S 20401

AKI K. NAKAO, Director

1401 LAKESIDE DRIVE, OAKLAND, CALIFORNIA 94612 510 208 9700 FAX 510 208 9711 www.acgov.org/gsa/

February 7, 2006

TO: Amir K Gholami, Hazardous Materials Specialist, Environmental Health

FROM: Rod Freitag, Environmental Program Manager, GSA-TSD

SUBJECT: ALCOPARK, 165-13TH STREET, OAKLAND, CA

As requested, I am submitting the attached information package to assist you in evaluating this site for closure. Included is a narrative of the investigation work that has been completed for the different tank groups at the site, as well as copies of select reports.

Please let me know if you need anything else.

RDF:rdf:i:\e&em\prjt\env\7001\submittal package.doc

Attachment

cc: Ariu Levi, Env. Health (no attachment)
Donna Drogos, Env. Health (no attachment)

NARRATIVE WORK DESCRIPTION

ALCOPARK GARAGE

Alameda County's Alcopark garage is located at 165 13th St. in Oakland, CA. In 1989, when subsurface investigation work started at the site, there were five underground storage tanks as shown on the enclosed figures. **[Tab 1]** Two gasoline tanks were located at the corner of 13th and Jackson, two gasoline tanks were located at the corner of 12th and Jackson, and a waste oil tank was located adjacent to the vehicle maintenance bay in the basement. The waste oil tank and the two gasoline tanks at the corner of 12th and Jackson have since been closed. Subsurface investigations have been conducted at all three tank sites in accordance with the requirements of the Alameda County Department of Environmental Health (ACDEH). The subsurface investigations are summarized in the following sections.

Active Vehicle Fueling Station, Corner of 13th and Jackson (USTs 1921-3 and 1921-4)

Piping associated with USTs 1921-3 and 1921-4 failed precision testing in April of 1988. ACDEH was informed, and an *Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report* (URL) was filed.

Alameda County General Services Agency (GSA) contracted with Scott Company to locate and repair the leak in the vapor recovery piping. Hunter Environmental Services (HES) was contracted to collect soil samples and assess contamination in the vicinity of the leak. Soil samples were collected directly beneath the piping at depths of 3 and 9 feet below ground surface. TPHgas and BTEX contaminants were detected in the shallow sample, and only minor concentrations of BTEX were detected in the deeper sample. TPHgas and BTEX levels detected in the soil reportedly exceeded those allowed by regulations for sites with groundwater at less than 50 feet below ground surface. HES's findings are documented in its March 3, 1989 report, a copy of which is enclosed . **[Tab 2]**

Based on HES's findings, GSA contracted with HES to investigate the lateral and vertical extent of petroleum hydrocarbon contamination at the site. Prior to investigation, a workplan was prepared and submitted to ACDEH for approval. In accordance with ACDEH's requirements, HES advanced seven exploratory borings, three of which were converted into groundwater monitoring wells (MW-1, MW-4, MW-5). Soil and groundwater samples collected by HES were tested and found to contain detectable concentrations of BTEX. BTEX concentrations detected in the unsaturated zone were insufficient to warrant further action. BTEX concentrations detected in groundwater samples resulted in a recommendation of quarterly groundwater sampling. Boring logs, monitor well construction details, and analytical data for soil and ground-water samples are presented in HES's May 26, 1989 report, a copy of which is enclosed. **[Tab 3]**

Environmental Science & Engineering, Inc. (ESE, formerly Hunter Environmental Services), on behalf of GSA, prepared and submitted to ACDEH a workplan for quarterly monitoring. Quarterly monitoring commenced, subsequent to ACDEH's approval. Beginning in July, 1990, the three monitoring wells were sampled on seven different occasions. By letter agreement dated December 17, 1993, sampling was temporarily halted pending investigation of potential off-site sources. A copy of the December 17, 1993 letter agreement between ACDEH and GSA is enclosed. **[Tab 4]**

By letter dated May, 20, 1997, ACDEH requested that GSA resume sampling of the monitoring wells, and that the sampling protocol be modified to include MTBE analysis. RAM Environmental (RAM) was contracted by GSA to perform the required sampling. RAM sampled the monitoring

wells in July of 1997. Based on concerns with detectable concentrations of MTBE in the groundwater (22 ppb in MW-5), ACDEH required additional monitoring and submittal of a workplan to further define the plume. RAM conducted an additional round of sampling in November of 1997. MTBE was detected in MW-1 (29 ppb) and MW-5 (14 ppb). Groundwater sample results are summarized in Table 1, which is a summary of all groundwater data collected to date at this subsite. **[Tab 5]**

Professional Service Industries, Inc. (PSI) was retained by GSA to further define the plume per ACDEH's requirements. On January 15, 1998, PSI submitted a workplan for ACDEH's approval. In accordance with the approved workplan, PSI advanced two exploratory borings at site in March of 1988. The furthest downgradient boring was converted into a monitoring well (MW-6). No contaminants of concern were detected in the soil samples collected. Contaminants of concern were detected in the groundwater sample taken from the new well. Boring logs, monitor well construction details, and analytical data for soil and ground-water samples are presented in PSI's April 20, 1998 investigation report. **[Tab 6]**

ACDEH issued a letter, dated June 22, 1998, requiring quarterly monitoring to assess contaminant trends. In accordance with ACDEH's requirements, the wells were monitored for another two quarters. Groundwater sample results are summarized in Table 1, which is a summary of all groundwater data collected to date at this subsite. **[Tab 5]**

On March 2, 1999, ACDEH sent GSA a letter requiring installation of a monitoring well further downgradient. A workplan was subsequently submitted by PSI for ACDEH's approval. After receiving ACDEH's approval, approval of corrective action costs was obtained from the Cleanup Fund. PSI then installed the new well (MW-7). No contaminants of concern were detected in the soil samples collected; contaminants of concern were detected in the groundwater sample taken from the new well. Boring logs, monitor well construction details, and analytical data for soil and ground-water samples are presented in PSI's October 14, 1999 report. **[Tab 7]**

ACDEH sent GSA a letter, dated July 18, 2000, requiring preparation of a Site Conceptual Model in accordance with the Regional Water Quality Control Board's final draft *"Guideline for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates."* GSA retained the services of PSI. PSI issued a Site Conceptual Model report on November 10, 2000. No drinking water wells were identified within ½ mile of the site, and Lake Merritt, the nearest surface water receptor, is salt water and not a potential source of drinking water. Based on these findings, PSI concluded that, "...an Interim Remedial Action should not be required for the subject site because the migration of MTBE contaminated groundwater to the nearest receptor, Lake Merritt, is unlikely. Furthermore, since no potential drinking water sources are at risk, a risk assessment is not necessary for the site." A copy of PSI's Site Conceptual Model report is enclosed. **[Tab 8]**

After reviewing PSI's Site Conceptual Model report, Ms. Eva Chu of ACDEH required that a supplemental fate and transport screening be done to assess potential MTBE impacts on the Lake Merritt ecosystem. On June 8, 2001, PSI issued a report of its findings and indicated that it did not expect a significant impact on the ecology of Lake Merritt. A copy of PSI's report is enclosed. **[Tab 9]**

Groundwater sampling is still conducted periodically in accordance with ACDEH's requirements. The most recent sampling was conducted on August 17, 2005. A report documenting this sampling event was submitted to ACDEH on September 28, 2005, along with a request to suspend groundwater monitoring. Case closure for Alcopark was also requested. **[Tab 10]**

Former Waste Oil Tank (UST 1921-5)

The 550-gallon waste oil tank was excavated and removed by ESE in February, 1992. Subsequent to removal of the tank, soil and groundwater samples were collected as directed by ACDEH. The samples were analyzed for waste oil constituents, in accordance with RWQCB guidelines. Soil samples collected from the excavation walls tested "ND". TPHgas, TPHdiesel, BTEX, semi-volatile organics and volatile organics were detected in a water sample collected from the excavation. ESE's findings are documented in the enclosed report, dated April 22, 1992. **[Tab 11]**

A workplan to install a groundwater monitoring well was prepared and submitted for approval in accordance with ACDEH's requirements. The workplan was approved on October 2, 1992, and the well was installed by ESE on October 29, 1992. Contaminants of concern were not detected in the soil. Contaminants exceeding primary MCLs were not detected in the in the initial groundwater or in the groundwater samples collected during three subsequent quarters of monitoring. A boring log, monitor well construction details, and analytical data for the soil and groundwater samples collected during well installation are presented in ESE's January 6, 1993 report. Quarterly groundwater monitoring data is summarized in ESE's October 5, 1993 report. **[Tab 12]**

By letter dated December 17, 1993, ACDEH suspended monitoring requirements. A copy of the letter is enclosed. **[Tab 13]**

At present, the monitoring well is locked, but intact. The well will be permanently closed after case closure has been granted for the Alcopark site.

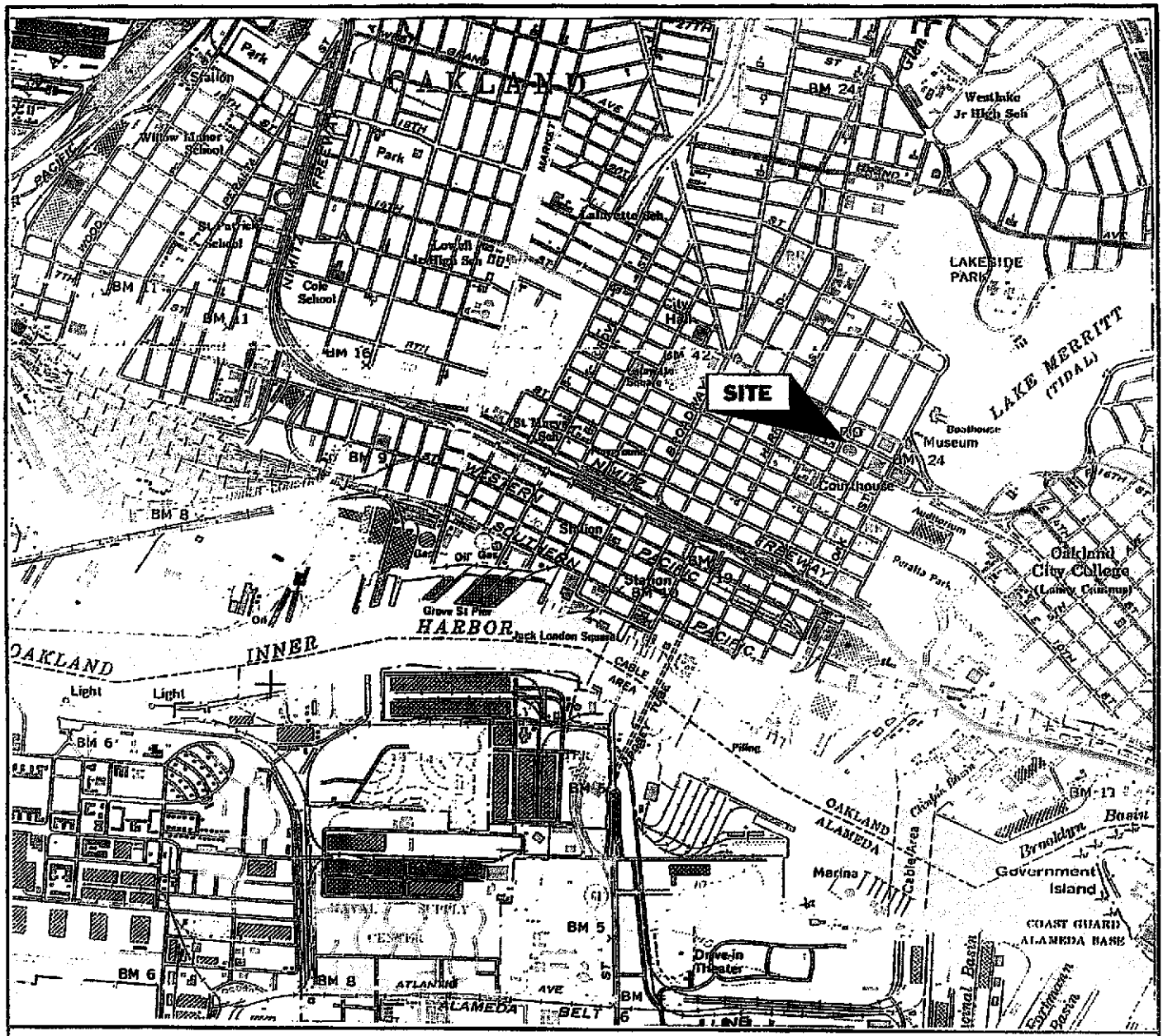
Former Vehicle Fueling Station, Corner of 12th and Jackson (USTs 1921-1 and 1921-2)

In October of 1992, ESE conducted a soil and groundwater investigation to assess conditions at the corner of 12th and Jackson, as required by ACDEH. Four soil borings were advanced and soil and groundwater samples were collected from each one. The samples were analyzed for TPHgas and BTEX. Insignificant concentrations of TPHgas and BTEX were detected in soil samples. TPHgas and BTEX concentrations detected in groundwater were much higher in upgradient samples than in downgradient samples. Benzene concentrations in upgradient samples exceeded the MCL for benzene. By letter agreement dated December 17, 1993, no further action was required pending investigation of upgradient, offsite sources. Copies of ESE's April 19, 1993 investigation report and the December 17, 1993 letter agreement between ACDEH and GSA are enclosed. **[Tab 14]**

USTs 1921-1 and 1921-2 were permanently closed in-place by GeoStrategies, Inc. in June of 1994. ACDEH issued a letter requiring no further action on September 27, 1994. **[Tab 15]**

On December 18, 1998, GSA received a call from ACDEH requesting that additional soil and groundwater investigation be done at the corner of 12th and Jackson. GSA had PSI submit a workplan to ACDEH, which was approved on January 27, 1999. In accordance with the workplan, three borings were advanced on February 10, 1999; soil and groundwater samples were collected from each boring; and the samples were analyzed for TPHgas, BTEX and MTBE. No MTBE was detected and no significant concentrations of TPHgas and/or BTEX were detected. PSI's findings are documented in the enclosed report, dated February 25, 1999. **[Tab 16]**

On March 2, 1999, ACDEH sent GSA a letter requiring additional sampling at the former piping/dispenser location. A workplan was subsequently submitted by PSI for ACDEH's approval. After receiving approval, boring SB-8 was advanced using a hand auger. Soil and groundwater samples were collected and analyzed for MTBE, TPHgas and BTEX. No contaminants of concern were detected. PSI's findings are documented in it's October 14, 1999 report. **[Tab 7]**



NORTH

0 1/2 1 MILE

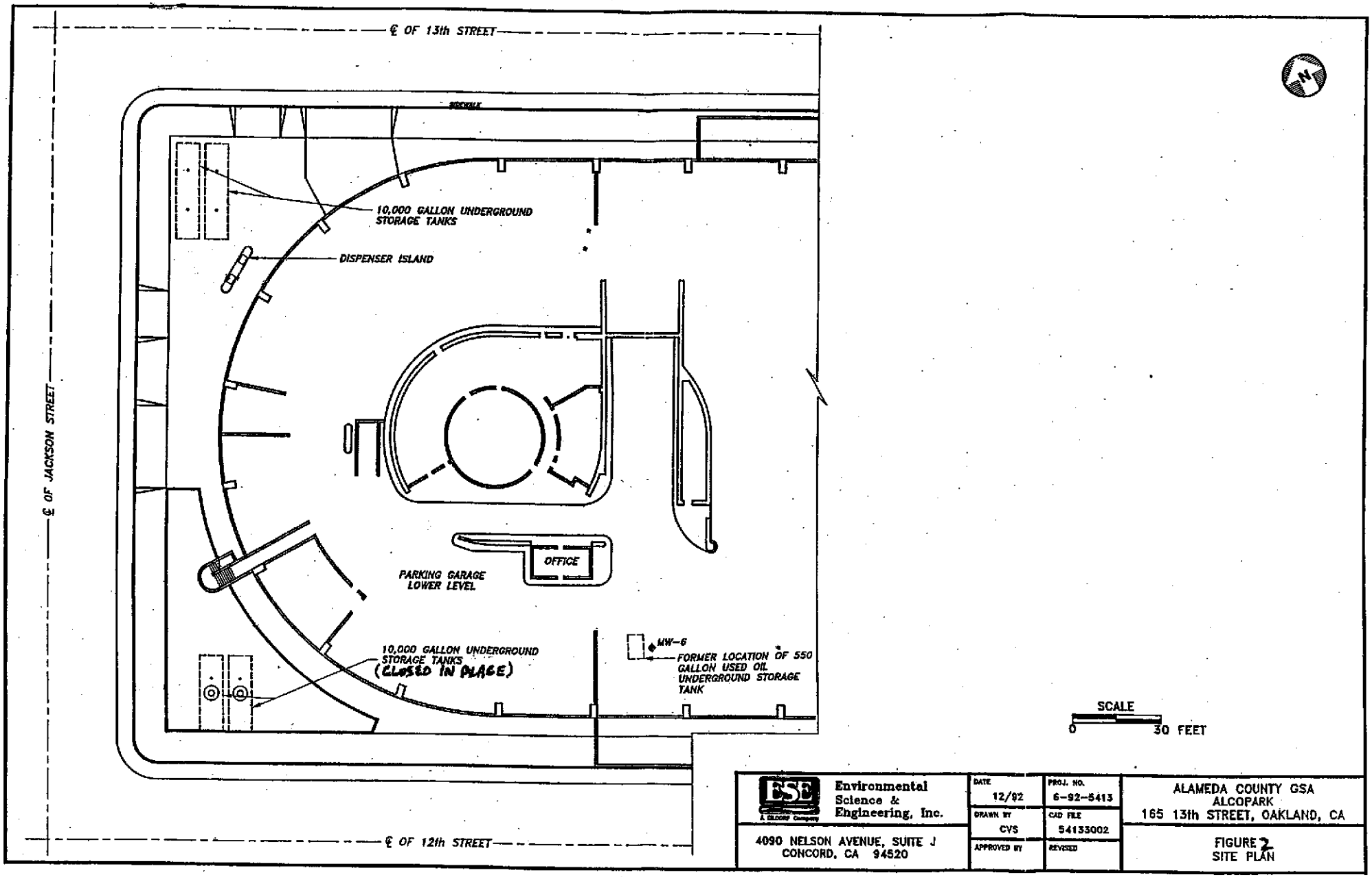
SCALE

REFERENCE:
U.S.G.S. OAKLANDWEST, CALIFORNIA, 1959
PHOTOREVISED 1980

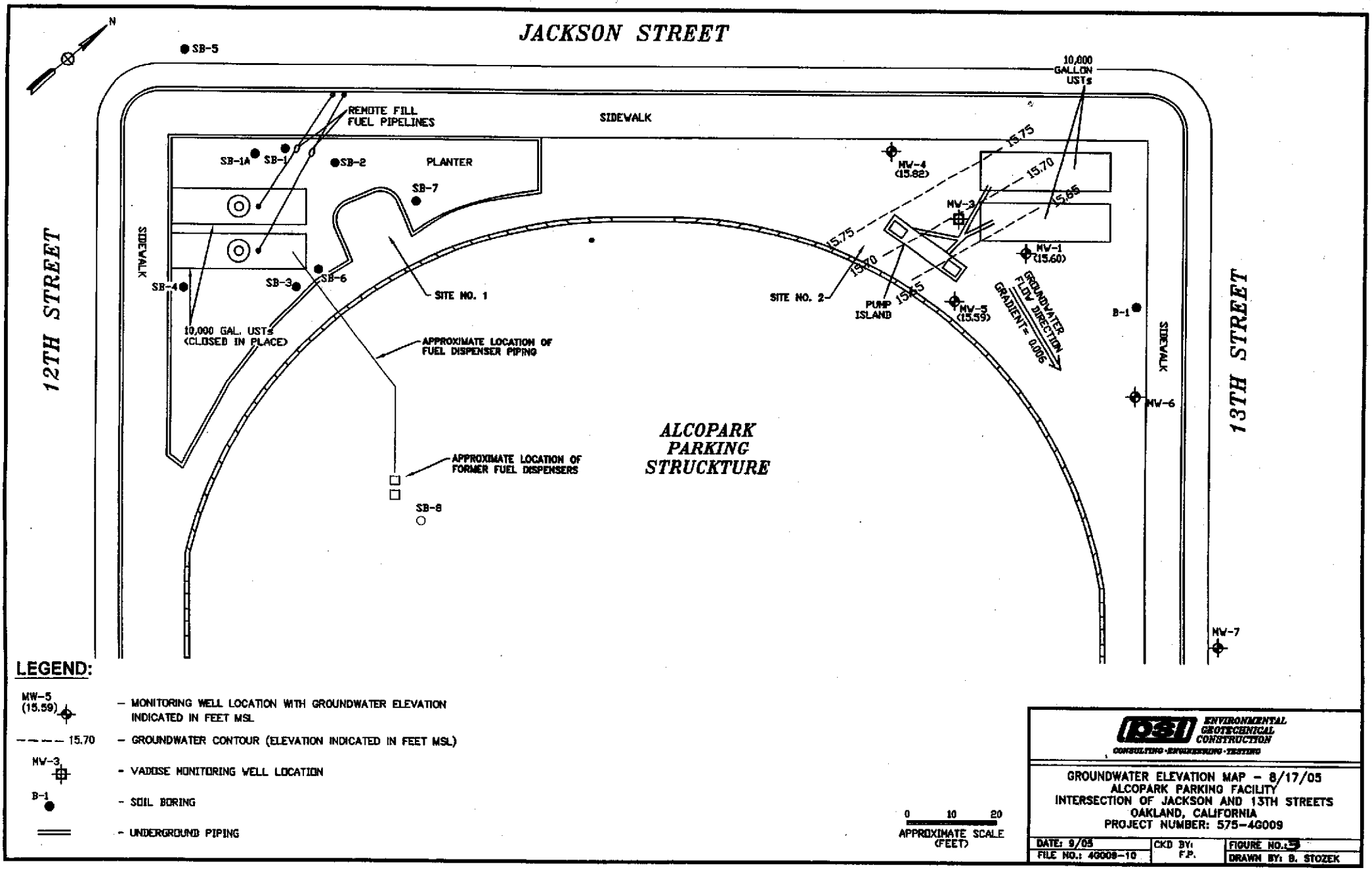
ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION

SITE LOCATION
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 3/04	CKD BY:	FIGURE NO: 1
FILE NO: 4G009-1	F.P.	DRAWN BY: B.S.



ESE Environmental Science & Engineering, Inc.	DATE 12/92	PROJ. NO. 6-92-5413	ALAMEDA COUNTY GSA ALCOPARK 165 13th STREET, OAKLAND, CA
4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DRAWN BY CVS	CAD FILE 54133002	FIGURE 2 SITE PLAN
	APPROVED BY	REVISED	



LEGEND:

MW-5 (15.59) – MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION INDICATED IN FEET MSL

15.70 – GROUNDWATER CONTOUR (ELEVATION INDICATED IN FEET MSL)

MW-3 – VADOSE MONITORING WELL LOCATION

B-1 – SOIL BORING

– UNDERGROUND PIPING

0 10 20
APPROXIMATE SCALE (FEET)

ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING · ENGINEERING · TESTING

GROUNDWATER ELEVATION MAP – 8/17/05
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 9/05	CKD BY: F.P.	FIGURE NO.: 5
FILE NO.: 4G009-10		DRAWN BY: B. STOZEK

HUNTER
ENVIRONMENTAL SERVICES, INC.

Northern California Office
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637 • 800-321-3637
FAX 415-372-3790

March 3, 1989

Project No. 02-276-008

Mr. Paul LeCheminant
4400 MacArthur Blvd.
Oakland, California 94619

SUBJECT: Field Observations and Sampling Results, Alcopark.

Dear Mr. LeCheminant:

Hunter/Gregg personnel were at Alcopark, Jackson and 13th Street, Oakland, California on January 24, 1989 to observe exploration for a piping leak in existing fuel lines. Scott Company, excavation contractors, excavated with a backhoe and by hand beneath the unleaded gasoline dispensers and the vapor recovery system. The vapor recovery system, was found to be leaking. Soil around the broken connection was excavated, placed on plastic, and covered. On January 25, 1989, the excavated soil was placed in barrels, labeled, and stored on site.

Hunter/Gregg personnel completed a hand-auger boring in unexcavated soil beneath the vapor recovery system, Figure 1-Site map. Soil samples from this boring were taken at depths of 3 and 9 feet below the ground surface. A composite soil sample was also taken from the excavated soil pile. Soil samples were taken in 6-inch long by 2-inch diameter brass rings. Upon retrieval, the samples were capped with teflon-lined caps, labeled, sealed with tape and placed in a cooler. Soil samples were taken under chain of custody to a state-certified laboratory for analysis. Analyses completed on these samples were Total Petroleum Hydrocarbons (TPH), using EPA Method 8015 and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX), using EPA Method 8020.

Analytical results for these two samples are shown on Table 1. Certificates of Analyses and chain-of-custody documents are enclosed. TPH was 630 ppm at 3 feet depth and decreased to non-detectable at 6 feet depth. Petroleum constituents, BTEX, also decreased with depth as shown below in Table I.

Table 1. Laboratory Results from Soil Sampling, January 24, 1989, at Alameda County / Alcopark

SAMPLE ID	SAMPLE DEPTH (ft)	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
AP-1	3	630	1,500	11,000	4,500	33,000
AP-1	9	ND < 10	110	130	32	140
AP-Soil Pile	-	3,700	-	-	-	-

Note: ft - feet
ppm - Parts per million or milligrams per kilogram (mg/kg)
ppb - Parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - Not-detected at a detection limit of 10 ppm

Concentrations of petroleum hydrocarbons exceed levels allowed by regulations for soil at a site with ground water at less than 50 feet, which is the condition at the Alcopark site. Hunter/Gregg recommends that a site investigation be performed to delineate the extent of hydrocarbon constituents in the soil and assess the impact on the ground water. A site investigation plan will need to be written for regulatory approval. Remediation can then proceed once limits are defined and regulatory approval of a remedial plan is obtained.

Please contact James Bryson or Sue Wickham at (415) 372-3637 with any questions or comments. Upon your approval, these analytical results will be transmitted to the Alameda County Department of Environmental Health.

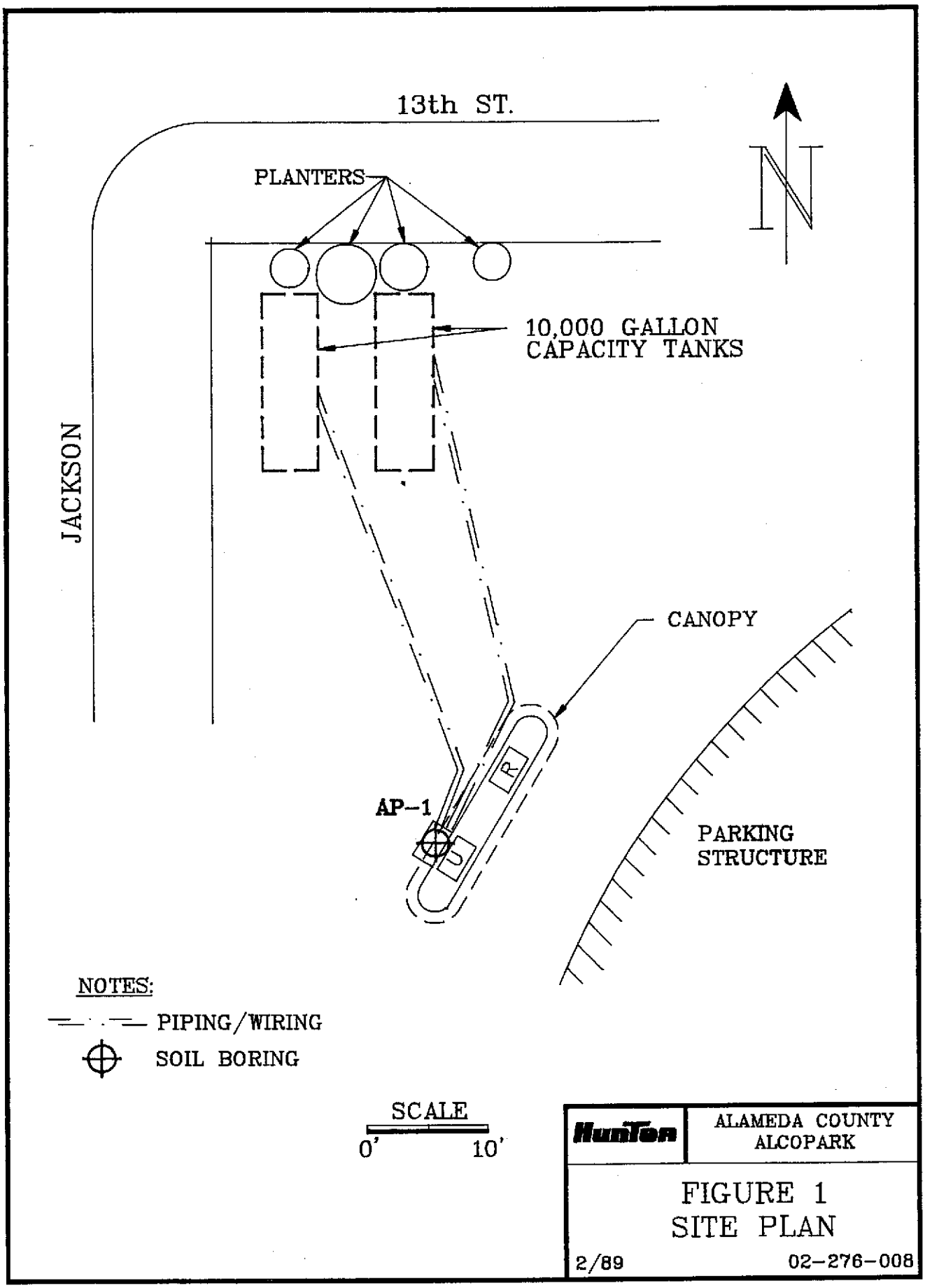
Very truly yours,

James P. Bryson
Staff Geologist

Susan S. Wickham, RG 3851
Project Hydrogeologist

JPB/SSW:vmf

Attachments


13th ST.
PLANTERS
10,000 GALLON
CAPACITY TANKS
JACKSON
CANOPY
AP-1
R
U
PARKING
STRUCTURE
NOTES:
PIPING/WIRING
SOIL BORING
SCALE
0'
10'
HUNTER
ALAMEDA COUNTY
ALCOPARK
FIGURE 1
SITE PLAN
2/89
02-276-008

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50582
CLIENT: Hunter/Gregg
CLIENT ID: Alcopark

DATE RECEIVED: 1/25/89
DATE REPORTED: 1/26/89
JOB NO.: N/A

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
AP-1-3' 1/24/89 3:30	630.	ND < 10
AP-1-9' 1/24/89 3:00	ND < 10	ND < 10
AP-Soil Pile 1/24/89	3700.	ND < 100

mg/kg = part per million (ppm)
Minimum Detection Limit for Gasoline and Diesel, 10 mg/kg.

QA/QC Summary:
Daily standards run at 200 mg/L; RPD Gasoline=7 , Diesel= 8.
MS/MSD: Average Gasoline Recovery =60 ; Duplicate RPD =15.

Les Partridge, Ph.D.
Les Partridge
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50582
CLIENT: Hunter/Gregg
JOB NO.: Alcopark

DATE SAMPLED: 1/24/89
DATE ANALYZED: 1/26/89
DATE REPORTED: 1/26/89

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

Concentration (ug/kg)

Sample Identification	Benzene	Toluene	Ethyl Benzene	Xylenes
AP-1-3' 1/24/89 3:30	1500.	11000.	4500.	33000.
AP-1-9' 1/24/89 3:00	110.	130.	32.	140.

ug/kg = part per billion (ppb)

QA/QC Summary: Matrix Spike, Matrix Spike Duplicate:
Average Recovery: 92% , RPD: <17

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

GREGG & ASSOCIATES, INC.
A Hunter Company
597 Center Avenue, Suite 350, Martinez, CA 94553 / (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 1/24/89 PAGE 1 OF 1

NAME Hunter/Gregg, Inc
ADDRESS 597 Center Ave Suite 350
Martinez, CA. 94553
PROJECT Alameda Co./Alcopark
SAMPLER'S NAME (print) JAMES BRYSON
(signature) James P. Bryson

sample #	date	time	location	PARAMETERS 1 EPA 8015	2 EPA 8020	3	4	5	6	7	8	9	10	OTHER 0	0	0	0	0	0	TOTALS	OBSERVATION/COMMENTS
AP-1-3'	1/24/89	3:30		X	X	} 24 HOUR T.A.T.														1	SOIL
AP-1-9'	1/24/89	3:00		X	X															1	↓
AP-Soil Pile	1/24/89	3:30		X																1	

PARAMETER KEY:
1-CAM METALS (18)
2-PR. POLLUTANT METALS (13
3-GENERAL MINERALS
4-OIL & GREASE
5-PETROLEUM HYDROCARBONS
6-BASE/NEU/ACIDS (ORGANICS
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)
10-TOC

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
James P. Bryson	1. Ken Brown	1/25	833
	2.		
	3.		
	4.		

TOTAL NUMBER OF CONTAINERS THIS SHEET: 3

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

DISPATCHED BY: (signature)	date	time	RECEIVED FOR LAB BY: (sig)	date	time

PHASE I SITE CHARACTERIZATION REPORT

FOR

ALAMEDA COUNTY/ ALCOPARK FACILITY

165 13th STREET
OAKLAND, CALIFORNIA

Performed for:

Alameda County
General Services Agency -
Building Maintenance Department
4400 MacArthur Boulevard
Oakland, California

Performed by:

HUNTER/GREGG, Inc.
597 Center Avenue, Suite 350
Martinez, California

02-276-010

May 1989

This report, including all related activities, was prepared or conducted by Hunter/Gregg staff under the direct supervision of James P. Bryson, Staff Engineering Geologist, and Susan S. Wickham, Project Hydrogeologist. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other hydrogeologists and engineers practicing in this field. No other warranty, expressed or implied, is made as to the professional advice in this report.

James P. Bryson

Date 5/26/89

James P. Bryson

Susan S. Wickham

Date 5/26/89

Susan S. Wickham
California Registered Geologist No. 3851

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APPENDICES

1.0 INTRODUCTION

Hunter/Gregg, Inc. performed a Phase I Site Characterization for the Alameda County/Alcopark parking structure in Oakland, California on March 20, 21, and 22, 1989. The original scope of work included drilling three ground-water monitoring wells, two vapor monitoring wells, and three soil borings to assess subsurface conditions. It was determined during the characterization study that only one vapor monitoring well was necessary to monitor the piping. In accordance with the Phase I Site Characterization plan, a geologist from Hunter/Gregg supervised the drilling of three ground-water wells, one vapor well, and three soil borings. Soil samples were collected at five foot intervals during the drilling of the wells and soil borings. Ground-water samples were collected, following the completion and development of the wells, for laboratory analysis. The purpose of the wells and soil borings was to assess the lateral and vertical extent of petroleum hydrocarbons in the soil materials adjacent to the pump island that had a leak in the vapor recovery piping and to evaluate the impact of this leak on ground water below the site. The wells were installed in a manner that they could be retro-fitted with ground-water and vapor monitors to satisfy the Alameda County Health Department requirements for underground tank monitoring. This section of the report describes the site background.

1.1 Background

A geologist from Hunter/Gregg was on site January 24, 1989, to supervise the excavation of soil around the tank piping for the purpose of locating a possible piping leak. During a line integrity test performed by the Scott Company of Oakland, California, on January 24, 1989, a leak was found in the vapor recovery line below the unleaded gasoline dispenser. The leak was repaired by the Scott Company and an unauthorized release form was filed by the County of Alameda-General Services Agency. After the location of the leak was determined the geologist from Hunter/Gregg completed a hand-augered boring to a depth of nine feet directly below where the piping leak was found. Soil samples were taken at depths of three and nine feet below the ground surface and were analyzed for Total Petroleum Hydrocarbons (TPH) using EPA Method 8015 and for Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) using EPA Method 8020. A sample of the excavated

soil was also analyzed for TPH. The results of these laboratory analyses are shown on Table 1 - Laboratory Results On Soil From Preliminary Site Investigation For Alameda County/Alcopark. As a result of the initial hand boring performed by Hunter/Gregg, Hunter/Gregg recommended that a Phase I Site Characterization be performed. Hunter/Gregg was retained by the County of Alameda-General Services Agency in March of 1989 to perform a Phase I Site Characterization.

Table 1. Laboratory Results From Preliminary Site Investigation For Alameda County/Alcopark

SAMPLE ID	SAMPLE DEPTH (ft)	TPH (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
AP-1	3	630	1,500	11,000	4,500	33,000
AP-1	9	ND < 10	110	130	32	140
AP-Soil Pile	-	3,700	-	-	-	-

Note: ft - feet
ppm - Parts per million or milligrams per kilogram (mg/kg)
ppb - Parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - Not-detected at a detection limit of 10 ppm

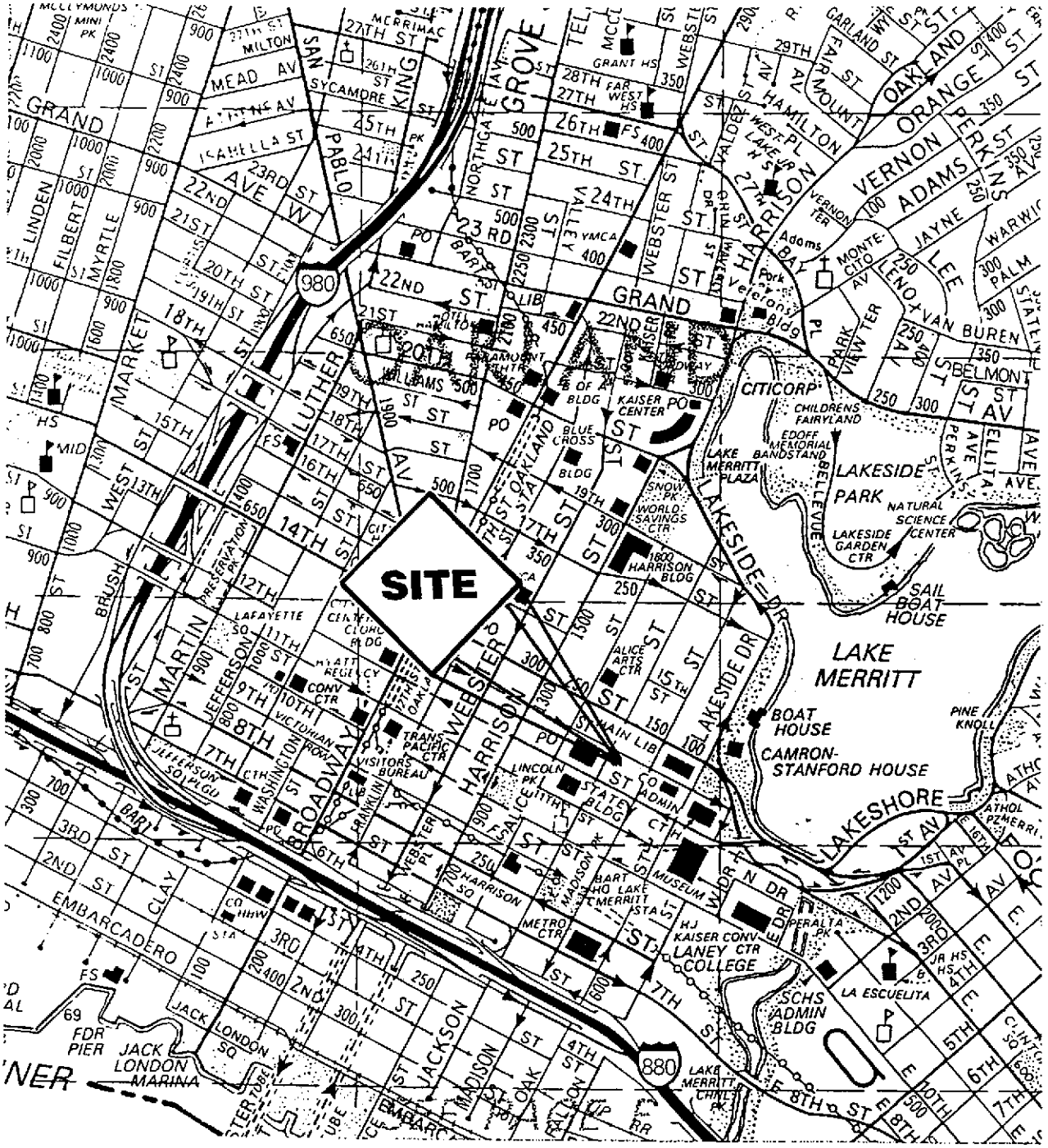
2.0 FINDINGS

2.1 Site Description

The Alameda County/Alcopark facility is located at 165 13th Street, Oakland, California as shown on Figure 1 - Site Location Map. The Alcopark facility is a county parking and vehicle maintenance facility. The northern corner of the site is used for fueling county vehicles. There are presently two underground storage tanks on the northern corner of the property, one 10,000 gallon capacity regular leaded gasoline storage tank and one 10,000 gallon capacity unleaded gasoline storage tank. There is a single pump island with two dispensers as shown on Figure 2 - Site Map. The site is approximately 33 feet above mean sea level and is about 1/3 mile due west of Lake Merritt. The ground surface around the tanks and pump island is concrete. Surface drainage on the site is northward toward 13th Street.

2.2 Geology

The Alcopark facility is located in Oakland approximately three miles due east of the San Francisco Bay. The geologic materials in the vicinity are reported to be predominantly Quaternary alluvial deposits which consist of unconsolidated clays, silts, sands, and gravels. The source of these alluvial deposits is the Berkeley Hills approximately two miles to the east.



