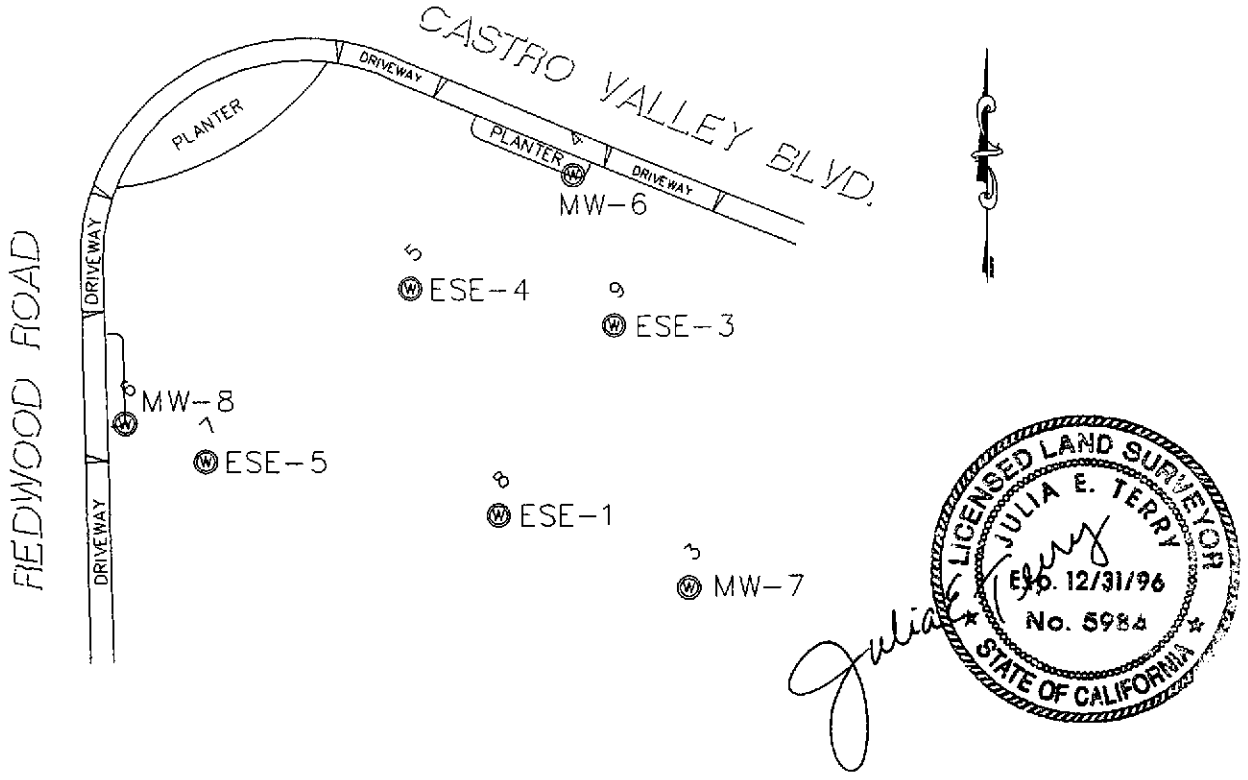
APPENDIX G

WELL ELEVATION SURVEY MAPS

BENCHMARK:
THE EXISTING WELL INFORMATION PROVIDED BY ALISTO ENGINEERING GROUP WAS USED. WITH STRUCTURE ESE-3 HAVING AN ELEVATION OF 178.20, AND STRUCTURE ESE-2, HAVING AN ELEVATION OF 178.23.

WELL LOCATIONS:

WELL	NORTHING	EASTING	ELEVATION
MW-1			177.55 VAULT
MW-1			177.24 CASING
MW-6	1021.96	1046.19	179.41 VAULT
MW-6			179.24 CASING
MW-7	909.26	1077.96	176.99 VAULT
MW-7			176.55 CASING
MW-8	954.21	925.16	176.70 VAULT
MW-8			176.34 CASING .