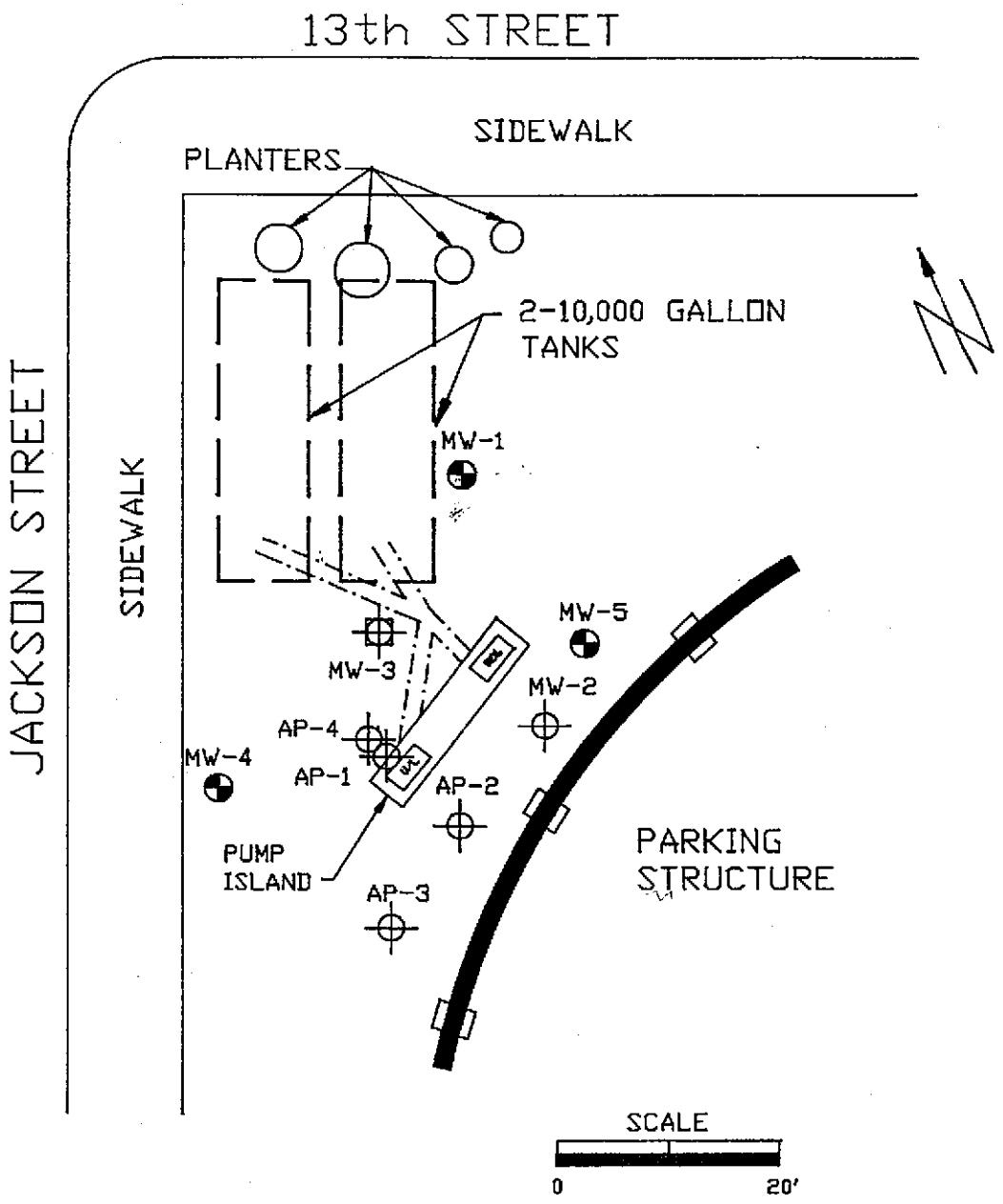
HunTer

ALAMEDA CO.
ALCOPARK

FIGURE 1
SITE LOCATION MAP

5/89

02-276-010



LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

Hunter	ALAMEDA COUNTY ALCOPARK

FIGURE 2
SITE MAP

5/89 02-276-010

2.3 Field Procedures

On March 20, 21, and 22, 1989, Wells MW-1 through MW-5, and Borings AP-2 through AP-4 were completed using a truck mounted Mobile Drill B-53 hollow-stem auger drill rig. The auger flights were five feet in length and had an outside diameter ranging from 7.5 to 10.25 inches, and an inside diameter ranging from 4.25 to 6.50 inches. A retractable plug prevented soil from entering into the auger flights during the boring process. The plug, located at the end of a 140-pound drive hammer, was inserted into and retrieved from the hollow-stem auger by a wire line. Soil samples were retrieved through the auger stem with a Modified California Sampler lined with two six inch long brass rings. After the sampler was driven to the desired depth and retrieved, the rings were removed from the sampler.

The lower ring contained the soil sample to be used for laboratory analysis and the upper ring was used to describe the soil. The soil in the upper ring was examined in the field for olfactory indications of petroleum hydrocarbons and an indication of preliminary hydrocarbon levels with a Thermo Environmental Instruments, Model 580A, Organic Vapor Meter (OVM) photoionization detector. The soil from the upper ring was described on the boring log. The grain size, color, moisture, and other pertinent Unified Soil Classification System (USCS) properties along with the OVM readings were described on field boring logs by the geologist from Hunter/Gregg. The boring logs are included in Appendix A - Boring Logs.

The ends of the lower ring were sealed with aluminum foil, capped, and secured with duct tape. The samples were then labeled and placed in an ice chest for cold storage during transportation. At the completion of field work the samples were delivered under chain-of-custody to Superior Analytical Laboratories, Inc., of San Francisco, California, for analysis.

Before the Modified California Sampler and rings were assembled and used for further sampling, they were cleaned to avoid cross-contamination of samples. The equipment was washed with a trisodium phosphate solution, rinsed with tap water, and then allowed to air dry. The augers were steam cleaned prior to arrival at the site and only clean augers were used to drill each boring.

At the completion of drilling and sampling the three soil borings were backfilled with a bentonite/cement mixture to a depth of four feet and were then sealed with four feet of concrete to the surface to prevent the infiltration of surface water.

The three ground-water wells (MW-1, MW-4, and MW-5) and one vapor well (MW-3) were installed using either two or four inch OD schedule 40 PVC well casing with 0.02 inch slotted perforations. The well annulus was filled with #3 Lonestar sand, and a bentonite and cement seal. The wells were finished at the ground surface with water tight 12 inch diameter well boxes. Specific information on well installation can be found on the respective boring logs in Appendix A.

2.4 Field Observations

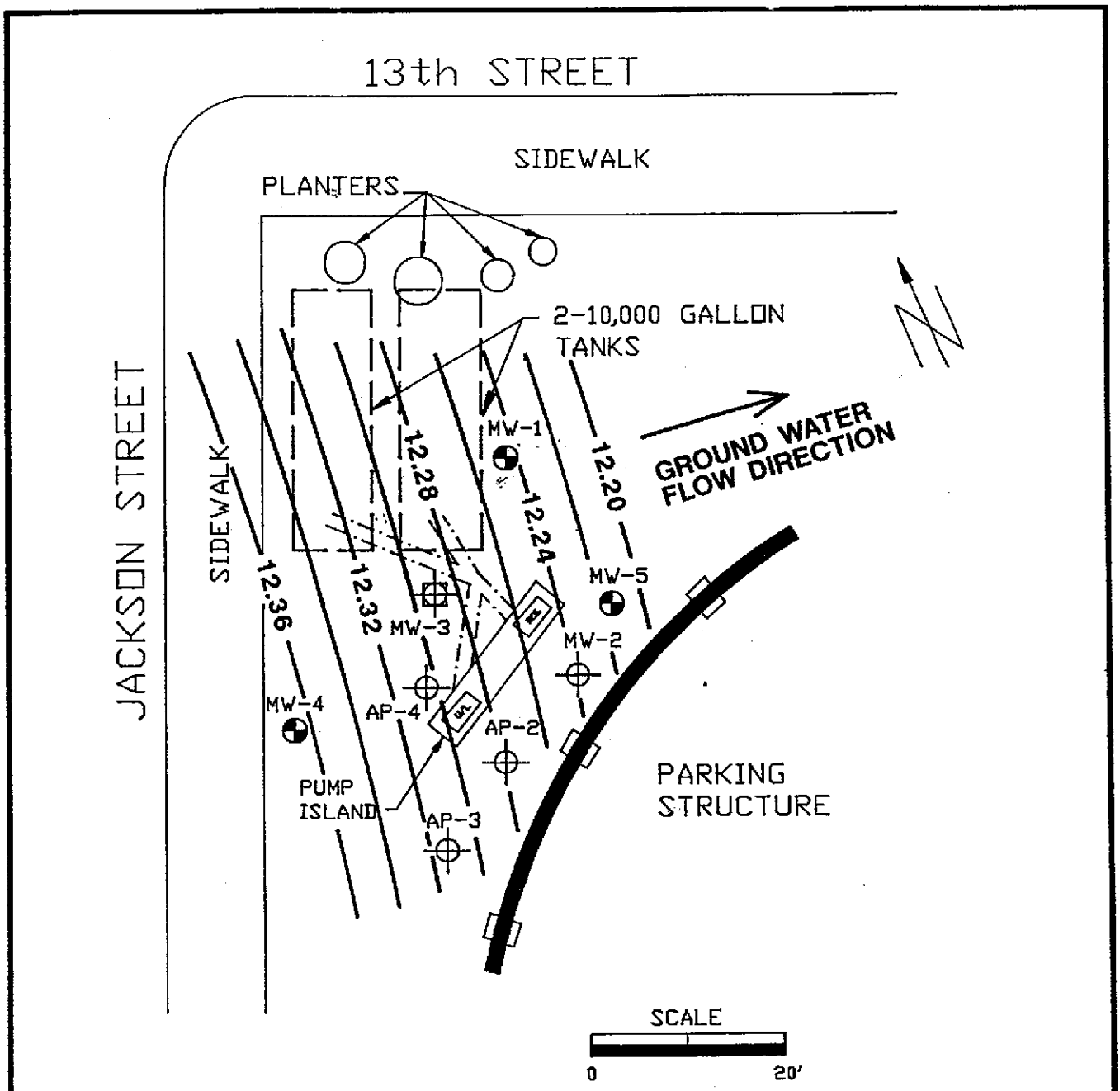
Monitoring wells MW-1 through MW-5 (Figure 2) were drilled first to assess the extent of petroleum hydrocarbons in the soil materials and to sample ground water. MW-1, MW-4, and MW-5 were drilled to a total depth of 35 feet. MW-2 was proposed as a ground-water monitoring well down gradient from the pump island, but was abandoned during drilling due to auger refusal at 15 feet. The auger refusal was due to contact with a building footing 15 feet below the surface. MW-3, the vapor well, was drilled to a total depth of 24 feet and backfilled to 16 feet for well installation. Soil borings AP-2 through AP-4 (Figure 2) were drilled to a total depth of 25 feet to assess the lateral and vertical extent of petroleum hydrocarbons in the soil materials adjacent to the pump island.

2.4.1 Soil

Materials observed during drilling indicate that the site is underlain by a relatively homogeneous, brown, moderately dense, poorly graded, fine grained sand to a depth of 35 feet. The unsaturated zone had petroleum odors and OVM readings above background levels in Wells MW-1, 3, 4, and 5; and Borings AP-2 and AP-4. The highest levels were found in Borings AP-2 and AP-4 which are the borings closest to the spill (Figure 2). In both borings the odors and OVM readings decreased downwards. MW-1 had strong petroleum odors and OVM readings in the 15 and 20 foot soil samples; however, MW-5, the down gradient well, had only a trace of odors and a moderate OVM reading in the 20 foot soil sample. The OVM readings and other field observations can be found in Appendix A.

2.4.2 Ground Water

Ground water in the vicinity is typically between 15 to 25 feet below the ground surface. Tidal influence on the ground water was not observed at the site. Ground water was found during drilling at a depth of approximately 24 feet below the ground surface, and was measured at approximately 21 feet below the ground surface after well development. The water levels in the three ground-water wells (MW-1, MW-4, and MW-5) were measured by a geologist from Hunter/Gregg on March 23, 1989, and the three wells were surveyed by Hunter/Gregg personnel on April 10, 1989. This information was used to evaluate the ground-water gradient at the site, which is to the east as shown on Figure 3 -Ground Water Gradient.



LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING
- 12.2 GROUNDWATER ELEVATION CONTOUR (3/23/89)

CONTOUR INTERVAL = 0.02 FEET

HunTon

ALAMEDA COUNTY
ALCOPARK

FIGURE 3
GROUNDWATER GRADIENT

5/89

02-276-010

2.5 Laboratory Analysis

Laboratory analyses of the soil and water samples were performed by Superior Analytical Laboratories, Inc., a State-Certified, independent testing laboratory, located in San Francisco, California. Selected soil samples from the four monitoring wells, MW-1, MW-3, MW-4, and MW-5, and all soil samples from the soil borings, AP-2, AP-3, and AP-4, were analyzed for Total Petroleum Hydrocarbons (TPH) using Environmental Protection Agency (EPA) Method 8015, and for Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) using EPA Method 8020. The results of the laboratory analyses for the Phase I Site Characterization are summarized in Table 2 - Laboratory Results On Soil Samples For Alameda County/Alcopark and Table 3 - Laboratory Results On Water Samples For Alameda County/Alcopark. Copies of the laboratory results and Chain-of-Custody manifests are included in Appendix B - Laboratory Results and Chain-of-Custody.

2.5.1 Soil

Laboratory analysis of the soil samples from the monitoring wells, MW-1, MW-3, MW-4, and MW-5, were all non-detectable for TPH at a detection limit of 10 parts per million (ppm) or milligrams per kilogram (mg/kg). The BTEX analyses on these samples all reported Benzene levels that were above the State of California - Department of Health Services (DHS) action level for Benzene in water which is 0.7 parts per billion (ppb) or micrograms per kilogram (ug/kg), except the 5 foot sample in MW-5 which was non-detectable at a detection limit of 3.3 ppb (Table 1). DHS action levels for water are used here for comparison because action levels for soil have not been established. The Toluene analysis for the monitoring wells reported levels that were all below the DHS action level of 100 ppb except the 15 foot sample in MW-1 which was 190 ppb. The Ethyl Benzene and Total Xylene levels reported for the four monitoring wells were all below the DHS action levels of 680 and 620 ppb, respectively (Table 2).

The TPH analyses for the soil borings, AP-2, AP-3, and AP-4, were all non-detectable at a detection limit of 10 ppm except the 5 foot sample in Boring AP-3 which had a TPH level of 31 ppm. Benzene levels in Boring AP-2 at 5, 10, and 15 feet were 53, 45, and 76 ppb,

TABLE 2 - LABORATORY RESULTS OF SOIL SAMPLES FOR ALAMEDA COUNTY/ALCOPARK II

SAMPLE NUMBER	DATE SAMPLED	TOTAL PETROLEUM HYDROCARBONS (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
MW-1-5'	3/20/89	ND < 10	22	18	7.7	ND < 3.0
MW-1-15'	3/20/89	ND < 10	150	190	53	250
MW-1-20'	3/20/89	ND < 10	63	23	6.5	ND < 3.0
MW-1-25'	3/20/89	ND < 10	-	-	-	-
MW-3-5'	3/20/89	ND < 10	32	25	ND < 3.0	ND < 3.0
MW-3-15'	3/20/89		12	25	ND < 3.0	27
MW-4-5'	3/21/89	ND < 10	-	-	-	-
MW-4-15'	3/21/89	ND < 10	7.5	29	ND < 3.1	ND < 3.1
MW-4-25'	3/21/89	ND < 10	-	-	-	-
MW-5-5'	3/21/89	ND < 10	ND < 3.3	34	ND < 3.3	ND < 3.3
MW-5-15'	3/21/89	ND < 10	4.9	12	ND < 3.0	ND < 3.0
MW-5-25'	3/21/89	ND < 10	-	-	-	-
AP-2-5'	3/21/89	ND < 10	53	69	9.5	150
AP-2-10'	3/21/89	ND < 10	45	95	23	110
AP-2-15'	3/21/89	ND < 10	76	100	30	130
AP-2-20'	3/21/89	ND < 10	ND < 3.0	16	ND < 3.0	ND < 3.0
AP-2-25'	3/21/89	ND < 10	-	-	-	-
AP-3-5'	3/22/89	31	ND < 3.0	31	ND < 3.0	ND < 3.0
AP-3-10'	3/22/89	ND < 10	ND < 3.0	31	4.5	ND < 3.3
AP-3-15'	3/22/89	ND < 10	ND < 3.0	50	ND < 3.0	ND < 3.0
AP-3-20'	3/22/89	ND < 10	ND < 3.0	40	ND < 3.1	ND < 3.1
AP-3-25'	3/22/89	ND < 10	-	-	-	-
AP-4-5'	3/22/89	ND < 10	38	23	3.6	ND < 3.0
AP-4-10'	3/22/89	ND < 10	5.5	44	3.2	22
AP-4-15'	3/22/89	ND < 10	3.7	10	3.3	ND < 3.1
AP-4-20'	3/22/89	ND < 10	ND < 3.0	40	ND < 3.0	ND < 3.0
AP-4-25'	3/22/89	ND < 10				

Notes: ppm - parts per million or milligrams per kilogram (mg/kg)
ppb - parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - not detected at indicated detection limit

TABLE 3 - LABORATORY RESULTS OF WATER SAMPLES FOR ALAMEDA COUNTY/ALCOPARK

SAMPLE NUMBER	DATE SAMPLED	TOTAL PETROLEUM HYDROCARBONS (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
MW-1-W	3/23/89	ND < 1	21	3.9	0.4	4.5
MW-4-W	3/22/89	ND < 1	13	1.4	1.0	ND < 0.3
MW-5-W	3/23/89	ND < 1	ND < 0.3	ND < 0.3	ND < 0.3	ND < 0.3

Notes: ppm - parts per million or milligrams per kilogram (mg/kg)
ppb - parts per billion or micrograms per kilogram (ug/kg)
ND < 10 - not detected at indicated detection limit

respectively which are all above the DHS action level for Benzene of 0.7 ppb. The 20 foot sample in AP-2 was non-detectable for Benzene at a detection limit of 3 ppb. Toluene was below the DHS action level for all the samples except the 15 foot sample in AP-2 which was 100 ppb. The Ethyl Benzene and Total Xylene levels in all the soil borings were below the DHS action levels of 680 and 620 ppb, respectively (Table 2).

2.5.2 Ground Water

The water samples from the three ground-water monitoring wells, MW-1, MW-4, and MW-5, showed non-detectable TPH levels. Benzene was reported at 21 ppb in MW-1, 13 ppb in MW-4, and was non-detectable at a detection limit of 0.3 ppb in MW-5. Toluene, Ethyl Benzene, and Total Xylenes in the water samples from all three ground-water wells were reported to be below the respective DHS action levels listed above. The results of the laboratory analyses on the ground-water samples are summarized in Table 3.

3.0 CONCLUSIONS

Geologic materials beneath the site consist of relatively homogeneous, moderately dense, fine-grained sand with a thin (approximately three foot thick) clay layer at a depth of 26 feet in the area of Monitoring Wells MW-1 and MW-5 (Figure 2). The ground-water surface was measured in the monitoring wells at approximately 21 feet below the ground surface. No free phase product was found in any of the ground-water wells. The local ground-water gradient was determined to be in an easterly direction based on well surveying conducted at the site (Figure 3).

The Total Petroleum Hydrocarbons (TPH) analyses on soil and water samples from the soil borings and monitoring wells were all non-detectable except for one sample from Boring AP-3 (31 ppm), which demonstrates that there is not a large quantity of gasoline in the soil and groundwater at the site.

In the 5, 10, and 15 foot samples from Borings AP-2 and AP-4, Benzene ranged from 3.7 to 76 parts per billion (ppb), Toluene ranged from 10 to 100 ppb, Ethyl Benzene ranged from non-detectable to 30 ppb, and Total Xylenes ranged from non-detectable to 150 ppb. The soil samples at 20 feet in AP-2 and AP-4 were non-detectable for Benzene, Ethyl Benzene, and Total Xylenes, and had low concentrations of Toluene, (16 and 40 ppb, respectively) delineating the vertical extent of BTEX in the area of AP-2 and AP-4 at approximately 20 feet below the surface.

The low to non-detectable BTEX results on soil samples from AP-3 helps to delineate the lateral extent of gasoline in the soil below the pump island. Based on field observations and laboratory results from the soil borings and the soil samples from the monitoring wells there appears to be an area of soil with low gasoline concentrations approximately 20 feet deep and 10 to 15 feet in radius around Boring AP-4 (Figure 2).

Due to the apparently localized hydrocarbon concentrations in the soil around Monitoring Well MW-1 and the proximity of MW-1 to the underground tank field, the hydrocarbons

in the soil are probably due to overspill problems associated with the underground storage tanks.

The TPH analyses on the water samples from the three ground-water wells were all non-detectable at a detection limit of 10 ppm. The Benzene levels in water samples from MW-1 and MW-4 were 21 and 13 ppb, respectively; which are both above the DHS action level of 0.7 ppb for Benzene. The Toluene, Ethyl Benzene, and Total Xylene levels in ground water from MW-1 and MW-4 were all well below DHS action levels. The BTEX results on the water sample for MW-5, the down gradient well, were all non-detectable at a detection limit of 0.3 ppb.

The BTEX levels in the water samples from MW-4, the up gradient well, and MW-1 could also be attributed to an underground storage tank across the street that was closed, by cementing in place, in March of 1989. The closure of the tank was witnessed by the Hunter/Gregg geologist on site in March, 1989.

The ground-water well down-gradient from the previous piping leak, MW-5, showed non-detectable laboratory results for TPH and BTEX in the water sample. These non-detectable results show that ground water in the area of MW-5 has not been adversely impacted at this time due to the leak below the unleaded gasoline dispenser.

4.0 RECOMMENDATIONS

Based on the findings of the Phase I Site Characterization, Hunter/Gregg recommends that the three ground-water wells, MW-1, MW-4, and MW-5, be sampled on a quarterly basis with quarterly reports submitted to the Alameda County Health Department to confirm Total Petroleum Hydrocarbon (TPH) and Benzene, Toluene, Ethyl Benzene, and Total Xylene (BTEX) levels in ground water beneath the site and to trace any possible migration of dissolved petroleum constituents into the ground water.

Hunter/Gregg does not believe the level of hydrocarbons in the unsaturated zone warrants further action. Hunter/Gregg also recommends that overspill protection be installed for the three existing underground storage tanks to minimize the possibility of introducing hydrocarbons into soil and ground water in the area of the underground tanks.

APPENDIX A
BORING LOGS

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LOG OF BORING NO. MW-1

PROJECT NO: 02-276-010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. -
SITE LOCATION: 165 13th St., Oakland
METHOD: Hollow-stem auger, Mobile Drill B-53
BORING LOCATION: 5' East of pump island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at Surface	
2					SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, no odor	
4		30	47	RING @ 5'	SP	As Above	
6							
8							
10		38	ND	RING @ 10'	SP	As Above, moist, trace of odor	
12							
14		40	300	RING @ 15'	SP	SAND, brown, fine-grained, medium dense, moist, strong odor	
16							
18							
20		50+	260	RING @ 20'	SP	SAND, brown, medium-grained, moist, slight odor	
22							
24						▽ Water found at 23'	

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LOG OF BORING NO. MW-1 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		–	–	RING @ 25'	SP	As above, silty, no odor	
26					CL	CLAY, light-brown, sandy, silty, firm, moist, no odor	
28							
30					SP	SAND, brown, gravelly, fine to medium-grained, very dense, moist, no odor	
32							
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-14', 0.02" slotted 4" PVC; 14'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

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LOG OF BORING NO. MW–2 PAGE 1 of 1

PROJECT NO: 02–276–010 DATE: 3/20/89
CLIENT: Alameda County REF. ELEV. —
SITE LOCATION: 165 13th St., Oakland METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 6' S.E. of pump island HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham, R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at surface	
2		22	ND	RING @ 5'	SP	SAND, silty, clayey, fine–grained, medium dense, slightly moist, no odor	
4							
6							
8							
10		17	ND	RING @ 10'	SP	As above	
12							
14		36	43	RING @ 15'	SP	As above, dark brown	
16						TOTAL DEPTH – 15.5'	
18							
20							
22							
24							

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LOG OF BORING NO. MW–3 PAGE 1 of 1

PROJECT NO: 02–276–010 DATE: 3/20/89
CLIENT: Alameda County REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' N.W. of pump island HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham, R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						8" Concrete at surface	
2							
4		33	16	RING @ 5'	SP	SAND, brown, silty, fine–grained, medium dense, slighty moist, no odor	
6							
8							
10		22	35	RING @ 10'	SP	As above	
12							
14		50+	160	RING @ 15'	SP	As above, slight odor	
16						Well Construction: 15'-5', 0.02" slotted 2" PVC; 5'-0', blank 2" PVC. Holeplug 24'-22'; 3/8" bentonite pellets 22'-21'; holeplug 21'-16'; #3 Lonestar sand 16'-4'; 3/8" bentonite pellets 4'-3'; concrete 3'-0'. 12" water-proof well box.	
18							
20			ND	RING @ 20'		As above	
22							
24						▽ Water found at 23' TOTAL DEPTH – 24'	

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LOG OF BORING NO. MW–4 PAGE 1 of 2

PROJECT NO: 02–276–010
CLIENT: Alameda County
SITE LOCATION: 02–276–010
BORING LOCATION: 20' West of pump island
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G. #3851

DATE: 3/21/89
REF. ELEV. –
METHOD: Hollow–stem Auger, Mobile Drill B–53
HOLE DIA: 8.25"

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						4" Concrete at Surface	
2							
4		4	ND	RING @ 5'	SP	SAND, brown, some silt, fine-grained, loose, slighty moist, no odor	
6							
8							
10		25	ND	RING @ 10'	SP	As above, medium dense	
12							
14		35	133	RING @ 15'	SP	As above, ,slight odor	
16							
18							
20		50+	15	RING @ 20'	SP	SAND, brown, fine-grained, dense, moist, no odor	
22						▽ Water found at 23'	
24							

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LOG OF BORING NO. MW–4 PAGE 2 of 2

PROJECT NO: 02–276–010 DATE: 3/21/89
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		–	ND	RING @ 25'	SP	As above, saturated	
26							
28							
30							
32							
34							
36						TOTAL DEPTH–35'	

Well Construction: 35'-15', 0.02" slotted 2" PVC; 15'-0', blank 2" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11'; holeplug 11'-4'; concrete 4'-0'. 12" water-proof well box.

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LOG OF BORING NO. MW–5

PROJECT NO: 02–276–010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. –
SITE LOCATION: 165 13th St.,Oakland
METHOD: Hollow–stem auger, Mobile Drill B–53
BORING LOCATION: 5' East of pump Island
HOLE DIA: 10.25"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J.Bryson
SUPERVISOR: S.Wickham R.G #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION
0						6" Concrete at Surface
4		18	ND	RING @ 5'	SP	SAND, light–brown, silty, fine–grained, medium dense, slightly moist, no odor
10		22	ND	RING @ 10'	SP	As above
14		46	10	RING @ 15'	SP	SAND, gray–brown, fine–grained, medium dense, slightly moist, no odor
20		50+	110	RING @ 20'	SP	As above, trace of odor
24						▽ Water found at 24'

WELL CONSTRUCTION

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LOG OF BORING NO. MW-5 PAGE 2 of 2

PROJECT NO: DATE:
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:
BORING LOCATION: HOLE DIA:
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
24		-	-	RING @ 25'	SP	▽ RING @ 25'	
26							
28					CL	CLAY, light-brown, sandy, silty, fine-grained, medium dense, saturated	
30							
32					SP	SAND, brown, silty, fine-grained, medium dense, saturated	
34							
36						TOTAL DEPTH-35'	

Well Construction: 35'-15', 0.02" slotted 4" PVC; 15'-0', blank 4" PVC. #3 Lonestar sand 35'-13'; 3/8" bentonite pellets 13'-11.5'; holeplug 11.5'-4'; concrete 4'-0'. 12" water-proof well box.

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LOG OF BORING NO. AP-2

PAGE 1 of 1

PROJECT NO: 02-276-010
DATE: 3/21/89
CLIENT: Alameda County
REF. ELEV. –
SITE LOCATION: 165 13th St., Oakland
METHOD: Hollow-stem auger, Mobile Drill B-53
BORING LOCATION: 8' S.E. of pump island
HOLE DIA: 7.5"
DRILLER: Gregg Drilling and Testing
LOGGED BY: J. Bryson
SUPERVISOR: S. Wickham R.G. #3851

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						6" Concrete at Surface	
4		15	563	RING @ 5'	SP	SAND, gray-brown, fine-grained, medium dense, slightly moist, slight odor	
10		23	27	RING @ 10'	SP	SAND, brown, medium dense, silty, fine-grained slightly moist, no odor	
14		39	92	RING @ 15'	SP	SAND, gray, fine-grained, medium dense, slighty moist, no odor	
20		50+	ND	RING @ 20'	SP	SAND, brown, fine-grained, dense, moist, no odor	
24		50+	ND	RING @ 25'	SP	▽ As above, saturated Water found at 24' TOTAL DEPTH-25'	

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LOG OF BORING NO. AP-3 PAGE 1 of 1

PROJECT NO: 02-276-010 DATE: 3/22/89
CLIENT: REF. ELEV.
SITE LOCATION: METHOD:

BORING LOCATION: 10' South of pump island HOLE DIA: 7.5"
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						6" Concrete at Surface	
2							
4		23	7	RING @ 5'	SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, no odor	
6							
8							
10		28	ND	RING @ 10'	SP	As above, trace of odor	
12							
14							
16		45	100	RING @ 15'	SP	As above, no silt	
18							
20		50+	6	RING @ 20'	SP	SAND, brown, fine-grained, medium dense, wet, no odor	
22							
24		50+	ND	RING @ 25'	SP	▽ As above, saturated	

Water found at 24'
TOTAL DEPTH-25'

HUNTER
ENVIRONMENTAL SERVICES, INC.
597 Center Avenue, Suite 350
Martinez, California 94553
415-372-3637

LOG OF BORING NO. AP-4

PAGE 1 of 1

PROJECT NO: 02-276-010
DATE: 3/22/89
CLIENT:
REF. ELEV.
SITE LOCATION:
METHOD:
BORING LOCATION: 3' West of pump island
HOLE DIA: 7.5"
DRILLER:
LOGGED BY:
SUPERVISOR:

DEPTH (FT)	GRAPHIC LOG	BLOW/FT	VAPOR (PPM)	SAMPLE TYPE AND DEPTH	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	WELL CONSTRUCTION
0						OPEN CUT IN 4" THICK CONCRETE (3'X3')	
2							
4		29	550	RING @ 5'	SP	SAND, brown, silty, fine-grained, medium dense, slightly moist, slight odor	
6							
8							
10		26	25	RING @ 10'	SP	SAND, brown, fine-grained, medium dense, slightly moist, slight odor	
12							
14		41	150	RING @ 15'	SP	As above	
16							
18							
20		50+	150	RING @ 20'	SP	SAND, gray-brown, fine-grained, moist, medium dense, slight odor	
22							
24		39	5	RING @ 25'	SP	Water found at 24' TOTAL DEPTH-25' ▽ SAND, brown, fine-grained, medium dense, saturated, no odor	

APPENDIX B
LABORATORY RESULTS AND CHAIN OF CUSTODY

RECEIVED APR 12 1989

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
CLIENT ID: Alcopark II

DATE RECEIVED: 3/24/89
DATE REPORTED: 3/31/89
JOB NO.: 02-276-010

ANALYSIS FOR VOLATILE PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

	Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
1	MW-1-5' 3/20/89 8:40	ND <10	ND <10
3	MW-1-15' 3/20/89 8:45	ND <10	ND <10
4	MW-1-20' 3/20/89 9:10	ND <10	ND <10
5	MW-1-25'; 3/20/89; 9:30;	ND <10	ND <10
9	MW-3-5 ' 3/20/89 13:30	ND <10	ND <10
11	MW-3-15' 3/20/89 13:40	ND <10	ND <10
13	MW-4- 5'; 3/21/89; 8:30;	ND <10	ND <10
17	MW-4-25'; 3/21/89; 9:05;	ND <10	ND <10
15	MW-4-15' 3/21/89 8:50	ND <10	ND <10
18	MW-5-5' 3/21/89 10:40	ND <10	ND <10
20	MW-5-15' 3/21/89 11:00	ND <10	ND <10
22	MW-5-25'; 3/21/89;11:15;	ND <10	ND <10
23	AP-2-5' 3/21/89 14:30	ND <10	ND <10
24	AP-2-10' 3/21/89 14:40	ND <10	ND <10
25	AP-2-15' 3/21/89 14:55	ND <10	ND <10
26	AP-2-20' 3/21/89 14:55	ND <10	ND <10
27	AP-2-25'; 3/21/89;15:00;	ND <10	ND <10
28	AP-3-5' 3/22/89 7:45	31	ND <10
29	AP-3-10' 3/22/89 8:00	ND <10	ND <10

mg/kg = part per million (ppm)

Minimum Detection Limit for Gasoline and Diesel in Soil: 10mg/kg.

QA/QC SUMMARY:
Daily Standards run at 200 mg/L; RPD Gasoline= 2: Diesel =7.
MS/MSD: Average Gasoline Recovery = 79%: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter / Gregg
CLIENT JOB NO.: 02-276-010

DATE RECEIVED: 03/24/89
DATE REPORTED: 03/31/89

ANALYSIS FOR TOTAL PERTROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
30	AP-3-15' 3/22/89 8:05	ND <10	ND <10
31	AP-2-20' 3/22/89 8:10	ND <10	ND <10
32	AP-3-25'; 3/22/89; 8:25;	ND <10	ND <10
33	AP-4-5' 3/22/89 8:25	ND <10	ND <10
34	AP-4-10' 3/22/89 8:30	ND <10	ND <10
35	AP-4-15' 3/22/89 8:40	ND <10	ND <10
37	AP-4-25'; 3/22/89; 9:00;	ND <10	ND <10
36	AP-4-20' 3/22/89 8:50	ND <10	ND <10

Minimum Detection Limit for Gasoline and Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 14
RPD Diesel = 5
MS/MSD Average Recovery = 79%: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
CLIENT ID: Alcopark II

DATE RECEIVED: 3/24/89
DATE REPORTED: 3/31/89
JOB NO.: 02-276-010

ANALYSIS FOR VOLATILE PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

	Sample Identification	Concentration (mg/L) Gasoline Range	Diesel Range
38	MW-1-W 3/23/89 15:00	ND <1	ND <1
40	MW-4-W 3/22/89 15:00	ND <1	ND <1
41	MW-5-W 3/23/89 15:00	ND <1	ND <1

mg/L = part per million (ppm)

Minimum Detection limit for Gasoline in Water: 1 mg/L.

QA/QC SUMMARY:
Daily Standard run at 200 mg/L: RPD Gasoline= 3.
MS/MSD: Average Recovery = 79%.: Duplicate RPD = 12.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
JOB NO.: 02-276-010

DATE SAMPLED:3/20-3/23/89
DATE ANALYZED:3/24-3/31/89
DATE REPORTED:3/31/89

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

		Concentration (ug/kg)			
LAB#	CLIENT ID	Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1-5' 3/20	22	18	7.7	ND<3.0
3	MW-1-15' 3/20	150	190	53	250
4	MW-1-20' 3/20	63	23	6.5	ND<3.0
9	MW-3-5' 3/20	32	25	ND<3.0	ND<3.0
11	MW-3-15' 3/20	12	25	ND<3.0	27
15	MW-4-15' 3/21	7.5	29	ND<3.1	ND<3.1
18	MW-5-5' 3/21	ND<3.3	34	ND<3.3	ND<3.3
20	MW-5-15' 3/21	4.9	12	ND<3.0	ND<3.0
23	AP-2-5' 3/21	53	69	9.5	150
24	AP-2-10' 2/21	45	95	23	110
25	AP-2-15' 3/21	76	100	30	130
26	AP-2-20' 3/21	ND<3.0	16	ND<3.0	ND<3.0
28	AP-3-5' 3/22	ND<3.0	31	ND<3.0	ND<3.0
29	AP-3-10' 3/22	ND<3.0	31	4.5	ND<3.3
30	AP-3-15' 3/22	ND<3.0	50	ND<3.0	ND<3.0
31	AP-3-20' 3/22	ND<3.0	40	ND<3.1	ND<3.1
33	AP-4-5' 3/22	38	23	3.6	ND<3.0
34	AP-4-10' 3/22	5.5	44	3.2	22
35	AP-4-15' 3/22	3.7	10	3.3	ND<3.1
36	AP-4-20' 3/22	ND<3.0	40	ND<3.0	ND<3.0

ug/kg = part per billion (ppb)
Mimimum Detection Limit in Soil: 3ug/kg.

QA/QC SUMMARY:
Daily Standard run at 20 ug/kg: RPD < 15.
MS/MSD: Average Recovery = 71%: Duplicate RPD <5.
Average Surrogate Recovery = 90%.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

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1385 FAIRFAX ST., STE D • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 50725
CLIENT: Hunter Environmental
JOB NO.: 02-276-010

DATE SAMPLED: 3/20-3/23/89
DATE ANALYZED: 3/30-3/31/89
DATE REPORTED: 3/31/89

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

Concentration (ug/L)

LAB#	CLIENT ID	Benzene	Toluene	Ethyl Benzene	Xylenes
38	MW-1-W 3/23/89	21	3.9	0.4	4.5
40	MW-4-W 3/22/89	13	1.4	1.0	ND<0.3
41	MW-5-W 3/23/89	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L = part per billion (ppb)

Minimum Detection Limit in Water: 0.3 ug/L.

QA/QC SUMMARY:
Daily Standard run at 20 ug/L: RPD < 15.
MS/MSD: Average Recovery = 71% Duplicate RPD <5.
Average Surrogate Recovery = 102%.

Les Partridge, Ph.D.
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

HUNTER
ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 1 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave #350
MARTINEZ, CA. 94553
PROJECT Alameda Co./Alcopark II 02-276-00

SAMPLER'S NAME (print) JAMES P. Bryson
(signature) James P. Bryson

sample #	date	time	location	PARAMETERS 1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	OTHER						TOTAL	OBSERVATION/COMMENTS
MW-1-5'	3/20/89	8:40		X	X															1	
MW-1-10'		8:45				} HOLD SAMPLE														1	* - indicates that ~~any~~ if TPH
MW-1-15'		8:50		X	X															1	analysis for that sample is
MW-1-20'		9:10		X	X															1	greater than 100 ppm, analyze
MW-1-25'		9:30		X	*															1	sample for BTEX.
MW-2-5'		11:45				} HOLD SAMPLES														1	
MW-2-10'		12:00																		1	
MW-2-15'		12:10																		1	
MW-3-5'		13:30		X	X															1	
MW-3-10'		13:40				} HOLD SAMPLE														1	
MW-3-15'		13:50		X	X															1	
MW-3-20'	↓	14:30				} HOLD SAMPLE														1	
MW-4-5'	3/21/89	8:30		X	*															1	
MW-4-10'	↓	8:45				} HOLD SAMPLE														1	

PARAMETER KEY: 10-TOC
1-CAM METALS (18) 0-
2-PR. POLLUTANT METALS (13 0-
3-GENERAL MINERALS 0-
4-OIL & GREASE 0-
5-PETROLEUM HYDROCARBONS 0-
6-BASE/NEU/ACIDS (ORGANICS 0-
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. James P. Bryson	1. [illegible]	3/24	1000
2. [illegible]	2. [illegible]		
3. [illegible]	3.		
4.	4.		

TOTAL NUMBER OF CONTAINERS THIS SHEET: 14

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

DISPATCHED BY: (signature)	date	time	RECEIVED FOR LAB BY: (sig)	date	time
			[illegible]	3/24	1000

HUNTER ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 2 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave. #350
Martinez, CA. 94553
PROJECT Alameda Co. / Mecpuk II 02-276-010

SAMPLER'S NAME (print) JAMES P. BYRSON
(signature) James P. Byrson

	sample #	date	time	location	1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	OTHER	TOTALS
5	MW-4-15'	3/21/89	8:50		X	X										1
6	MW-4-20'		9:00				} HOLD SAMPLE									1
7	MW-4-25'		9:05		X	*										1
8	MW-5-5'		10:40		X	X										1
9	MW-5-10'		10:50				} HOLD SAMPLE									1
10	MW-5-15'		11:00		X	X										1
11	MW-5-20'		11:10				} HOLD SAMPLE									1
12	MW-5-25'		11:15		X	*										1
13	AP-2-5'		14:30		X	X										1
14	AP-2-10'		14:40		X	X										1
15	AP-2-15'		14:50		X	X										1
16	AP-2-20'		14:55		X	X										1
17	AP-2-25'		15:00		X	*										1

PARAMETER KEY: 10-TOC
1-CAM METALS (18) 0-
2-PR. POLLUTANT METALS (13 0-
3-GENERAL MINERALS 0-
4-OIL & GREASE 0-
5-PETROLEUM HYDROCARBONS 0-
6-BASE/NEU/ACIDS (ORGANICS 0-
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)

OBSERVATION/COMMENTS

* - indicates that if TPH analysis for that sample is greater than 100 ppm, analyze sample for BTEX.

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. James P. Byrson	1. John Haas	3/24	1000
2. John Haas	2.		
3.	3.		
4.	4.		

TOTAL NUMBER OF CONTAINERS THIS SHEET: 13

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

DISPATCHED BY: (signature)	date	time	RECEIVED FOR LAB BY: (sig)	date	time
			[illegible]	3/24	14:00

Hunter ENVIRONMENTAL SERVICES, INC.

Northern California Office (415) 372-3637

CHAIN OF CUSTODY RECORD

DATE 3/24/89 PAGE 3 OF 3

NAME Hunter/Gregg, Inc.
ADDRESS 597 Center Ave, Suite 350
Martinez, CA. 94553
PROJECT Alameda Co./Alaspark II 02-276-010
SAMPLER'S NAME (print) James P. Bryson
(signature) James P. Bryson

sample #	date	time	location	1 EPA 8015 (TPH)	2 EPA 8020 (BTEX)	3	4	5	6	7	8	9	10	O	O	O	O	O	O	TOTAL	OBSERVATION/COMMENTS
HP-3-5'	3/22/89	7:45		X	X															1	* - indicates that if TPH
HP-3-10'		8:00		X	X															1	analysis for that sample is
HP-3-15'		8:05		X	X														*	1	greater than 100 ppm,
HP-3-20'		8:10		X	X															1	analyze sample for BTEX.
HP-3-25'		8:10		X	*															1	
HP-4-5'		8:25		X	X															1	
HP-4-10'		8:30		X	X															1	
HP-4-15'		8:40		X	X															1	
HP-4-20'		8:50		X	X															1	
HP-4-25'	↓	9:00		X	*															1	
HW-1-W	3/23/89	15:00		X	X															2	
HW-3-W	3/20/89	14:30				} HOLD SAMPLE														2	
HW-4-W	3/22/89	15:00		X	X															2	
HW-5-W	3/23/89	15:00		X	X															2	

PARAMETER KEY: 10-TOC
1-CAM METALS (18) 0-
2-PR. POLLUTANT METALS (13 0-
3-GENERAL MINERALS 0-
4-OIL & GREASE 0-
5-PETROLEUM HYDROCARBONS 0-
6-BASE/NEU/ACIDS (ORGANICS 0-
7-PESTICIDES
8-VOLATILE ORGANICS (601/602)
9-VOLATILE ORGANICS (624)

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
James P. Bryson	1. John Haas	3/24	1000
John Haas	2.		
	3.		
	4.		

DISPATCHED BY: (signature) date time RECEIVED FOR LAB BY: (sig) date 3/31 time 14:00

TOTAL NUMBER OF CONTAINERS THIS SHEET: 18

METHOD OF SHIPMENT:

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS:

91-7001

General Services Agency

Darlene Smith, Director

BUILDING MAINTENANCE DEPARTMENT
4400 MacArthur Boulevard
Oakland, California 94619
Telephone (510) 535-6200
FAX (510) 535-6245

Hilton T. Hunt, Deputy Director
GSA-Building Maintenance Department

December 17, 1993

Mr. Thomas F. Peacock
Supervising Hazardous Materials Specialist
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 350
Oakland, CA 94621

Subject: **CURRENT STATUS AND FUTURE COMPLIANCE REQUIREMENTS, ALCOPARK FACILITY, 165 13TH STREET, OAKLAND, CALIFORNIA**

Dear Tom:

First of all, thank you for meeting with me on November 22, 1993. I appreciate your continued cooperation and suggestions. I feel that our demonstrated team approach will help both organizations to reach our common objectives in the most efficient manner. Below is a summary of our November 22, 1993 discussion and our December 15, 1993 telephone conversation:

I. **Waste Oil Underground Storage Tank (UST) Closure Request** - It is the policy of San Francisco Regional Water Quality Control Board that **only sites are closed** not individual UST's or wells. Therefore, the regulators are considering Alcopark facility as one site. Our October 15, 1993 request for closure of waste oil monitoring well MW-6 can not be granted. Since the County has demonstrated four consecutive quarters that the groundwater samples taken from MW-6 have not exceeded Primary Maximum Contaminated Levels for drinking water, Environmental Health is in agreement that the County can suspend monitoring of well MW-6 and can lock up this well. The County will suspend monitoring and plans no further action.

II. **Benzene Contamination at Corner of 13th & Jackson** - After reviewing the attached plots of the eight quarters of observed benzene groundwater levels for wells MW-1, MW-5 and MW-4, the corresponding observed direction of the groundwater gradient, and the site soils characterization study that was done, the following conclusions were reached:

A. Since there is no correlation between the observed groundwater TPH-Gasoline and Benzene levels, the observed contamination is due to "old" gasoline. Since the operational tanks are being continuously monitored for leaks and none have been reported, the contamination is not coming from these tanks or from current operation at the active Alcopark gasoline filling station. Since the observed Benzene Concentration levels in groundwater shows a pattern that strongly suggests, when tied into the site characterization study done for the corner of 12th and Jackson, that observed Benzene groundwater contamination is coming upgradient of the Alcopark facility. Therefore, Environmental Health, at this time, will not require the County to install additional monitoring wells or soil borings.

The County requested that the groundwater monitoring of MW-1, MW-4 and MW-5 be suspended. For the time being, Environmental Health will not require quarterly monitoring of the three wells MW-1, MW-4 and MW-5.

B. From a comprehensive search of the records by Environmental Health, the most likely groundwater contamination source is the State of California Office Building located across the street and upgradient of Alcopark. There are currently three UST's located on the site that have been abandoned since 1989. Since they are abandoned, there is no environmental monitoring to confirm or identify that groundwater contamination is coming from this site. Environmental Health is actively pursuing the State of California to come into compliance with these tanks or remove them.

If the contamination source can be discovered, the County can sue the guilty party and recover our clean-up cost associated with identifying this problem. These recoverable costs are as follows:

Groundwater Monitoring @ 13th & Jackson	$20,250
Removal of Waste Oil Tank & Monitoring	$30,561
Site Assessment - 12th & Jackson	$ 9,010
Site Characterization - 13th & Jackson	$20,645
Future Groundwater Monitoring Expense	$14,000
TOTAL RECOVERABLE COSTS	**$94,466**

Thus, the County appreciates Environmental Health taking the lead to discover the source of the Benzene groundwater contamination.

III. **UST Removal 12th and Jackson** - After reviewing the April 19, 1993 Site Characterization Report for the two UST's located at the corner of 12th and Jackson, the following conclusions were reached:

A. This report again shows that the concentration of TPH-Gasoline in the soil samples is below action level but that the upgradient groundwater samples show concentrations of Benzene exceeding MCL's whereas the downgradient samples are below MCL levels. These results are consistent with the groundwater results at the opposite corner, 13th and Jackson as discussed above and again support the case that this groundwater contamination is coming from a source upgradient of Alcopark.

B. The County will explore the option to close these two UST's in place.

C. Environmental Health will not require the County to do additional soil borings or install groundwater monitoring wells.

D. Since closure of these two UST's is part of an on going site closure, the County only needs to submit closure plans. No new permits are required; thus saving the County $900.

I would appreciate a written confirmation for our records that the above represents our understanding of County's future actions to be taken at Alcopark. Therefore, I would appreciate your prompt acknowledgement by signing both original copies of this letter. Please keep one for your records and return one to me. Again, thank you for your continued cooperation and assistance.

Sincerely,

Andy

Andrew B. Garcia
Environmental Project Manager

cc: Mr. Jim de Vos - attachment

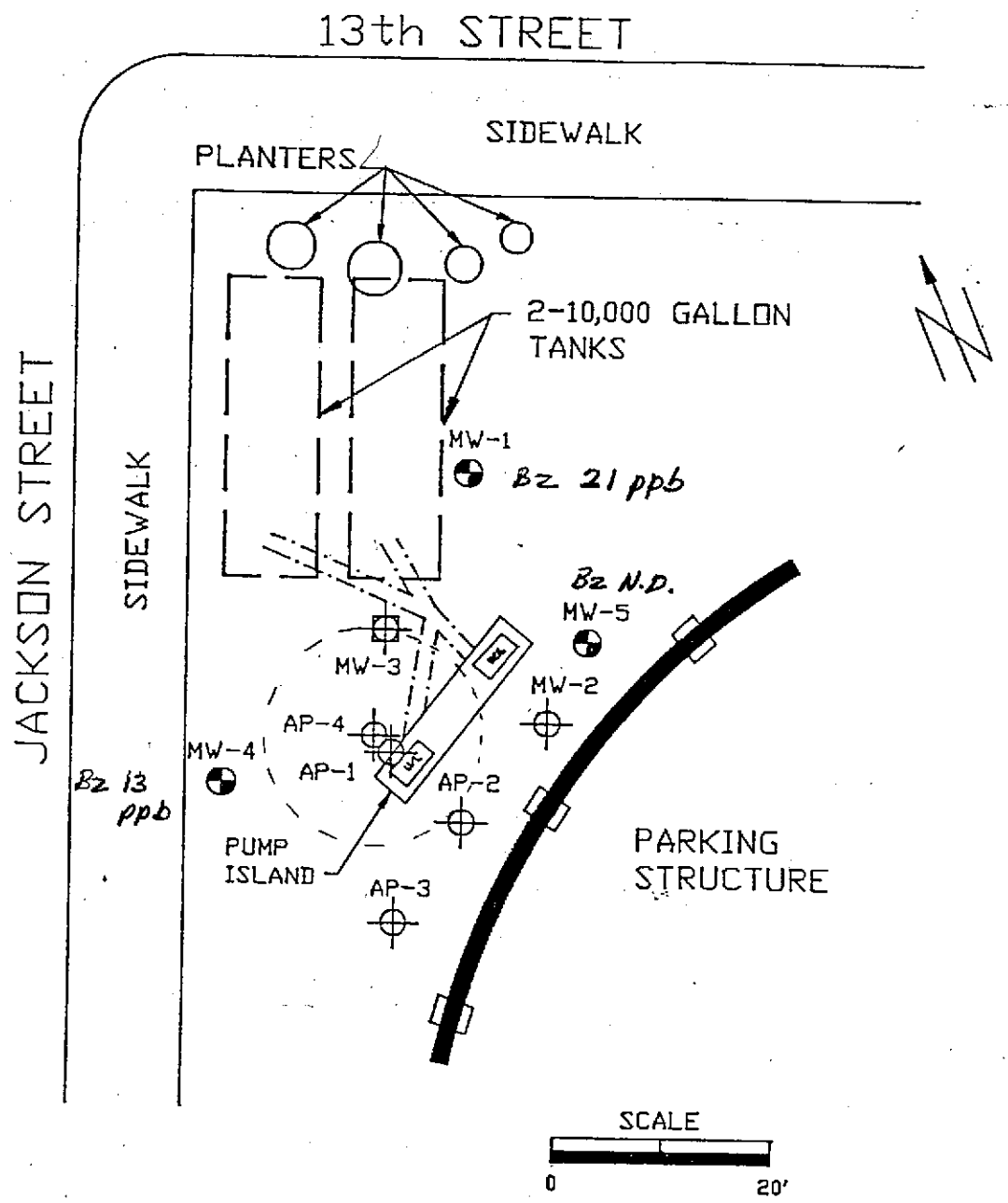
Agree and Concur with the above.

12-23-93
Date

Thomas Peacock
Thomas Peacock

Enlosure

ABG:abg:C:\WP51\HZM00331
917001, 917002, 917007-8, 927025 Bldg. #1921



LEGEND

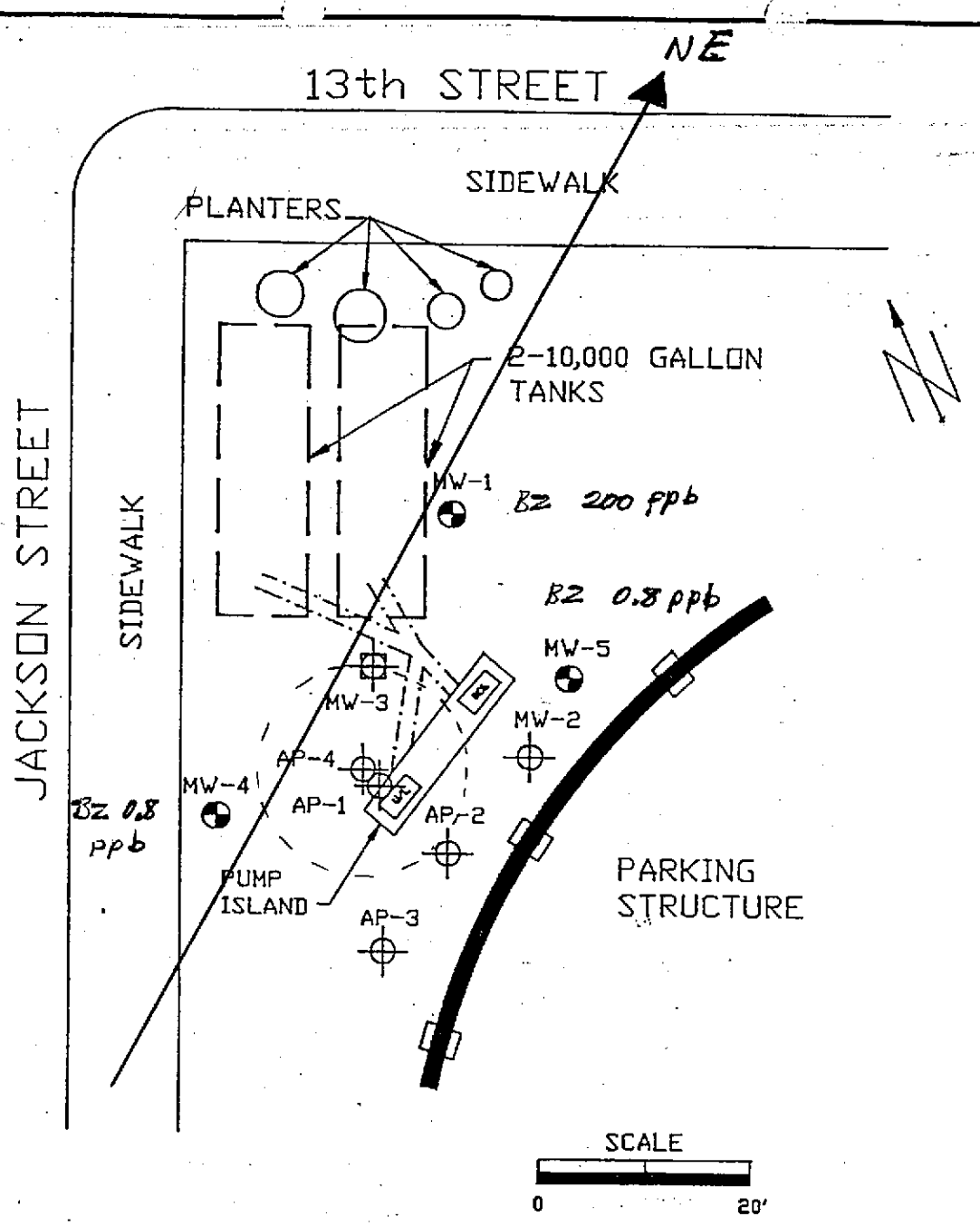
- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

MARCH 1989

HUNTER | ALAMEDA COUNTY ALCOPARK

FIGURE 2
SITE MAP

5/89 02-276-010

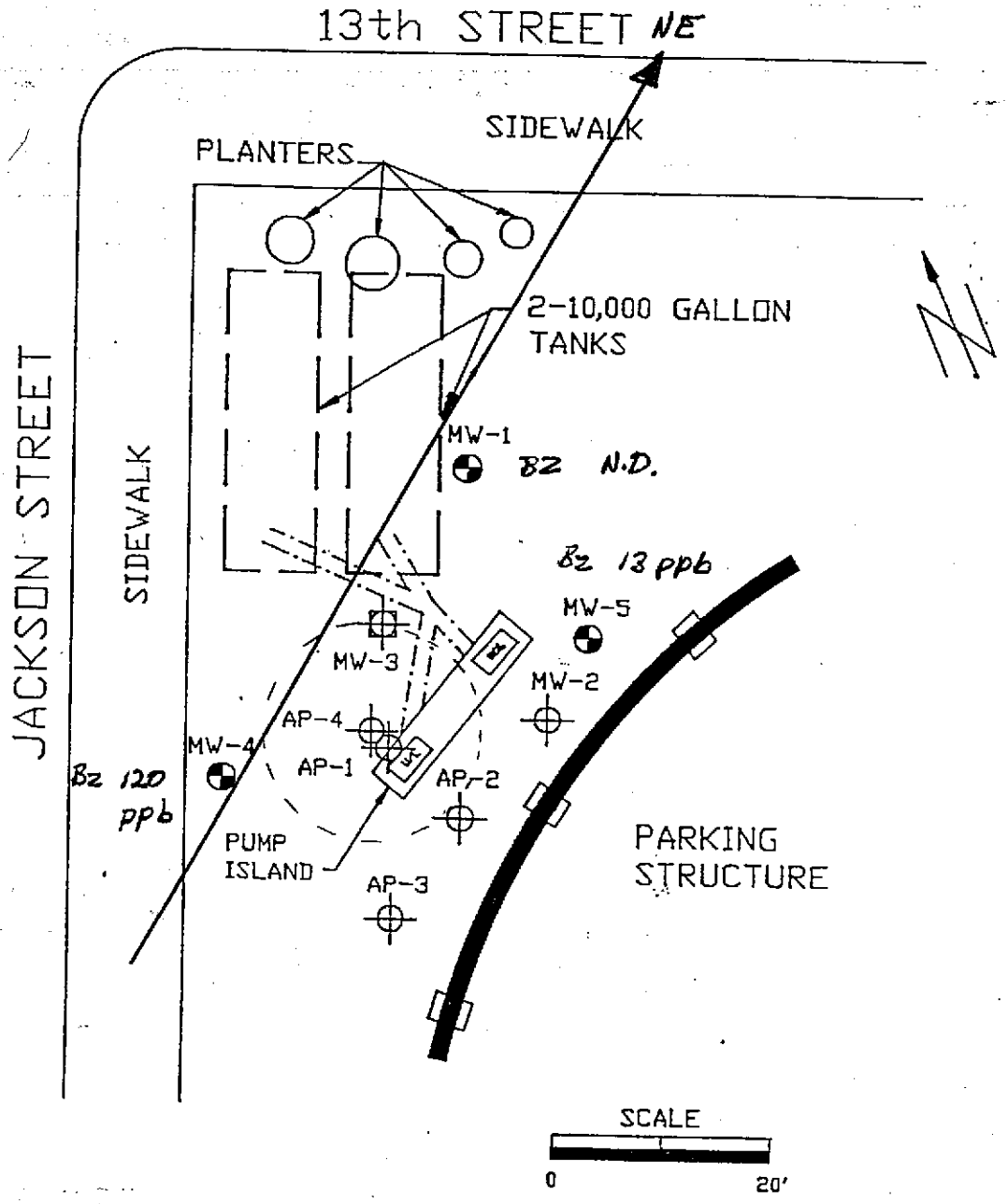


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

JULY 1990

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

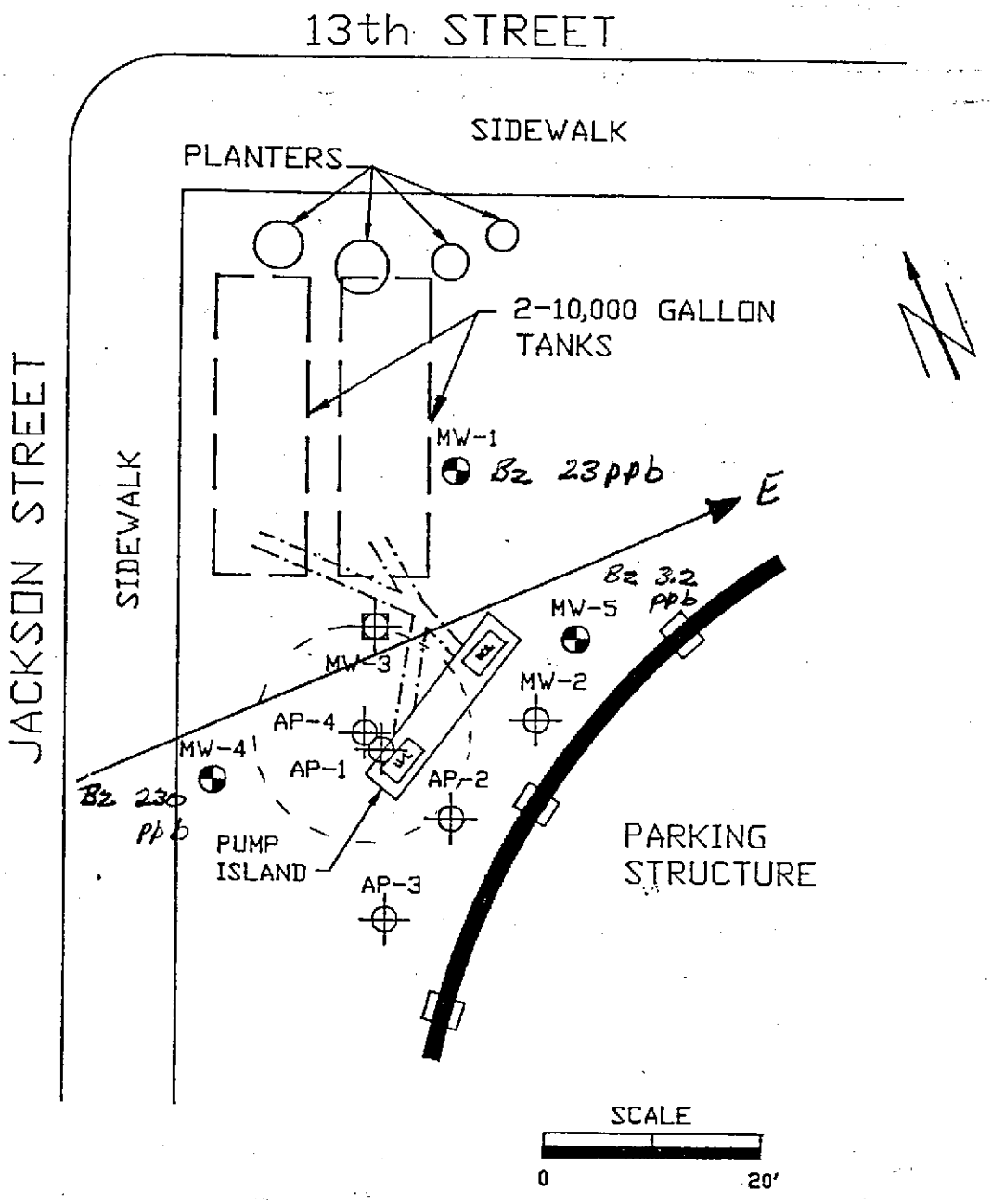


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

OCTOBER 1990

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

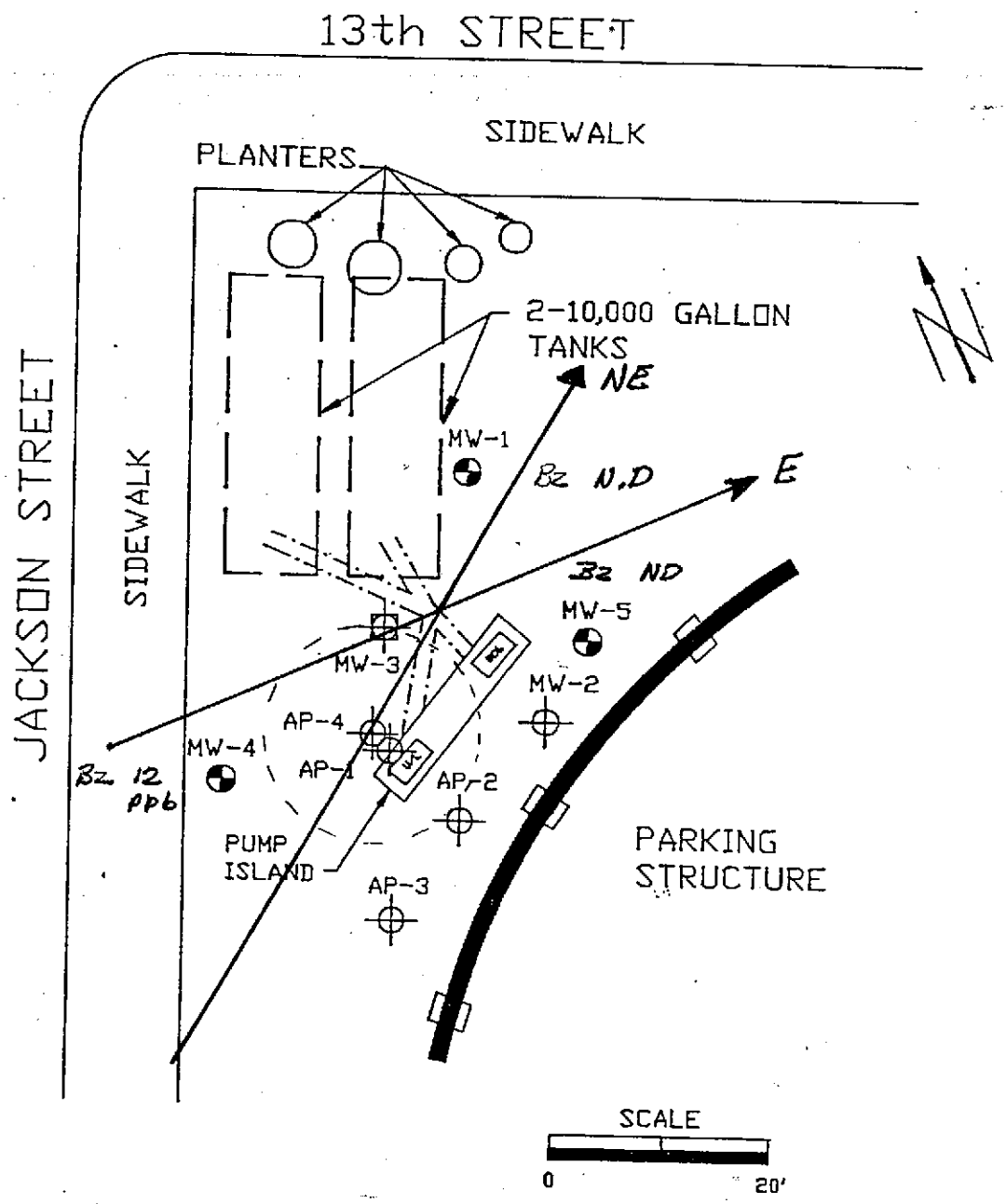


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

JANUARY 1991

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

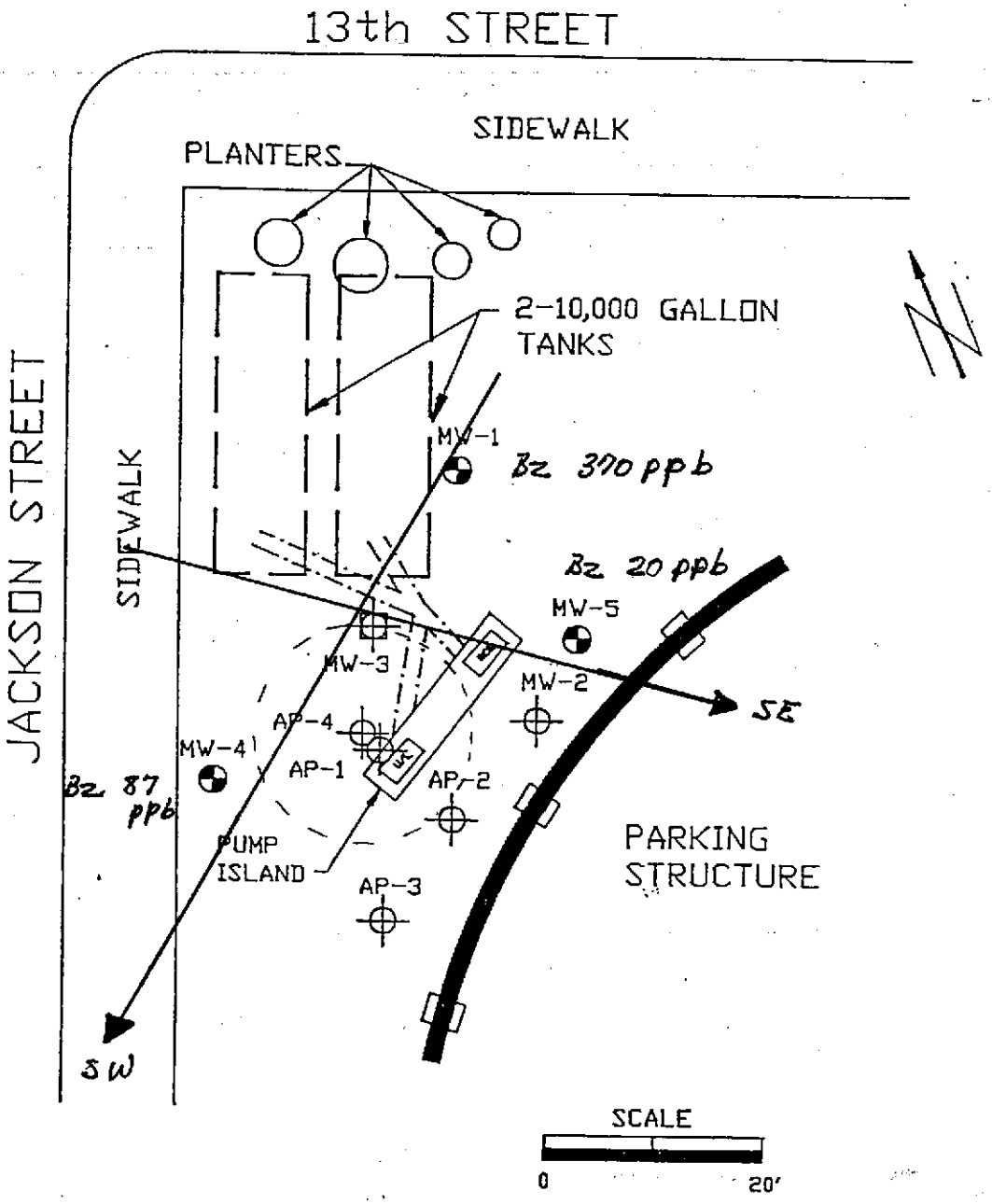


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

APRIL 1991

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

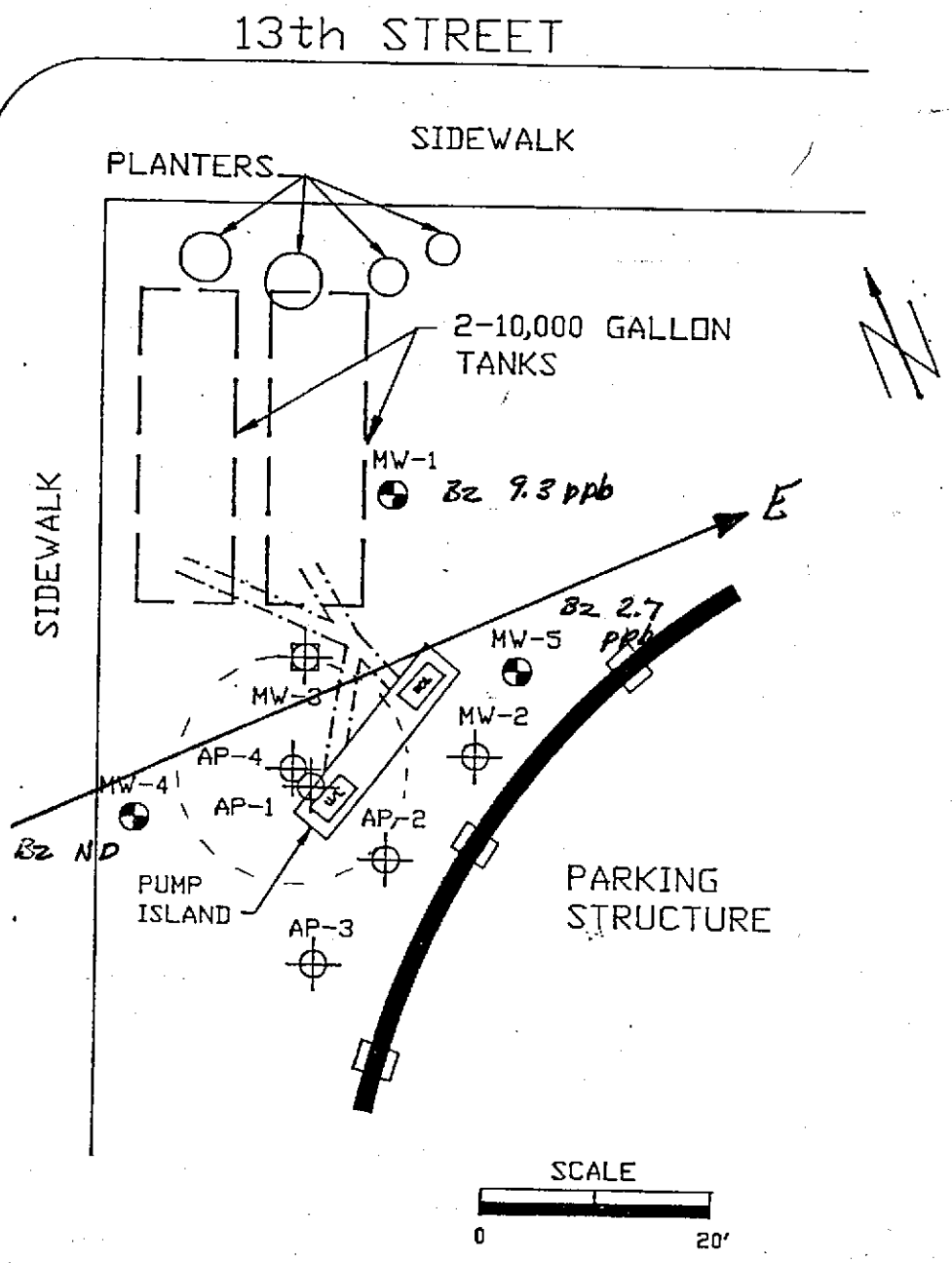


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

AUGUST 1991

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

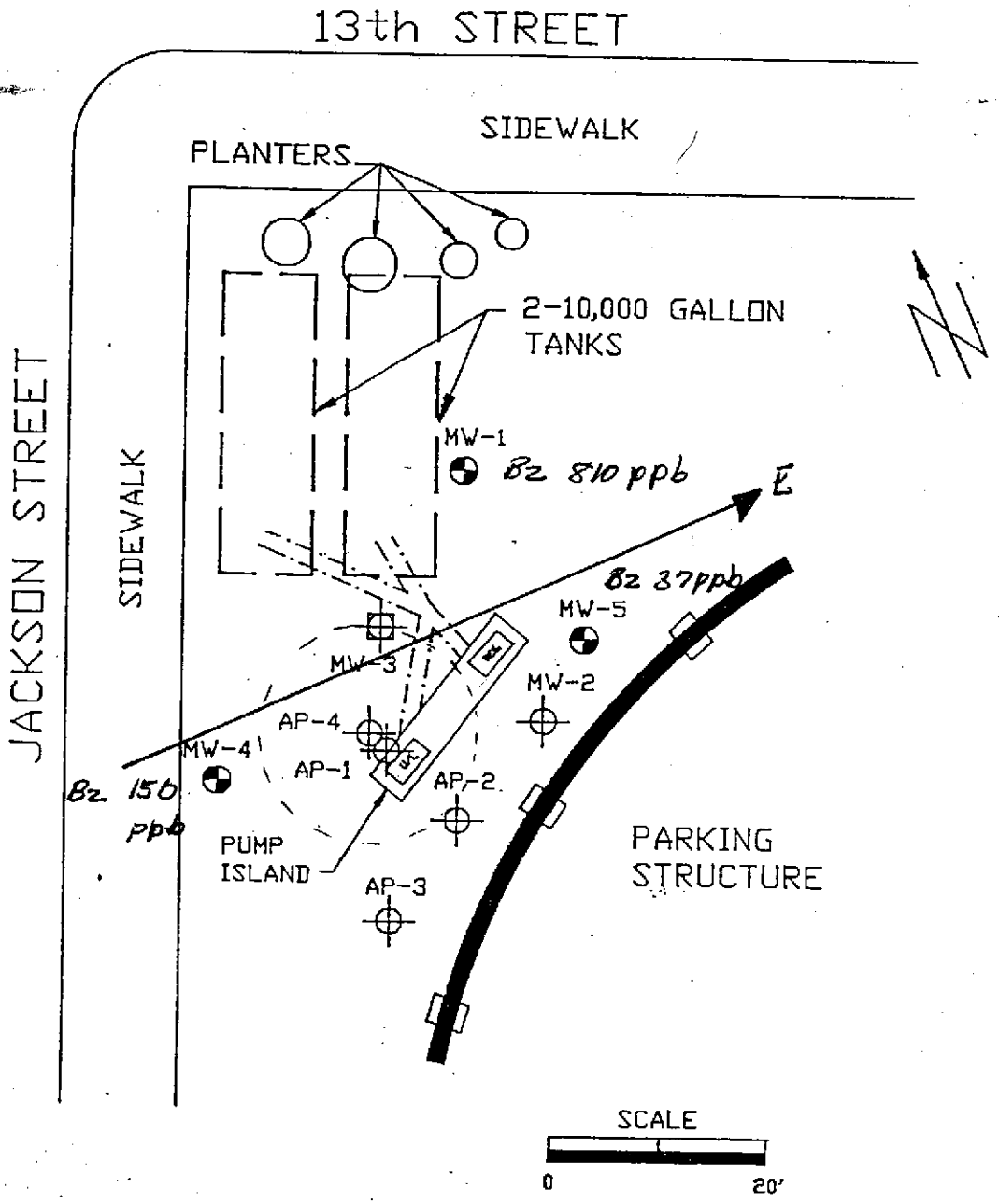


LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

NOVEMBER 1991

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010



LEGEND

- SOIL BORING
- GROUND WATER MONITORING WELL
- VADOSE MONITORING WELL
- UNDERGROUND PIPING

JUNE 1992

Hunter	ALAMEDA COUNTY ALCOPARK
FIGURE 2 SITE MAP	
5/89	02-276-010

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA SUMMARY
ALCOPARK FUELING FACILITY SITE NO. 2
OAKLAND, CALIFORNIA

All concentrations In ug/l (PPB).								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-5 (cont.)	4/1/1998	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/15/1998	16.43	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	10/22/1998	15.60	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	9/9/1999	15.44	NS	NS	NS	NS	NS	NS
	1/18/2000	14.67	NS	NS	NS	NS	NS	NS
	5/4/2000	16.18	NS	NS	NS	NS	NS	NS
	8/22/2000	15.32	NS	NS	NS	NS	NS	NS
	2/8/2001	14.53	NS	NS	NS	NS	NS	NS
	7/20/2001	14.59	NS	NS	NS	NS	NS	NS
	2/18/2002	14.94	NS	NS	NS	NS	NS	NS
	7/19/2002	14.83	NS	NS	NS	NS	NS	NS
	2/10/2003	14.83	NS	NS	NS	NS	NS	NS
	7/15/2003	14.80	NS	NS	NS	NS	NS	NS
	2/12/2004	14.87	NS	NS	NS	NS	NS	NS
	7/7/2004	14.82	NS	NS	NS	NS	NS	NS
	3/24/2005	15.91	NS	NS	NS	NS	NS	NS
	8/17/2005	15.59	NS	NS	NS	NS	NS	NS
MW-6	4/1/1998	NA	740	4,600	9.8	3.2	3.0	15
	7/15/1998	NA	6,200	11,000	280	43	180	350
	7/15/1998	NA	NA	13,000	ND (500)	ND (500)	ND (500)	ND (500)
	10/22/1998	NA	4,700	9,600	450	13	200	200
	10/22/1998	NA	NA	9,100	470	ND (250)	ND (250)	ND (250)
	9/9/1999	NA	6,600	3,700	2,500	43	310	250
	1/18/2000	NA	3,500	4,600	800	ND (5.0)	40	13
	5/4/2000	NA	NS	NS	NS	NS	NS	NS
	8/22/2000	NA	1,400	1,700	370	4.8	12	35
	2/8/2001	NA	NS	NS	NS	NS	NS	NS
	7/20/2001	NA	1,100	800	240	2.9	2.3	3.4
	2/18/2002	NA	1,500	570	260	ND (2.0)	11	4.3
	7/19/2002	NA	1,800	800	1,400	ND (50)	ND (50)	ND (50)
	2/10/2003	NA	4,000	830	1,000	ND (50)	ND (50)	ND (50)
	7/15/2003	NA	4,100	1,200	2,200	ND (25)	180	260
	2/12/2004	NA	7,200	980	1,600	ND (25)	100	440
	7/7/2004	NA	4,000	840	1,500	ND (25)	150	210
	3/24/2005	NA	4,600	480	520	ND (10)	86	280
	8/17/2005	NA	2,800	610	820	ND (17)	190	250
MW-7	9/9/1999	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
	1/18/2000	NA	ND	2,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	5/4/2000	NA	140	1,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	8/22/2000	NA	160	830	0.62	ND (0.5)	ND (0.5)	ND (0.5)
	2/8/2001	NA	130	650	ND (0.5)	0.53	ND (0.5)	ND (0.5)
	7/20/2001	NA	56	400	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	2/18/2002	NA	ND (50)	200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/19/2002	NA	ND (50)	300	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	2/10/2003	NA	ND (50)	140	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	7/15/2003	NA	ND (50)	140	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
	2/12/2004	NA	ND (50)	100	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)
	7/7/2004	NA	56	200	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
	3/24/2005	NA	ND (50)	350	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	8/17/2005	NA	66	230	9.3	ND (5.0)	ND (5.0)	6.8
W-B1	3/23/1998	NA	3,100	4,200	250	18	160	290

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. ( ) denotes detection limit.
Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA SUMMARY
ALCOPARK FUELING FACILITY SITE NO. 2
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	3/21/1989	12.2	ND	NA	21	3.9	0.4	4.5
	7/26/1990	12.3	1,400	NA	200	45	ND	53
	10/25/1990	12.1	1,200	NA	ND	7.3	2.2	46
	1/25/1991	11.9	270	NA	23	1.5	ND	3.1
	4/25/1991	11.8	230	NA	ND	ND	ND	ND
	8/27/1991	11.8	8,300	NA	370	64	ND	120
	11/25/1991	11.7	810	NA	9.3	ND	7.8	32
	6/11/1992	12.85	2,600	NA	810	16	21	42
	7/16/1997	14.36	19,000	ND (150)	1,400	2,800	500	2,600
	10/21/1997	13.92	14,000	29	1,200	1,000	590	2,800
	3/11/1998	17.14	NS	NS	NS	NS	NS	NS
	4/1/1998	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
	7/15/1998	16.41	71	57	31	ND (0.5)	ND (0.5)	3.1
	10/22/1998	15.62	5,100	360	520	140	250	950
	9/9/1999	15.42	2,400	400	680	140	130	370
	1/18/2000	14.49	4,100	180	420	11	210	350
	5/4/2000	16.19	NS	NS	NS	NS	NS	NS
	8/22/2000	15.34	9,400	410	1,200	130	410	920
	2/8/2001	14.53	NS	NS	NS	NS	NS	NS
	7/20/2001	14.60	9,600	ND (50)	1,000	300	350	2,000
	2/18/2002	15.08	1,500	ND (100)	260	6.5	2.8	49
	7/19/2002	14.84	180	28	68	ND (1.7)	ND (1.7)	6.8
	2/10/2003	14.83	210	11	14	0.75	ND (0.5)	4.0
	7/15/2003	14.80	370	4.6	31	0.99	22	75
	2/12/2004	14.87	1,800	29	170	2.7	140	87
	7/7/2004	14.81	800	37	120	ND (2.5)	67	38
	3/24/2005	15.92	ND (50)	4.7	4	ND (0.5)	2.5	2
	8/17/2005	15.60	4,100	59	410	35	380	1,500
MW-4	3/21/1989	12.4	ND	NA	13	1.4	1.0	ND
	7/26/1990	12.5	NA	NA	0.8	ND	ND	ND
	10/25/1990	12.2	NA	NA	120	1.2	1.1	0.9
	1/25/1991	12.0	NA	NA	230	2.8	1.2	2.0
	4/25/1991	13.0	170	NA	12	ND	ND	2.3
	8/27/1991	11.8	ND	NA	87	1.3	0.8	0.8
	11/25/1991	11.8	1,400	NA	ND	1.7	8.6	3.6
	6/11/1992	12.93	560	NA	150	1.8	1.8	1.1
	7/16/1997	14.46	50	ND	ND	ND	ND	ND
	10/21/1997	14.10	ND	ND	ND	ND	ND	ND
	3/11/1998	17.39	NS	NS	NS	NS	NS	NS
	4/1/1998	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/15/1998	16.92	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	10/22/1998	15.75	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	9/9/1999	15.57	NS	NS	NS	NS	NS	NS
	1/18/2000	14.32	NS	NS	NS	NS	NS	NS
	5/4/2000	16.34	NS	NS	NS	NS	NS	NS
	8/22/2000	15.47	NS	NS	NS	NS	NS	NS
	2/8/2001	14.73	NS	NS	NS	NS	NS	NS
	7/20/2001	14.72	NS	NS	NS	NS	NS	NS
	2/18/2002	15.05	NS	NS	NS	NS	NS	NS
	7/19/2002	14.97	NS	NS	NS	NS	NS	NS
	2/10/2003	14.94	NS	NS	NS	NS	NS	NS
	7/15/2003	14.94	NS	NS	NS	NS	NS	NS
	2/12/2004	14.93	NS	NS	NS	NS	NS	NS
	7/7/2004	14.94	NS	NS	NS	NS	NS	NS
	3/24/2005	16.05	NS	NS	NS	NS	NS	NS
	8/17/2005	15.82	NS	NS	NS	NS	NS	NS
MW-5	3/21/1989	12.2	ND	NA	ND	ND	ND	ND
	7/26/1990	12.4	670	NA	0.8	ND	ND	ND
	10/25/1990	12.1	120	NA	13	ND	ND	ND
	1/25/1991	11.9	120	NA	3.2	ND	ND	ND
	4/25/1991	12.3	ND	NA	ND	ND	ND	ND
	8/27/1991	11.5	ND	NA	20	ND	0.5	ND
	11/25/1991	11.7	190	NA	2.7	ND	0.8	2.5
	6/11/1992	12.85	150	NA	37	ND	ND	ND
	7/16/1997	14.33	ND	22	ND	ND	ND	ND
	10/21/1997	13.88	ND	14	ND	ND	ND	ND
	3/11/1998	17.14	NS	NS	NS	NS	NS	NS

7001

[psi] Information To Build On
Engineering • Consulting • Testing

April 20, 1998

Mr. Rod Freitag, P.E.
Environmental Program Manager
County of Alameda
Engineering & Environmental Management Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612

RE: Final Report, Soil and Groundwater Investigation
Alcopark Fueling Facility, Oakland, California

Dear Mr. Freitag:

Professional Service Industries is pleased to transmit two copies of the Final Report, Soil and Groundwater Investigation for the Alcopark Fueling Facility at 165 13th Street, Oakland, California. In accordance with your instructions, PSI is also transmitting a copy of the report to the Alameda County Health Care Services Agency. Please call me with any comments or questions on this report at (510) 785-1111.