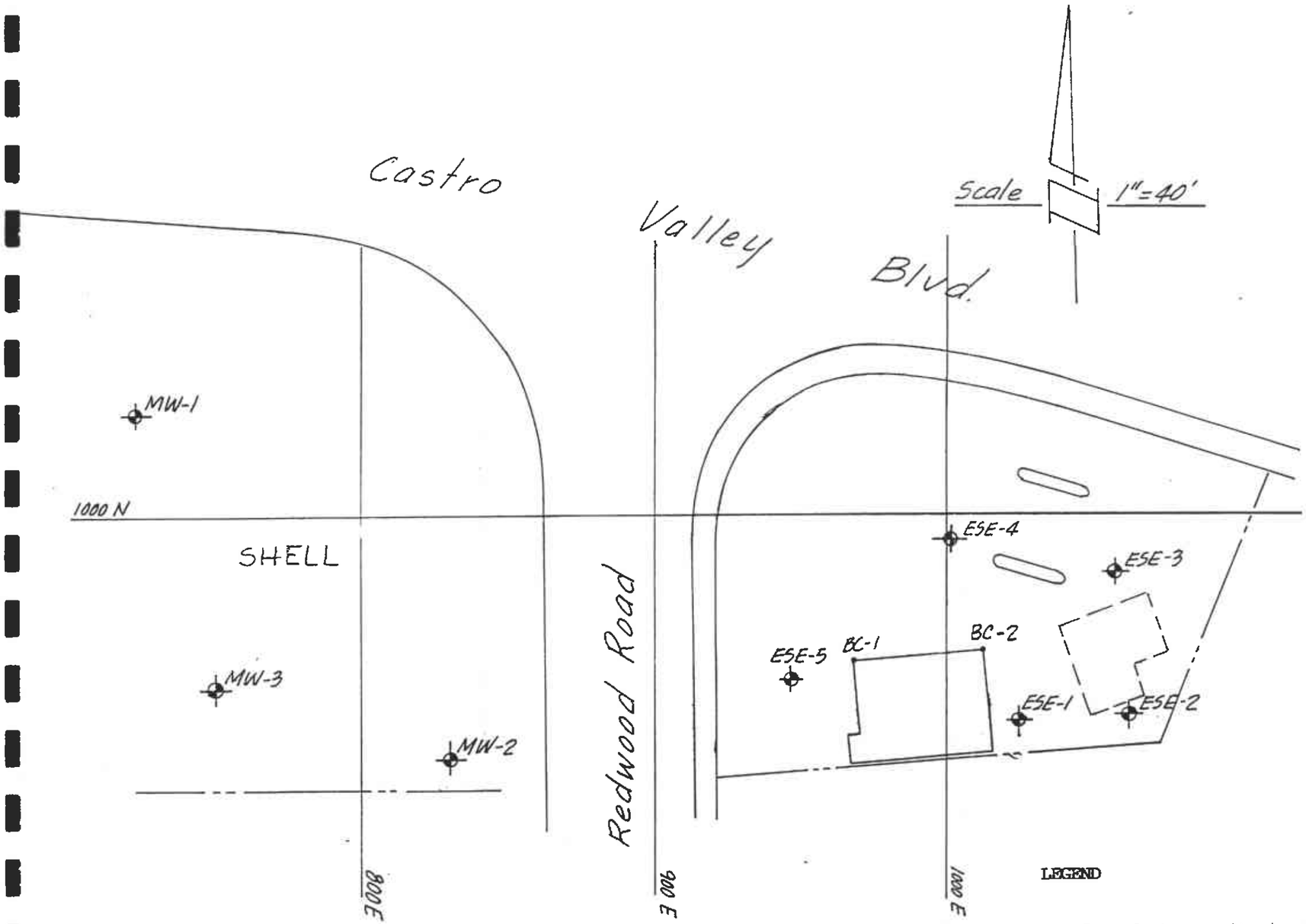
NOTE: HORIZONTAL LOCATIONS ARE BASED ON THE COORDINATE VALUES OF ESE-1 THRU ESE-4, PROVIDED TO THIS OFFICE BY ALISTO ENGINEERING GROUP.

PLS SURVEYS, INC.
1202 LINCOLN AVENUE
ALAMEDA, CA 94501
(510) 522-1790
FAX(510) 522-6207

MONITORING WELLS

BP OIL SERVICE STATION NO. 11105
3515 CASTRO VALLEY BLVD.
CASTRO VALLEY, CALIFORNIA

SCALE	NONE
DATE	07-28-95
BY	JET
JOB NO.	95039



WELL	N	E	ELEV.
ESE-1	929.26	1025.39	177.69
ESE-2	932.31	1062.20	178.23
ESE-3	981.08	1057.83	178.20
ESE-4	990.86	1001.62	177.66
ESE-5	943.83	946.60	176.08
MW-1	1035.34	722.78	
MW-2	916.64	830.41	176.30
MW-3	941.12	750.32	178.07
BC-1	950.25	967.29	
BC-2	954.29	1013.42	

BENCHMARK

Brass disc stamped "CUB 2J -1977" located at the easterly end of headwall on the southerly side of Castro Valley Blvd. 449'+/- easterly of Redwood Road. Elevation = 179.95.

The information shown hereon this plat was done by me from a field survey for Alisto Engineering Group during the month of March, 1994.

LICENSED LAND SURVEYOR
No. 4155
STATE OF CALIFORNIA

LEGEND

Groundwater monitoring well

BC- Building corners

BP Oil Station no. 11105
3519 Castro Valley Blvd.
Castro Valley, California

Project No. 10-138

APPENDIX H

FIELD PROCEDURES FOR CHAIN OF CUSTODY DOCUMENTATION, LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

FIELD PROCEDURES
FOR
CHAIN OF CUSTODY DOCUMENTATION

Samples were handled in accordance with the California Department of Health Services guidelines. Each sample was labeled in the field and immediately stored in a cooler and preserved with blue or dry ice for transport to a state-certified laboratory for analysis.

A chain of custody record accompanied the samples and included the site and sample identification, date of collection, analysis requested, and the name and signature of the sampling technician. When transferring possession of the samples, the transferee signed and dated the chain of custody record.

Analytical Technologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 507270

August 04, 1995

ALISTO ENGINEERING
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK, CA 94598

Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY, CA
Project # : G393629/10-138-3-3

Attention: BRADY NAGLE

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
July 26, 1995	25	SOIL

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the attached list of flag definitions.