Sincerely,

Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist

Enclosure

cc: Thomas Peacock, Alameda County Health Care Services Agency

FINAL REPORT
SOIL AND GROUNDWATER INVESTIGATION
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

prepared for

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California

prepared by

Professional Service Industries, Inc.
1320 West Winton Avenue
Hayward, California 94545
(510) 785-1111

April 17, 1998
575-8G004

TABLE OF CONTENTS

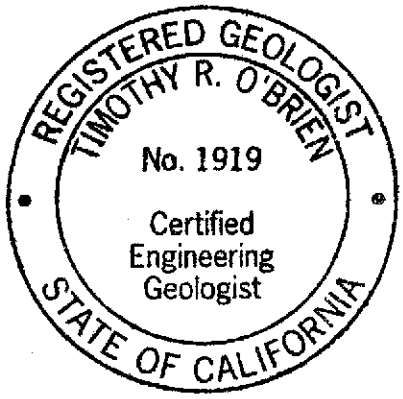
STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of County of Alameda, General Services Agency for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

This report is issued with the understanding that GSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Frank R. Poss
Senior Hydrogeologist

Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist



1. INTRODUCTION

Professional Service Industries, Inc. (PSI) was retained by the County of Alameda General Services Agency (GSA) to perform an investigation of soil and groundwater conditions at the Alcopark fueling station located at 165 13th Street, Oakland, California. The site location is presented on Figure 1.

The investigation was prompted by a request from the Alameda County Health Care Services Agency (HCSA) which requested additional information on the extent of petroleum hydrocarbon impacted ground water (HCSA,1997a).

1.1 SCOPE OF WORK

The scope of work consisted of the following tasks:

- Prepare a site specific Health and Safety Plan.
- Obtain groundwater levels in the existing wells to verify the groundwater gradient prior to drilling.
- Drill soil borings to collect soil and groundwater samples. Soil samples and soil cuttings were field screened for total organic vapor concentration using a photoionization detector (PID).
- Construct a groundwater monitoring well in one of the soil borings. Develop and sample the well for chemical analysis.
- Obtain groundwater samples from the three existing monitoring wells.
- Transport soil and groundwater samples to McCampbell Analytical Laboratories, a California State certified laboratory, for analysis of Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 8015M; Benzene, Toluene, Ethylbenzene, total Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8020;
- Prepare a report summarizing the findings of the investigation and evaluate the groundwater plume stability.

1.2 SITE BACKGROUND

Three groundwater monitoring wells were installed at the Alcopark fueling station in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at the fuel dispensing island. Initial sample results indicated the presence of BTEX in the groundwater. Subsequent sample results indicated the presence of TPH-G. Based on the analytical data, it was surmised that contaminants detected on-site were emanating

from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of upgradient source (GSA, 1997).

By letter dated May 30, 1997, the Alameda County Health Care Services Agency (HCSA) instructed GSA to resume groundwater monitoring at Alcopark (HCSA, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G and BTEX concentrations in the downgradient well. MTBE was also detected. Additional samples collected in October, 1997 provided similar results (GSA, 1997).

By letter dated September 11, 1997, the HCSA directed GSA to investigate the extent and stability of the plume.

1.2.1 Storage Tank System Upgrades

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations. This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (GSA, 1997).

1.3 PROJECT OBJECTIVES

The investigation was performed to assess the extent of the groundwater plume.

2. PRE-FIELD IMPLEMENTATION ACTIVITIES

Drilling permits were obtained prior to field implementation. To ensure the optimum location placement of the additional soil borings and groundwater monitoring well, the groundwater flow direction was measured.

2.1.1 Well Construction Permit Application

In accordance with well construction requirements in Alameda County, a well construction permit was obtained from the Alameda County Public Works Department. A copy of the permit is included in Appendix A.

2.1.2 Preparation of Site Specific Health and Safety Plan

Prior to the commencement of field activities at the site, a site-specific Health and Safety Plan (HSP) was developed in compliance with 29 CFR 1910.120. The HSP addressed the potentially hazardous materials and physical hazards that might have been encountered during field activities at the site.

2.1.3 Utility Clearance

Prior to beginning drilling activities, the boring locations were marked with white paint. The utility location service, Underground Service Alert (USA), was notified of the drilling schedule 72 hours prior to implementation. In addition, the boring locations were cleared by a private underground utility locating service.

2.1.4 Groundwater Flow Direction

Depth to water measurements were collected on March 11, 1998, using an electric water level sounder. The depth to groundwater measurements were converted to groundwater elevations and the groundwater gradient was calculated. The depth to groundwater data is presented in Table 2-1. The calculated groundwater flow direction was to the east, consistent with previous measurements.

3. SUBSURFACE INVESTIGATION

The subsurface investigation was performed to collect soil and groundwater samples and install a groundwater monitoring well to allow better interpretation of soil and groundwater conditions.

3.1 SOIL BORINGS

Two soil borings were drilled at the site on March 23, 1998 to further investigate the soil and groundwater conditions at the site. The borings were advanced far enough to allow collection of a grab groundwater sample in Boring B1 and construct a groundwater monitoring well (MW-6) in Boring B2. Because no contaminants were measured with the PID or noted by the field geologist, proposed Boring B3 was not drilled. The soil boring locations are presented on Figure 2.

Fisch Environmental Exploration Services of Valley Springs, California provided drilling services. The borings were drilled by the direct push GeoProbe drilling technique. Soil borings were logged by a PSI geologist using the Unified Soil Classification System (USCS). The work was performed under the supervision of a State of California Registered Geologist.

Soil samples were collected in plastic sample liners. Upon retrieval of the soil samples, a portion of the sample was placed in a plastic Ziplock bag, labeled, and set aside to allow the soil gas concentration in the bag to equilibrate. The steel probe of the PID was used to push through the sample bags and collect a soil gas concentration measurement. The PID measurements were recorded on the boring logs. Soil boring logs are presented in Appendix A.

3.1.1 Soil Sample Collection

One soil sample was collected from each soil boring for the chemical analyses described in Section 4.0. Because no measurable concentration of total VOCs was observed, samples for chemical analysis were selected as close to the capillary fringe as possible. In each boring the sample collected at the 14-15 foot depth interval was selected.

Soil samples were collected by cutting the interval for chemical analysis out of the plastic liners they were collected in and capping the ends with Teflon sheeting, plastic end caps, and duct tape. Samples were labeled using a permanent marking pen identifying the sampler, boring name, sample collection depth, time, and date. Collected samples were placed in a cooler containing ice and maintained under chain of custody protocol.

3.1.2 Grab Groundwater Sampling

Upon completion of the Boring B1, a grab groundwater sample was collected. The grab groundwater sample was collected using disposable polyethylene tubing equipped with a check valve lowered through the drill stem. Field work for groundwater sampling was conducted in accordance with the procedures described in Appendix B. Samples were stored in a cooler containing ice and maintained under chain of custody protocol.

Upon collection of the groundwater sample, Boring B1 was grouted with neat cement.

3.1.3 Monitoring Well Construction

A 1/2-inch, inside diameter, poly vinyl chloride well was constructed in Boring B2. The screened interval of the well was constructed to allow for the evaluation of the presence of floating product on the water table. A well construction detail is presented on Figure 3.

The screened interval of the well consists of pre-packed, factory milled 0.020-inch slots. A one-foot bentonite transition seal was placed above the sandpack, and neat cement grout fills the annular space to the surface. A tamper resistant wellhead cover was set in concrete slightly above grade to minimize surface water ponding.

3.1.4 Well Development

The well grout was allowed to cure for at least 48 hours. The well was developed by surging and pumping. Groundwater parameters temperature and electrical conductivity were monitored as development progressed to determine when equilibrium conditions are reached. Development water was stored on-site in labeled DOT approved drums. The well development log is included in Appendix C.

3.2 MONITORING WELL SAMPLING

The three existing monitoring wells (Wells MW-1, MW-4, and MW-5), and the new well installed by PSI (Well MW-6) were sampled by a PSI technician on April 1, 1998. The samples were collected and preserved as described in the field procedures presented in Appendix B. The samples were chemically analyzed as described in Section 4.0.

3.2.1 Groundwater Elevation and Flow Direction

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in each monitoring well. The groundwater measurements were converted to groundwater elevation and the data plotted on a groundwater elevation map. A groundwater elevation map was prepared for April 1, 1998. The map is presented as Figure 2.

Interpretation of the groundwater elevation map indicates the groundwater is flowing to the east under a hydraulic gradient of approximately 0.007 foot per foot. Chart 1, Appendix D, presents groundwater elevation over time.

3.2.2 Groundwater Well Sample Procedures

The monitoring wells were sampled without purging as requested in the ACHS letter dated September 11, 1997. Groundwater samples were collected with disposable polyethylene tubing equipped with a check valve. Groundwater samples were collected according to PSI's standard protocol, included in Appendix B and were stored in an ice chest at 4 degrees Celsius and maintained under chain of custody protocol.

To minimize the possibility of contaminant cross-contamination between sampling locations, most of the sampling equipment used is disposable. To further minimize the possibility of cross-contamination, all re-usable sampling equipment was cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to use at a new sampling location.

4. LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation were submitted to McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is a State of California Department of Health Services certified hazardous waste laboratory (Environmental Laboratory Accreditation Program [ELAP] #1644). A summary of the types of analyses and analytical methods is presented below.

All soil and groundwater samples collected at the site were analyzed for the following constituents by the indicated methods:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) in accordance with Environmental Protection Agency (EPA) Method 8015-m.
- BTEX and MTBE by EPA Method 8020.

The samples were transported to the laboratory under chain of custody protocol. Copies of the chain of custody forms are included in Appendix C.

4.1 ANALYTICAL RESULTS DISCUSSION

Soil and groundwater samples were collected and chemically analyzed in accordance with the approved work plan for the investigation. The following discussion describes the chemical analysis results. The data is summarized in Tables 2-1 and 2-2. Laboratory reports are presented in Appendix C.

Analytical results did not indicate concentrations of TPH-G, BTEX, or MTBE exist in the soil sampled in this investigation. The analytical report is summarized in Table 2-2.

Analytical results revealed measurable concentrations of TPH-G, MTBE, and BTEX constituents in groundwater at the site. The analytical report is summarized in Table 2-1.

TPH-G concentrations in Well MW-1 have decreased dramatically since the sample events performed in 1997. The groundwater samples collected from downgradient locations Boring B1 and Well MW-6 contained moderate concentrations of TPH-G. TPH-G was not detected in samples from Wells MW-4 or MW-5. Chart 2, Appendix D presents TPH-G concentrations over time.

MTBE concentrations in Wells MW-1 (6.3 ug/l), MW-4 (ND [5.0 ug/l]), MW-5 (11 ug/l) were slightly lower and consistent with former measurements. MTBE was measured in groundwater samples collected from downgradient location Boring B1 (4,200 ug/l) and Well MW-6 (4,600 ug/l).

Benzene concentrations in groundwater decreased dramatically since the sample events performed in 1997. Benzene concentrations were measured in groundwater samples collected from downgradient locations Boring B1 (250 ug/l) and Well MW-6 (9.8 ug/l). Chart 3, Appendix D, presents benzene concentrations over time.

5. CONCLUSIONS

Based on the information presented in this report, the following conclusions have been reached:

- Site soils consists of clay and sand mixtures. Groundwater exists in an unconfined condition approximately 16 feet bgs.
- Groundwater flow direction is to the east under a gradient of 0.007 foot per foot.
- Elevated concentrations of TPH-G, MTBE, and BTEX exist in site groundwater downgradient of the tank pit.
- Soil samples collected from the capillary fringe did not contain detectable TPH-G, MTBE, or BTEX.

Based on the results presented in this report, PSI recommends additional groundwater monitoring be performed to determine contaminant trends. Evaluation of the trends will assist in differentiating between a one time leak event (such as might have happened during piping upgrade work) and an ongoing source. It is noted that the Alcopark tank leak monitoring system has not indicated the occurrence of a tank or piping leak (Freitag, personal communication, 1998). At this time, PSI does not recommend further drilling to investigate the extent of the groundwater plume.

REFERENCES

GSA, 1997, RFP for Groundwater Investigation Services, December 2.

HCSA, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.

HCSA, 1997b, Continuation of Groundwater Monitoring Request Letter to Mr. Jim De Vos, May 20.

Personal communication, 1998, Mr. Rod Freitag of the Alameda County General Services Agency, Discussion on the leak detection system at the Alcopark facility, April, 15.

USGS, 1980, Oakland West, California topographic map.

TABLE 2-1
GROUNDWATER ELEVATION AND ANALYTICAL DATA
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).

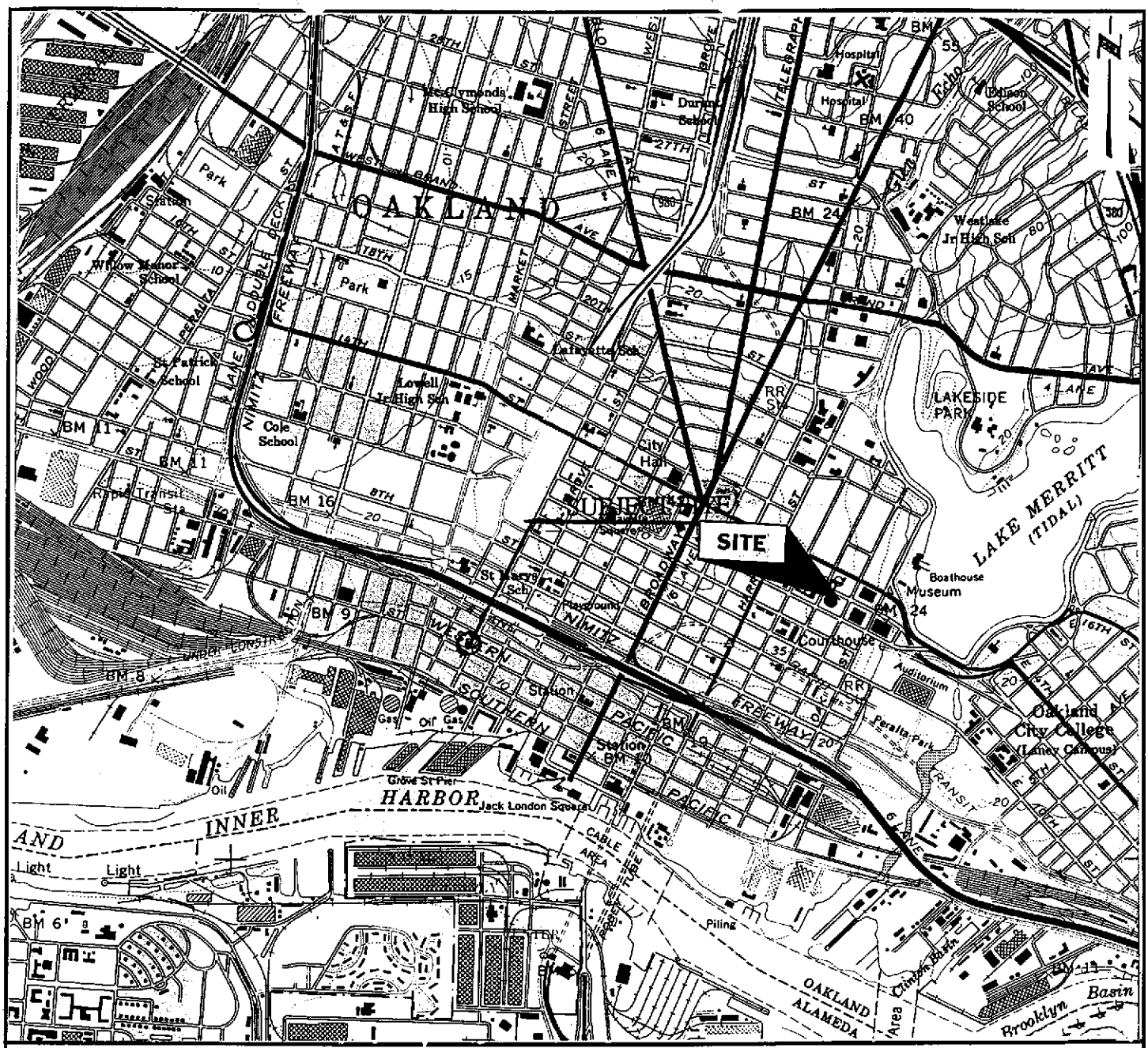
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW1	3/21/89	12.2	ND	NA	21	3.9	0.4	4.5
W-MW1	7/26/90	12.3	1,400	NA	200	45	ND	53
W-MW1	10/25/90	12.1	1,200	NA	ND	7.3	2.2	46
W-MW1	1/25/91	11.9	270	NA	23	1.5	ND	3.1
W-MW1	4/25/91	11.8	230	NA	ND	ND	ND	ND
W-MW1	8/27/91	11.8	8,300	NA	370	64	ND	120
W-MW1	11/25/91	11.7	810	NA	9.3	ND	7.8	32
W-MW1	6/11/92	12.85	2,600	NA	810	16	21	42
W-MW1	7/16/97	14.36	19,000	ND (150)	1,400	2,800	500	2,600
W-MW1	10/21/97	13.92	14,000	29	1,200	1,000	590	2,800
W-MW1	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW1	4/1/98	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
W-MW4	3/21/89	12.4	ND	NA	13	1.4	1.0	ND
W-MW4	7/26/90	12.5	NA	NA	0.8	ND	ND	ND
W-MW4	10/25/90	12.2	NA	NA	120	1.2	1.1	0.9
W-MW4	1/25/91	12.0	NA	NA	230	2.8	1.2	2.0
W-MW4	4/25/91	13.0	170	NA	12	ND	ND	2.3
W-MW4	8/27/91	11.8	ND	NA	87	1.3	0.8	0.8
W-MW4	11/25/91	11.8	1,400	NA	ND	1.7	8.6	3.6
W-MW4	6/11/92	12.93	560	NA	150	1.8	1.8	1.1
W-MW4	7/16/97	14.46	50	ND	ND	ND	ND	ND
W-MW4	10/21/97	14.10	ND	ND	ND	ND	ND	ND
W-MW4	3/11/98	17.39	NS	NS	NS	NS	NS	NS
W-MW4	4/1/98	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	3/21/89	12.2	ND	NA	ND	ND	ND	ND
W-MW5	7/26/90	12.4	670	NA	0.8	ND	ND	ND
W-MW5	10/25/90	12.1	120	NA	13	ND	ND	ND
W-MW5	1/25/91	11.9	120	NA	3.2	ND	ND	ND
W-MW5	4/25/91	12.3	ND	NA	ND	ND	ND	ND
W-MW5	8/27/91	11.5	ND	NA	20	ND	0.5	ND
W-MW5	11/25/91	11.7	190	NA	2.7	ND	0.8	2.5
W-MW5	6/11/92	12.85	150	NA	37	ND	ND	ND
W-MW5	7/16/97	14.33	ND	22	ND	ND	ND	ND
W-MW5	10/21/97	13.88	ND	14	ND	ND	ND	ND
W-MW5	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW5	4/1/98	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW6	4/1/98	NA	740	4,600	9.8	3.2	3.0	15
W-B1	3/23/98	NA	3,100	4,200	250	18	160	290

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. ( ) denotes detection limit.
Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.

TABLE 2-2
SUMMARY OF SOIL SAMPLE ANALYTICAL DATA
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

	All concentrations in ug/kg (PPB).					
	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
SB-1-14'	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
SB-2-14'	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline
MTBE denotes Methyl tert-Butyl Ether
ND denotes not detected (detection limit shown in parentheses).



0 1/2 1 MILE

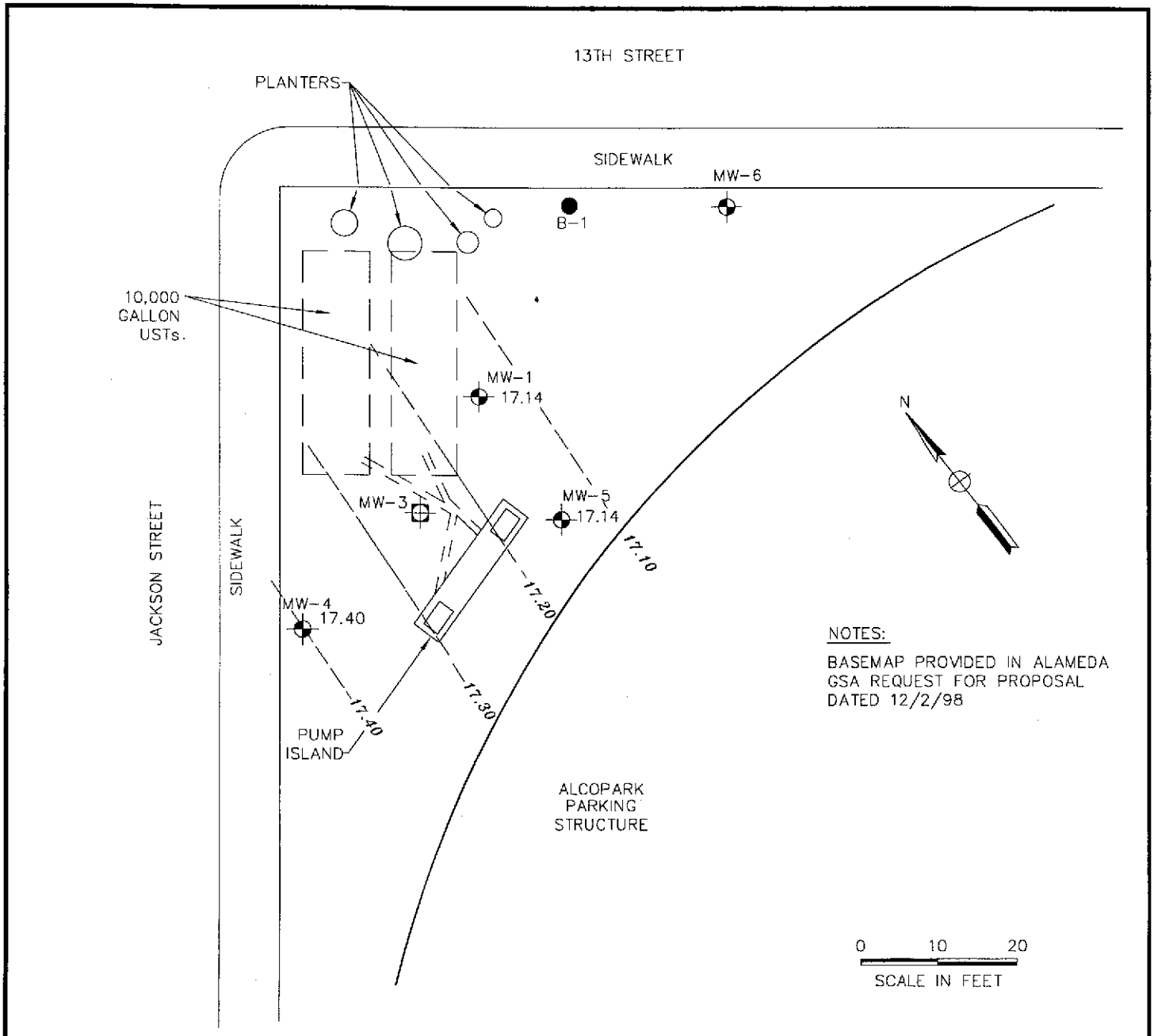
SCALE

REFERENCE:
U.S.G.S. OAKLANDWEST, CALIFORNIA, 1959
PHOTOREVISED 1980

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

SITE LOCATION
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-8G004

DATE: 1/14/98	CKD BY:	FIGURE NO: 1
FILE NO: 8G004 -1		DRAWN BY: S.BOWERS



LEGEND

MW-1 GROUNDWATER MONITORING WELL

MW-3 VADOSE MONITORING WELL LOCATION

B-1 SOIL BORING

UNDERGROUND PIPING

LINE OF EQUAL GROUNDWATER ELEVATION

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CONSULTING • ENGINEERING • TESTING

GROUNDWATER ELEVATION MAP – 4/1/98
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-8G004

DATE: 1/13/98	CKD. BY: JD	FIGURE NO.: 2
FILE NO: 8G004-2		DRAWN BY: S.BOWERS

APPENDIX A

DRILLING PERMIT AND SOIL BORING LOGS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5245 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Alcopark Fueling Facility
165 13th Street
Oakland, CA

California Coordinates Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT Rod Freitag, P.E.
Name Alameda Co., General Services Agency
Address 401 Lakeside Dr. Phone 510 208 9522
City Oakland, CA Zip 94612

APPLICANT
Name Professional Service Industries (PSI)
Timothy R. O'Brien Fax 510 785 1192
Address 1320 W. Winton Phone 510 785 1111
City Hayward, CA Zip 94545

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	☒	Direct Push	

DRILLER'S LICENSE NO. 683865

WELL PROJECTS
Drill Hole Diameter 2.5" in. Maximum
Casing Diameter 1.0 in. Depth 30 ft.
Surface Seal Depth 10 ft. Number 1 GEOPROBE

GEOTECHNICAL PROJECTS
Number of Borings 2 Maximum
Hole Diameter 2.5 in. Depth 25 ft.

ESTIMATED STARTING DATE 3/16/98
ESTIMATED COMPLETION DATE 3/16/98

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

APPLICANT'S SIGNATURE Timothy R. O'Brien DATE 3/11/98

FOR OFFICE USE

PERMIT NUMBER 98WR116
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report 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 SUPPLY WELLS
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.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Maximum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(D.) 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.

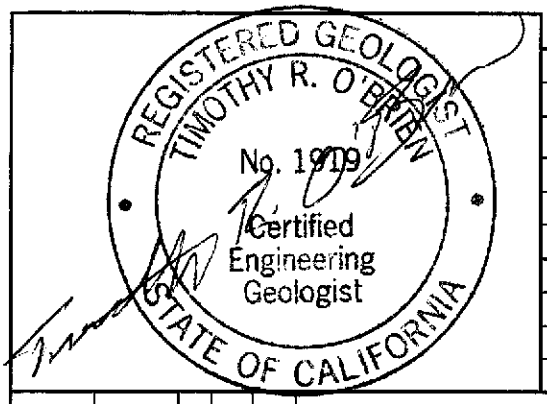
E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED A. Kan DATE 3/13/98

SOIL BORING LOG



BORING NO:	B2
SHEET 1 OF 2	
PROJECT NAME: ALCOPARK	PROJECT NO: 8G004
DATE: 3/23/98	
NORTHINGS:	EASTINGS:
DRILLING COMPANY:	FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS:	2.5 INCH DIAMETER DEPTH: 24 FT

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	INITIAL	19 FT
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
0					Sand with some clay, fine to medium grained sand, brown,		SP	Concrete pavement surface.
1					moist, low plasticity fines, no odor.			
2								
3								
4								
5						0		
6		22						
7								
8								
9								
10						0		
11		16						
12								
13								
14								
15						0		
16		19						
17								
18								Color change to green.
19								Slight organic (sewage) odor noted.
20						0		
		16						Log continued on Sheet 2 of 2

LOGGED BY: TIM O'BRIEN

SOIL BORING LOG

BORING NO:	B2
SHEET 2	OF 2
PROJECT NAME: ALCOPARK	PROJECT NO: 8G004
DATE: 3/23/98	
NORTHINGS:	EASTINGS:
DRILLING COMPANY:	FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS:	2.5 INCH DIAMETER DEPTH: 24 FT

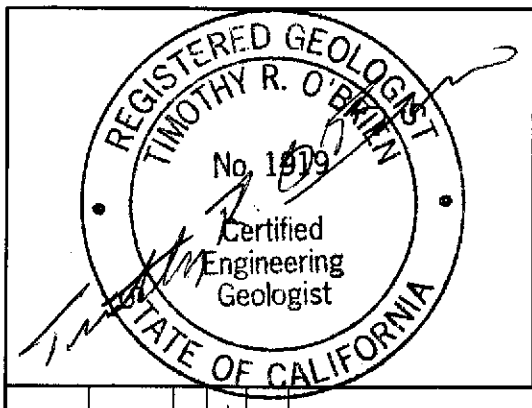
GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
					Sand with trace fines as described above.	0	SP	Sample interval continued from 19 ft. bgs.
21		16						
22								
23								
24								Probe refusal at 24 ft. bgs.
								Total Depth = 24 feet.
25								Boring terminated at depth of
								probe refusal.
26								Well MW-6 constructed in boring.
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

LOGGED BY: Tim O'Brien

SOIL BORING LOG



BORING NO:	B1
SHEET 1 OF 2	
PROJECT NAME: ALCOPARK	PROJECT NO: 8G004
DATE: 3/23/98	
NORTHINGS:	EASTINGS:
DRILLING COMPANY:	FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2.5 INCH DIAMETER	DEPTH: 21 FT

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	INITIAL	19 FT
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
0					Sand with some clay, fine to medium grained sand, tan,		SP	Concrete pavement surface.
1					moist, moderate plasticity fines, no odor.			
2								
3								
4								
5						0		
6		21						
7								
8								
9								
10					Silty sand, fine to medium grained, greenish-gray, moist,	0	SM	
11		20			low plasticity fines, no odor.			
12								
13					Sand with trace fines, fine to medium grained, tan, very moist,		SP	
14					low plasticity fines, no odor.			
15								
16		22				0		
17								
18								Color change to green, moisture increase
19								to very moist to wet.
20								Organic (sewage) odor noted.
		23				0		Log continued on Sheet 2 of 2

LOGGED BY: TIM O'BRIEN

SOIL BORING LOG

BORING NO:	B1
SHEET 2	OF 2
PROJECT NAME: ALCOPARK	PROJECT NO: 8G004
DATE: 3/23/98	
NORTHINGS:	EASTINGS:
DRILLING COMPANY:	FISCH ENVIRONMENTAL SERVICES
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS:	2.5 INCH DIAMETER DEPTH:

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
3/23/98	STABILIZED	16 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
		23			Sand with trace fines as described above.	0	SP	Sample interval continued from 19 ft. bgs.
21								Total Depth = 21 feet.
22								Boring terminated at depth sufficient for investigation.
23								Boring grouted with neat cement.
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

LOGGED BY: Tim O'Brien

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: B2/MW-6

PERMIT NO:

DATE: 3/23/98 | PROJECT NAME: Aleopark | PROJECT NO: 575-86004

WELL SITE LOCATION PLAN:

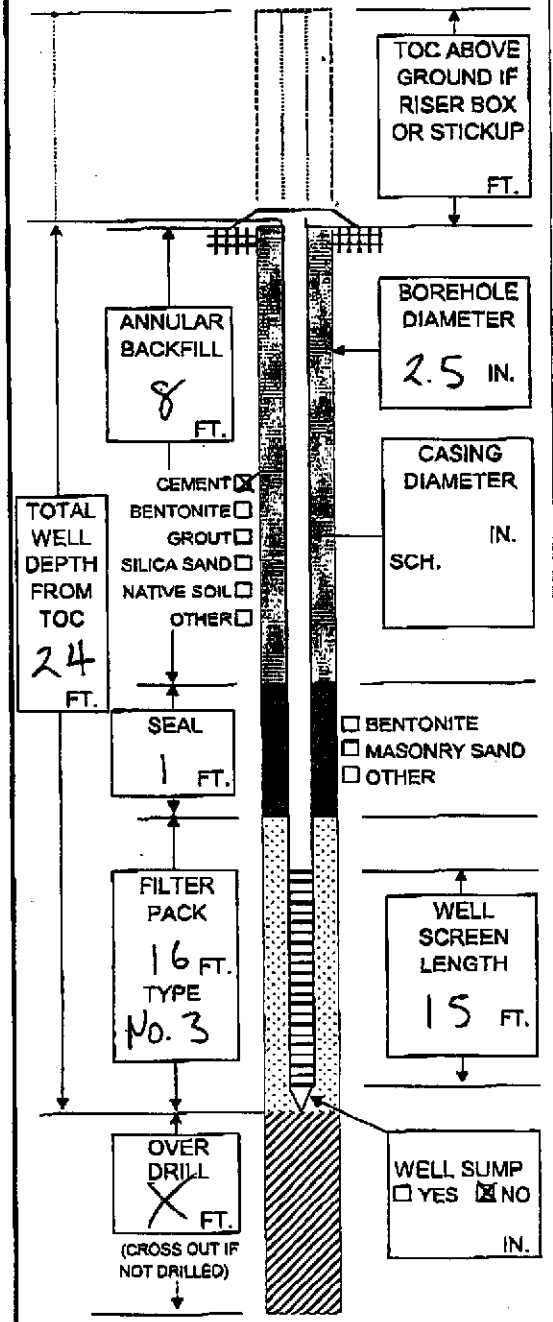
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Env. Services

DRILL CREW: Dave Fisch

WELL TYPE: ☐ SHALLOW ☐ SINGLE CASED ☒ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ☒ HIGH PRESSURE WASH ☐ SOAP WASH ☐ OTHER

CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☐ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☐ OTHER
PIT CASING: ☐ YES ☐ NO ☐ DESCRIBE

WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☒ OTHER 0.5 IN
SLOT: ☐ 0.010 ☒ 0.020 ☐ OTHER ____ IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ☒ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ☒ 2.5 ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER ____ IN
DRILLING MUD: ☒ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ☒ NO

COMPLETION: ☒ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☒ DOLPHIN ☐ MASTER KEY NO. ____ ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☒ OTHER Dave General

DEVELOPMENT METHOD: ☐ NONE ☒ BAILING ☐ PUMPING ☐ AIR LIFT ☐ SURGE & BLOCK ☐ OTHER
TIME: ☐ 10 MIN ☐ 20 MIN ☒ OTHER 30 MIN
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL
WATER BEFORE: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ☐ NO TYPE

DEVELOPMENT WATER: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL ____ FT ☐ BTOC ☐ BGS

DATE: ____ ____ FT BELOW TOC

DATE: ____ ____ FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

PREPARED BY: Chris Merritt / Tim Obrien

PSI
Rev. 12/95

APPENDIX B

PSI STANDARD FIELD PROCEDURES

APPENDIX B
PSI STANDARD FIELD PROCEDURES

I. DRILLING OF SOIL BORINGS AND COLLECTION OF SOIL SAMPLES

The following procedures will be used for the drilling and sampling of the soil borings drilled at the site:

1. Drilling will be conducted by Fisch Environmental under the supervision of PSI. Drilling equipment will be pressure washed at the beginning of the day and between soil borings.

2. Prior to the commencement of drilling activities at the site, Underground Service Alert (USA) will be contacted to identify underground utilities in the areas that the borings will be located.

3. Boring logs for the soil borings drilled at the site will be prepared under the supervision of a State of California-registered geologist. The soil cuttings observed during drilling will be described in accordance with the Unified Soil Classification System.

4. Soil samples will be collected using a continuous core, stainless steel sampler. Undisturbed soil samples are collected by pushing the sampler into the subsurface using a hydraulic press or percussion hammer.

5. Once the sampler has been retrieved the ends of the sample tube will be covered with Teflon sheets and capped with polyethylene end caps. The sample will be labeled and placed in a zip-lock bag in a chilled cooler pending delivery to the laboratory for analysis.

6. Soil samples will be assigned identification numbers such as S-B1-12, where "S" indicates a soil sample, "B1" indicates Boring 1 and "12" indicates that the sample was collected at 12 feet bgs. The samples will be labeled with the sampling designation, depth, date, client name, and project number.

7. Continuous core barrels will be washed between sampling intervals with Alconox soap followed by two deionized-water rinses.

8. Chain of custody procedures using chain of custody forms will be used to document sample handling and transportation.

9. A photo ionization detector (PID) will be used to monitor volatile organic compounds (VOCs) in the ambient air during drilling at the site in accordance with the site health and safety plan. VOC concentrations in the soil will be measured and recorded on the borings logs for depths that soil samples were collected. VOCs in the soil will be measured at the sampling depths by punching holes in the sample tubes and

inserting the PID probe into the hole. PID measurements will be recorded on the boring log.

10. Soil cuttings and steam wash water generated during drilling activities at the site will be contained in Department of Transportation (DOT) approved drums. The drums will be labeled with the contents, date, well or boring number, client name, and project number.

II FIELD DOCUMENTATION OF SAMPLING PROCEDURES

The following outline describes the procedures adhered by PSI for proper sampling documentation.

1. Sampling procedures will be documented in a field notebook that will contain:

    1. Sample collection procedures
    2. Date and time of collection
    3. Date of shipping
    4. Sample collection location
    5. Sample identification number(s)
    6. Intended analysis
    7. Quality control samples
    8. Sample preservation
    9. Name of sampler
    10. Any pertinent observations

2. Samples will be labeled with the following information:

    1. Sample number
    2. Well number
    3. Date and time sample was collected
    4. Sampler's name
    5. Sample preservatives (if required)

3. The following is the sample designation system for the site:

    For Borings and Hand-Auger Borings the samples will be labeled B-(Boring Number)-(Depth) (i.e. sample collected from boring 4 at 0.9 meters would be B4-0.9)

    For groundwater samples (W) (Boring Number) (i.e. WB4)

3. Handling of the samples will be recorded on a chain of custody form which shall include:

1. Site name
2. Signature of Collector
3. Date and time of collection
4. Sample identification number
5. Number of containers in sample set
6. Description of sample and container
7. Name and signature of persons, and the companies or agencies they represent, who are involved in the chain of possession
8. Inclusive dates and times of possession
9. Analyses to be completed

III. GROUND-WATER SAMPLING

The following procedures will be used for ground water sampling:

1. All equipment shall be washed prior to entering the well with an Alconox solution, followed by two tap water rinses and a deionized water rinse.

2. Prior to purging wells, depth-to-water will be measured using an Solinst water-interface probe to an accuracy of approximately 0.01 foot. The measurements will be made to the top of the well casing on the north side.

4. Free floating product thickness and depth-to-ground water will be measured in wells containing free floating product using a Solinst oil-water interface probe to an accuracy of approximately 0.003 meters (0.01 foot). The measurements will be made to the top of the well casing on the north side.

5. Water samples will be collected with a polyethylene disposable bailer. The water collected will be immediately decanted into laboratory-supplied vials and bottles. The containers will be overfilled, capped, labeled, and placed in a chilled cooler, prior to delivery to the laboratory for analysis.

6. Chain of custody procedures, including chain of custody forms, will be used to document water sample handling and transport from collection to delivery to the laboratory for analysis.

7. Ground-water samples will be delivered to a State-certified hazardous waste laboratory within approximately 24 hours of collection.