The results of these analyses and the quality control data are enclosed. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

GARY STEWART
VOLATILES SUPERVISOR

ALAN J. KLEINSCHMIDT
LABORATORY MANAGER

SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY, CA

Report Date: August 04, 1995
ATI I.D. : 507270

ATI #	Client Description	Matrix	Date Collected
1	MW-6 (6-6.5')	SOIL	18-JUL-95
2	MW-6 (11-11.5')	SOIL	18-JUL-95
3	MW-6 (21-21.5')	SOIL	18-JUL-95
4	MW-7 (6-6.5')	SOIL	18-JUL-95
5	MW-7 (11-11.5')	SOIL	18-JUL-95
6	MW-7 (26-26.5')	SOIL	18-JUL-95
7	SB-1 (1.5-2')	SOIL	19-JUL-95
8	SB-1 (3.5-4')	SOIL	19-JUL-95
9	SB-1 (5.5-6')	SOIL	19-JUL-95
10	SB-1 (7-7.5')	SOIL	19-JUL-95
11	SB-1 (11.5-12')	SOIL	19-JUL-95
12	SB-1 (15.5-16')	SOIL	19-JUL-95
13	SB-2 (1.5-2')	SOIL	19-JUL-95
14	SB-2 (3.5-4')	SOIL	19-JUL-95
15	SB-2 (5.5-6')	SOIL	19-JUL-95
16	SB-2 (7.5-8')	SOIL	19-JUL-95
17	SB-2 (11.5-12)	SOIL	19-JUL-95
18	SB-2 (15.5-16')	SOIL	19-JUL-95
19	MW-8 (1.5-2')	SOIL	19-JUL-95
20	MW-8 (3.5-4')	SOIL	19-JUL-95
21	MW-8 (7.5-8')	SOIL	19-JUL-95
22	MW-8 (11.5-12')	SOIL	19-JUL-95
23	MW-8 (15.5-16')	SOIL	19-JUL-95
24	MW-8 (19.5-20')	SOIL	19-JUL-95
25	MW-8 (23-23.5')	SOIL	19-JUL-95

---TOTALS---

Matrix	# Samples
SOIL	25

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date o this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

ANALYTICAL SCHEDULE

Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY, CA

ATI I.D.: 507270

Analysis	Technique/Description
MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507270
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	MW-6 (6-6.5')	SOIL	18-JUL-95	28-JUL-95	31-JUL-95	1.00
2	MW-6 (11-11.5')	SOIL	18-JUL-95	28-JUL-95	31-JUL-95	1.00
4	MW-7 (6-6.5')	SOIL	18-JUL-95	28-JUL-95	31-JUL-95	1.00

Parameter	Units	1	2	4
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
XYLENES (TOTAL)	MG/KG	<0.050	<0.050	<0.050
FUEL HYDROCARBONS	MG/KG	<2.5	<2.5	<2.5
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	90	89	92

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507270
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
5	MW-7 (11-11.5')	SOIL	18-JUL-95	28-JUL-95	31-JUL-95	1.00
7	SB-1 (1.5-2')	SOIL	19-JUL-95	28-JUL-95	01-AUG-95	4.00
8	SB-1 (3.5-4')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	10.00

Parameter	Units	5	7	8
BENZENE	MG/KG	<0.025	<0.10	<0.25
TOLUENE	MG/KG	<0.025	<0.10	0.33
ETHYLBENZENE	MG/KG	<0.025	1.4	4.5
XYLENES (TOTAL)	MG/KG	<0.050	4.1	18
FUEL HYDROCARBONS	MG/KG	<2.5	140	190
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	97	104	110

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507270
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
10	SB-1 (7-7.5')	SOIL	19-JUL-95	28-JUL-95	01-AUG-95	1.00
13	SB-2 (1.5-2')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	1.00
14	SB-2 (3.5-4')	SOIL	19-JUL-95	28-JUL-95	01-AUG-95	1.00

Parameter	Units	10	13	14
BENZENE	MG/KG	0.088	<0.025	<0.025
TOLUENE	MG/KG	0.088@E	<0.025	<0.025
ETHYLBENZENE	MG/KG	0.41	<0.025	0.93@E
XYLENES (TOTAL)	MG/KG	2.0	<0.050	0.12@E
FUEL HYDROCARBONS	MG/KG	310	<2.5	20
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	107	97	111

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507270
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
15	SB-2 (5.5-6')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	10.00
16	SB-2 (7.5-8')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	10.00
20	MW-8 (3.5-4')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	1.00

Parameter	Units	15	16	20
BENZENE	MG/KG	<0.25	<0.25	<0.025
TOLUENE	MG/KG	<0.25	<0.25	<0.025
ETHYLBENZENE	MG/KG	1.2	3.9	<0.025
XYLENES (TOTAL)	MG/KG	1.4	5.1	<0.050
FUEL HYDROCARBONS	MG/KG	140	230	<2.5
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	101	117	87

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507270
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
21	MW-8 (7.5-8')	SOIL	19-JUL-95	28-JUL-95	02-AUG-95	1.00

Parameter	Units	21
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	0.046@E
XYLENES (TOTAL)	MG/KG	0.11@E
FUEL HYDROCARBONS	MG/KG	8.8
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	94

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36232
Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 27-JUL-95
Date Analyzed : 31-JUL-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
XYLENES (TOTAL)	MG/KG	<0.050
FUEL HYDROCARBONS	MG/KG	<2.5
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36233
Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 31-JUL-95
Date Analyzed : 01-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
XYLENES (TOTAL)	MG/KG	<0.050
FUEL HYDROCARBONS	MG/KG	<2.5
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	87

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77448
Client : ALISTO ENGINEERING

Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 28-JUL-95
Date Analyzed : 31-JUL-95
Sample Matrix : SOIL
REF I.D. : 507270-02

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	MG/KG	<0.025	0.50	0.43	86	0.42	84	2
TOLUENE	MG/KG	<0.025	0.50	0.46	92	0.46	92	0

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77449
Client : ALISTO ENGINEERING

Project # : G393629/10-138-3-3
Project Name: BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 31-JUL-95
Date Analyzed : 01-AUG-95
Sample Matrix : SOIL
REF I.D. : REAGENT SOIL

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	MG/KG	<0.025	0.50	0.44	88	0.46	92	4
TOLUENE	MG/KG	<0.025	0.50	0.47	94	0.48	96	2

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57943
Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name : BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 28-JUL-95
Date Analyzed : 31-JUL-95
Sample Matrix : SOIL

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	MG/KG	<0.025	0.47	0.50	94
TOLUENE	MG/KG	<0.025	0.49	0.50	98

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57944
Client : ALISTO ENGINEERING
Project # : G393629/10-138-3-3
Project Name : BP SITE#11105/3519 CASTRO VALLEY BLVD. CASTRO VALLEY

ATI I.D. : 507270
Date Extracted: 31-JUL-95
Date Analyzed : 01-AUG-95
Sample Matrix : SOIL

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	MG/KG	<0.025	0.53	0.50	106
TOLUENE	MG/KG	<0.025	0.55	0.50	110

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

ANALYTICAL TECHNOLOGIES, INC.
SAN DIEGO
FLAGS

ORGANICS

FLAG	MESSAGE DESCRIPTION
A	A TIC IS A SUSPECTED ALDOL-CONDENSATION PRODUCT
B	ANALYTE FOUND IN THE ASSOCIATED REAGENT BLANK
C	PESTICIDE, WHERE THE IDENTIFICATION WAS CONFIRMED BY GC/MS
CO	THESE COMPOUNDS CO-ELUTE AND ARE QUANTITATED AS ONE PEAK
D	COMPOUND IDENTIFIED IN AN ANALYSIS AT SECONDARY DILUTION
E	ANALYTE AMOUNT EXCEEDS THE CALIBRATION RANGE
J	ESTIMATED VALUE
H	QUANTIFIED AS DIESEL BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF DIESEL
K	QUANTIFIED AS KEROSENE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF KEROSENE
L	QUANTIFIED AS GASOLINE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF GASOLINE
N	PRESUMPTIVE EVIDENCE OF A COMPOUND
P	PESTICIDE/AROCLOR TARGET ANALYTE, WHERE THERE IS GREATER THAN 25% DIFFERENCE FOR DETECTED CONCENTRATION BETWEEN 2 GC COLUMNS
TR	COMPOUND DETECTED AT AN UNQUANTIFIABLE TRACE LEVEL
U	COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
X	SEE CASE NARRATIVE
Y	SEE CASE NARRATIVE
Z	SEE CASE NARRATIVE
*	OUTSIDE OF QUALITY CONTROL LIMITS
*D	COMPOUND ANALYZED FROM A SECONDARY ANALYSIS
*F	RESULT OUTSIDE OF ATI'S QUALITY CONTROL LIMITS
*G	RESULT OUTSIDE QUALITY CONTROL LIMITS. INSUFFICIENT SAMPLE FOR RE-EXTRACTION/ANALYSIS
*H	RESULT OUTSIDE OF LIMITS DUE TO SAMPLE MATRIX INTERFERENCE
*I	BECAUSE OF NECESSARY SAMPLE DILUTION, VALUE WAS OUTSIDE QC LIMITS
*K	DUE TO THE NECESSARY DILUTION OF THE SAMPLE, RESULT WAS NOT ATTAINABLE
*L	ANALYTE IS A SUSPECTED LAB CONTAMINANT
*P	A STANDARD WAS USED TO QUANTITATE THIS VALUE
*R	DATA IS NOT USABLE
*T	SURROGATE RECOVERY IS OUTSIDE QC CONTROL LIMITS. NO CORRECTIVE ACTION INDICATED BY METHOD
*V	SAMPLE RESULT IS >4X SPIKED CONCENTRATION, THEREFORE SPIKE IS NOT DETECTABLE
*Y	RESULT NOT ATTAINABLE DUE TO SAMPLE MATRIX INTERFERENCE
@A	RESULTS OUT OF LIMITS DUE TO SAMPLE NON-HOMOGENEITY
@C	*VARIABLE MESSAGE*
@D	RESULT COULD NOT BE CONFIRMED DUE TO MATRIX INTERFERENCE ON THE CONFIRMATION COLUMN
@E	RESULT MAY BE FALSELY ELEVATED DUE TO SAMPLE MATRIX INTERFERENCE
@F	RESULT OUTSIDE OF CONTRACT SPECIFIED QUALITY CONTROL LIMITS
@G	RESULT OUTSIDE OF CONTRACT SPECIFIED ADVISORY LIMITS
@H	DETECTION LIMIT ELEVATED DUE TO MATRIX INTERFERENCE
@M	RESULT NOT CONFIRMED BY U.V. DUE TO SAMPLE MATRIX INTERFERENCE
@N	RESULT NOT CONFIRMED BY FLUORESCENCE DUE TO SAMPLE MATRIX INTERFERENCE
@P	RESULT QUANTITATED USING FLUORESCENCE ONLY DUE TO THE LOW CONCENTRATION
@Q	DETECTION LIMIT ELEVATED DUE TO LIMITED SAMPLE FOR ANALYSIS
@T	RESULT DUE TO TCLP EXTRACTION MATRIX INTERFERENCE. NO QC LIMITS HAVE BEEN ESTABLISHED
@U	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE COMMON FUEL HYDROCARBON FINGERPRINTS
@Z	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE A FUEL HYDROCARBON