APPENDIX C

SAMPLING LOG/ANALYTICAL REPORT/CHAIN OF CUSTODY

FLUID MEASUREMENT FIELD DATA

SHEET: 1 OF 1

DATE: 4/1/98	PROJECT NAME: Alameda Co. GSA, Alcopark fueling station	PROJECT NO: 575-8G004
WATER LEVEL MEASUREMENT INSTRUMENT:	Solinst oil/water interface probe	SERIAL NO:
PRODUCT DETECTION INSTRUMENT:	Solinst oil/water interface probe	SERIAL NO:

EQUIP. DECON: ■ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE ☐ TAP WATER FINAL RINSE

☐ TAP WATER WASH ☐ LIQUINOX WASH ☐ DIST/DEION 2 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE ☐ AIR DRY

WELL NUMBER	GROUND SURFACE ELEVATION	TOP OF CASING ELEVATION	DEPTH TO PRODUCT BELOW TOC	DEPTH TO WATER BELOW TOC	WELL DEPTH BELOW TOC	PRODUCT THICKNESS	WATER TABLE ELEVATION	ACTUAL TIME
MW-1	----------	33.00	----------	15.86	----------	----------	17.14	9:20
MW-4	----------	33.63	----------	16.23	----------	----------	17.40	9:10
MW-5	----------	33.01	----------	15.87	----------	----------	17.14	9:05
MW-6	----------	----------	----------	----------	20.22	----------	----------	9:25

REMEMBER TO CORRECT PRODUCT THICKNESS FOR DENSITY BEFORE CALCULATING WATER TABLE ELEVATION

PREPARED BY: Scott A. Bowers

PSI
Rev. 12/95

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

PSI 1320 W. Winton Ave Hayward, CA 94545	Client Project ID: Alcopark	Date Sampled: 03/23/98
		Date Received: 03/24/98
	Client Contact: Tim O'Brien	Date Extracted: 03/24/98
	Client P.O: #8G004	Date Analyzed: 03/24/98

03/31/98

Dear Tim:

Enclosed are:

1). the results of **3** samples from your **Alcopark** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

PSI 1320 W. Winton Ave Hayward, CA 94545	Client Project ID: Alcopark	Date Sampled: 03/23/98
		Date Received: 03/24/98
	Client Contact: Tim O'Brien	Date Extracted: 03/24-03/30/98
	Client P.O: #8G004	Date Analyzed: 03/24-03/30/98

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
87190	SB-1-14'	S	ND	ND	ND	ND	ND	ND	101
87191	SB-2-14'	S	ND	ND	ND	ND	ND	ND	98
87192	W-B1	W	3100,a,i	4200	250	18	160	290	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/24/98-03/25/98 Matrix: WATER

Analyte	Concentration (mg/L) Sample (#87088)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	94.3	98.1	100.0	94.3	98.1	4.0
Benzene	0.0	10.0	10.2	10.0	100.0	102.0	2.0
Toluene	0.0	10.1	10.3	10.0	101.0	103.0	2.0
Ethyl Benzene	0.0	10.1	10.4	10.0	101.0	104.0	2.9
Xylenes	0.0	30.4	31.3	30.0	101.3	104.3	2.9
TPH(diesel)	0	168	166	150	112	111	1.1
TRPH (oil & grease)	0	24800	24200	23700	105	102	2.4

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
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QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/30/98 Matrix: WATER

Analyte	Concentration (mg/L) Sample (#87316)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	99.1	99.4	100.0	99.1	99.4	0.3
Benzene	0.0	10.5	10.6	10.0	105.0	106.0	0.9
Toluene	0.0	10.6	10.7	10.0	106.0	107.0	0.9
Ethyl Benzene	0.0	10.8	10.8	10.0	108.0	108.0	0.0
Xylenes	0.0	32.6	32.9	30.0	108.7	109.7	0.9
TPH(diesel)	0	142	152	150	95	102	7.3
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/23/98-03/24/98 Matrix: SOIL

Analyte	Concentration (mg/kg) Sample (#80334)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	2.226	2.270	2.03	110	112	2.0
Benzene	0.000	0.200	0.204	0.2	100	102	2.0
Toluene	0.000	0.208	0.208	0.2	104	104	0.0
Ethylbenzene	0.000	0.204	0.206	0.2	102	103	1.0
Xylenes	0.000	0.610	0.612	0.6	102	102	0.3
TPH(diesel)	0	294	298	300	98	99	1.1
TRPH (oil and grease)	0.0	35.1	33.5	30	117	112	4.7

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/30/98 Matrix: SOIL

Analyte	Concentration (mg/kg) Sample (#80337)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	1.797	2.219	2.03	89	109	21.0
Benzene	0.000	0.162	0.170	0.2	81	85	4.8
Toluene	0.000	0.170	0.200	0.2	85	100	16.2
Ethylbenzene	0.000	0.164	0.182	0.2	82	91	10.4
Xylenes	0.000	0.496	0.532	0.6	83	89	7.0
TPH(diesel)	0	307	307	300	102	102	0.1
TRPH (oil and grease)	0.0	28.5	23.9	30	95	80	17.6

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

Pace Analytical

10791 xpsi 3.doc 377288

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Professional Service Industries
Address: 1320 W. Winton Ave
Hayward, CA 94545
Phone: 510 785 1111

Report To: Tim O'Brien
Bill To: PSI Hayward
P.O. # / Billing Reference: 8G004
Project Name / No.: Alcopark

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): Tim O'Brien
Sampler Signature: Tim O'Brien
Date Sampled: 3/23/98

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl	ice	TPH-G	BTEX+MTBE 8020	REMARKS
1	SB-1-14'				1						X	X	X	
2	SB-2-14'				1						X	X	X	
3	W-B1				5					X	X	X	X	40ml VOAs
4														
5														
6														
7														
8														

87190
87191
87192

INTACT CONDITION ✓ · COOL CONDITION ✓ · HEADSPACE ABSENT ✓ · PRESERVATION APPROPRIATE ✓ · CONTAINERS ✓ · VOAS / O&G / METALS / OTHER

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	RETURNED DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Tim O'Brien	D Coppock AEro651	3/24/98	1355
	D Coppock	[illegible]	3/24/98	1530

Additional Comments
Normal turnaround time

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries	Client Project ID: #8G004; Alco Park	Date Sampled: 04/01/98
1320 West Winton Avenue		Date Received: 04/02/98
Hayward, CA 94545	Client Contact: Tim O'Brien	Date Extracted: 04/04/98
	Client P.O:	Date Analyzed: 04/04/98

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
87712	W-MW1	W	ND	6.3	5.4	ND	ND	0.82	92
87713	W-MW4	W	ND	ND	ND	ND	ND	ND	98
87714	W-MW5	W	ND	11	ND	ND	ND	ND	96
87715	W-MW6	W	740,a	4600	9.8	3.2	3.0	15	92
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

* cluttered chromatogram; sample peak coelutes with surrogate peak

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

377281

ace Analytical

10887xpsi5

CHAIN-OF-CUSTODY RECORD
Analytical Request

PST
s 1320 W. Winton Ave
Hayward CA 94545
510 785 1111

Report To: Tim O'Brien
Bill To: ~~Client~~ ~~for~~ Alameda County GSA
P.O. # / Billing Reference
Project Name / No. 86004 / Alcopark

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

d By (PRINT): Scott Bowers
r Signature
Date Sampled 4/1/98

SAMPLE DESCRIPTION		TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl	ICE	TPH-G 8015	BTEX, MTBE 8020	REMARKS
W-MW1	✓				4					X	X	X	X	[redacted]
W-MW4	(+)				4					X	X	X	X	
W-MW5	(+)				4					X	X	X	X	
W-MW6	5+				4					X	X	X	X	

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	RETURNED/DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	Tim O'Brien PST	4/1/98	3:00pm
	John Nelson 608	[signature] Mica	4/2/98	1215

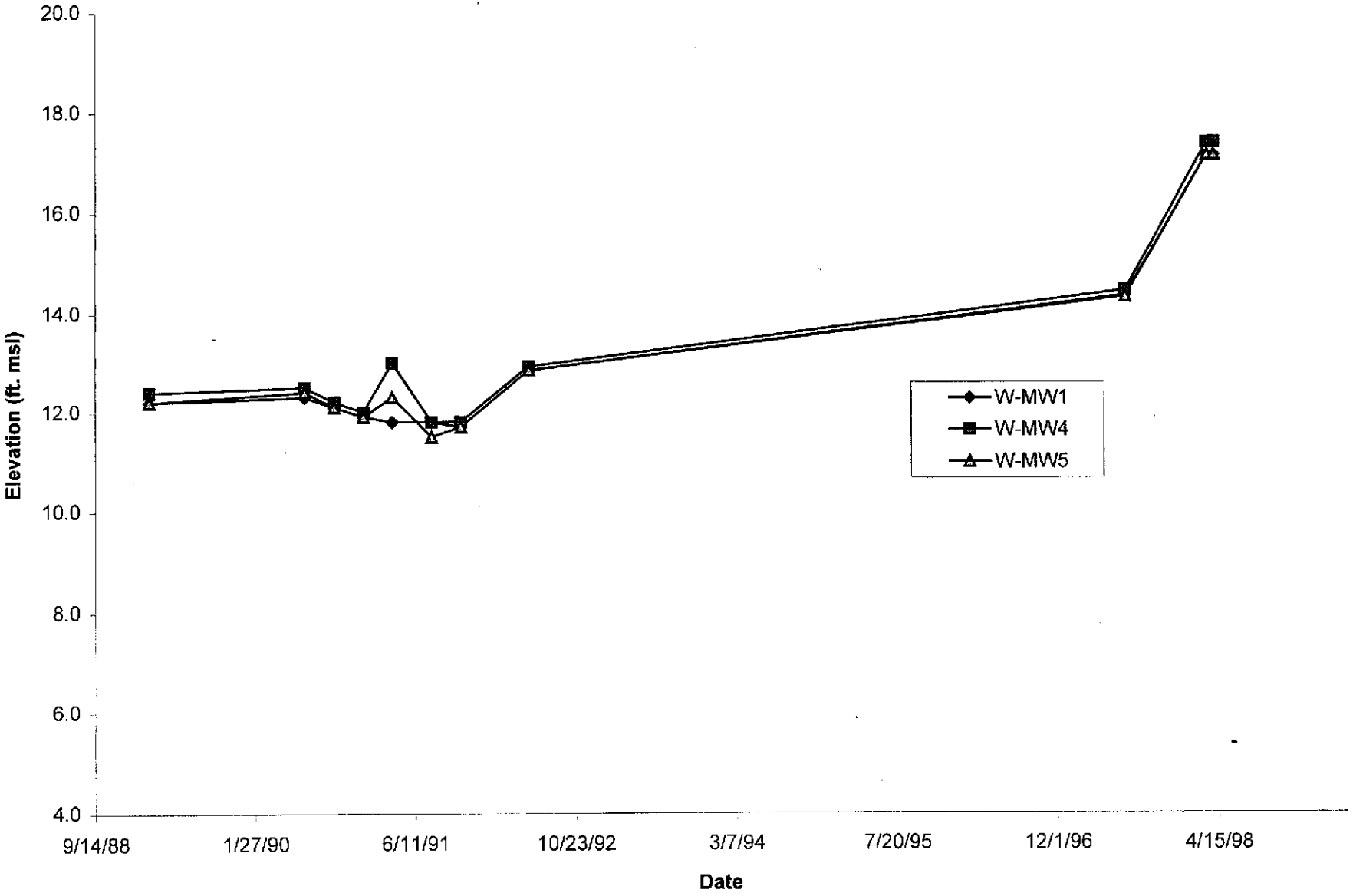
ICE/t° ✓ PRESERVATION ✓ VOAS | O&G | METALS | OTHER
GOOD CONDITION ✓ APPROPRIATE CONTAINERS ✓
HEAD SPACE ABSENT ✓
Cooler Received Sealed & Intact OK

nal Comments
ormal turnaround
Bill ALAMEDA Co.
C: " " Rod Freitag

IGINAL

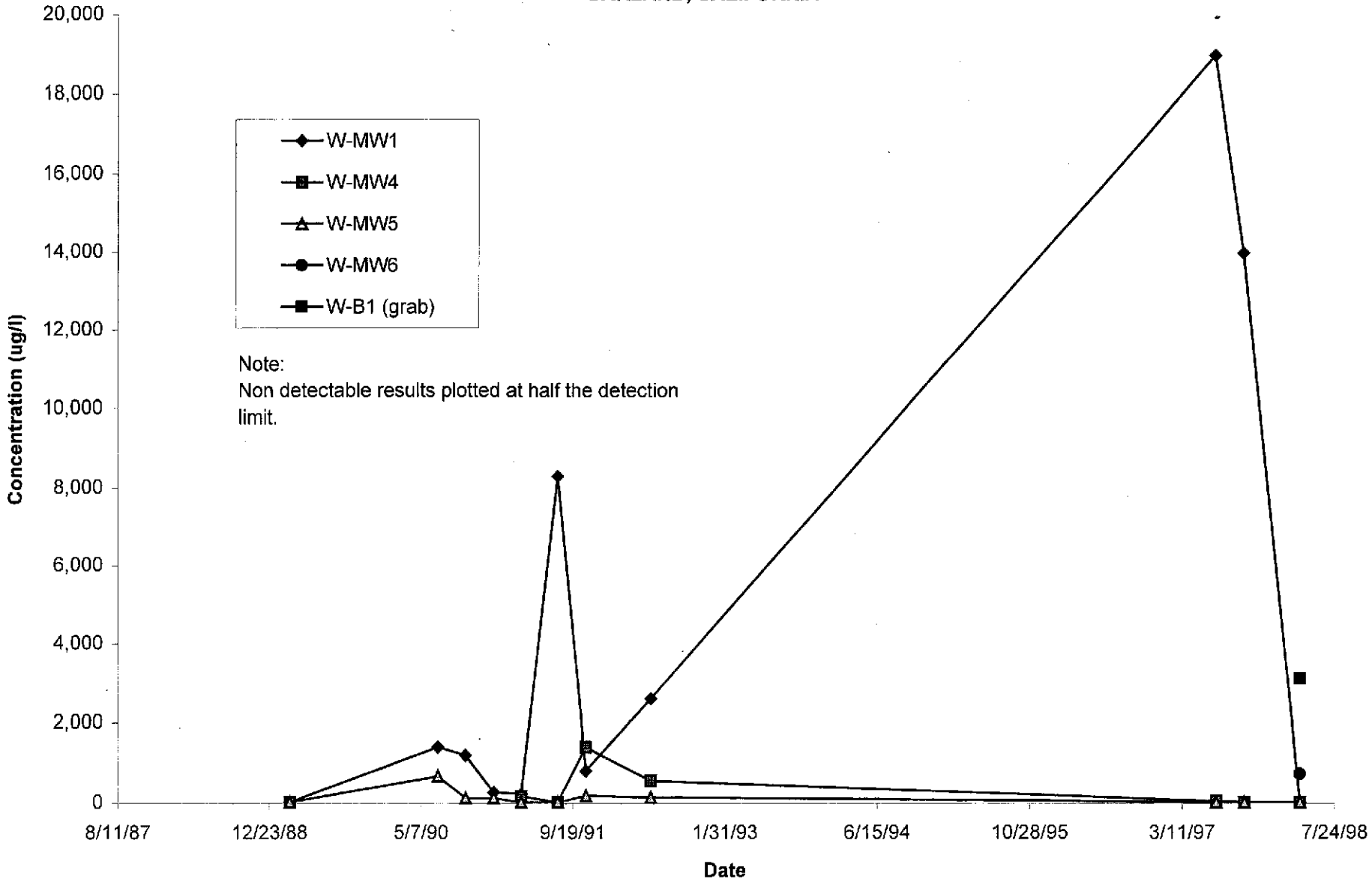
SEE REVERSE SIDE FOR INSTRUCTIONS

CHART 1
GROUNDWATER ELEVATION
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



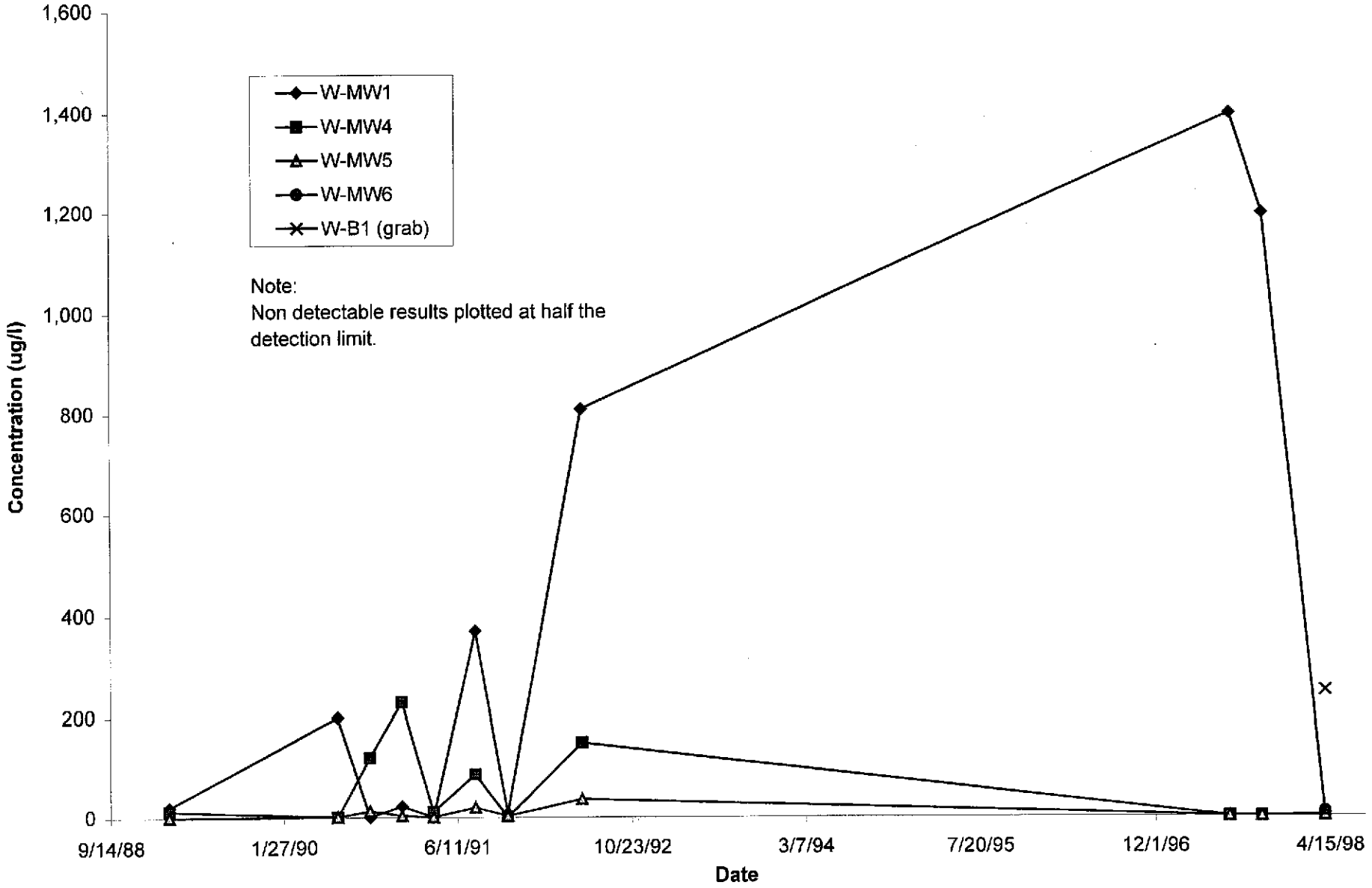
F:\transfer\project\ALAGSA\Alcopark\Tables\GW Chart

CHART 2
TOTAL PETROLEUM CONCENTRATIONS
ALCOPARK FUELING FACILTY
OAKLAND, CALIFORNIA



F:\transfer\project\ALAGSA\Alcopark\Tables\TPH-G Chart

CHART 3
BENZENE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



F:\transfer\project\ALAGSA\Alcopark\Tables\Benzene Chart

7001/7025

psi Information To Build On
Engineering • Consulting • Testing

October 14, 1999

Mr. Rod Freitag, P.E.
Environmental Program Manager
County of Alameda
Technical Services Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612

RE: Final Report, Soil and Groundwater Investigations
Alcopark Fueling Facility, Oakland, California

Dear Mr. Freitag:

As requested, Professional Service Industries is transmitting the Final Report, Soil and Groundwater Investigation for the Alcopark Fueling Facility at 165 13th Street, Oakland, California. In accordance with you instructions, the report is also being transmitted to the Alameda Health Care Services Agency. Please call me with any comments or questions on this report at (510) 785-1111.

Sincerely,

Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist

Enclosure

Eva Chu, Alameda Health Care Services Agency

\\PSI_HAYWARD\USR\APPS\TRANSFER\PROJECT\ALMDAGSA\ALCOPARK\03rd99\FREITO14.DOC

FINAL REPORT
SOIL AND GROUNDWATER INVESTIGATION
ALCOPARK FUELING FACILITIES
OAKLAND, CALIFORNIA

prepared for

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California

prepared by

Professional Service Industries, Inc.
1320 West Winton Avenue
Hayward, California 94545
(510) 785-1111

October 14, 1999
575-9G028

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(Continued)

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APPENDICES

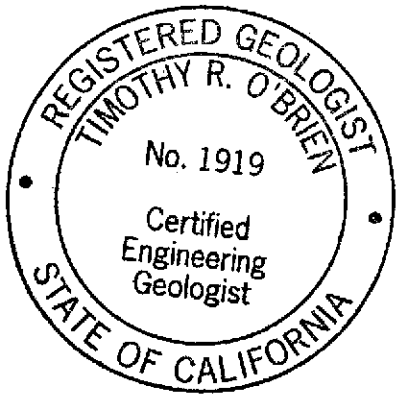
STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of County of Alameda, General Services Agency (GSA) for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

This Report is issued with the understanding that GSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This Report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Chris Merritt
Project Geologist

Timothy R. O'Brien, RG/CEG/CHG
Senior Geologist



1. INTRODUCTION

Professional Service Industries, Inc. (PSI) has been retained by the County of Alameda, General Services Agency (GSA) to perform additional soil and groundwater characterization for two separate sites located at the Alcopark parking garage.

Site Number 1 contains closed in-place USTs, located at the corner of 12th and Jackson Streets; Site Number 2 contains active USTs, located at the corner of 13th and Jackson Streets. The site locations are presented on Figures 1 and 2.

The scope of work consisted of the following tasks:

- Prepare a site specific Health and Safety Plan.
- Obtain City of Oakland encroachment and excavation (drilling) permits. Obtain a Alameda Department of Public Works drilling permit.
- Mark the drilling locations and notify Underground Service Alert 72 hours prior to initiating drilling activities. A private utility locating company was also employed to clear the boring locations.
- Drill one hand auger boring at Site No. 1 adjacent and downgradient of the former fuel dispenser location to collect soil and groundwater samples.
- Drill one Geoprobe soil boring at Site No. 2 to obtain soil samples. Use a PID to screen the soil samples collected in the borings. Install a small diameter groundwater monitoring well in the Geoprobe soil boring. Develop and sample the groundwater monitoring well.
- Sample Wells MW-1, MW-6, and MW-7 for chemical analysis.
- Transport soil and groundwater samples to McCampbell Analytical of Pacheco, California, a California State certified laboratory.
- Analyze soil and groundwater samples for Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 8015M; Benzene, Toluene, Ethylbenzene, total Xylenes (BTEX), and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 8020.
- Prepare a report summarizing the findings of the investigation, an evaluation of the groundwater plume stability, and suitability of the sites for administrative closure.

1.1 SITE BACKGROUND

1.1.1 Site Location No. 1, Northeast Corner of 12th and Jackson Streets

GSA closed two 10,000 gallon USTs in-place at the site in 1994. The USTs previously stored gasoline. The USTs were located outside the building adjacent to the City street. Piping extended from the USTs to dispensers located in the maintenance garage.

The tanks had not been used since the early 1980s (GSA, 1999). Soil and groundwater samples collected in support of in-place closure indicated low concentrations of petroleum hydrocarbons in soil and measurable concentrations of petroleum hydrocarbons in groundwater (ESE, 1993).

The Alameda County Environmental Health Department (ACEHD) requested additional investigation of the site. That investigation was performed by PSI in January, 1999. A limited amount of petroleum hydrocarbon contamination was detected (PSI, 1999). Subsequent to that investigation, the ACEHD requested the fuel delivery piping be investigated (ACEHD, 1999c).

1.1.2 Site Location No. 2, Southeast Corner of 13th and Jackson Streets

GSA operates two 10,000-gallon USTs to fuel County vehicles. Three groundwater monitoring wells were installed at the Alcopark fueling station in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at Dispenser No. 1. Initial sample results indicated the presence of BTEX in the groundwater. Subsequent sample results indicated the presence of TPH-G. Based on the analytical data, it was surmised that contaminants detected on-site were emanating from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of an upgradient source (GSA, 1997).

In May, 1997 the ACEHD instructed GSA to resume groundwater monitoring at the facility (ACEHD, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G, BTEX, and MTBE. ACEHD directed GSA to investigate the extent and stability of the plume (ACEHD, 1997b). To better define groundwater conditions downgradient of the USTs, two borings were drilled in March, 1998. Based on groundwater monitoring events performed since March, 1998, the ACEHD directed GSA to better define the extent of groundwater contamination (ACEHD, 1999c).

1.1.2.1 Storage Tank System Upgrades

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations.

This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (GSA, 1997).

1.2 PROJECT OBJECTIVES

The objective of the project at Site No. 1 is to determine if soil or groundwater quality has been impacted immediately downgradient of the former dispenser and piping location. Because the exact location of the piping is unknown, and is impossible to determine accurately, soil and groundwater samples collected downgradient of the former dispenser location will provide data for the evaluation.

The objective of the project at Site No. 2 is to better define groundwater quality downgradient of the USTs.

2. PRE-FIELD ACTIVITIES

This section describes the tasks performed prior to implementing the drilling program. The tasks included:

- Prepare a Soil and Groundwater Investigation Workplan for submittal to the ACDEH for approval.
- Obtain a Well Construction Permit from the Alameda County Public Works Department.
- Obtain City of Oakland encroachment and excavation (drilling) permits.
- Prepare a site specific health and safety plan.
- Notify the ACEHD of the drilling and sampling schedule.
- Mark the borehole locations on-site and inform Underground Service Alert of the planned drilling activities.

2.1.1 Soil and Groundwater Investigation Workplan

PSI prepared a Soil and Groundwater Investigation Workplan which was submitted to Ms. Eva Chu of the ACEHD for approval. The workplan was approved on April 20, 1999 (ACEHD, 1999d).

2.1.2 Well Construction Permit Application

In accordance with well construction requirements in Alameda County, a well construction permit was obtained from the Alameda County Public Works Department. The Public Works Department was informed of the drilling schedule to be on-site to inspect the annular seal and boring grout placement.

2.1.3 City of Oakland Encroachment and Excavation Permits

In accordance with City of Oakland requirements for constructing wells in the City street. PSI obtained City of Oakland Encroachment and Excavation Permits and scheduled an on-site inspection with the City of Oakland personnel. A copy of the permits are included in Appendix A.

2.1.4 Preparation of Site Specific Health and Safety Plan

Prior to the commencement of field activities at the site, a site-specific Health and Safety Plan (HSP) was prepared in compliance with 29 CFR 1910.120. The HSP addressed potentially hazardous materials and physical hazards that might have been encountered during field activities at the site.

2.1.5 Utility Clearance

PSI marked the drilling locations with white paint. Underground Service Alert (USA) was contacted to identify subsurface utilities in the areas of investigation. In addition, the boring locations were cleared by a private underground utility locating service.

3. SUBSURFACE INVESTIGATION

This section describes the soil and groundwater investigation performed.

3.1 SOIL BORINGS

Two soil borings were drilled to further investigate the soil and groundwater conditions. The borings were drilled far enough to allow collection of a grab groundwater sample in Boring SB-8, and install a groundwater monitoring well in the boring for Well MW-7.

Soil borings were logged by a PSI geologist using the Unified Soil Classification System (USCS). The work was performed under the supervision of a State of California Registered Geologist.

3.1.1 Soil Boring at Site No. 1

Boring SB-8 was drilled using a hand auger to collect soil and groundwater samples for chemical analysis. The boring was located as shown on Figure 2. The boring location was selected to provide information on the soil and groundwater quality downgradient of the former fuel dispensers, which were located in the Alcopark maintenance garage.

The boring was drilled by a PSI geologist using a hand auger. Soil samples were collected in the boring for lithologic logging and evaluation of the presence of volatile organic compounds. A soil boring log is presented in Appendix B.

Samples for chemical analysis were collected in stainless steel sleeves using a drive sampler. The sleeves were capped using Teflon sheet, plastic end caps, and duct tape. Samples were labeled using a permanent ink marking pen. Samples were stored in a cooler containing ice and maintained under chain of custody protocol.

Representative sample material was collected from the hand auger at three foot intervals, placed in plastic Ziploc bags, and labeled. The soil gas was allowed to equilibrate in the bag for at least 10 minutes. A hole was punched through the sample bags using the steel probe of the PID to allow collection of a soil gas VOC concentration measurement. The PID measurements are recorded on the boring log.

3.1.1.1 Selection of Soil Sample for Chemical Analysis

One soil sample was selected for the chemical analyses described in Section 4. The sample for chemical analysis was selected based on field measured PID readings. Because no measurable VOCs were detected in the soil boring, a sample from the capillary fringe was collected for chemical analysis.

3.1.1.2 Grab Groundwater Sampling

Upon completion of the boring, a grab groundwater sample was collected. The grab groundwater sample was collected using a disposable Teflon bailer. Field work for groundwater sampling was conducted in accordance with the procedures described in the project work plan (PSI, 1999). The sample was stored in a cooler containing ice and maintained under chain of custody protocol.

Upon collection of the groundwater sample, the boring was grouted with neat cement and capped with concrete to match the existing concrete slab.

3.1.2 Soil Boring at Site No. 2

Boring MW-7 was drilled to collect soil samples for chemical analysis and to install a groundwater monitoring well. The boring was located as shown on Figure 2. The boring location was selected to provide information on the downgradient extent of impacted groundwater.

The boring was drilled using the direct push Geoprobe drilling technique. Fisch Environmental Services of Apple Valley, California provided drilling services. The boring was logged by a PSI geologist using the Unified Soil Classification System.

Soil samples were collected in the boring at four foot intervals for lithologic logging and evaluation of the presence of volatile organic compounds. The boring extended deep enough to install a groundwater monitoring well. The depth of the well is 24 feet below ground surface.

Samples were collected in plastic liners. The samples were capped using Teflon sheet, plastic end caps, and duct tape. Each sample was labeled using a permanent ink marking pen. Samples were stored in a cooler containing ice and maintained under chain of custody protocol.

Representative sample material was collected from the sample interval, placed in plastic Ziploc bags, and labeled. The soil gas was allowed to equilibrate in the bag for at least 10 minutes. Holes were punched through the sample bags using the steel probe of the PID to allow collection of a soil gas VOC concentration measurement. The PID measurements are recorded on the boring log. A soil boring log is presented in Appendix B.

3.1.2.1 Selection of Soil Sample for Chemical Analysis

One soil sample was selected for the chemical analyses described in Section 4. Samples for chemical analysis were selected based on field measured PID readings. Because no

measurable VOC concentration was observed in the soil boring, a sample from the capillary fringe was collected for chemical analysis from the soil boring.

3.1.3 Grab Groundwater Sampling

Because a groundwater well was installed, a grab groundwater sample was not collected from this boring.

3.1.4 Monitoring Well Construction

A one-half inch, inside diameter, polyvinyl chloride well was installed in Boring MW-7 using prepacked screen. The screened interval of the well extends from 9 to 24 feet below ground surface (bgs). The screen location allows for the evaluation of the presence of floating product on the water table.

The screened interval of the well consists of factory milled 0.020-inch slots. Sandpack extends slightly above the screen interval. A one-foot bentonite transition seal was installed above the sandpack, and neat cement grouts the annular space to the surface. A tamper resistant wellhead cover was set in concrete slightly above grade to minimize surface water ponding.

3.1.5 Well Development

The well was developed by pumping. The groundwater parameters temperature and electrical conductivity were monitored as development progressed to determine when equilibrium conditions were reached.

3.2 MONITORING WELL SAMPLING

Five groundwater monitoring wells and one vadose zone monitoring well presently at Site No. 2. The ACEHD no longer requires Wells MW-4 and MW-5 to be sampled for chemical analysis (ACHED, 1999c). The remaining wells (MW-1, MW-6, and MW-7) were sampled for chemical analysis. The samples were chemically analyzed as described in Section 4. Groundwater elevations were monitored in all site monitoring wells.

3.2.1 Groundwater Elevation Measurements

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in each monitoring well. The Wells MW-1 and MW-6 were then sampled without purging as requested in the ACEHD letter dated September 11, 1997. The groundwater elevation data is presented in Table 2 and Figure 2.

Groundwater elevation contours are presented on Figure 2. The groundwater flow direction is to the east with a hydraulic gradient of 0.0041 foot/foot. The flow direction is consistent with previously measured groundwater flow directions measured at the site. Groundwater elevation data over time is presented on Chart 1, Appendix D.

3.2.2 Groundwater Sample Collection

Groundwater samples were collected with disposable polyethylene tubing equipped with a check valve (Wells MW-6 and MW-7) or a disposable Teflon bailer (Well MW-1). The groundwater samples were collected according to PSI's standard protocol, presented in the project work plan (PSI, 1999c). Groundwater samples were stored in an ice chest at 4 degrees Celsius and maintained under chain of custody protocol.

3.2.3 Decontamination Procedures

To minimize the possibility of contaminant cross-contamination between sampling locations, most of the sampling equipment is disposable. To further minimize the possibility of cross-contamination, all re-usable sampling equipment was cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to use at a new sampling location. Sampling equipment included:

- Stainless-steel sample barrel and tubes,
- Drilling equipment,
- Groundwater sampling equipment
- Sounders, and
- Development equipment.

4. LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation were submitted to McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is a State of California Department of Health Services certified hazardous waste laboratory (Environmental Laboratory Accreditation Program [ELAP] #1644). A summary of the types of analyses and analytical methods is presented below.

All soil and groundwater samples submitted to the analytical laboratory were analyzed for the following constituents by the indicated methods:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) in accordance with Environmental Protection Agency (EPA) Method 8015-m.
- BTEX and MTBE by EPA Method 8020.

4.1 ANALYTICAL RESULTS

Soil and groundwater samples were collected and chemically analyzed in accordance with the analytical method requirements and project workplan. The analytical data is summarized in Tables 1, 2, and 3. Table 1 presents the data generated at the former UST location (Site No. 1); Tables 2 and 3 present the data generated at the active UST location (Site No. 2). Laboratory reports are presented in Appendix C. The samples were transported to the laboratory under chain of custody protocol. Copies of the chain of custody forms are included in Appendix C.

4.1.1 Soil Analysis Discussion – Site Number 1

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the soil sample collected in this investigation. The analytical data is summarized in Table 1.

4.1.2 Groundwater Analysis Discussion – Site Number 1

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the groundwater sample collected in this investigation. The analytical data is summarized in Table 1.

4.1.3 Soil Analysis Discussion – Site Number 2

No detectable concentration of TPH-G, BTEX, or MTBE was detected in the soil sample collected in this investigation. The analytical data is summarized in Table 3.

4.1.4 Groundwater Analysis Discussion – Site Number 2

Analytical results reported measurable concentrations of TPH-G, BTEX, and MTBE in groundwater samples from Wells MW-1, MW-6, and MW-7. This is consistent with analytical results from previous sampling events. The analytical data is summarized in Table 2.

- TPH-G was detected in Wells MW-1 (2,400 ug/l), MW-6 (6,600 ug/l), and MW-7 (92 ug/l). The concentration of TPH-G over time is presented on Chart 2, Appendix D.

- Benzene was detected in Wells MW-1 (680 ug/l), MW-6 (2,500 ug/l), and MW-7 (1.6 ug/l). The concentration of benzene over time is presented on Chart 3, Appendix D.

- MTBE was detected in Wells MW-1 (400 ug/l) and MW-6 (3,700 ug/l), and MW-7 (1,200 ug/l). by the analytical method EPA 8020. The concentration of MTBE over time is presented on Chart 4, Appendix D.

5. CONCLUSIONS

Conclusions for each site are presented below:

5.1 SITE NUMBER 1

Based on the information presented in this report, the following conclusions have been reached:

- No TPH-G, BTEX, or MTBE was detected in soil or groundwater samples collected immediately downgradient of the former fuel dispensers.
- Investigations performed previously indicated localized petroleum hydrocarbon contamination at Boring SB-6.

Based on the results of PSI's soil and groundwater investigations presented in this and a previous report, PSI does not recommend additional investigation of the former Alcopark USTs (PSI, 1999). This recommendation is based on the lack of MTBE in site soil or groundwater, and published guidance which recommends natural bioremediation of low concentration spills (RWQCB, 1996). PSI recommends site closure for Site Number 1.

5.2 SITE NUMBER 2

Based on the information presented in this report, the following conclusions have been reached:

- Groundwater exists approximately 17.5 feet below the ground surface.
- Groundwater flow direction is to the east.
- Groundwater samples collected at the site contained measurable concentrations of TPH-G, BTEX, or MTBE in Wells MW-1, MW-6, and MW-7. Concentrations of TPH-G, and benzene are significantly lower in the downgradient Well MW-7 than in Well MW-6. The concentration of MTBE in Well MW-7 is one-third the concentration reported in Well MW-6.

Based on the results presented in this report, PSI recommends additional groundwater monitoring be performed to determine contaminant trends. Evaluation of the trends will assist in differentiating between a one time leak event (such as might have happened during piping upgrade work) and an ongoing source. It is noted that the Alcopark tank leak monitoring system has not indicated the occurrence of a tank or piping leak (Freitag, personal communication, 1998).

PSI does not recommend further drilling to investigate the extent of the groundwater plume. Further investigation of groundwater conditions would require additional drilling in the public street at a distance of approximately 100 feet downgradient of Well MW-7. Based on the reduction in concentration of contaminants observed between Wells MW-6 and MW-7, a well installed in an available location downgradient is not expected to be impacted by site contaminants and would not provide useful information.

REFERENCES

ACEHD, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.

ACEHD, 1997b, Continuation of Groundwater Monitoring Request Letter to Mr. Jim De Voss, May 20.

ACEHD, 1999a, Workplan Approval for Former Alcopark Fueling Facility, prepared by Ms. Eva Chu, January 27.

ACEHD, 1999b, Personnel Communication between Ms. Eva Chu of ACEHD and Mr. Timothy O'Brien of PSI concerning additional laboratory analysis request, February 10.

ACHED, 1999c, Additional Investigation Request Letter, prepared by Ms. Eva Chu, March 2.

ACEHD, 1999d, Workplan Approval for Soil and Groundwater Investigation, Alcopark Fueling Facilities, prepared by Ms. Eva Chu, April 20.

ESE, 1993, Subsurface Investigation for USTs at Jackson and 12th Streets, 165 13th Street, Oakland, California, prepared for Alameda County General Services Agency, April 19.

GSA, 1997, RFP for Groundwater Investigation Services, December 2.

GSA, 1999, Request For Proposal (RFP) for Groundwater Services, January 8.

LLNL, 1998, An Evaluation of MTBE Impacts to California Groundwater Resources, prepared for California State Water Resources Control Board, June 11.

PSI, 1998a, Soil and Groundwater Investigation, Alcopark Fueling Facility, prepared for Alameda GSA, April 17.

PSI, 1998b, Groundwater Monitoring Report, Second Quarter, 1998, Alcopark Fueling Facility, prepared for Alameda GSA, August 12.

PSI, 1998c, Groundwater Monitoring Report, Third Quarter, 1998, Alcopark Fueling Facility, prepared for Alameda GSA, November 16.

PSI, 1999, Soil and Groundwater Investigation, Former Alcopark Fueling Facility, prepared for Alameda GSA, February 25.

PSI, 1999c, Workplan, Soil and Groundwater Investigation, Alcopark Fueling Facilities, prepared for Alameda GSA, April 8, 1999.

USGS, 1980, Oakland West, California, topographic map.

TABLE 1
SUMMARY OF ANALYTICAL DATA, SITE NO. 1
FORMER ALCOPARK FUELING FACILITY
12TH and JACKSON STREETS, OAKLAND, CA

					All concentrations in mg/kg (PPM).					
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	15	10/27/92	Soil	<1	NA	0.019	0.019	0.011	0.042	NA
SB-1	21.5	10/27/92	Soil	6.3	NA	0.41	0.68	0.1	0.70	NA
SB-2	15	10/27/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-2	22	10/27/92	Soil	1.8	NA	0.21	0.19	0.034	0.20	NA
SB-3	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-3	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-5	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-6	25	2/10/99	Soil	<1	<0.005	0.047	0.022	0.024	0.026	<3.0
SB-7	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-8*	6	9/3/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
					All concentrations in mg/l (PPM).					
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	NA	10/27/92	Groundwater	51	NA	2.4	9.4	1.4	8.4	NA
SB-2	NA	10/27/92	Groundwater	8.2	NA	0.56	0.93	0.36	0.62	NA
SB-3	NA	10/28/92	Groundwater	0.072	NA	0.00071	<0.0005	0.0005	0.0024	NA
SB-4	NA	10/28/92	Groundwater	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
SB-5	25	2/10/99	Groundwater	<0.050	<0.005	0.00063	0.00076	<0.0005	0.00067	NA
SB-6	25	2/10/99	Groundwater	5.0	<0.015	0.58	0.58	0.16	0.87	NA
SB-7	25	2/10/99	Groundwater	<0.050	<0.005	<0.0005	0.0011	<0.0005	0.002	NA
SB-8*	7	9/3/99	Groundwater	<0.050	<0.001	<0.001	<0.001	<0.001	<0.001	NA

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline.
MTBE denotes Methyl Tert Butyl Ether.
mg/kg denotes milligrams per kilogram (ppm).
< denotes less than detection limit.
NA denotes Not Analyzed.
Sample Depth reported in feet below ground surface. Sample SB-8 collected inside Alcopark basement garage.
Data collected in 1992 from ESE Report of Findings dated April 19, 1993 prepared for Alameda GSA.

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).

Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW1	3/21/89	12.2	ND	NA	21	3.9	0.4	4.5
W-MW1	7/26/90	12.3	1,400	NA	200	45	ND	53
W-MW1	10/25/90	12.1	1,200	NA	ND	7.3	2.2	46
W-MW1	1/25/91	11.9	270	NA	23	1.5	ND	3.1
W-MW1	4/25/91	11.8	230	NA	ND	ND	ND	ND
W-MW1	8/27/91	11.8	8,300	NA	370	64	ND	120
W-MW1	11/25/91	11.7	810	NA	9.3	ND	7.8	32
W-MW1	6/11/92	12.85	2,600	NA	810	16	21	42
W-MW1	7/16/97	14.36	19,000	ND (150)	1,400	2,800	500	2,600
W-MW1	10/21/97	13.92	14,000	29	1,200	1,000	590	2,800
W-MW1	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW1	4/1/98	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
W-MW1	7/15/98	16.41	71	57	31	ND (0.5)	ND (0.5)	3.1
W-MW1	10/22/98	15.62	5,100	360	520	140	250	950
W-MW1	9/9/99	15.42	2,400	400	680	140	130	370
W-MW4	3/21/89	12.4	ND	NA	13	1.4	1.0	ND
W-MW4	7/26/90	12.5	NA	NA	0.8	ND	ND	ND
W-MW4	10/25/90	12.2	NA	NA	120	1.2	1.1	0.9
W-MW4	1/25/91	12.0	NA	NA	230	2.8	1.2	2.0
W-MW4	4/25/91	13.0	170	NA	12	ND	ND	2.3
W-MW4	8/27/91	11.8	ND	NA	87	1.3	0.8	0.8
W-MW4	11/25/91	11.8	1,400	NA	ND	1.7	8.6	3.6
W-MW4	6/11/92	12.93	560	NA	150	1.8	1.8	1.1
W-MW4	7/16/97	14.46	50	ND	ND	ND	ND	ND
W-MW4	10/21/97	14.10	ND	ND	ND	ND	ND	ND
W-MW4	3/11/98	17.39	NS	NS	NS	NS	NS	NS
W-MW4	4/1/98	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	7/15/98	16.92	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	10/22/98	15.75	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	9/9/99	15.57	NS	NS	NS	NS	NS	NS
W-MW5	3/21/89	12.2	ND	NA	ND	ND	ND	ND
W-MW5	7/26/90	12.4	670	NA	0.8	ND	ND	ND
W-MW5	10/25/90	12.1	120	NA	13	ND	ND	ND
W-MW5	1/25/91	11.9	120	NA	3.2	ND	ND	ND
W-MW5	4/25/91	12.3	ND	NA	ND	ND	ND	ND
W-MW5	8/27/91	11.5	ND	NA	20	ND	0.5	ND
W-MW5	11/25/91	11.7	190	NA	2.7	ND	0.8	2.5
W-MW5	6/11/92	12.85	150	NA	37	ND	ND	ND
W-MW5	7/16/97	14.33	ND	22	ND	ND	ND	ND
W-MW5	10/21/97	13.88	ND	14	ND	ND	ND	ND
W-MW5	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW5	4/1/98	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	7/15/98	16.43	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	10/22/98	15.60	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	9/9/99	15.44	NS	NS	NS	NS	NS	NS

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).

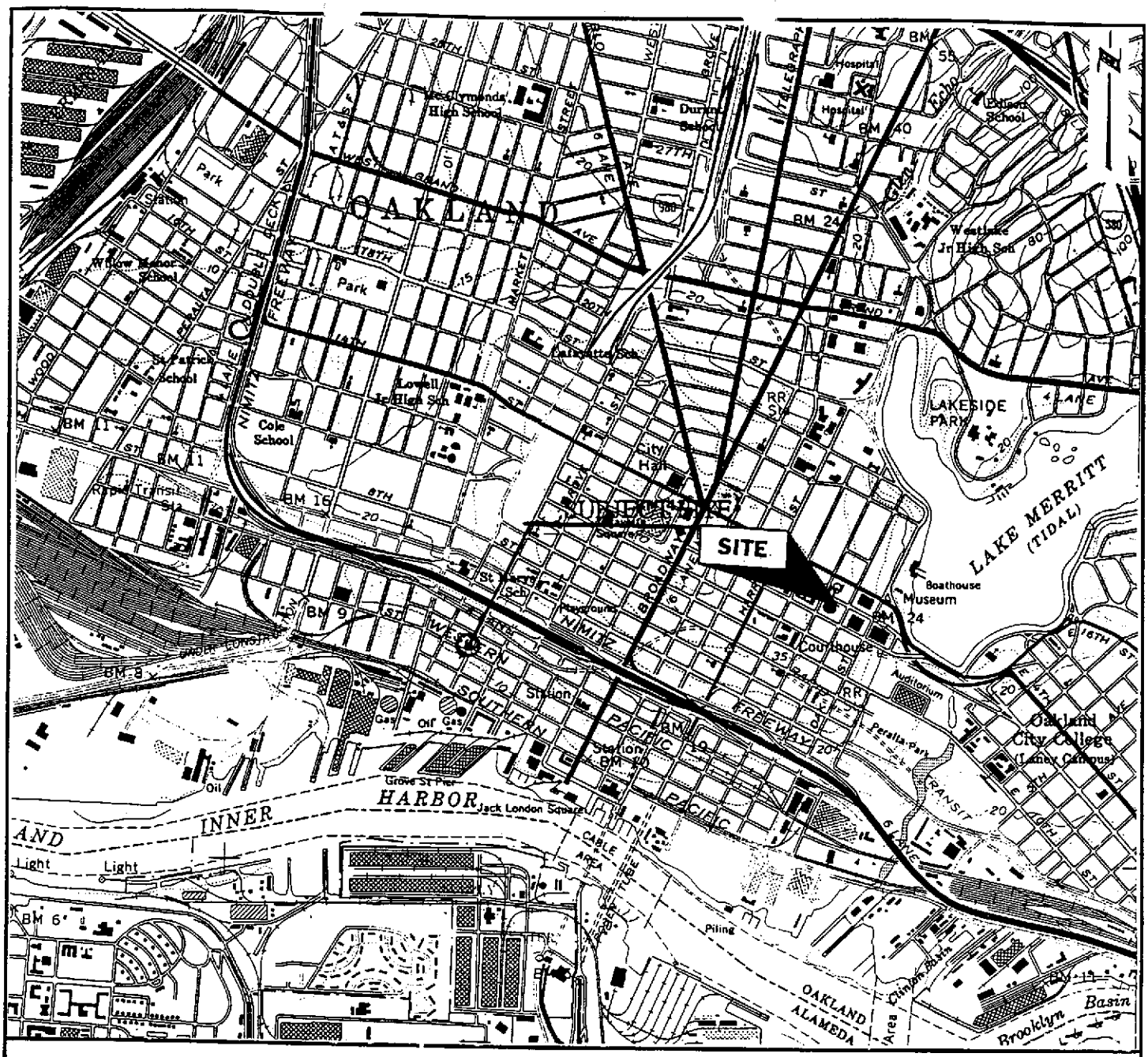
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW6	4/1/98	NA	740	4,600	9.8	3.2	3.0	15
W-MW6	7/15/98	NA	6,200	11,000	280	43	180	350
W-MW6	*7/15/98*	*NA*	*NA*	*13,000*	*ND (500)*	*ND (500)*	*ND (500)*	*ND (500)*
W-MW6	10/22/98	NA	4,700	9,600	450	13	200	200
W-MW6	*10/22/98*	*NA*	*NA*	*9,100*	*470*	*ND (250)*	*ND (250)*	*ND (250)*
W-MW6	9/9/99	NA	6,600	3,700	2,500	43	310	250
W-MW7	9/9/99	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
W-B1	3/23/98	NA	3,100	4,200	250	18	160	290

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. ( ) denotes detection limit.
Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.
Duplicate results presented in italics performed by EPA method 8260.