ACCESSION #: 507270 INITIALS: LY

ATI-SanDiego
SAMPLE CONDITION UPON RECEIPT CHECKLIST
(FOR RE-ACCESSIONS, COMPLETE #7 THRU #9)

1	Does this project require special handling according to NFESC Levels C, D, AFCEE or CLP protocols? If yes, complete a)and b) a) pH sample aliquoted: yes /no /na b) Either 1) Record Bottle Lot #'s: Or 2) Attach Sample Kit Request Form(s)	YES	(NO)
2	Number of Coolers Received If more than one cooler received attach Multiple Cooler Documentation Form (MCD) Indicate "see MCD"on Item 11 below	1 (# 1234)	
3	Are custody seals required for this project ?	YES	(N/A)
	a) are Custody Seals present on Cooler(s) ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
	b) are Custody Seals present on the sample ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
4	Is there a Chain-Of-Custody (COC)* per cooler ? if not, if a problem is found indicate which samples/test were in the affected cooler on the MCD.	(YES)	NO
5	Is the COC* complete per cooler ? Relinquished: (yes)/no Requested analysis: (yes)/no	(YES)	NO
6	Is the COC* in agreement with the samples received? # Samples: (yes)/no Sample ID's: (yes)/no Date sampled: (yes)/no Matrix: (yes)/no # containers: (yes)/no	(YES)	NO
7	Are the samples preserved correctly?	(YES)	NO
8	Is there enough sample for all the requested analyses?	(YES)	NO
9	Are all samples within holding times for the requested analyses?	(YES)	NO
10	Record cooler temperature. Contact PM if temperature is not 4°C ± 2°C.	2.0 °C	
	Is ice present in cooler?	(YES)	NO
11	Were all sample containers received intact (ie. not broken, leaking, etc.)?	(YES)	NO
12	Are samples requiring no headspace, headspace free? N/A	(YES)	NO
13	Are VOA 1st stickers required?	YES	(NO)
14	Are there special comments on the Chain of Custody which require client contact?	YES	(N/A)
15	If yes, was ATI Project Manager notified?	YES	NO

Describe "no" items: _____

Was client contacted? yes / no

If yes, Date: _____ Name of Person contacted:

Describe actions taken or client instructions: _____

*Or other representative documents, letters, and/or shipping memos

ATT # 507270

CHAIN OF CUSTODY

No. 075858 Page 1 of 3

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
ALISTO ENGINEERING	1575 TREAT BOULEVARD, SUITE 201	WALNUT CREEK	CA	94598

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11105	3519 CASTRO VALLEY BLVD, CASTRO VALLEY Blvd, CA	10-138-3-3

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
BRADY NAGLE	(510) 295-1650	(510) 295-1823	6393629

BP CONTACT	BP ADDRESS	PHONE NUMBER	FAX NO.
Scott Houston	295 SW 41st St, Blk 13, Ste N Renton, WA. 98055	(206) 251-0689	(206) 251-0736

LAB CONTACT	LABORATORY ADDRESS	PHONE NUMBER	FAX NO.
ATL	5550 Morehouse Drive, San Diego, CA 92121	(619) 458-9141	

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
CHRISTINE LADD	Christine Ladd	7/25/95	Fed Ex

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

AIRBILL NUMBER: 3955999000

ANALYSIS REQUIRED: TPH-g / BTEX

SAMPLE DESCRIPTION	COLLECTION DATE / TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH-g / BTEX	COMMENTS
MW-6 (6-6.5')	7/18/95	Soil	1		01	X	
MW-6 (11-11.5')	7/18/95				02	X	
MW-6 (21-21.5')	7/18/95				03	Hold	Hold
MW-7 (6-6.5')	7/18/95				04	X	
MW-7 (11-11.5')	7/18/95				05	X	
MW-7 (26-26.5')	7/18/95				06	Hold	HOLD
SB-1 (1.5-2')	7/19/95				07	X	
SB-1 (3.5-4')	7/19/95				08	X	
SB-1 (5.5-6')	7/19/95				09	Hold	HOLD
SB-1 (7-7.5')	7/19/95				10	X	
SB-1 (11.5-12')	7/19/95				11	X	
SB-1 (15.5-16')	7/19/95				12	X	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Christine Ladd	7/19/95	6pm			
			[illegible] / ATL	7-26-95	09:20

ADDITIONAL COMMENTS: Cooler #1234-2.0°C

CLV-16722
PKG/50

Distribution: White - Original (with Data)
Yellow - BP
Pink - Lab
Blue - Consultant Field Staff

ATI # 507270

CHAIN OF CUSTODY

No. 075859

Page 2 of 3

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
ALISTO ENGINEERING				

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11105	3514 CASTRO VALLEY BLVD, CASTRO VALLEY, CA.	10-138-3-3

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
BRADY NAGLE	(510) 295-1650	(510) 295-1823	6393629
BP CONTACT	**BP ADDRESS**	**PHONE NUMBER**	**FAX NO.**
Scott Houston	Renton, WA	(206) 251-0689	(206) 251-0736
LAB CONTACT	**LABORATORY ADDRESS**	**PHONE NUMBER**	**FAX NO.**
ATI		(619) 458-9141	

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
CHRISTINE LADD	Christine Ladd	7/25/95	Fed Ex

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☐ Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER: 3855999000

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	8015 TPH-D	8020 BTEX	COMMENTS
SB-2 (1.5-2')	7/19/95	SOIL	1		13	X		
SB-2 (3.5-4')					14	X		
SB-2 (5.5-6')					15	X	Hold	Hold
SB-2 (7.5-8')					16	X		
~~SB-2 (9.5-10')~~								
SB-2 (11.5-12')					17	X		
SB-2 (15.5-16')					18	X		
MW-8 (1.5-2')					19	X	Hold	Hold
MW-8 (3.5-4')					20	X		
MW-8 (7.5-8')					21	X		
MW-8 (11.5-12')					22	X		
MW-8 (15.5-16')					23	X		

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Christine Ladd	7/25/95	6pm			
			[illegible] ATI	7/26/95	09:20

ADDITIONAL COMMENTS: Cooler # 1234 = 2.0°C

CLV-16722
PKG/50

Distribution: White - Original (with Data)
Yellow - BP
Pink - Lab
Blue - Consultant Field Staff

ATI# 507270

CHAIN OF CUSTODY

No. 075860 Page 3 of 3

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
ALISTO ENGINEERING				

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11105	3579 CASTRO VALLEY BLVD, CASTRO VALLEY, CA	10-134-3-3

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Brady Wagle	(510) 295-1650	(510) 295-1823	6393629
BP CONTACT	**BP ADDRESS**	**PHONE NUMBER**	**FAX NO.**
Scott Houston	Renton, WA.	(206) 251-0689	(206) 251-0736
LAB CONTACT	**LABORATORY ADDRESS**	**PHONE NUMBER**	**FAX NO.**
ATI		(619) 458-9141	
SAMPLED BY (Please Print Name)	**SAMPLED BY (Signature)**	**SHIPMENT DATE**	**SHIPMENT METHOD**
CHRISTINE LADD	Christine Ladd	7/25/95	FedEX

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

AIRBILL NUMBER 3455999000

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH as gas / BTEX	COMMENTS
MW-8 (19.5-20')	7/19/95	SOIL	1		24	X	
MW-8 (23-23.5')	7/19/95	SOIL	1		25	X	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Christine Ladd	7/25/95	6pm			
			M. A. Jacks / ATI	7-26-95	09:20

ADDITIONAL COMMENTS: Cooler #1254 = 2.0°.

CLV-16722
PKG/50

Distribution: White - Original (with Data)
Yellow - BP
Pink - Lab
Blue - Consultant Field Staff

AnalyticalTechnologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 508034

ugust 16, 1995

LISTO ENGINEERING
575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK, CA 94598

roject Name: BP SITE#11105/CASTRO VALLEY, CA
roject # : PENDING/10-138-03/003

ttention: BRADY NAGLE

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
August 02, 1995	10	WATER

he sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the ttached list of flag definitions.

The results of these analyses and the quality control data are enclosed. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

ARY STEWART
OLATILES SUPERVISOR

FOR ALAN J. KLEINSCHMIDT
LABORATORY MANAGER

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Report Date: August 16, 1995
ATI I.D. : 508034

ATI #	Client Description	Matrix	Date Collected
1	S-1	WATER	28-JUL-95
2	S-2	WATER	28-JUL-95
3	S-3	WATER	28-JUL-95
4	S-4	WATER	28-JUL-95
5	S-5	WATER	28-JUL-95
6	S-6	WATER	28-JUL-95
7	S-7	WATER	28-JUL-95
8	S-8	WATER	28-JUL-95
9	S-9	WATER	28-JUL-95
10	S-10	WATER	28-JUL-95

---TOTALS---

Matrix	# Samples
WATER	10

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

lient : ALISTO ENGINEERING
oject # : PENDING/10-138-03/003 ATI I.D.: 508034
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Analysis	Technique/Description
OD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 508034
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	28-JUL-95	N/A	11-AUG-95	1.00
2	S-2	WATER	28-JUL-95	N/A	11-AUG-95	5.00
3	S-3	WATER	28-JUL-95	N/A	11-AUG-95	1.00

Parameter	Units	1	2	3
BENZENE	UG/L	<0.50	<2.5	<0.50
TOLUENE	UG/L	<0.50	<2.5	<0.50
ETHYLBENZENE	UG/L	<0.50	<2.5	<0.50
XYLENES (TOTAL)	UG/L	<1.0	<5.0	<1.0
FUEL HYDROCARBONS	UG/L	<50	2000	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	95	93	99

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 508034
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	28-JUL-95	N/A	11-AUG-95	1.00
5	S-5	WATER	28-JUL-95	N/A	11-AUG-95	1.00
6	S-6	WATER	28-JUL-95	N/A	11-AUG-95	1.00

Parameter	Units	4	5	6
BENZENE	UG/L	<0.50	15	<0.50
TOLUENE	UG/L	<0.50	<0.50	<0.50
ETHYLBENZENE	UG/L	<0.50	1.7	<0.50
XYLENES (TOTAL)	UG/L	<1.0	1.3	<1.0
FUEL HYDROCARBONS	UG/L	190	520	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	101	145*H	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 508034
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	28-JUL-95	N/A	11-AUG-95	1.00
8	S-8	WATER	28-JUL-95	N/A	11-AUG-95	5.00
9	S-9	WATER	28-JUL-95	N/A	11-AUG-95	1.00