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

		All concentrations in ug/kg (PPB).					
Boring Name	Date	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
B-1-14'	3/23/98	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
B-2-14'	3/23/98	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
B-7-18	9/3/99	ND (1,000)	ND (50)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline
MTBE denotes Methyl tert-Butyl Ether
ND denotes not detected (detection limit shown in parentheses).
Boring B-1 grouted, Well MW-6 constructed in Boring B-2, Well MW-7 constructed in Boring B-7.



NORTH

0 1/2 1 MILE

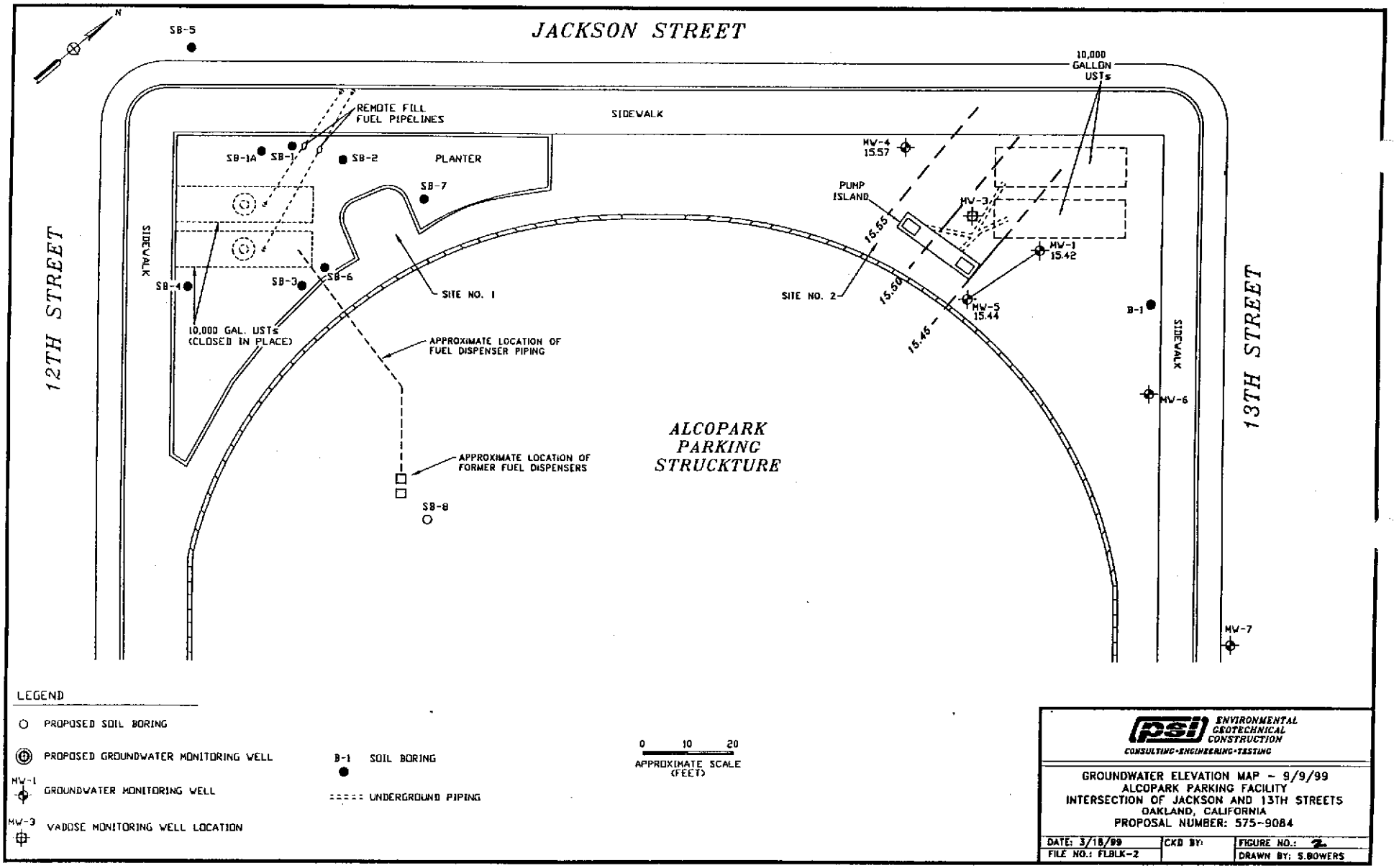
SCALE

REFERENCE:
U.S.G.S. OAKLANDWEST, CALIFORNIA, 1959
PHOTOREVISED 1980

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

SITE LOCATION
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-80004

DATE: 1/14/98	CKD BY:	FIGURE NO: 1
FILE NO: 80004 -1		DRAWN BY: S.BOWERS



psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

GROUNDWATER ELEVATION MAP - 9/9/99
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROPOSAL NUMBER: 575-9084

DATE: 3/18/99	CKD BY:	FIGURE NO.: 2
FILE NO.: FLBLK-2		DRAWN BY: S.BOWERS

APPENDIX A

WELL INSTALLATION PERMITS

96028

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 165 13th Street
Oakland, California

California Coordinates Source / / Accuracy ft.
CCN / ft. CCE / ft.
APN / /

CLIENT
Name Alameda Co. GSA Mr. Rod Freitag
Address 1401 Lakeside Dr. Phone 510 208 9522
City Oakland, CA Zip 94612

APPLICANT
Name Professional Services Industry
Tim O'Brien Fax 510 785 1192
Address 1320 W. Winton Ave Phone 510 785 1111
City Hayward, CA Zip 94545

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	☒ Direct Push		

DRILLER'S LICENSE NO. C57 683865

WELL PROJECTS
Drill Hole Diameter 2 in. Maximum
Casing Diameter 1/2 in. Depth 30 ft.
Surface Seal Depth ~8 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings / Maximum
Hole Diameter / in. Depth / ft.

ESTIMATED STARTING DATE 6/10/99
ESTIMATED COMPLETION DATE 6/10/99

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

APPLICANT'S SIGNATURE [signature] DATE 5/18/99

FOR OFFICE USE
PERMIT NUMBER 99WR225
WELL NUMBER
APN

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report 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 SUPPLY WELLS
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.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. 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.

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

F. WELL DESTRUCTION
See attached.

(G.) SPECIAL CONDITIONS SEE ATTACHED INFORMATION.

APPROVED [signature] DATE 5-18-99

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ALVIN KAN

WATER RESOURCES SECTION
GROUNDWATER PROTECTION ORDINANCE
For Monitoring Well at Clean or Contaminated Site

Destruction Requirements:

1. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.
2. Sound the well as deeply as practicable and record for your report.
3. Using a tremie pipe, fill the hole to 2 feet below the lower of finished grade or original ground with neat cement.
4. After the seal has set, backfill the remaining hole with compacted material.

CITY OF OAKLAND
Office of Planning and Building

EXCAVATION PERMIT

TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL ENGINEERING

PERMIT NUMBER		SITE ADDRESS/LOCATION
X9900659		165 13th St
APPROX. START DATE	APPROX. END DATE	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number)
CONTRACTOR'S LICENSE # AND CLASS 716703		CITY BUSINESS TAX #

ATTENTION:

1) State law requires that the contractor/owner call *Underground Service Alert (USA)* two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1 (800) 642-2444. UNDERGROUND SERVICE ALERT (USA) #: _____

2) **48 hours prior to starting work, YOU MUST CALL (510) 238-3651 TO SCHEDULE AN INSPECTION.**

OWNER/BUILDER

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than $500):

☐ I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

☐ I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two structures more than once during any three-year period. (Sec. 7044 Business and Professions Code).

☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

☐ I am exempt under Sec. _____, B&PC for this reason _____.

WORKER'S COMPENSATION

☐ I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # _____ Company Name _____

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars ($100) or less).

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

Chris MERRITT (PSI) — 8/31/99

Signature of Permittee ☐ Agent for ☐ Contractor ☐ Owner — Date

DATE STREET LAST RESURFACED	SPECIAL PAVING DETAIL REQUIRED? ☐ YES ☐ NO	HOLIDAY RESTRICTION? (NOV 1 - JAN 1) ☐ YES ☐ NO	LIMITED OPERATION AREA? (7AM-9AM & 4PM-6PM) ☐ YES ☐ NO
ISSUED BY [signature]		DATE ISSUED 8/31/99	

Recording requested by
City of Oakland

When Recorded Mail to:
City of Oakland
Community & Econ. Develop. Agency
Building Services, Eng. info.
250 Frank H. Ogawa Plaza, 2nd Fl.
Oakland, CA 94612

TAX ROLL PARCEL NUMBER
(ASSESSOR'S REFERENCE NUMBER)

MAP	BLOCK	PARCEL	SUB
2	081	01	-

Address: 165-13th Street, Oakland

SPACE ABOVE FOR RECORDER'S USE ONLY

MINOR ENCROACHMENT PERMIT AND AGREEMENT

Alameda County, General Services Agency, is hereby granted a Conditional Revocable Permit to encroach into the public right-of-way area of 13th Street, adjacent to the property commonly known as 165-13th Street, Oakland with one monitoring well. The location of said encroachments shall be as delineated in Exhibit 'A' attached hereto and made a part hereof.

The permittee agrees to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the permitees described above, and their successors in interest thereof.

In witness whereof, I have set my signature this 12TH day of AUGUST, 1999.

Alameda County, General Services Agency

ROD FREITAG, ENVIRONMENTAL PROGRAM MANAGER

-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --

BELOW FOR OFFICIAL USE ONLY

CITY OF OAKLAND

Dated_____ By:_____

CALVIN N. WONG
Director of Building Services
For
WILLIAM E. CLAGGETT
Executive Director, Community & Economic Development Agency

file: minenc.15

APPENDIX B

SOIL BORING LOGS AND WELL DIAGRAM

SOIL BORING LOG

BORING NO:	B-7
SHEET 1	OF 2
PROJECT NAME: Alcopark Site No. 2	PROJECT NO: 575-9G028
DATE 9/3/99	
DRILLING COMPANY:	FISCH ENVIRONMENTAL
DRILLING METHOD:	DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2 INCH DIAMETER	DEPTH: 24 ft.

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
9/3/99	initial	18.0
9/3/99	stabilized	16.9

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
					Sand with some silt, fine to medium grained sand, brown,		SP	Concrete Surface
1					moist, no odor.			
2								
3								
4								
5		16				0		
6								
7								Color change to green.
8								
9								
10		18				0		
11								
12								
13								
14								
15		20				0		
16								
17								
18								groundwater encountered.
19		19						
20						0		
					Log continues downward			

LOGGED BY: Chris Merritt

SOIL BORING LOG

BORING NO: B-7
SHEET 2 OF 2

PROJECT NAME: Alcopark Site No. 2
PROJECT NO: 575-9G028
DATE 9/3/99

DRILLING COMPANY: FISCH ENVIRONMENTAL
DRILLING METHOD: DIRECT PUSH - GEOPROBE
BORING DIMENSIONS: 2 INCH DIAMETER DEPTH: 24 FT

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
					Silty sand as described above.		SP	
21								
22								
23								
		24						
24						0		Groundwater encountered at 18 feet.
25								Total Depth = 24 feet.
								Boring terminated at depth sufficient for
26								well installation.
								Well MW-7 installed in boring.
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

LOGGED BY: Chris Merritt

SOIL BORING LOG

BORING NO:	SB-8
SHEET 1 OF 1	
PROJECT NAME: Alcopark Site No. 1	PROJECT NO: 575-9G028
DATE 9/3/99	
DRILLING COMPANY:	PSI
DRILLING METHOD:	Hand Auger
BORING DIMENSIONS:	2.5 inch hand auger DEPTH: 8 ft.

GROUNDWATER LEVELS

DATE	COMMENTS	DEPTH BGS
9/3/99	initial	7.0
9/3/99	stabilized	7.0

DEPTH (FEET)	SAMPLE NO.	RECOVERY (IN)	SAMPLE INTERVAL	BLOW COUNT	DESCRIPTION	PID (PPM)	USCS	REMARKS
					Sand with some silt, fine to medium grained sand, brown,		SP	Concrete Surface
1					moist, no odor.			
2								
3						0		PID from soil cuttings.
4								
5						0		PID from soil cuttings.
6								
7		6				0		groundwater encountered.
8								Total depth = 8 feet.
9								Boring terminated at depth sufficient for investigation.
10								Boring grouted with neat cement and capped with 8-10 inches of concrete.
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

LOGGED BY: Chris Merritt

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: B7/MW7
PERMIT NO:

DATE: 4/3/99 | PROJECT NAME: Alcopak Site #2 | PROJECT NO: 96028

WELL SITE LOCATION PLAN:

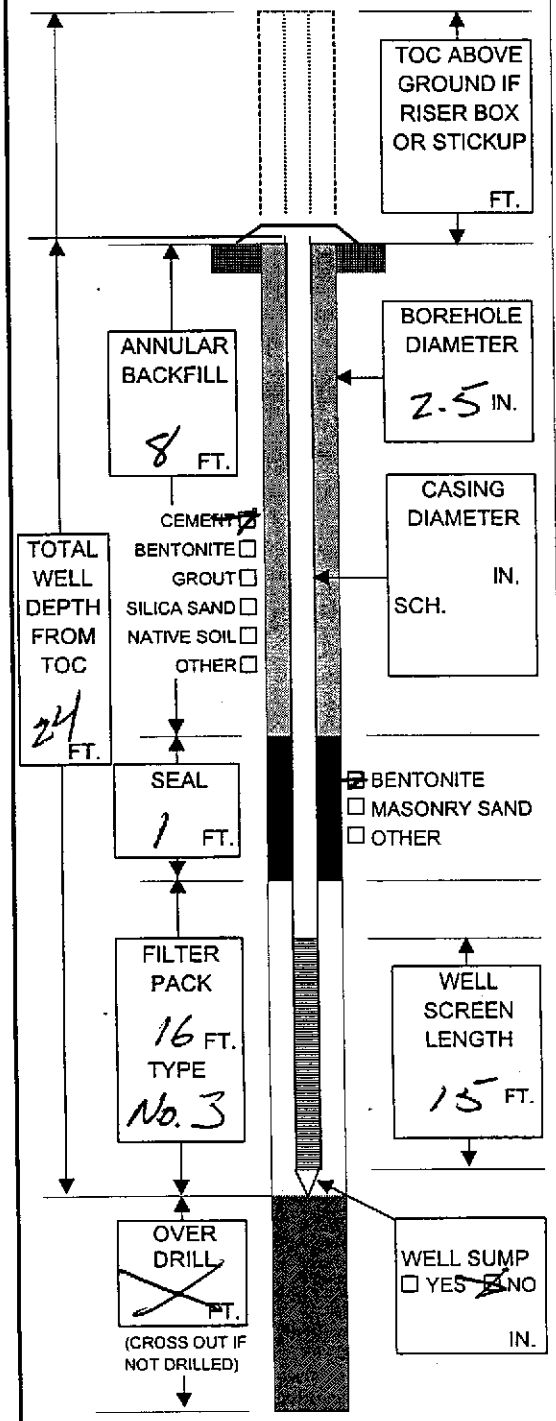
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: Dave Fisch

WELL TYPE: ☐ SHALLOW ☐ SINGLE CASED ☒ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ☒ HIGH PRESSURE WASH ☐ SOAP WASH ☐ OTHER

CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☐ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☒ OTHER Prepack
PIT CASING: ☐ YES ☐ NO ☐ DESCRIBE

WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ☐ OTHER ____ IN
SLOT: ☒ 0.010 ☐ 0.020 ☐ OTHER ____ IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ☒ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ☒ 2.5 ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER ____ IN
DRILLING MUD: ☒ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ☒ NO

COMPLETION: ☒ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☒ DOLPHIN ☐ MASTER KEY NO. ____ ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☒ OTHER None generated

DEVELOPMENT METHOD: ☐ NONE ☒ BAILING ☐ PUMPING ☐ AIR LIFT ☐ SURGE & BLOCK ☐ OTHER
TIME: ☐ 10 MIN ☐ 20 MIN ☒ OTHER 30 MIN
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL
WATER BEFORE: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ☐ NO TYPE

DEVELOPMENT WATER: ☐ DRUMMED NUMBER OF DRUMS ____ ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL ____ FT ☐ BTOC ☐ BGS

DATE: ____ ____ FT BELOW TOC

DATE: ____ ____ FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

PREPARED BY: Chris Merritt

PSI
Rev. 12/95

APPENDIX C

ANALYTICAL LABORATORY REPORT

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, /, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/03/99

09/10/99

Dear Tim:

Enclosed are:

1). the results of **3** samples from your **#9G028; Alameda GSA-Alcopark** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, , Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/04-09/07/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
18598	B8-6.0	S	ND	---	---	---	---	---	96
18603	B7-18.0	S	ND	---	---	---	---	---	96
18605	WB-8	W	ND,i	---	---	---	---	---	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds aresignificant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Telephone : 925-798-1620 Fax : 925-798-1622
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Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/04-09/08/99

Volatile Organics By GC/MS

EPA method 8260

Lab ID	18598
Client ID	B8-6.0
Matrix	S

Compound	Concentration*	Compound	Concentration*
Acetone [b]	ND<20	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone [d]	ND
sec-Butyl benzene	ND	Methylene Chloride [e]	ND
tert-Butyl benzene	ND	Methyl ethyl ketone [f]	ND
Carbon Disulfide	ND	Methyl isobutyl ketone [g]	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether [c]	ND	Styrene [l]	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene [m]	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate [n]	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride [o]	ND
trans-1,2-Dichloroethene	ND	Xylenes, total [p]	ND
1,2-Dichloropropane	ND	**Comments:**	
1,3-Dichloropropane	ND	**Surrogate Recoveries (%)**	
2,2-Dichloropropane	ND	Dibromofluoromethane	97
1,1-Dichloropropene	ND	Toluene-d8	110
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	109

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe

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

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) aceticacid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/04-09/08/99

Volatile Organics By GC/MS

EPA method 8260

Lab ID	18603
Client ID	B7-18.0
Matrix	S

Compound	Concentration*	Compound	Concentration*
Acetone [b]	ND<20	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone [d]	ND
sec-Butyl benzene	ND	Methylene Chloride [e]	ND
tert-Butyl benzene	ND	Methyl ethyl ketone [f]	ND
Carbon Disulfide	ND	Methyl isobutyl ketone [g]	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether [c]	ND	Styrene [l]	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene [m]	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate [n]	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride [o]	ND
trans-1,2-Dichloroethene	ND	Xylenes, total [p]	ND
1,2-Dichloropropane	ND	**Comments:**	
1,3-Dichloropropane	ND	**Surrogate Recoveries (%)**	
2,2-Dichloropropane	ND	Dibromofluoromethane	89
1,1-Dichloropropene	ND	Toluene-d8	111
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	114

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe

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

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) acetic acid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, , Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/04-09/08/99
	Client P.O:	Date Analyzed: 09/04-09/08/99

Volatile Organics By GC/MS

EPA method 8260

Lab ID	18605
Client ID	WB-8
Matrix	W

Compound	Concentration*	Compound	Concentration*
Acetone [b]	ND	trans-1,3-Dichloropropene	ND
Benzene	ND	Ethylene dibromide	ND
Bromobenzene	ND	Ethylbenzene	ND
Bromochloromethane	ND	Hexachlorobutadiene	ND
Bromodichloromethane	ND	Iodomethane	ND
Bromoform	ND	Isopropylbenzene	ND
Bromomethane	ND	p-Isopropyl toluene	ND
n-Butyl benzene	ND	Methyl butyl ketone [d]	ND
sec-Butyl benzene	ND	Methylene Chloride[e]	ND
tert-Butyl benzene	ND	Methyl ethyl ketone [f]	ND
Carbon Disulfide	ND	Methyl isobutyl ketone [g]	ND
Carbon Tetrachloride	ND	Methyl tert-Butyl Ether (MTBE)	---
Chlorobenzene	ND	Naphthalene	ND
Chloroethane	ND	n-Propyl benzene	ND
2-Chloroethyl Vinyl Ether[c]	ND	Styrene [i]	ND
Chloroform	ND	1,1,1,2-Tetrachloroethane	ND
Chloromethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chlorotoluene	ND	Tetrachloroethene	ND
4-Chlorotoluene	ND	Toluene [m]	ND
Dibromochloromethane	ND	1,2,3-Trichlorobenzene	ND
1,2-Dibromo-3-chloropropane	ND	1,2,4-Trichlorobenzene	ND
Dibromomethane	ND	1,1,1-Trichloroethane	ND
1,2-Dichlorobenzene	ND	1,1,2-Trichloroethane	ND
1,3-Dichlorobenzene	ND	Trichloroethene	ND
1,4-Dichlorobenzene	ND	Trichlorofluoromethane	ND
Dichlorodifluoromethane	ND	1,2,3-Trichloropropane	ND
1,1-Dichloroethane	ND	1,2,4-Trimethylbenzene	ND
1,2-Dichloroethane	ND	1,3,5-Trimethylbenzene	ND
1,1-Dichloroethene	ND	Vinyl Acetate [n]	ND
cis-1,2-Dichloroethene	ND	Vinyl Chloride [o]	ND
trans-1,2-Dichloroethene	ND	Xylenes, total [p]	ND
1,2-Dichloropropane	ND	**Comments:** i	
1,3-Dichloropropane	ND	**Surrogate Recoveries (%)**	
2,2-Dichloropropane	ND	Dibromofluoromethane	93
1,1-Dichloropropene	ND	Toluene-d8	106
cis-1,3-Dichloropropene	ND	4-Bromofluorobenzene	110

*water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / SPLP extracts in ug/L

Reporting limits unless otherwise stated: water samples 1 ug/L; vapor samples 0.5 ug/L; solid and sludge samples 5 ug/kg; wipes 0.2ug/wipe

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

(b) 2-propanone or dimethyl ketone; (c) (2-chloroethoxy) ethene; (d) 2-hexanone; (e) dichloromethane; (f) 2-butanone; (g) 4-methyl-2-pentanone or isopropylacetone; (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content; (k) ethenylbenzene; (l) methylbenzene; (m) acetic acid ethenyl ester; (n) chloroethene; (o) dimethylbenzenes.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: #9G028; Alameda GSA-Alcopark	Date Sampled: 09/03/99
		Date Received: 09/03/99
	Client Contact: Tim O'Brien	Date Extracted: 09/03/99
	Client P.O:	Date Analyzed: 09/04-09/08/99

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	18598	18603	18605	Reporting Limit	
Client ID	B8-6.0	B7-18.0	WB-8		
Matrix	S	S	W	S	W
Compound	Concentration*			ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND	ND	ND	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	ND	ND	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	ND	ND	ND	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND	ND	ND	5.0	1.0
tert-Butanol	ND	ND	ND	25	5.0
Surrogate Recoveries (%)					
Dibromofluoromethane	97	89	93		
Comments:			i		

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

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

(h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/03/99-09/04/99 Matrix: WATER

Analyte	Concentration (ug/L) Sample (#18261)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	119.1	118.7	100.0	119.1	118.7	0.3
Benzene	0.0	8.6	8.3	10.0	86.0	83.0	3.6
Toluene	0.0	9.2	9.0	10.0	92.0	90.0	2.2
Ethyl Benzene	0.0	9.8	9.5	10.0	98.0	95.0	3.1
Xylenes	0.0	29.5	28.5	30.0	98.3	95.0	3.4
TPH(diesel)	0.0	7694	7598	7500	103	101	1.3
TRPH (oil & grease)	0	22500	22400	23700	95	95	0.4

% Rec. = (MS - Sample) / amount spiked x 100

RPD = ((MS - MSD) / (MS + MSD))x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/03/99-09/04/99 Matrix: SOIL

Analyte	Concentration (mg/kg) Sample (#12144)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	2.060	2.068	2.03	101	102	0.4
Benzene	0.000	0.202	0.198	0.2	101	99	2.0
Toluene	0.000	0.204	0.202	0.2	102	101	1.0
Ethylbenzene	0.000	0.208	0.202	0.2	104	101	2.9
Xylenes	0.000	0.588	0.578	0.6	98	96	1.7
TPH(diesel)	0	331	336	300	110	112	1.5
TRPH (oil and grease)	0.0	21.0	21.7	20.8	101	104	3.3

% Rec. = (MS - Sample) / amount spiked x 100

RPD =((MS - MSD) / (MS + MSD))x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR VOCs (EPA 8240/8260)

Date: 09/03/99-09/04/99 Matrix: WATER

Analyte	Concentration (ug/kg,u Sample (#18180)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
1,1-Dichloroethe	0	108	112	100	108	112	3.6
Trichloroethene	0	96	98	100	96	98	2.1
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	119	122	100	119	122	2.5
Benzene	0	117	117	100	117	117	0.0
Toluene	0	108	121	100	108	121	11.4

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR VOCs (EPA 8240/8260)

Date: 09/03/99-09/04/99 Matrix: SOIL

Analyte	Concentration (ug/kg,u Sample (#08229)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
1,1-Dichloroethe	0	124	127	100	124	127	2.4
Trichloroethene	0	98	100	100	98	100	2.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	109	112	100	109	112	2.7
Benzene	0	102	105	100	102	105	2.9
Toluene	0	109	110	100	109	110	0.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

Centrum Analytical Laboratories, Inc.

Centrum Job #

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com
(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Page 1 of 1

16601ZPS19.doc

Project No: 96028	Project Name: ALAMEDA GSA - ALCOPARK
Project Manager: TIM O'BRIEN	Phone: 510-785-1111 Fax: 510-785-1192
Client Name: (Report and Billing) BILL: ROD FRIETAG ALAMEDA GSA REPORT: TIM O'BRIEN PSI	Address: (Report and Billing) BILL TO ALAMEDA GSA REPORT TO 1320 W. WINTON AVE HAYWARD, CA 94545

Please Circle Analyses Requested: 8015M: Diesel, Fuel Screen, Carbon Chain; 8015M: (Gas) only; 8021B: BTEX/MtBE ONLY; 418.1 (TRPH), 413.2; + OXYGENATES; GCMS: (8260B), 8021B, 624, 524.2; GCMS: MtBE Conf. Only; GCMS: 8270C, 625; 8080: Pesticides, PCBs, Pest/PCB; Metals: Title 22 (CAM), RCRA, PP; pH, TDS, TSS, Conductivity; Flashpoint, Hex Cr

Turn-Around Time
☐ 24 Hr. RUSH*
☐ 48 Hr. RUSH*
☐ Normal TAT
*Requires PRIOR approval, additional charges apply
Requested due date: ______

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M Gas only	GCMS 8260B	Remarks/Special Instructions
	B8-2.5	9/3/99	1210	SOIL		1SSL			H 18596
	B8-4.0	↓	1219	↓		↓			H 18597
	B8-6.0	↓	1231	↓		↓	X	X	18598
	B7-4.0	↓		↓		PETF			H 18599
	B7-8.0	↓		↓		↓			H 18600
	B7-12.0	↓		↓		↓			H 18601
	B7-16.0	↓		↓		↓			H 18602
	B7-18.0	↓		↓		↓	X	X	18603
	B7-24.0	↓		↓		↓			H 18604
5t	WB-8	↓	1253	H_2O		6 VOA	X	X	18605

1) Relinquished by: (Sampler's Signature) CHRIS MERRITT	Date: 9/3/99	Time: 1437	3) Relinquished by: [signature]
2) Received by: [signature]	Date: 9/3	Time: 1437	4) Received by:
			5) Relinquished by: [signature] Date: 9/3 Time: [illegible]
			6) Received for Laboratory by: Maria Venegas Date: 9/3

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
Samples chilled? ☐ Yes ☐ No ☐ From Field
Custody seals? ☐ Yes ☐ No
All sample containers intact? ☐ Yes ☐ No
☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Locator No.

Laboratory Notes:
ICE/T° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
VOAS O&G METALS OTHER
PRESERVATION ✓
APPROPRIATE ✓
CONTAINERS ✓

TB. MV

L: MV

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, , Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 1320 West Winton Avenue Hayward, CA 94545	Client Project ID: Alcopark	Date Sampled: 09/09/99
		Date Received: 09/10/99
	Client Contact: Tim O'Brien	Date Extracted: 09/10/99
	Client P.O:	Date Analyzed: 09/10/99

09/17/99

Dear Tim:

Enclosed are:

1). the results of **3** samples from your **Alcopark** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, ..07, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries	Client Project ID: Alcopark	Date Sampled: 09/09/99
1320 West Winton Avenue		Date Received: 09/10/99
Hayward, CA 94545	Client Contact: Tim O'Brien	Date Extracted: 09/13-09/14/99
	Client P.O:	Date Analyzed: 09/13-09/14/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)[+]	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
19023	MW-1	W	2400,a	400	680	140	130	370	105
19025	MW-6	W	6600,a	3700	2500	43	310	250	99
19024	MW-7	W	92,f,i	1200	1.6	ND	ND	ND	103
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

[+]The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 925-798-1620 Fax: 925-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/12/99-09/13/99 Matrix: WATER

Analyte	Concentration (ug/L) Sample (#18261)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	103.5	101.2	100.0	103.5	101.2	2.2
Benzene	0.0	10.2	9.8	10.0	102.0	98.0	4.0
Toluene	0.0	10.5	9.7	10.0	105.0	97.0	7.9
Ethyl Benzene	0.0	10.0	9.8	10.0	100.0	98.0	2.0
Xylenes	0.0	31.2	29.8	30.0	104.0	99.3	4.6
TPH(diesel)	0.0	7727	7737	7500	103	103	0.1
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = ((MS - MSD) / (MS + MSD))x 2 x 100

146962PSI10.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: TIM O'BRIEN Bill To: ALAMEDA GSA

Company: PSI

1320 W. Winton Ave
Hayward, CA 94549

Tele: (510) 785-1111 Fax: (510) 785-1192

Project #: Project Name:

Project Location: ALCOPARK

Sampler Signature: CHRIS MERRITT

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-1		9/9/99		6	VOA	X						X			X															19023
MW-6		↓		6	↓	X						X			X															19024
MW-7		↓		6	↓	X						X			X															19025

ICE/T ✓
GOOD CONDITION ✓
HEADSPACE ABSENT ✓
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓

VOAS O&G METALS OTHER
✓

Relinquished By:	Date:	Time:	Received By:
CHRIS MERRITT	9/10/99	1353	Bill Butler
Bill Butler	9-10-	14:45	VWR
Relinquished By:	Date:	Time:	Received By:

Remarks:

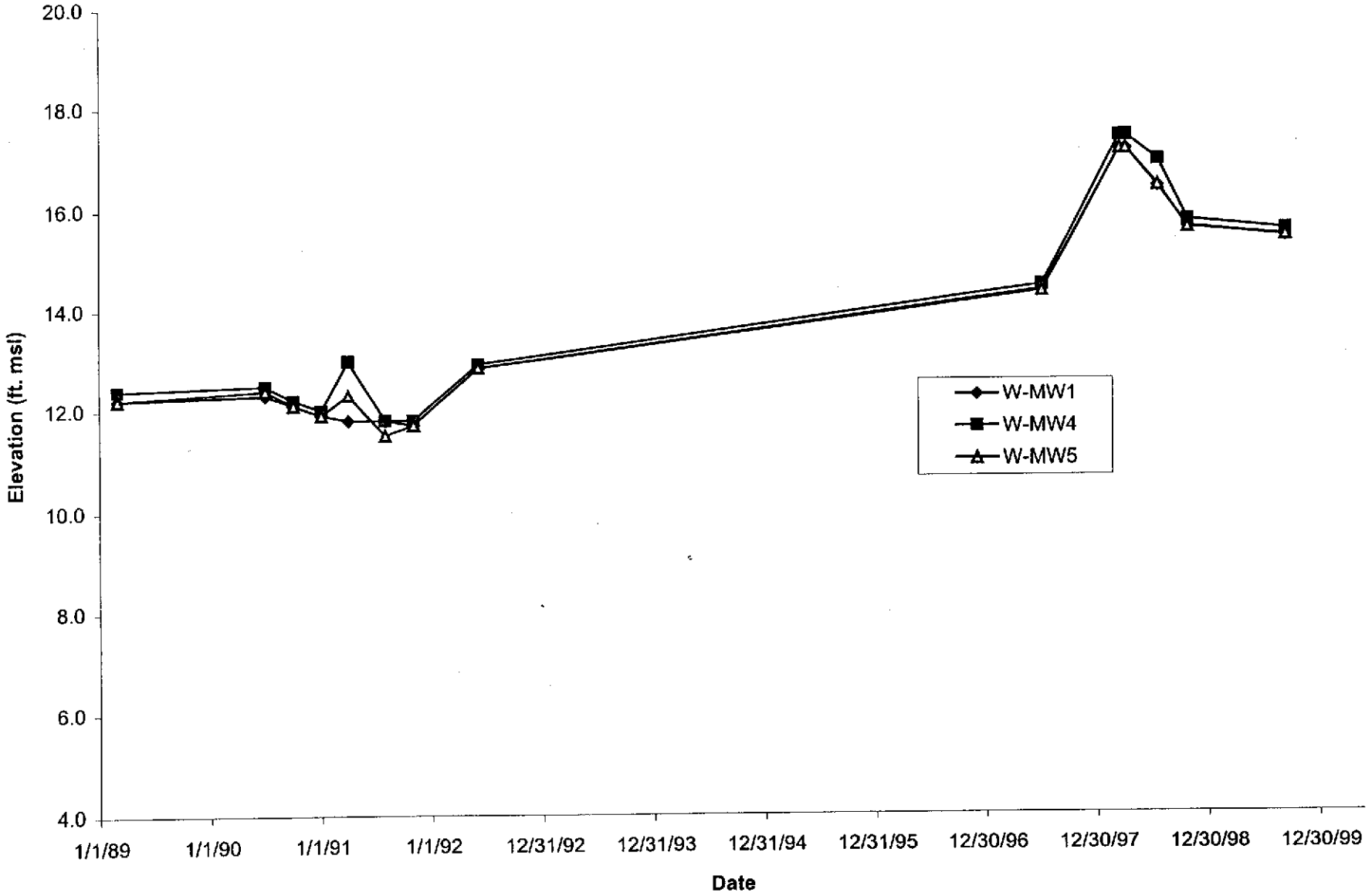
Call Chris to confirm MTBE & Gas HITS w/ Oxygenates 8260

TB. MV

APPENDIX D

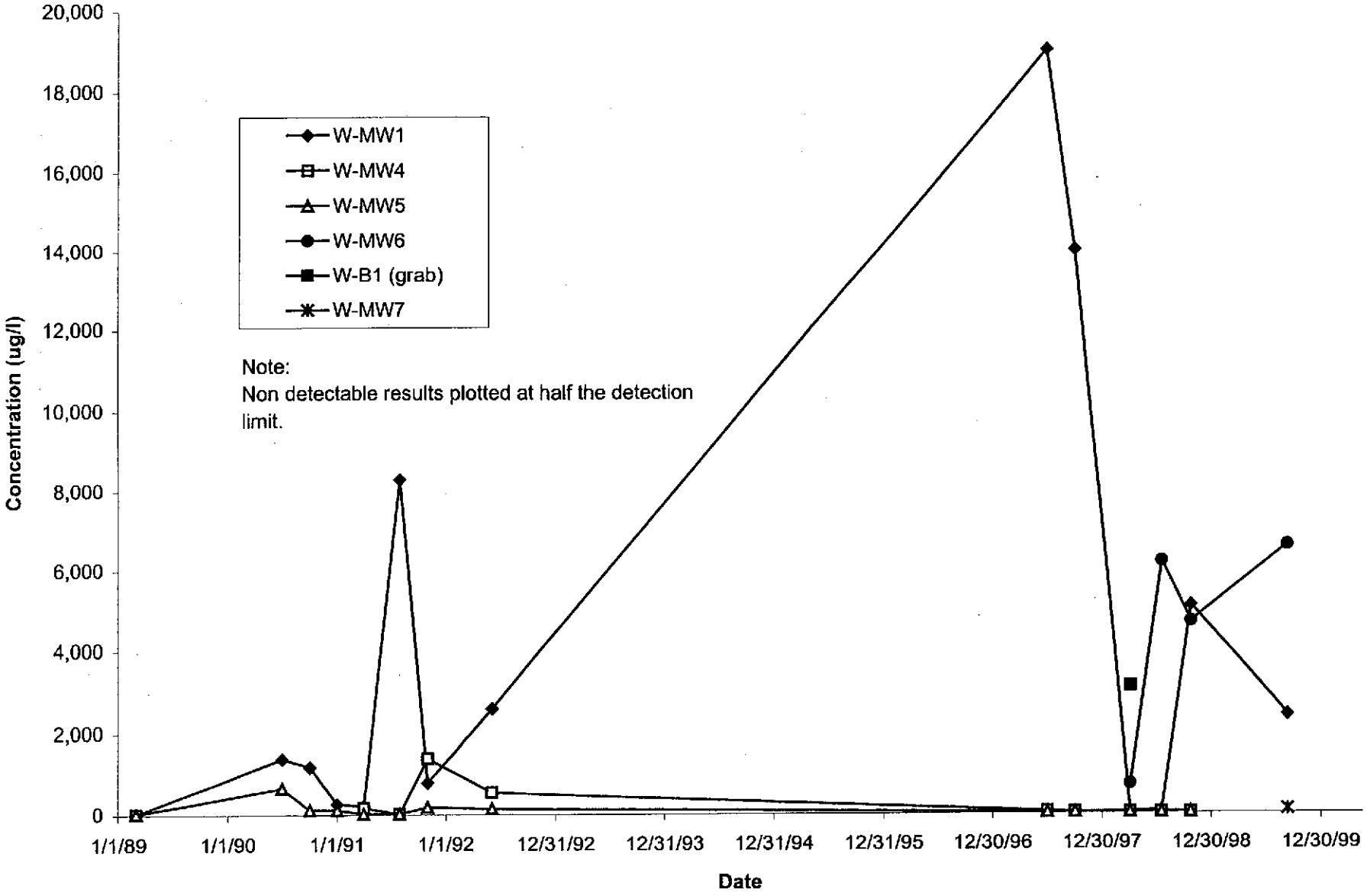
ANALYTICAL DATA CHARTS

CHART 1
GROUNDWATER ELEVATION
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



F:\transfer\project\ALAGSA\Alcopark\tbls399.xls\GW Chart

CHART 2
TOTAL PETROLEUM CONCENTRATIONS
ALCOPARK FUELING FACILTY
OAKLAND, CALIFORNIA



F:\transfer\project\ALAGSA\Alcopark\tbls399.xls\TPH-G Chart

CHART 3
BENZENE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

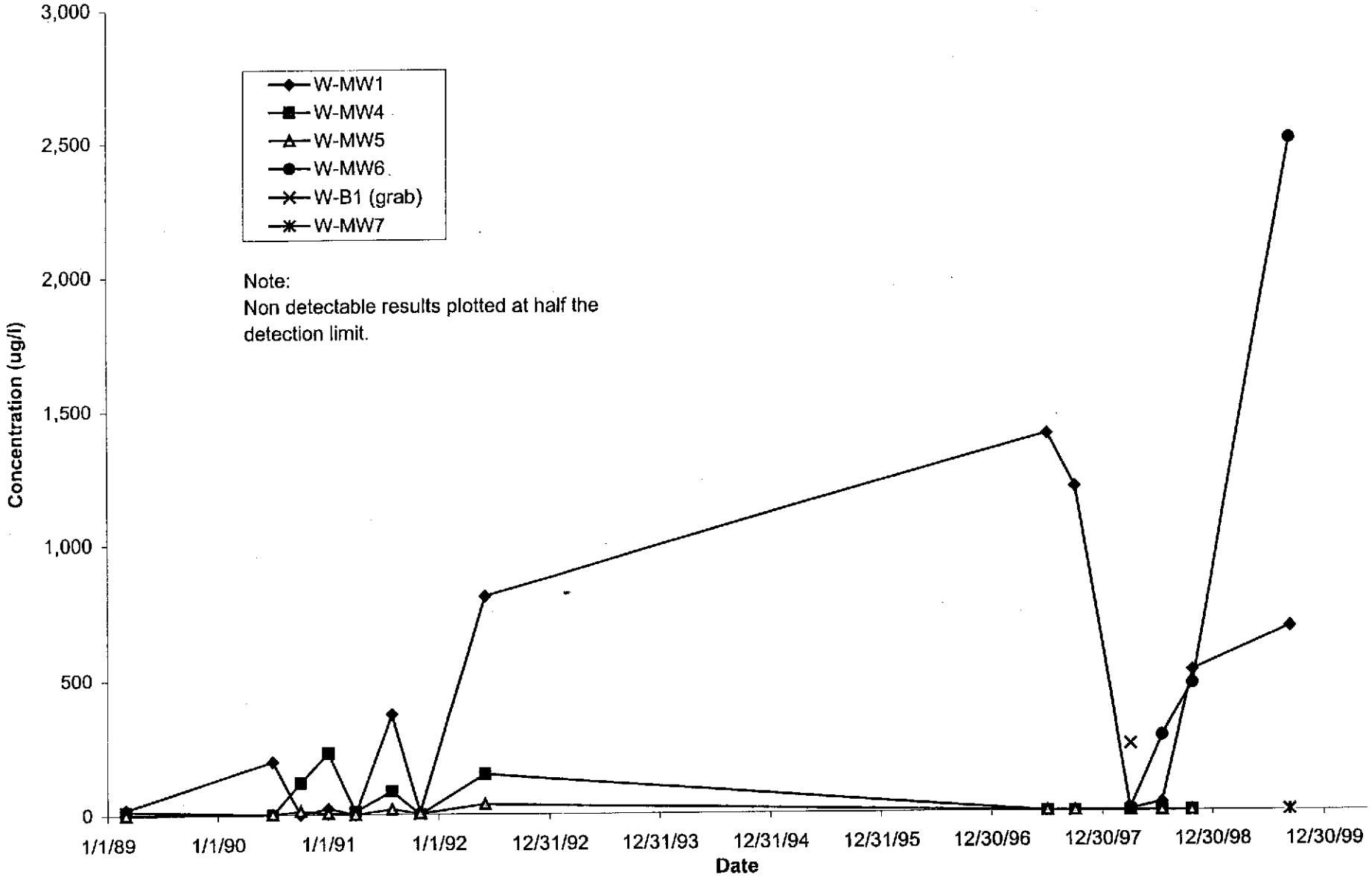


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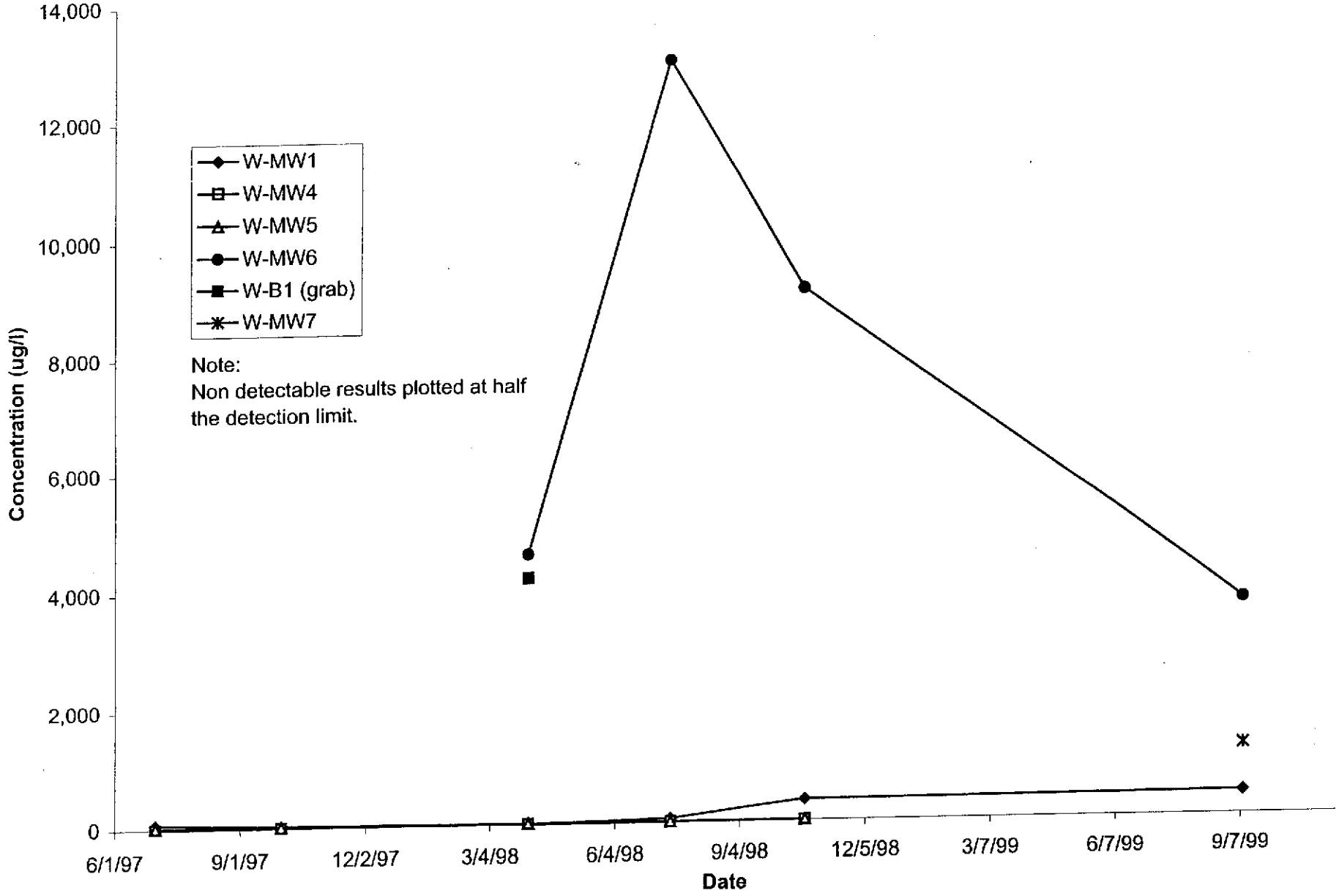
CHART 4
MTBE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



F:\transfer\project\ALAGSA\Alcopark\tbls399.xls\MTBE Chart

91-7901

LETTER OF TRANSMITTAL

To:	***Ms. Eva Chu***	Date:	***11-21-00***
	Environmental Health		
	QIC 30440	Subject:	***Site Conceptual Model for Alcopark***
			165-13th St., Oakland, CA

I am sending you: X Attached ☐ Under separate cover

via: ☐ US Mail ☐ Overnight/FedEx ☐ Hand carried ☐ Messenger

The following items:

☐ Drawings ☐ Specifications ☐ Shop Drawings X Submittals

☐ Samples ☐ Copy of Letter ☐ Change Order ☐ Other:

Copies	Date or No.	Description
1	***11-10-00***	***Site Conceptual Model Report, Alcopark Fueling Facilities,***
		165-13th Street, Oakland, California

These are transmitted as checked below:

☐ Approved as Submitted ☐ Resubmit __ Copies for Approval ☐ For Approval

☐ Approved as Noted ☐ Submit __ Copies for Distribution X For Your Use

☐ Returned for Correction ☐ Return __ Corrected Copies ☐ As Requested

☐ For Review and Comment ☐ Returning Loaned Item(s) ☐ Other

Remarks:

Rod Freitag, Environmental Program Manager
Technical Services Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612
Tel. (510) 208-9522

If Enclosures Are Not As Noted, Notify Me At Once

91-7001

SITE CONCEPTUAL MODEL REPORT
ALCOPARK FUELING FACILITIES
165 13TH STREET
OAKLAND, CALIFORNIA

prepared for

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California 94623

prepared by

Professional Service Industries, Inc.
1320 West Winton Avenue
Hayward, California 94545
(510) 785-1111

November 10, 2000
575-0G041

TABLE OF CONTENTS

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this Site Conceptual Model Report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of County of Alameda, General Services Agency (GSA) for the evaluation of environmental conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted identified any or all sources or locations of contamination.

This report is issued with the understanding that GSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.

Professional Service Industries, Inc.

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A Constantinescu

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1.0 INTRODUCTION

Professional Services Industries, Inc. (PSI) has been retained by the County of Alameda, General Services Agency (GSA) to perform a site conceptual model (SCM) that will include site-specific soil and groundwater parameters or default values; potential current and future receptors; and site contaminants distribution in space and time.

The subject site is the Alcopark parking garage located at the intersection of Jackson Street with 12th Street and 13th Street in a commercial/business area of the City of Oakland. The corner of 12th Street and Jackson Street was named in the previous reports as Site Number 1 and contains closed in-place underground storage tanks (USTs). The corner of 13th and Jackson Streets was named Site Number 2 and contains two active 10,000-gallon gasoline USTs.

The scope of work for the SCM includes the following tasks:

- Identify surface water receptors within one-half mile of the subject site.
- Through local agencies, determine whether any groundwater production wells are present within one-half mile of the subject site.
- Perform environmental regulatory data base review of all groundwater-impacted sites that are within one mile radius relative to the subject site. The regulatory records review will be completed to help further define the hydrogeology of the area and to also provide data on other methyl tertiary butyl ether (MTBE) plumes near the subject site.
- Investigate the location and depth of underground utilities and trenches within and near the site. The horizontal conduit evaluation will include analysis of utilities, trenches, depth to water, and potential for contaminant migration.
- Prepare a SCM report which incorporates data from previous investigations and groundwater sampling results and includes a recommendation on whether a risk assessment is necessary for the site.

2.0 SITE BACKGROUND

2.1 Site Number 1, Northeast Corner of 12th and Jackson Streets

GSA closed two 10,000 gallon USTs in-place at the site in 1994. The USTs previously stored gasoline. The USTs were located outside the building adjacent to the City streets. Piping extended from the USTs to dispensers located in the maintenance garage.

The tanks had not been used since the early 1980s (GSA, 1999). Soil and groundwater samples collected in support of in-place closure indicated low concentrations of petroleum hydrocarbons in soil and measurable concentrations of petroleum hydrocarbons in groundwater (ESE, 1993).

The Alameda County Environmental Health Department (ACEHD) requested additional investigation of the site. That investigation was performed by PSI in January, 1999. A limited amount of petroleum hydrocarbon contamination was detected (PSI, 1999). Subsequent to that investigation, the ACEHD requested the fuel delivery piping be investigated (ACEHD, 1999c). No detectable concentrations of total petroleum hydrocarbon (TPH-G), benzene, toluene, ethylbenzene, and xylenes (BTEX), or MTBE was detected in the soil and groundwater samples collected downgradient of the former fuel dispenser location during the 1999 subsurface investigation (PSI, 1999). Table 1 presents a summary of analytical data for Site Number 1. Based on the results of PSI's soil and groundwater investigations presented in the 1999 and previous reports, PSI recommended no additional investigation of the former Alcopark USTs Site Number 1 (PSI, 1999). This recommendation was based on the lack of MTBE in site soil and groundwater, and published guidance which recommends natural bioremediation of low concentration spills (RWQCB, 1996). PSI recommended site closure for Site Number 1.

2.2. Site Number 2, Southeast Corner of 13th and Jackson Streets

GSA operates two 10,000-gallon gasoline USTs to fuel County vehicles. Three ground water monitoring wells (MW-1, MW-4, MW-5) were installed at the Alcopark fueling station in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at Dispenser No. 1. Initial sample results indicated the presence of BTEX in the groundwater. Subsequent sample results indicated the presence of TPH-G. Based on the analytical data, it was surmised that contaminants detected on site were emanating from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of an upgradient source (GSA, 1997).

In May, 1997 the ACEHD instructed GSA to resume groundwater monitoring at the facility (ACEHD, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G, BTEX, and MTBE. ACEHD directed GSA to investigate the extent and stability of the plume (ACEHD, 1997b). To further define groundwater conditions downgradient of the USTs, monitoring well MW-6 was installed in March, 1998.

Based on subsequent groundwater monitoring, the ACEHD directed GSA to better define the extent of groundwater contamination (ACEHD, 1999c). Monitoring well MW-7, the furthest downgradient well, was installed at Site Number 2 in 1999. No detectable concentrations of TPH-G, BTEX, or MTBE were present in the soil samples collected during the installation of MW-7.

At Site Number 2, groundwater analytical results reported measurable concentrations of TPH-G and BTEX in groundwater samples from monitoring wells MW-1, MW-6, and MW-7 starting with the sampling event performed on March 21, 1989. MTBE was tested for the first time during the sampling event performed on July 16, 1997. The groundwater analytical data is summarized in Table 2. The following summary presents the variation in the TPH-G, BTEX, and MTBE concentrations at Site Number 2.

- TPH-G was detected in Well MW-1 at levels between ND (<50 µg/l) and 19,000 µg/l; in Well MW-6, the detected levels were between 740 µg/l and 6,600 µg/l; and in Well MW-7, the detected levels were between ND (<50 µg/l) and 160 µg/l. The concentration of TPH-G over time (starting with March 21, 1989 to August 22, 2000) is presented on Chart 2.

- Benzene was detected in Well MW-1 at levels between ND (<0.5 µg/l) and 1400 µg/l; in Well MW-6 at levels between 9.8 µg/l and 2,500 µg/l; and in Well MW-7 at levels between ND (<0.5 µg/l) and 1.6 µg/l. The concentration of benzene over time (starting with March 21, 1989 to August 22, 2000) is presented on Chart 3.

- MTBE was detected in Well MW-1 at levels between 6.3 µg/l and 410 µg/l; in Well MW-6 at levels between 1,700 µg/l and 13,000 µg/l; and in Well MW-7 at levels between 830 µg/l and 2,100 µg/l. The concentration of MTBE over time (starting with July 16, 1997 to August 22, 2000) is presented on Chart 4.

2.3 Storage Tank System Upgrades

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations. This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (GSA, 1997).

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Site Geology

The subject site is located within a large region known as the Coast Ranges geomorphic province. This region is characterized by extensive folding, faulting and fracturing of variable intensity (Norris, 1990). The faults and folds trend northwesterly and comprise the pronounced northwest trending ridge-valley system. The oldest geologic formations in the Bay Area are probably of Jurassic age (138-205 million years ago). These formations have been subject to repeated episodes of deformation. By comparison, the youngest formations (Quaternary age – last 2 million years) have been only mildly flexed.

According to the "Areal and Engineering Geology of the Oakland West Quadrangle, California" map issued by Dorothy H. Radbruch (1957) the subject site and the adjacent area are underlain by the Merritt sand of Quaternary age. This formation consists of sand, fine-grained, silty, clayey, with lenses of sandy clay and clay. The color is yellowish-brown to dark yellowish-orange. Grains consist of quartz and feldspar, some magnetite, flakes of white chert from the Claremont, minor amounts of sandstone, shale, hornblende, pyroxene, and biotite. Grains are angular to subrounded, frosted, and well sorted. Slightly coherent, in most places consolidation increases at depth. The site and surrounding area geological conditions are presented in Figure 3 and 3A.

The Merritt sand characteristics presented in the published technical literature (D.H. Radbruch, 1957) are as follows:

- Dry Density between 103 and 122, with an average value of 111; and
- Moisture Content between 7 and 21, with an average value of 16.

On the basis of borings drilled and logged at the subject site, the soil types encountered consist of sand with some silt, fine to medium grained, brown, and medium dense.

3.2 Site Hydrogeology

The above mentioned geologic map shows that the Merritt Sand is the first encountered subsurface aquifer, and is usually unconfined. The Merritt Sand is believed to be continuous across much of west Oakland south to Alameda Island. At Site Number 2, the depths to groundwater were between 16 feet and 21 feet. The groundwater flow direction is to the east with a hydraulic gradient of 0.0041 ft/ft (PSI, 1999). The Merritt Sand aquifer extends to a depth of approximately 60 feet bgs, where Temascal Formation is believed to provide a competent aquitard between it and the deeper confined aquifer present in the Alameda Formation.

Environmental Solutions, Inc.'s (ESI) report issued for Cypress Highway Realignment stated that based on aquifer pump test data, the Merritt Sand has a hydraulic conductivity on the order of 10^{-3} to 10^{-2} centimeters per second (cm/sec). The next aquifer below the

Merritt Sand aquifer is the Alameda Formation with depths ranging from 120 feet to 160 feet. In general, this aquifer is confined, and is believed to be continuous across much of west Oakland, with a thickness of over 200 feet.

4.0 SENSITIVE RECEPTOR SURVEY

The presence of potential conduits was evaluated by researching the presence and construction details of wells, horizontal conduits (utility trenches), and off-site sources.

4.1 Well Survey

A visual well survey was performed to identify agricultural, domestic, and industrial wells within a radius of one thousand three hundred twenty feet (½ mile) of the site. In addition, PSI reviewed database information provided by VISTA Information Solutions to determine the location and number of wells in the area. No wells were identified within ½ mile of the site. A copy of the Vista Site Assessment Plus Report is included in Appendix A.

4.2 Vapor and Ground/Surface Water Receptors

Ms. Adriana Constantinescu of PSI completed a vapor and groundwater receptor survey of the site by investigating the location and depth of underground utilities and trenches within 75 meters (250 feet) of the site and 225 meters (750 feet) hydraulically down gradient of the site. PG&E, EBMUD, MCI, and sewer lines identified by Underground Service Alert (USA) are shown on Figure 4. Based upon information obtained by phone communication with representatives of the above mentioned companies, the utility trenches are between 32 inches and 6 feet below ground surface. Based on the depth to groundwater (approximately 16 to 21 feet bgs), underground utilities and trenches are not expected to act as conduits for migration.

The nearest surface water receptor is the Lake Merritt, located approximately ¼ mile (1320 feet) east of the subject site. Hydrogeological data collected at the subject site between 1989 and 2000 showed that the groundwater flow direction is to the east, towards Lake Merritt.

4.3 Environmental Records Review

PSI reviewed regulatory records to obtain information on remediation activities at nearby UST sites. The information was used to evaluate if other sites might be contributing contaminants to the subject site.

The California LUST list, which is included in the Vista report in Appendix A, identified 196 LUST sites within 1 mile of the subject property. Based on the location of the LUST sites relative to the subject site and Lake Merritt's proximity to the subject site, which is acting as a hydraulic barrier, 189 of the LUST sites are not expected to represent a recognized environmental condition in connection with the subject site. PSI requested to review 7 case files at the Alameda County Environmental Health Division (ACEHD) for potential impacts to the subject site. The Alcopark Fueling Station (subject site) was identified as a LUST site.

Property Name: ***Jackson Street Apartments***	Media Effected: Soil
Street Address: 1431 Jackson Street	Distance: 0.001 mile east
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97
Alameda County Environmental Health Department file review revealed that a diesel underground storage tank was removed from the above listed facility on September 1997. This facility is located across the street from the subject site, at the intersection of Jackson Street and 13th Street. The "Tank Closure Report", prepared by Golden Gate Tank Removal on October 7, 1997 indicated that the soil samples collected at the time of the tank removal did not contain total petroleum hydrocarbons (TPH) as diesel (TPH-D), or benzene, toluene, ethylbenzene, and xylenes (BTEX). Same report stated that "they were no visible holes in the tank, there were no visible evidence of contamination in the tank pit, nor did the soil have any odor or discoloration within it. "No further action" was recommended for this site. Based upon the analytical results of the soil samples collected from the former tank excavation pit this site should not be considered a contributor to the MTBE plume.	

Property Name: ***Shell Service Station***	Media Effected: Soil
Street Address: 246 14th Street	Distance: <0.01 mile NW
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97
Alameda County Environmental Health Department file review revealed that three 5,000-gallon gasoline USTs, one 8,000-gallon gasoline UST and one 1,000-gallon waste oil UST were removed from the above listed facility on September 17,1991. Only one soil sample collected at the time of the USTs removal contained detectable levels of TPH-G. Remedial over-excavation was performed to a depth of 13 feet below ground surface (bgs). The "Subsurface Investigation and Case Closure Request Report", prepared by Weiss Associates, on January 26, 1995 indicated that the soil or groundwater samples collected from the two confirmatory soil borings advanced at this facility did not contain total petroleum hydrocarbons (TPH) as diesel (TPH-D), total oil and grease (TOG), or benzene, toluene, ethylbenzene, and xylenes (BTEX). Only one water sample contained 50 ug/l of TPH-G. No MTBE tests were performed or required at the time of that subsurface investigation. Based upon the analytical results of the soil samples collected from the former tank excavation pit, confirmatory soil or groundwater sampling, and the cross gradient location relative to the subject site, this site should not be considered a contributor to the MTBE plume.	

Property Name: ***Mobil Station***	Media Effected: Soil
Street Address: 160 14th Street	Distance: 0.001 mile east
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97
Alameda County Environmental Health Department file review revealed that one 10,000-gallon gasoline UST, one 6,000-gallon gasoline UST and one 550-gallon waste oil UST were removed from the above listed facility on May 8, 1986. This facility is located down	

gradient relative to the subject site, at the intersection of Madison Street and 14th Street. The "Sampling Report", prepared by Blaine Tech Services on May 8, 1986 showed that the soil samples collected at the time of the tank removal did not contain total petroleum hydrocarbons (TPH) as gasoline (TPH-G), or waste oil. Based upon the analytical results of the soil samples collected from the former tank excavation pit, this site should not be considered a contributor to the MTBE plume.

Property Name: ***Kaiser Center***	Media Effected: Soil
Street Address: 300 Lakeside Drive	Distance: 0.09 mile east
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97

Alameda County Environmental Health Department (ACEHD) file review revealed that three 5,000-gallon gasoline USTs and one 3,000-gallon diesel UST were removed from the above listed facility in June, 1991. This facility is located cross gradient relative to the subject site, at the intersection of Lakeside Drive and 20th Street. The "Site Closure Summary Report", prepared by ACEHD on October 14, 1993, indicated that the soil samples collected after the remedial excavation at the former USTs location contained only traces of the tested hydrocarbon compounds. The water sample collected from the excavation pit contained only 9.6 mg/l of TPH-G and 0.049 mg/l of benzene. Based upon the analytical results of the soil or groundwater samples collected from the former tank excavation pit this site could have detectable levels of MTBE. Due to the location of this site relative to the subject site, it should not be considered a contributor to the MTBE plume.

Property Name: ***Oakland Fire Alarm Station***	Media Effected: Soil
Street Address: 1310 Oak Street	Distance: 0.08 mile south east
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97

Alameda County Environmental Health Department (ACEHD) file review revealed that one 350-gallon diesel UST was removed from the above listed facility on July 19, 1993. This facility is located down gradient relative to the subject site, at the intersection of Oak Street and 12th Street. The "Site Closure Summary Report", prepared by ACEHD on October 14, 1993 showed that the soil samples collected after the remedial excavation at the former USTs location did not contain the tested hydrocarbon compounds. Based upon the analytical results of the soil samples collected from the former tank excavation pit this site should not be considered a contributor to the MTBE plume.

Property Name: ***Lakehurst Hotel***	Media Effected: Soil
Street Address: 1569 Jackson Street	Distance: 0.07 mile NE
City, State: Oakland, CA 94612	Operational Status: Tank Closed 10/7/97

Alameda County Environmental Health Department (ACEHD) file review revealed that three USTs containing waste oil and heating oil were removed from the above listed facility in November and December, 1996. One 1,000-gallon gasoline UST was closed in place. Soil samples collected from the soil borings advanced around former tanks contained detected levels of TPH-G, TPH-D, BTEX, and 0.063 mg/kg of MTBE. A grab groundwater sample collected from the eastern side of the gasoline UST did not contain the tested compounds. This facility is located down gradient relative to the subject site, at the intersection of Jackson Street and 17^{th} Street. Based upon the analytical results of the soil and groundwater samples collected from the soil borings and the cross-gradient location relative to the subject site, this site should not be considered a contributor to the MTBE plume.

Property Name: ***Former Chevron Station***	Media Effected: Soil & groundwater
Street Address: 301 14^{th} Street	Distance: 0.11 mile NW
City, State: Oakland, CA 94612	Operational Status: Active Site

Alameda County Environmental Health Department (ACEHD) file review indicated that three USTs containing fuel were removed from the above listed facility on June 15, 1990. Groundwater remedial monitoring is on-going at this LUST site. Maximum detected level of MTBE was reported at 12,500 ug/l, on March 30, 2000. This facility is located cross gradient relative to the subject site, at the intersection of Harrison Street and 14^{th} Street. Based upon the cross-gradient location relative to the subject site, this site should not be considered a contributor to the MTBE plume.

PSI's review of the files for the above LUST sites indicated that five of them should not be considered a contributor to the MTBE plume. Based upon the initial levels of hydrocarbon compounds detected at the Kaiser Center and the high levels of MTBE detected at the former Chevron Station #9-4816, those sites could have levels of MTBE that could migrate to the nearest receptor, Lake Merritt.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented in this report, the following conclusions have been reached:

- Previous investigations show that groundwater is contaminated with TPH-G, benzene, and MTBE at Site Number 2;
- Subject site is underlain by the Merritt sand of Quaternary age;
- No water wells were identified within ½ mile of the subject site;
- The nearest surface water receptor is the Lake Merritt, located approximately ½ mile (1320 feet) east of the subject site;
- Lake Merritt is salt water and is not a potential drinking water source.

According to the guidelines for "Investigation and Clean-up of MTBE and Other Oxygenates" issued by Regional Water Quality Board – San Francisco Bay Area, an Interim Remedial Action should not be required for the subject site because the migration of MTBE contaminated groundwater to the nearest receptor, Lake Merritt, is unlikely. Furthermore, since no potential drinking water sources are at risk, a risk assessment is not necessary for the site.

6.0 REFERENCES

GSA, 1997, Request For Proposal (RFP) for Groundwater Services, December 2.

HCSA, 1997a, Workplan Request Letter to Mr. Roman Freitag, September 11.

HCSA, 1997b, Continuation of Groundwater Monitoring Request, Letter to Mr. Jim DeVos, May 20.

HCSA, 1998, Quarterly Groundwater Monitoring Report Approval Letter, June 22.

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Personal Communication, 1998, Mr. Rod Freitag of the Alameda General Services Agency, Discussion of the leak detection system at the Alcopark facility, April 15.

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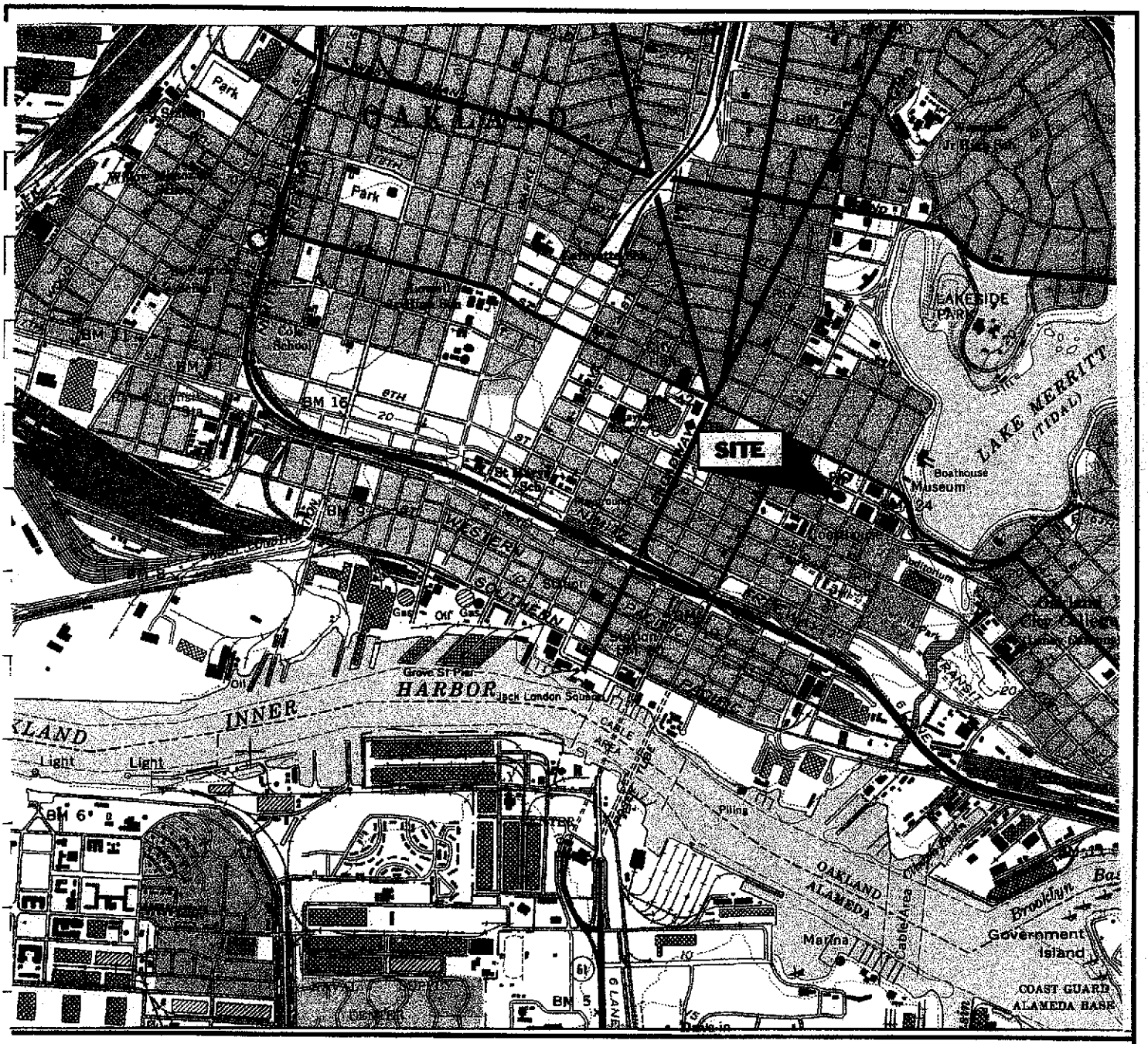
USGS, 1980, Oakland West, California, topographic map.



NORTH

0 1/2 1 MILE

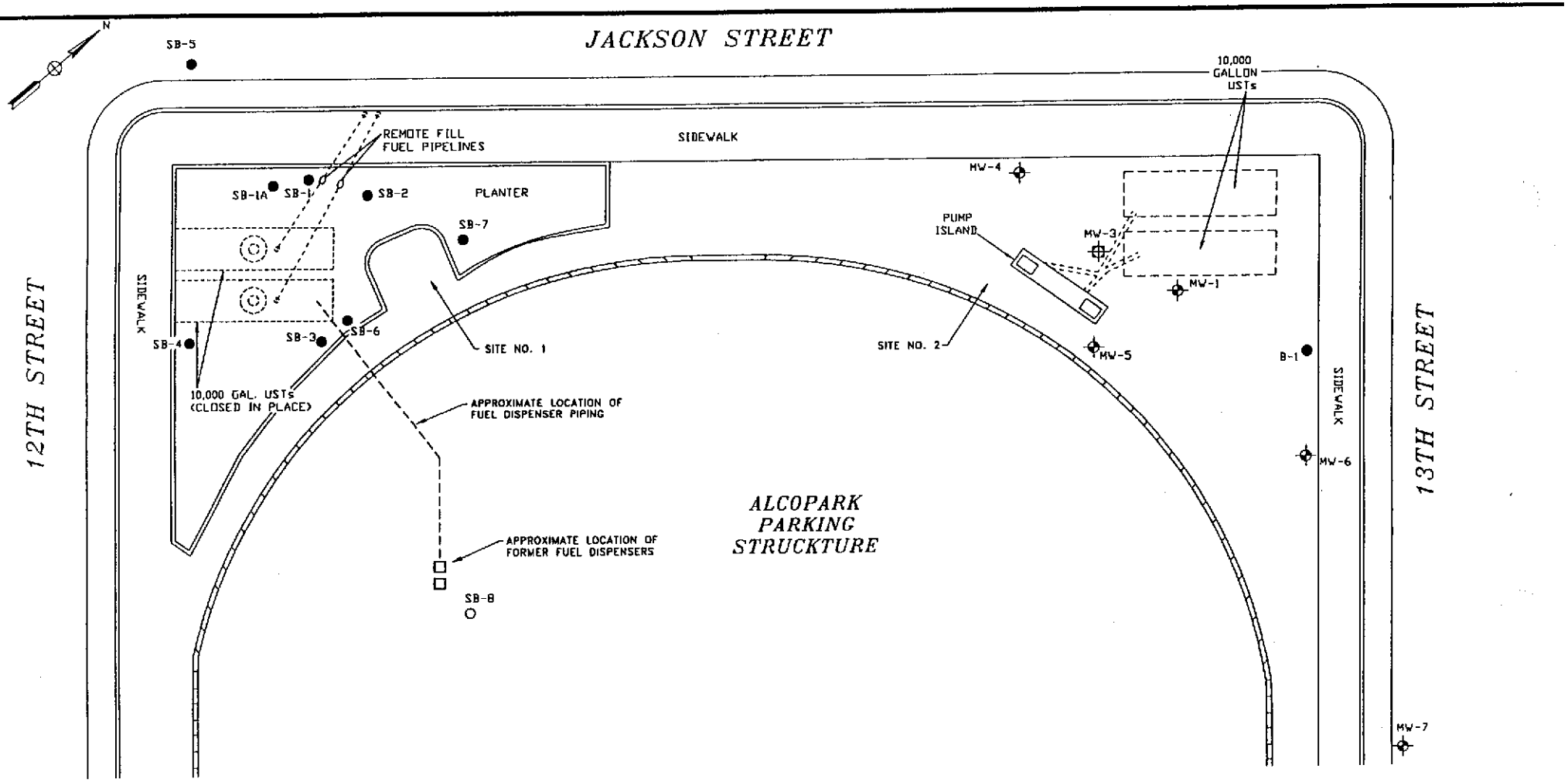
SCALE

REFERENCE:
U.S.G.S. OAKLAND WEST, CALIFORNIA, 1959
PHOTOREVISED 1980

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

SITE LOCATION
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-0E041

DATE: 10/27/00	CK'D BY:	FIGURE NO.: 1
FILE NO.: 0E041-1		DRAWN BY: A. CONSTANTINESCU



LEGEND

MW-1 GROUNDWATER MONITORING WELL

MW-3 VADOSE MONITORING WELL LOCATION

B-1 SOIL BORING

UNDERGROUND PIPING

0 10 20
APPROXIMATE SCALE (FEET)

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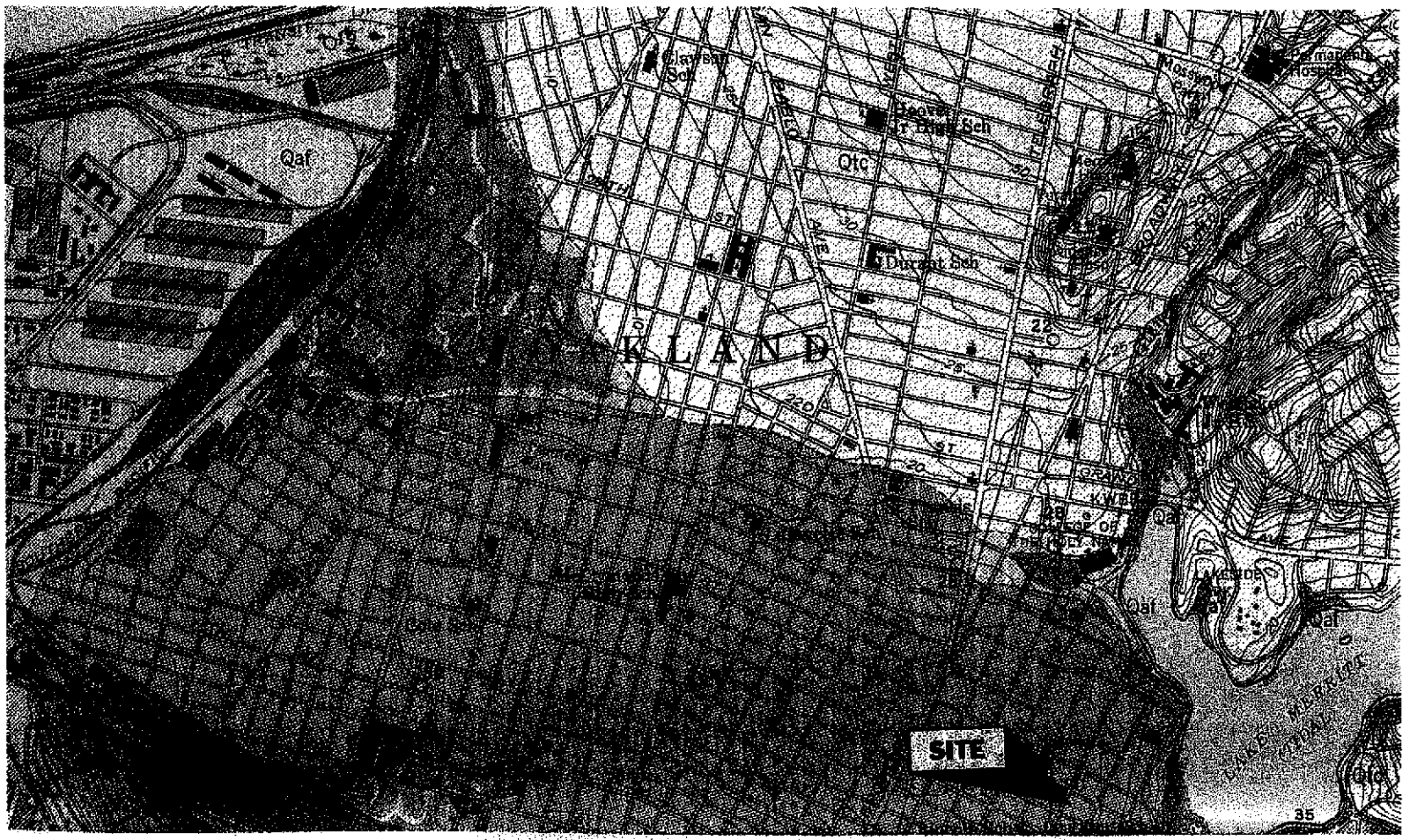
SITE PLAN
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-00041

DATE: 10/27/00	CKD BY:	FIGURE NO.: 2
FILE NO.: 00041-2		DRAWN BY: A.E CONSTANTINESCU



SOURCE: DOROTHY H. RADBRUCH, 1957, "AREAL AND ENGINEERING GEOLOGY OF THE OAKLAND WEST QUADRANGLE, CALIFORNIA".

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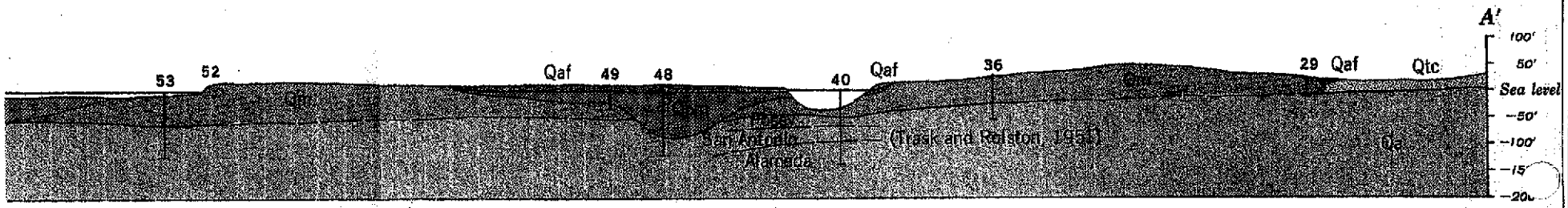
GEOLOGICAL MAP
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROPOSAL NUMBER: 575-9G028

DATE: 10/27/00	CKD BY:	FIGURE NO.: 3
FILE NO.: 00041-3A		DRAWN BY: A. CONSTANTINESCU



SECTION ALONG LINE A-A'
Vertical exaggeration 7X

EXPLANATION

Recent

Qls

Landslide debris
Clayey, silty sand that has moved down steep slope on Yerba Buena Island.

Qaf

Artificial fill
Sand, clay, or miscellaneous refuse.

Qrc

Reworked colluvium
Silty, clayey sand derived from underlying sandstone of the Franciscan group; moved downslope by water and gravity; in places reworked by wind.

Qbm

Bay mud
Sandy, clayey silt with shells and other organic material. Underlies most artificial fill.

Pleistocene

Qm

Merritt sand
Beach or near-shore deposit of slightly clayey, silty sand.

Qtc

Temescal formation
Alluvial-fan deposit comprising interfingering lenses of clayey gravel, sandy silty clay, and sand-clay-silt mixtures.

Alameda formation
Upper exposed few feet composed of sandy, silty clay with few pebbles; lower part consists of continental and marine sand, clay, gravel. Maximum known thickness, 1,050 feet.

Kv

Knoxville formation (Jurassic)
Shale with some beds of graywacke.

Kjf

Franciscan group (Jurassic and Cretaceous)
Graywacke with small amounts of shale.

SOURCE: DOROTHY H. RADBRUCH, 1957, "AREAL AND ENGINEERING GEOLOGY OF THE OAKLAND WEST QUADRANGLE, CALIFORNIA".

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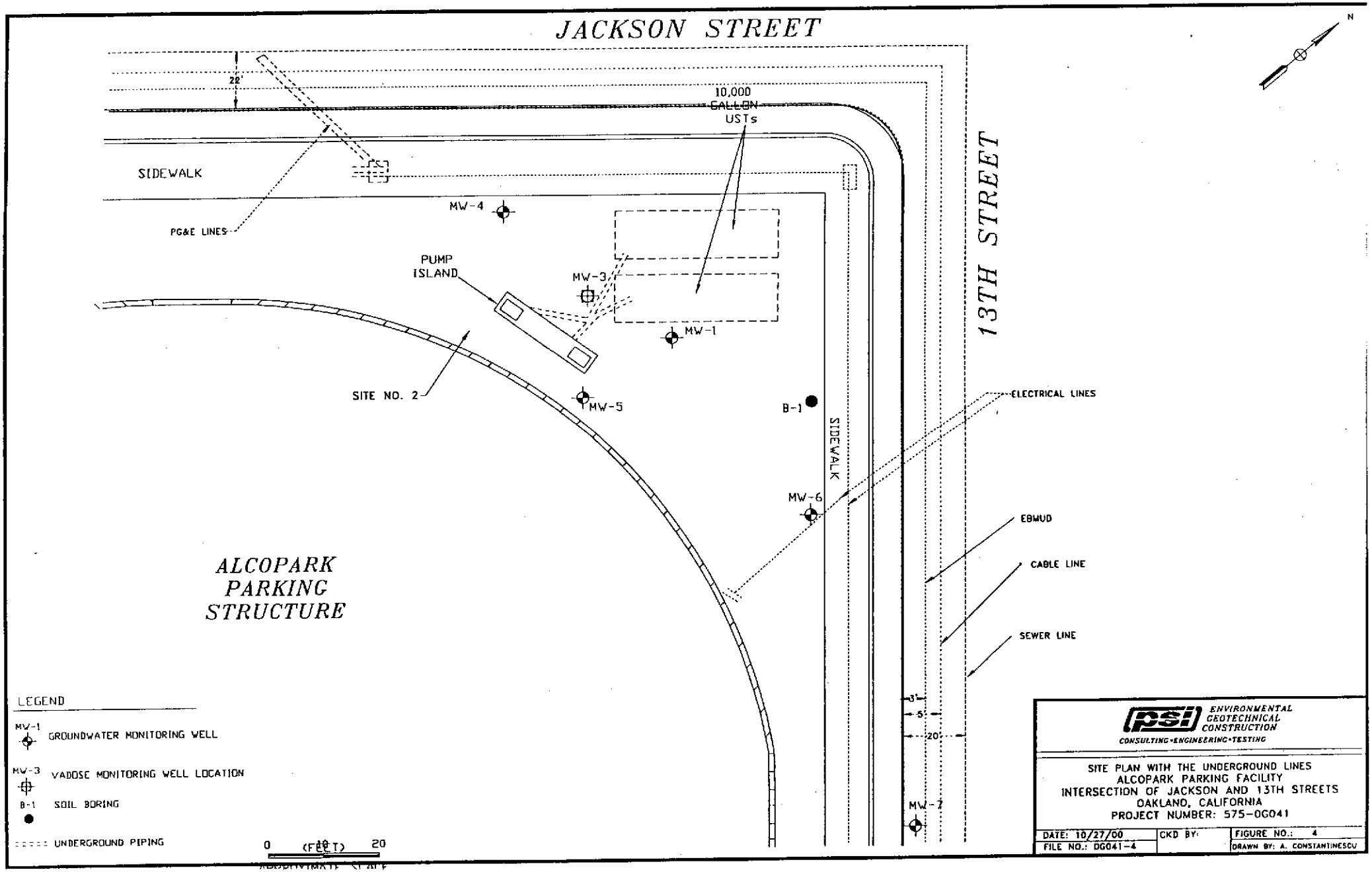
GEOLOGICAL CROSS SECTION
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROPOSAL NUMBER: 575-9G028

DATE: 10/27/00	CKD BY:	FIGURE NO.: 3-A
FILE NO.: 0G041-3A		DRAWN BY: A. CONSTANTINESCU



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SITE PLAN WITH THE UNDERGROUND LINES
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-0G041

DATE: 10/27/00	CKD BY:	FIGURE NO.: 4
FILE NO.: 0G041-4		DRAWN BY: A. CONSTANTINESCU

TABLE 1
SUMMARY OF ANALYTICAL DATA, SITE NO. 1
FORMER ALCOPARK FUELING FACILITY
12TH and JACKSON STREETS, OAKLAND, CA

						All concentrations in mg/kg (PPM).				
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	15	10/27/92	Soil	<1	NA	0.019	0.019	0.011	0.042	NA
SB-1	21.5	10/27/92	Soil	6.3	NA	0.41	0.68	0.1	0.70	NA
SB-2	15	10/27/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-2	22	10/27/92	Soil	1.8	NA	0.21	0.19	0.034	0.20	NA
SB-3	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-3	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	15	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-4	22	10/28/92	Soil	<1	NA	<0.005	<0.005	<0.005	<0.005	NA
SB-5	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-6	25	2/10/99	Soil	<1	<0.005	0.047	0.022	0.024	0.026	<3.0
SB-7	25	2/10/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
SB-8*	6	9/3/99	Soil	<1	<0.005	<0.005	<0.005	<0.005	<0.005	NA
						All concentrations in mg/l (PPM).				
Soil Boring	Sample Depth	Date	Matrix	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
SB-1	NA	10/27/92	Groundwater	51	NA	2.4	9.4	1.4	8.4	NA
SB-2	NA	10/27/92	Groundwater	8.2	NA	0.56	0.93	0.36	0.62	NA
SB-3	NA	10/28/92	Groundwater	0.072	NA	0.00071	<0.0005	0.0005	0.0024	NA
SB-4	NA	10/28/92	Groundwater	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA
SB-5	25	2/10/99	Groundwater	<0.050	<0.005	0.00063	0.00076	<0.0005	0.00067	NA
SB-6	25	2/10/99	Groundwater	5.0	<0.015	0.58	0.58	0.16	0.87	NA
SB-7	25	2/10/99	Groundwater	<0.050	<0.005	<0.0005	0.0011	<0.0005	0.002	NA
SB-8*	7	9/3/99	Groundwater	<0.050	<0.001	<0.001	<0.001	<0.001	<0.001	NA

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline.
MTBE denotes Methyl Tert Butyl Ether.
mg/kg denotes milligrams per kilogram (ppm).
< denotes less than detection limit.
NA denotes Not Analyzed.
Sample Depth reported in feet below ground surface. Sample SB-8 collected inside Alcopark basement garage.
Data collected in 1992 from ESE Report of Findings dated April 19, 1993 prepared for Alameda GSA.