Parameter	Units	7	8	9
BENZENE	UG/L	0.540E	<2.5	7.2
TOLUENE	UG/L	0.54	<2.5	<0.50
ETHYLBENZENE	UG/L	<0.50	<2.5	1.9
XYLENES (TOTAL)	UG/L	<1.0	<5.0	1.5
FUEL HYDROCARBONS	UG/L	<50	1100	460
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	100	83	106

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 508034
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
10	S-10	WATER	28-JUL-95	N/A	11-AUG-95	1.00

Parameter	Units	10
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	96

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36406
Client : ALISTO ENGINEERING
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

ATI I.D. : 508034
Date Extracted: N/A
Date Analyzed : 11-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	102

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36407
Client : ALISTO ENGINEERING
Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

ATI I.D. : 508034
Date Extracted: N/A
Date Analyzed : 11-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	98

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77802
Client : ALISTO ENGINEERING

Project # : PENDING/10-138-03/003
Project Name: BP SITE#11105/CASTRO VALLEY, CA

ATI I.D. : 508034
Date Extracted: N/A
Date Analyzed : 14-AUG-95
Sample Matrix : WATER
REF I.D. : 508064-04

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	4.9	98	4.9	98	0
TOLUENE	UG/L	<0.50	5.0	4.9	98	5.0	100	2

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 58178
Client : ALISTO ENGINEERING
Project # : PENDING/10-138-03/003
Project Name : BP SITE#11105/CASTRO VALLEY, CA

ATI I.D. : 508034
Date Extracted: N/A
Date Analyzed : 11-AUG-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	4.7	5.0	94
TOLUENE	UG/L	<0.50	4.9	5.0	98

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 58179
Client : ALISTO ENGINEERING
Project # : PENDING/10-138-03/003
Project Name : BP SITE#11105/CASTRO VALLEY, CA

ATI I.D. : 508034
Date Extracted: N/A
Date Analyzed : 11-AUG-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.2	5.0	104
TOLUENE	UG/L	<0.50	5.2	5.0	104

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

ANALYTICAL TECHNOLOGIES, INC.
SAN DIEGO
FLAGS

ORGANICS

FLAG	MESSAGE DESCRIPTION
A	A TIC IS A SUSPECTED ALDOL-CONDENSATION PRODUCT
B	ANALYTE FOUND IN THE ASSOCIATED REAGENT BLANK
C	PESTICIDE, WHERE THE IDENTIFICATION WAS CONFIRMED BY GC/MS
CO	THESE COMPOUNDS CO-ELUTE AND ARE QUANTITATED AS ONE PEAK
D	COMPOUND IDENTIFIED IN AN ANALYSIS AT SECONDARY DILUTION
E	ANALYTE AMOUNT EXCEEDS THE CALIBRATION RANGE
J	ESTIMATED VALUE
H	QUANTIFIED AS DIESEL BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF DIESEL
K	QUANTIFIED AS KEROSENE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF KEROSENE
L	QUANTIFIED AS GASOLINE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF GASOLINE
N	PRESUMPTIVE EVIDENCE OF A COMPOUND
P	PESTICIDE/AROCLOR TARGET ANALYTE, WHERE THERE IS GREATER THAN 25% DIFFERENCE FOR DETECTED CONCENTRATION BETWEEN 2 GC COLUMNS
TR	COMPOUND DETECTED AT AN UNQUANTIFIABLE TRACE LEVEL
U	COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
X	SEE CASE NARRATIVE
Y	SEE CASE NARRATIVE
Z	SEE CASE NARRATIVE
*	OUTSIDE OF QUALITY CONTROL LIMITS
*D	COMPOUND ANALYZED FROM A SECONDARY ANALYSIS
*F	RESULT OUTSIDE OF ATI'S QUALITY CONTROL LIMITS
*G	RESULT OUTSIDE QUALITY CONTROL LIMITS. INSUFFICIENT SAMPLE FOR RE-EXTRACTION/ANALYSIS
*H	RESULT OUTSIDE OF LIMITS DUE TO SAMPLE MATRIX INTERFERENCE
*I	BECAUSE OF NECESSARY SAMPLE DILUTION, VALUE WAS OUTSIDE QC LIMITS
*K	DUE TO THE NECESSARY DILUTION OF THE SAMPLE, RESULT WAS NOT ATTAINABLE
*L	ANALYTE IS A SUSPECTED LAB CONTAMINANT
*P	A STANDARD WAS USED TO QUANTITATE THIS VALUE
*R	DATA IS NOT USABLE
*T	SURROGATE RECOVERY IS OUTSIDE QC CONTROL LIMITS. NO CORRECTIVE ACTION INDICATED BY METHOD
*V	SAMPLE RESULT IS >4X SPIKED CONCENTRATION, THEREFORE SPIKE IS NOT DETECTABLE
*Y	RESULT NOT ATTAINABLE DUE TO SAMPLE MATRIX INTERFERENCE
@A	RESULTS OUT OF LIMITS DUE TO SAMPLE NON-HOMOGENEITY
@C	*VARIABLE MESSAGE*
@D	RESULT COULD NOT BE CONFIRMED DUE TO MATRIX INTERFERENCE ON THE CONFIRMATION COLUMN
@E	**RESULT MAY BE FALSELY ELEVATED DUE TO SAMPLE MATRIX INTERFERENCE**
@F	RESULT OUTSIDE OF CONTRACT SPECIFIED QUALITY CONTROL LIMITS
@G	RESULT OUTSIDE OF CONTRACT SPECIFIED ADVISORY LIMITS
@H	DETECTION LIMIT ELEVATED DUE TO MATRIX INTERFERENCE
@M	RESULT NOT CONFIRMED BY U.V. DUE TO SAMPLE MATRIX INTERFERENCE
@N	RESULT NOT CONFIRMED BY FLUORESCENCE DUE TO SAMPLE MATRIX INTERFERENCE
@P	RESULT QUANTITATED USING FLUORESCENCE ONLY DUE TO THE LOW CONCENTRATION
@Q	DETECTION LIMIT ELEVATED DUE TO LIMITED SAMPLE FOR ANALYSIS
@T	RESULT DUE TO TCLP EXTRACTION MATRIX INTERFERENCE. NO QC LIMITS HAVE BEEN ESTABLISHED
@U	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE COMMON FUEL HYDROCARBON FINGERPRINTS
@Z	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE A FUEL HYDROCARBON

ACCESSION #: SC8834 INITIALS: AT

ATI-SanDiego
SAMPLE CONDITION UPON RECEIPT CHECKLIST
(FOR RE-ACCESSIONS, COMPLETE #7 THRU #9)

1	Does this project require special handling according to NFESC Levels C, D, AFCEE or CLP protocols? If yes, complete a) and b) a) pH sample aliquoted: yes /no /na b) Either 1) Record Bottle Lot #'s: Or 2) Attach Sample Kit Request Form(s)	YES	(NO)
2	Number of Coolers Received If more than one cooler received attach Multiple Cooler Documentation Form (MCD) Indicate "see MCD" on Item 11 below	1 (#001)	
3	Are custody seals required for this project ?	YES	(N/A)
	a) are Custody Seals present on Cooler(s) ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
	b) are Custody Seals present on the sample ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
4	Is there a Chain-Of-Custody (COC)* per cooler ? if not, if a problem is found indicate which samples/test were in the affected cooler on the MCD.	(YES)	NO
5	Is the COC* complete per cooler ? Relinquished: (yes)/no Requested analysis: (yes)/no	(YES)	NO
6	Is the COC* in agreement with the samples received? # Samples: (yes)/no Sample ID's: (yes)/no Date sampled: (yes)/no Matrix: (yes)/no # containers: (yes)/no	(YES)	NO
7	Are the samples preserved correctly?	(YES)	NO
8	Is there enough sample for all the requested analyses?	(YES)	NO
9	Are all samples within holding times for the requested analyses?	(YES)	NO
10	Record cooler temperature. Contact PM if temperature is not 4°C ± 2°C.	2.3 °C	
	Is ice present in cooler?	(YES)	NO
11	Were all sample containers received intact (ie. not broken, leaking, etc.)?	(YES)	NO
12	Are samples requiring no headspace, headspace free? N/A	(YES)	NO
13	Are VOA 1st stickers required?	YES	(NO)
14	Are there special comments on the Chain of Custody which require client contact?	YES	(N/A)
15	If yes, was ATI Project Manager notified?	YES	NO

Describe "no" items: _____

Was client contacted? yes / no

If yes, Date: _____ Name of Person contacted:

Describe actions taken or client instructions: _____

*Or other representative documents, letters, and/or shipping memos

ATI # 508034

CHAIN OF CUSTODY

No. 055913 | Page ____ of ____

CONSULTANT'S NAME: Alisto Engineering	ADDRESS: 1575 Treat Blvd #201	CITY: W.C.	STATE: Ca	ZIP CODE: 94596
BP SITE NUMBER: 1105	BP CORNER ADDRESS/CITY: Castro Valley, Ca			CONSULTANT PROJECT NUMBER: 10-138-03/003
CONSULTANT PROJECT MANAGER: Brady Nagle	PHONE NUMBER: (510) 295-1650		FAX NUMBER: 295-1823	CONSULTANT CONTRACT NUMBER: Pending
BP CONTACT: Scott Hooton	BP ADDRESS: Renton WA		PHONE NUMBER	FAX NO.
LAB CONTACT: ATI	LABORATORY ADDRESS: San Diego, Ca		PHONE NUMBER	FAX NO.
SAMPLED BY (Please Print Name): Larry Gyenwenida	SAMPLED BY (Signature):		SHIPMENT DATE	SHIPMENT METHOD: Fed Express
				AIRBILL NUMBER: 106802355427

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

ANALYSIS REQUIRED: 8-TPH-G, TPH-D, BTEX

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	8-TPH-G	TPH-D	BTEX
S-1	7/28/95	W	2	ALL	01	X		
S-2					02			
S-3					03			
S-4					04			
S-5					05			
S-6					06			
S-7					07			
S-8					08			
S-9					09			
S-10					10			

COMMENTS

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	7/31/95		ATI	8-2-95	09:00

ADDITIONAL COMMENTS: Cooler = 2.3°C

CLV-16722

Distribution: White - Original (with Data); Yellow - BP; Pink - Lab; Blue - Consultant Field Staff