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).

Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW1	3/21/89	12.2	ND	NA	21	3.9	0.4	4.5
W-MW1	7/26/90	12.3	1,400	NA	200	45	ND	53
W-MW1	10/25/90	12.1	1,200	NA	ND	7.3	2.2	46
W-MW1	1/25/91	11.9	270	NA	23	1.5	ND	3.1
W-MW1	4/25/91	11.8	230	NA	ND	ND	ND	ND
W-MW1	8/27/91	11.8	8,300	NA	370	64	ND	120
W-MW1	11/25/91	11.7	810	NA	9.3	ND	7.8	32
W-MW1	6/11/92	12.85	2,600	NA	810	16	21	42
W-MW1	7/16/97	14.36	19,000	ND (150)	1,400	2,800	500	2,600
W-MW1	10/21/97	13.92	14,000	29	1,200	1,000	590	2,800
W-MW1	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW1	4/1/98	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
W-MW1	7/15/98	16.41	71	57	31	ND (0.5)	ND (0.5)	3.1
W-MW1	10/22/98	15.62	5,100	360	520	140	250	950
W-MW1	9/9/99	15.42	2,400	400	680	140	130	370
W-MW1	1/18/00	14.49	4,100	180	420	11	210	350
W-MW1	5/4/00	16.19	NS	NS	NS	NS	NS	NS
W-MW1	8/22/00	15.34	9,400	410	1,200	130	410	920
W-MW4	3/21/89	12.4	ND	NA	13	1.4	1.0	ND
W-MW4	7/26/90	12.5	NA	NA	0.8	ND	ND	ND
W-MW4	10/25/90	12.2	NA	NA	120	1.2	1.1	0.9
W-MW4	1/25/91	12.0	NA	NA	230	2.8	1.2	2.0
W-MW4	4/25/91	13.0	170	NA	12	ND	ND	2.3
W-MW4	8/27/91	11.8	ND	NA	87	1.3	0.8	0.8
W-MW4	11/25/91	11.8	1,400	NA	ND	1.7	8.6	3.6
W-MW4	6/11/92	12.93	560	NA	150	1.8	1.8	1.1
W-MW4	7/16/97	14.46	50	ND	ND	ND	ND	ND
W-MW4	10/21/97	14.10	ND	ND	ND	ND	ND	ND
W-MW4	3/11/98	17.39	NS	NS	NS	NS	NS	NS
W-MW4	4/1/98	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	7/15/98	16.92	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	10/22/98	15.75	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW4	9/9/99	15.57	NS	NS	NS	NS	NS	NS
W-MW4	1/18/00	14.32	NS	NS	NS	NS	NS	NS
W-MW4	5/4/00	16.34	NS	NS	NS	NS	NS	NS
W-MW4	8/22/00	15.47	NS	NS	NS	NS	NS	NS
W-MW5	3/21/89	12.2	ND	NA	ND	ND	ND	ND
W-MW5	7/26/90	12.4	670	NA	0.8	ND	ND	ND
W-MW5	10/25/90	12.1	120	NA	13	ND	ND	ND
W-MW5	1/25/91	11.9	120	NA	3.2	ND	ND	ND
W-MW5	4/25/91	12.3	ND	NA	ND	ND	ND	ND
W-MW5	8/27/91	11.5	ND	NA	20	ND	0.5	ND
W-MW5	11/25/91	11.7	190	NA	2.7	ND	0.8	2.5
W-MW5	6/11/92	12.85	150	NA	37	ND	ND	ND
W-MW5	7/16/97	14.33	ND	22	ND	ND	ND	ND

TABLE 2
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).

Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
W-MW5	10/21/97	13.88	ND	14	ND	ND	ND	ND
W-MW5	3/11/98	17.14	NS	NS	NS	NS	NS	NS
W-MW5	4/1/98	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	7/15/98	16.43	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	10/22/98	15.60	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW5	9/9/99	15.44	NS	NS	NS	NS	NS	NS
W-MW-5	1/18/00	14.67	NS	NS	NS	NS	NS	NS
W-MW-5	5/4/00	16.18	NS	NS	NS	NS	NS	NS
W-MW-5	8/22/00	15.32	NS	NS	NS	NS	NS	NS
W-MW6	4/1/98	NA	740	4,600	9.8	3.2	3.0	15
W-MW6	7/15/98	NA	6,200	11,000	280	43	180	350
W-MW6	*7/15/98*	NA	NA	13,000	ND (500)	ND (500)	ND (500)	ND (500)
W-MW6	10/22/98	NA	4,700	9,600	450	13	200	200
W-MW6	*10/22/98*	NA	NA	9,100	470	ND (250)	ND (250)	ND (250)
W-MW6	9/9/99	NA	6,600	3,700	2,500	43	310	250
W-MW6	1/18/00	NA	3,500	4,600	800	ND (5.0)	40	13
W-MW6	5/4/00	NA	NS	NS	NS	NS	NS	NS
W-MW6	8/22/00	NA	1,400	1,700	370	4.8	12	35
W-MW7	9/9/99	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	1/18/00	NA	ND	2,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	5/4/00	NA	140	1,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
W-MW7	8/22/00	NA	160	830	0.62	ND (0.5)	ND (0.5)	ND (0.5)
W-B1	3/23/98	NA	3,100	4,200	250	18	160	290

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. ( ) denotes detection limit.
Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.
Duplicate results presented in italics performed by EPA method 8260.

CHART 1
GROUNDWATER ELEVATION
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION

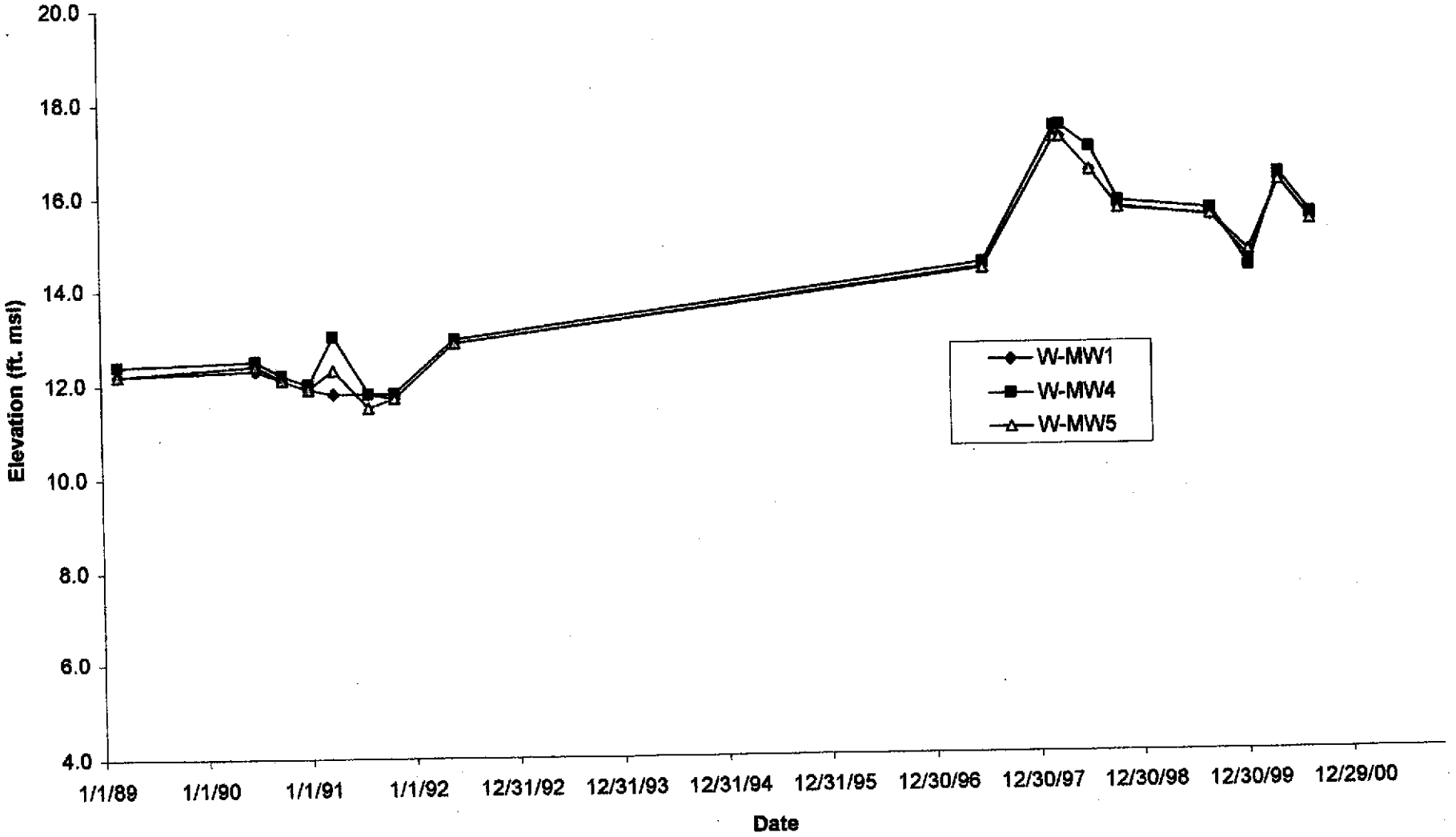

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CHART 2
TOTAL PETROLEUM CONCENTRATIONS
ALCOPARK FUELING FACILTY
OAKLAND, CALIFORNIA

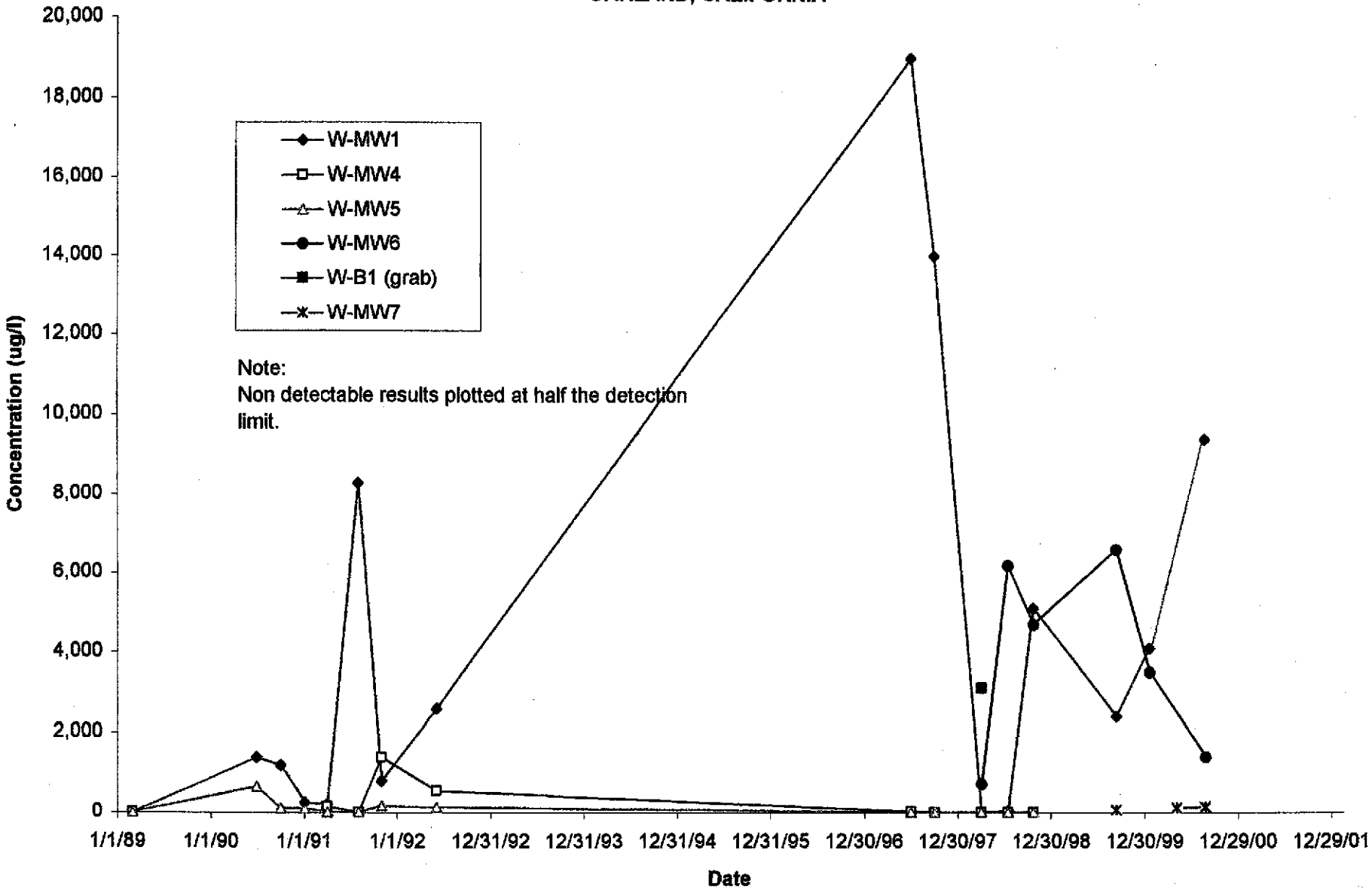

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CHART 3
BENZENE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

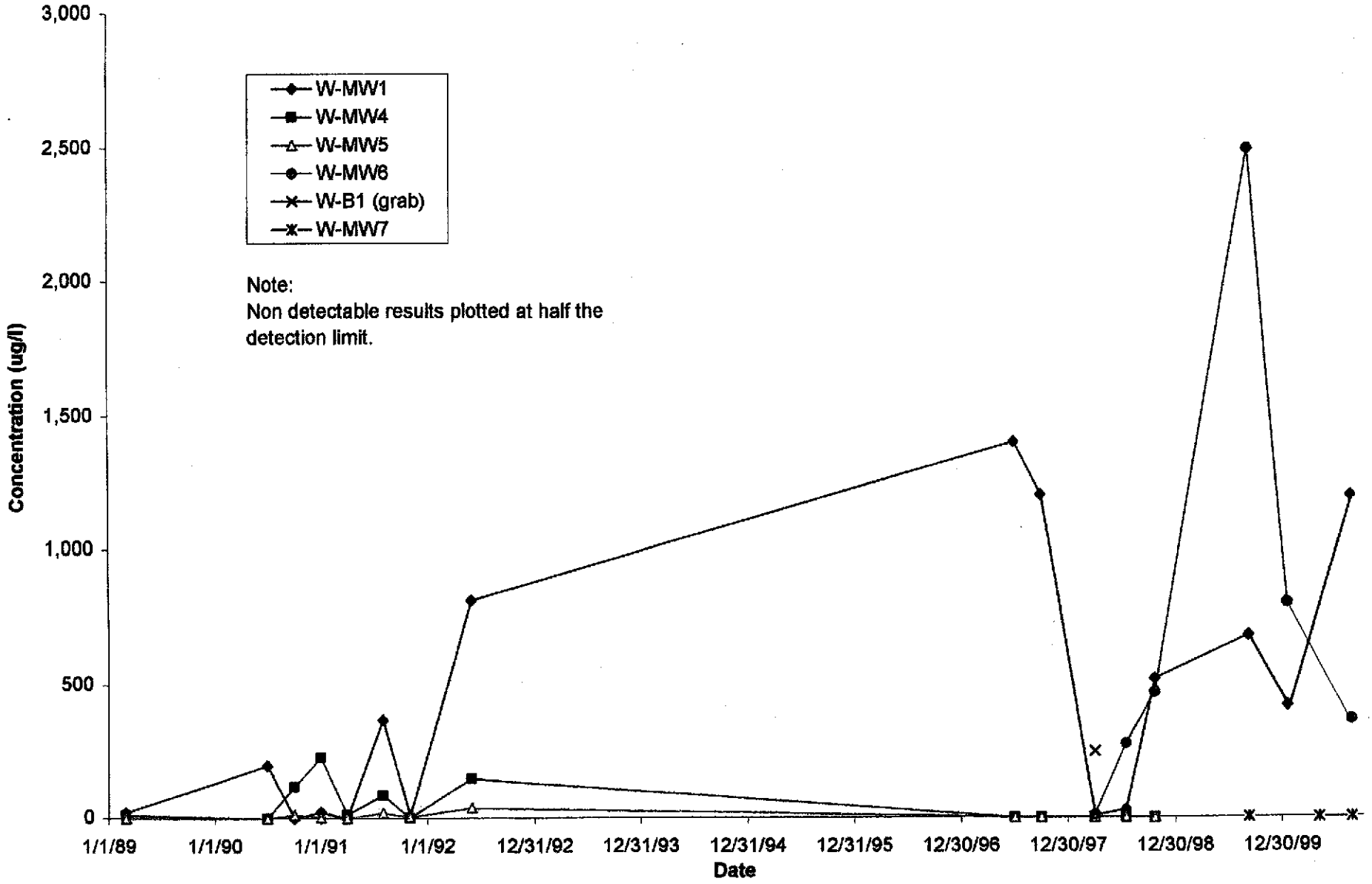

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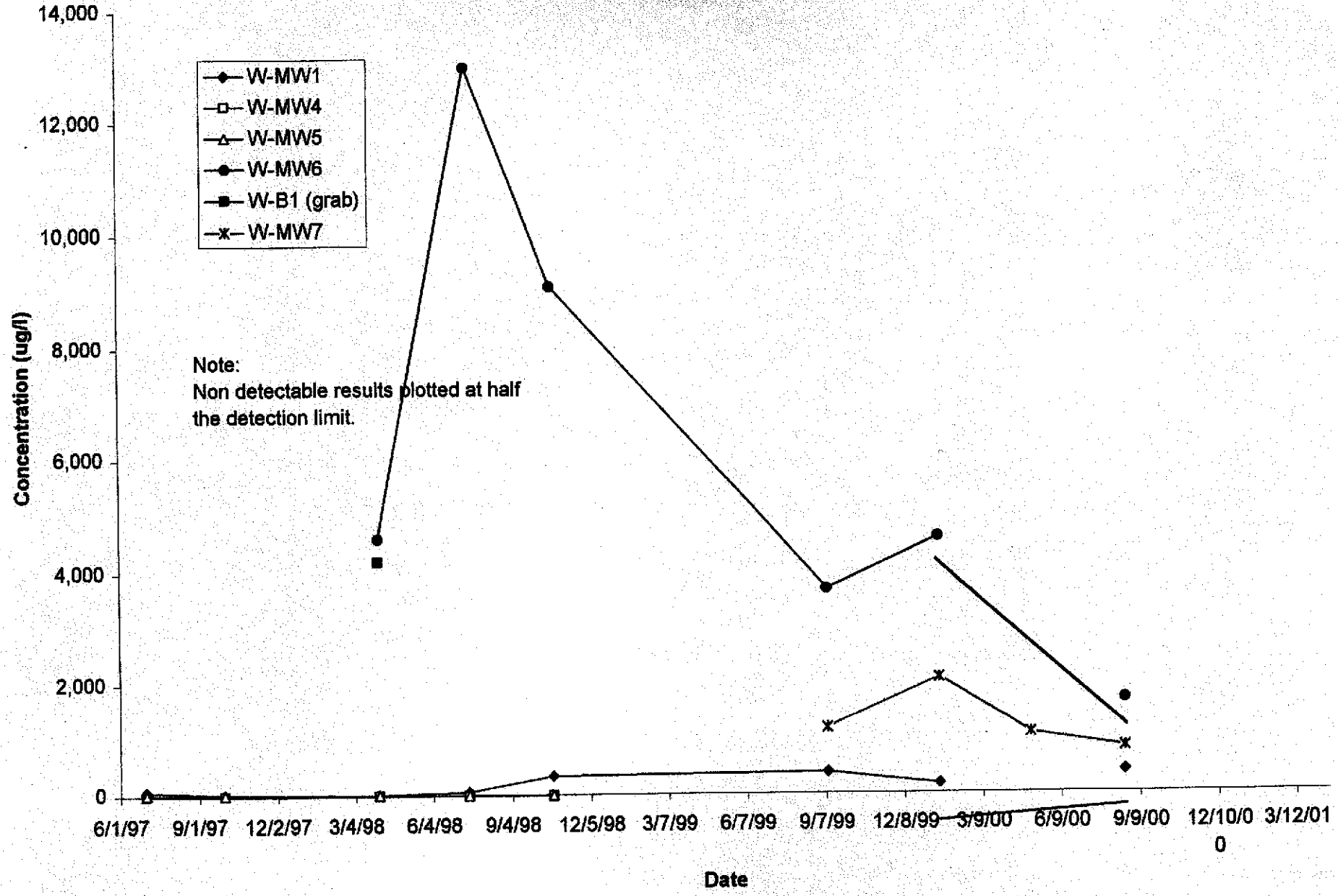
CHART 4
MTBE CONCENTRATIONS
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA



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SITE ASSESSMENT PLUS REPORT
(EXTENDED BY 1 MILE)

PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: 575-0G041 ALCOPARK - OAKLAND 165 13th Street Oakland, CA Cross Street: JAckson Street Latitude/Longitude: (37.802281, 122.264648)	Adriana Constantinescu PSI 1320 West Winton Avenue Hayward, CA 94545

Site Distribution Summary Agency / Database - Type of Records			*within 1 1/8 mile*	*1 1/8 to 1 1/4 mile*	*1 1/4 to 1 1/2 mile*	*1 1/2 to 2 miles*
A) Databases searched to 2 miles:						
US EPA	NPL	National Priority List	0	0	0	1
US EPA	CORRACTS	RCRA Corrective Actions	3	0	0	1
STATE	SPL	State equivalent priority list	1	0	1	1
B) Databases searched to 1 1/2 mile:						
STATE	SCL	State equivalent CERCLIS list	10	1	7	-
US EPA	CERCLIS / NFRAP	Sites currently or formerly under review by US EPA	11	0	4	-
US EPA	TSD	RCRA permitted treatment, storage, disposal facilities	0	0	0	-
STATE REG CO	LUST	Leaking Underground Storage Tanks	221	30	62	-
STATE/ REG/CO	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	1	0	0	-
STATE	DEED RSTR	Sites with deed restrictions	0	0	0	-
REGIONAL	NORTH BAY	Sites on North Bay Toxic List	11	1	4	-
REGIONAL	SOUTH BAY	Sites on South Bay Toxic List	0	0	0	-
STATE	CORTESE	State index of properties with hazardous waste	88	15	24	-
STATE	TOXIC PITS	Toxic Pits cleanup facilities	0	0	0	-
USGS/STATE	WATER WELLS	Federal and State Drinking Water Sources	0	0	0	-

Site Distribution Summary

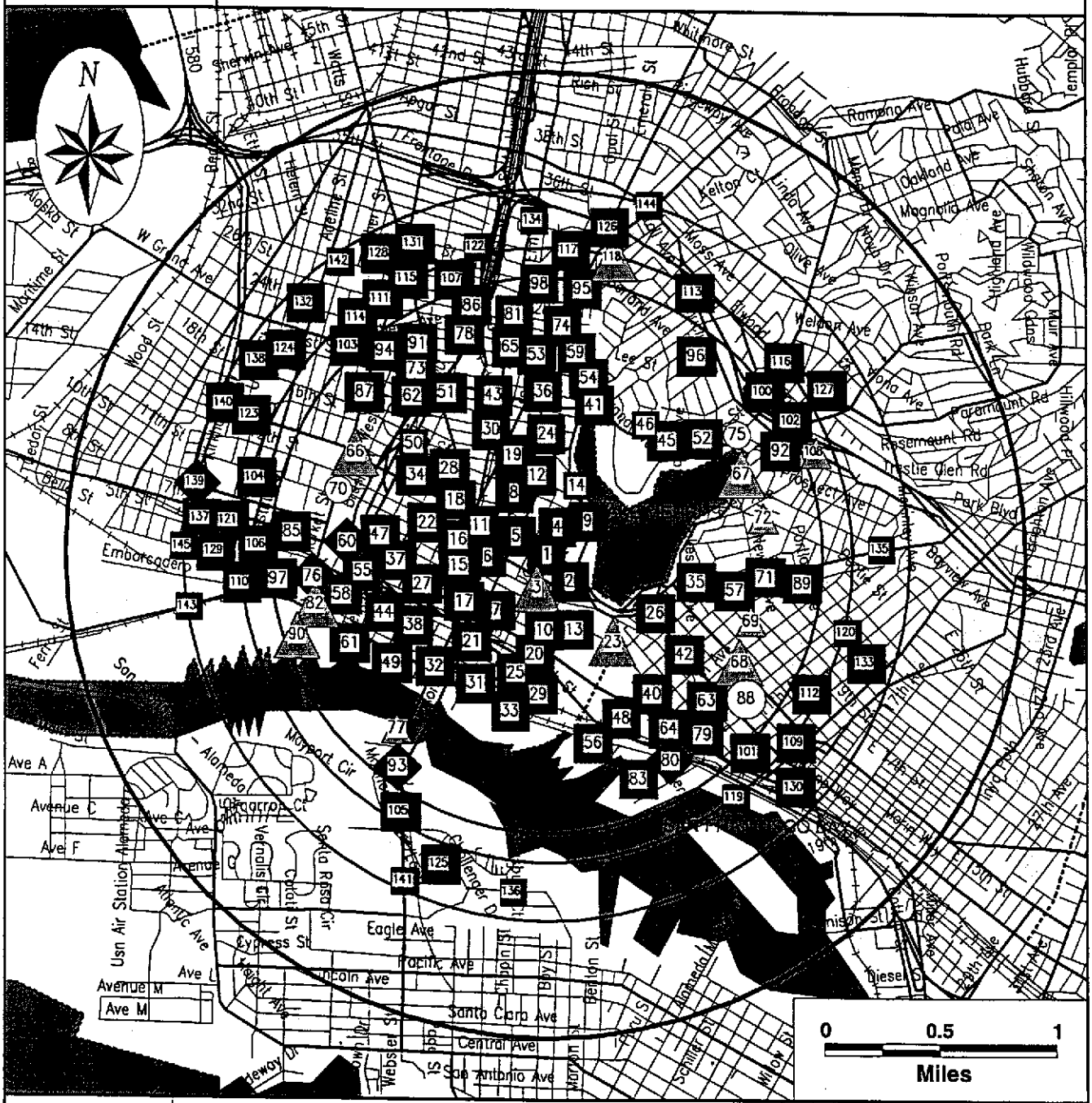
Agency / Database - Type of Records			within 1 1/8 mile	1 1/8 to 1 1/4 mile	1 1/4 to 1 1/2 mile	1 1/2 to 2 miles
C) Databases searched to 1 1/4 mile:						
US EPA	RCRA Viol	RCRA violations/enforcement actions	7	0	-	-
US EPA	TRIS	Toxic Release Inventory database	1	0	-	-
STATE	UST/AST	Registered underground or aboveground storage tanks	335	42	-	-
D) Databases searched to 1 1/8 mile:						
US EPA	ERNS	Emergency Response Notification System of spills	40	-	-	-
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	117	-	-	-
STATE	SPILLS	State spills list	20	-	-	-

This report meets the ASTM standard E-1527 for standard federal and state government database research in a Phase I environmental site assessment. A (-) indicates a distance not searched because it exceeds these ASTM search parameters.

NOTES

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1 MILE)

Map of Sites within 2 Miles



Subject Site

Category:	A	B	C	D
Databases Searched to:	2 mi.	1 1/2 mi.	1 1/4 mi.	1 1/8 mi.
Single Sites	◆	■	▲	○
Multiple Sites	◆	■	▲	○
	NPL, SPL, CORRACTS (TSD)	CERCLIS\ NFRAP, TSD, LUST, SWLF, SCL	UST	ERNS, GENERATORS

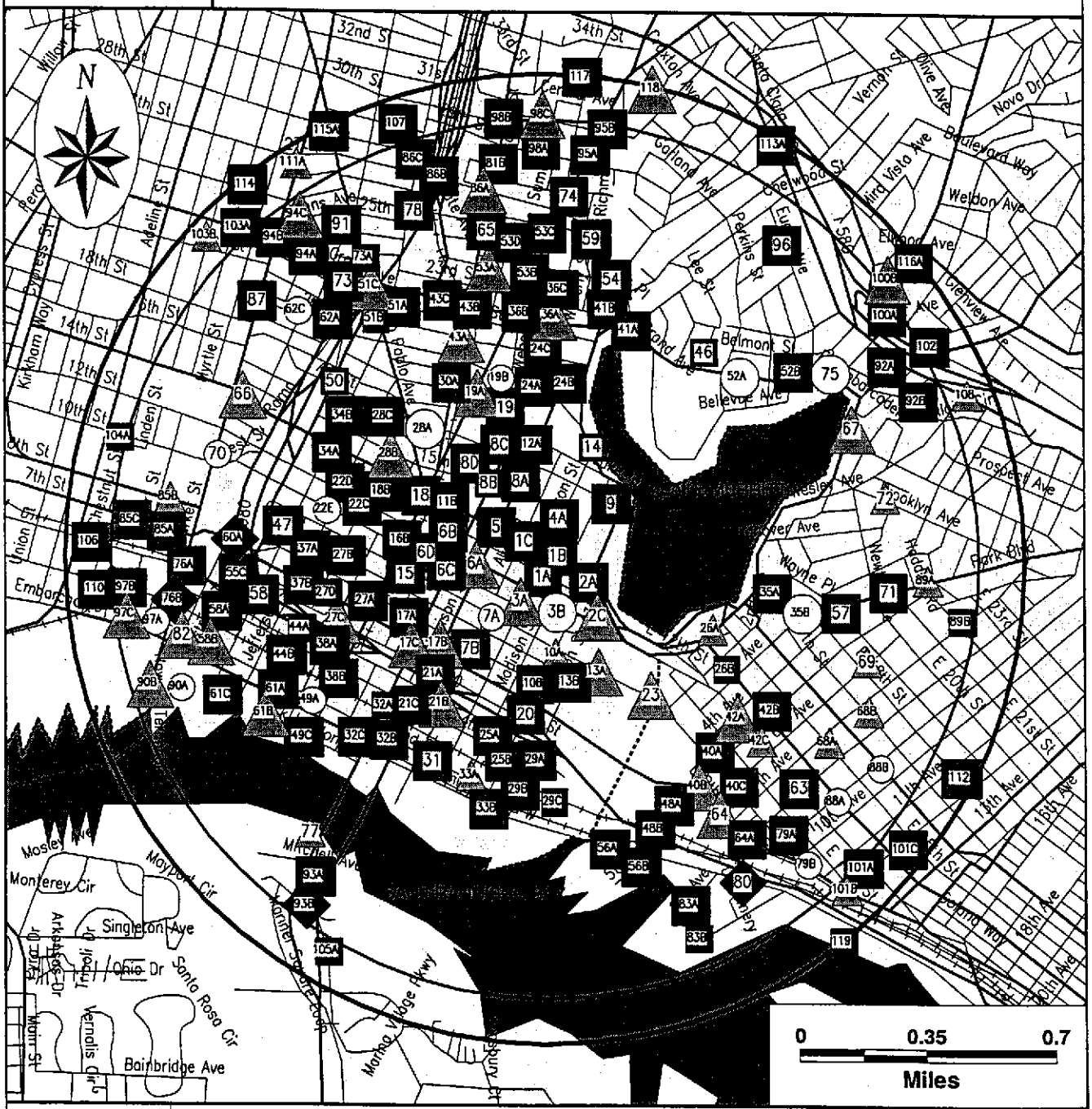
Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**
Report ID: **434301901**
Date of Report: **September 12, 2000**

SITE ASSESSMENT F_JS REPORT (EXTENDED BY 1 MILE)

Map of Sites within 1 1/4 Miles



Subject Site	Category:	A	B	C	D
★	Databases Searched to:	2 mi.	1 1/2 mi.	1 1/4 mi.	1 1/8 mi.
	Single Sites	◆	■	▲	○
	Multiple Sites	◆	■	▲	○
		NPL, SPL, CORRACTS (TSD)	CERCLIS\ NFRAP, TSD, LUST, SWLF, SCL	UST	ERNS, GENERATORS

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**
Report ID: **434301901**
Date of Report: **September 12, 2000**

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1 MILE)

Sites Represented as Polygons

These boundaries are approximated from agency records or other sources such as published maps. They may represent property boundaries, impact zones, or study areas. For more information contact the agency referenced by source number in the site listing.

★ Subject Site

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1 MILE)

Sites Represented as Radius Buffers

These radii are estimated from agency records or detailed street maps. The radii may be based on the furthest boundary of each property or study area from its center. For more information contact the agency referenced by source number in the site listing.

★ Subject Site	Highways and Major Roads Roads Railroads Rivers or Water Bodies Utilities

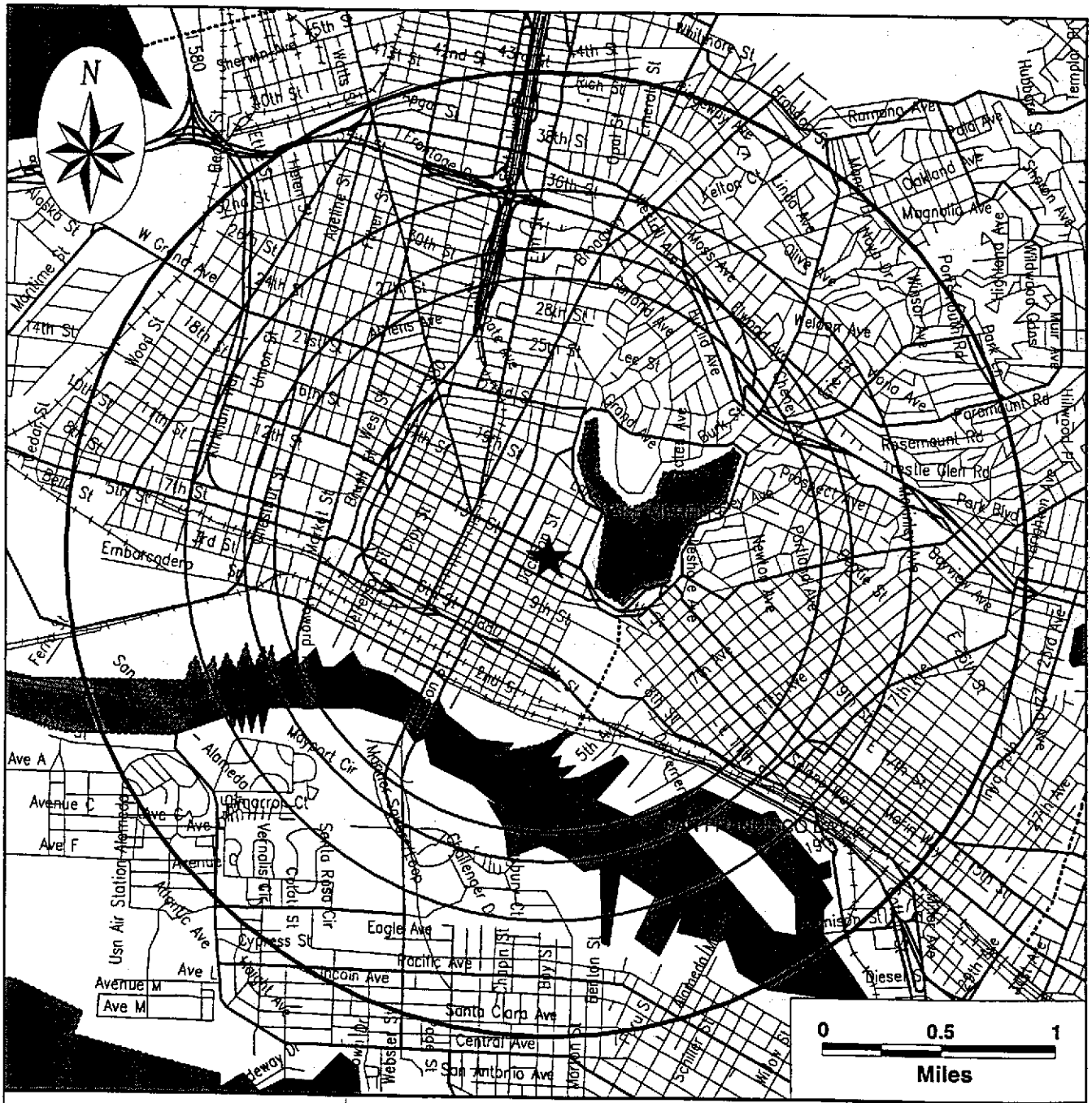
For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**

Report ID: **434301901**

Date of Report: **September 12, 2000**

SITE ASSESSMENT PLUS REPORT (EXTENDED BY 1 MILE)

Street Map



SITE ASSESSMENT PLUS REPORT
(EXTENDED BY 1 MILE)

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)		VISTA ID DISTANCE DIRECTION	A			B												C			D		
				NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
1A	CIVIC CENTER ANNEX 201 13TH OAKLAND, CA 94612		*1260050* *0.00 MI* *NA*																	X			
1A	ALCOPARK GARAGE 165 13TH ST OAKLAND, CA 94612		*64507273* *0.00 MI* *NA*																	X			
1A	ALCOPARK GARAGE 165 13TH OAKLAND, CA 94612		*7430157* *0.00 MI* *NA*												X								
1A	ALCOPARK GARAGE 165 13TH OAKLAND, CA 94612		*930110* *0.00 MI* *NA*							X										X			
1A	CIVIC CENTER ANNEX 210 13TH ST OAKLAND, CA 94612		*64506241* *0.00 MI* *NA*																	X			
1B	MOBIL SERVICE STATION 160 14TH ST OAKLAND, CA 94612		*64507274* *0.00 MI* *NA*																	X			
1B	UNOCAL SS #7124 0151E 14TH ST OAKLAND, CA 94612	1	*64506934* *0.00 MI* *NA*																	X			
1B	MOBIL SERVICE STATION 160 014TH OAKLAND, CA 94612		*4015686* *0.00 MI* *NA*																	X			
1B	JACKSON ST. APARTMENTS 1431 JACKSON ST OAKLAND, CA 94612		*64505920* *0.00 MI* *NA*																	X			
1B	MOBIL 160 14TH OAKLAND, CA 94612		*7430204* *0.00 MI* *NA*												X								
1B	PGE/JOHNSON S 1428 JACKSON ST OAKLAND, CA 94612		*8580661* *0.00 MI* *NA*																		X		
1B	MOBIL 160 14TH ST OAKLAND, CA 94612		*930112* *0.00 MI* *NA*							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
1C	ALBERTO CHANG 246 14TH ST OAKLAND, CA 94612	64506807 <0.01 MI NW																	X			
1C	QUALITY TUNE UP 246 14TH ST OAKLAND, CA 94612	5431461 <0.01 MI NW							X													
1C	QUALITY TUNE UP 246 14TH ST OAKLAND, CA 94612	12639256 <0.01 MI NW							X													
1C	QUALITY TUN UP 246 014TH OAKLAND, CA 94612	4015688 0.01 MI NW																	X			
1C	TIME OIL COMPANY 255 14H OAKLAND, CA	7429118 0.04 MI NW												X								
1D	BERGER ENTERPRISES 1501 JACKSON ST OAKLAND, CA 94612	7851351 0.02 MI N																	X			
2A	QUAN'S AUTOMOTIVE SERVICE 0100E 14TH ST OAKLAND, CA 94612	64506932 0.06 MI E																	X			
2A	FIRE ALARM STATION 1310 OAK ST OAKLAND, CA 94612	8588280 0.08 MI SE							X										X			
2A	FIRE ALARM STATION 1310 OAK ST OAKLAND, CA 94612	4988262 0.08 MI SE							X													
2A	KAISER ALUMINUM CHEMICAL CORP 300 LAKESIDE DRIVE OAKLAND, CA 94643	323452 0.09 MI E																	X			
2B	EMPTY BUILDING 125 12TH ST OAKLAND, CA 94607	64506797 0.08 MI SE																	X			
2B	PACIFIC BELL 125 TWELVE ST OAKLAND, CA 94607	314856 0.08 MI SE																			X	
2B	WESTERN UNION 125 12TH ST OAKLAND, CA 94607	1581665 0.08 MI SE							X													
2C	ALAMEDA COUNTY COURT HOUSE 1225 FALLON OAKLAND, CA 94607	1250785 0.15 MI SE																	X			
2C	ALAMEDA COURTHOUSE COUNTY OF 1225 FALLON ST OAKLAND, CA 94607	10270 0.15 MI SE																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
3A	OFFICE OF FLEET ADMINISTRATION 1111 JACKSON OAKLAND, CA 94607	1238328 0.07 MI SW																	X			
3A	OAKLAND STATE BUILDING 601 1111 JACKSON STREET OAKLAND, CA 94607	305075 0.07 MI SW																	X		X	
3B	OAKLAND AUTO BODY 149 11TH STREET OAKLAND, CA 94607	304978 0.11 MI S																			X	
4A	LAKEHURST HOTEL 1569 JACKSON ST OAKLAND, CA 94612	64507370 0.07 MI NE																	X			
4A	LAKEHURST HOTEL 1569 JACKSON OAKLAND, CA 94612	7032271 0.07 MI NE							X					X								
5	AUTO RADIO 1424 HARRISON ST OAKLAND, CA 94612	8579904 0.09 MI NW																	X			
5	ROYS AUTO BODY 1432 HARRISON ST OAKLAND, CA 94612	362177 0.10 MI NW																			X	
5	A BACHARACH TR B BORSUK 1432 HARRISON ST OAKLAND, CA 94612	11498878 0.10 MI NW							X													
5	HARRISON STREET GARAGE 1432 HARRISON OAKLAND, CA 94612	1261232 0.10 MI NW												X					X			
5	FRANK G. MAR COMMUNITY HOUSING PROJ HARRISON AND 13TH STREETS OAKLAND, CA 94607	1881357 0.10 MI W										X										
5	HARRISON CAR WASH 301 14TH ST OAKLAND, CA 94612	64507653 0.11 MI NW																	X			
5	1X CHEVRON USA 301 14TH ST OAKLAND, CA 94612	1581705 0.11 MI NW							X													
5	CHEVRON 301 14TH OAKLAND, CA 94612	7430214 0.11 MI NW												X								
5	GERMAN AUTOCRAFT 301 14TH OAKLAND, CA 94612	7430215 0.11 MI NW												X								
5	HARRISON CAR WASH 301 014TH OAKLAND, CA 94612	4015689 0.11 MI NW																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
7C	KIN SHELL 726 HARRISON OAKLAND, CA 94607	1253479 0.31 MI SW							X										X			
7C	OAKLAND AUTO PARTS TIRE 706 HARRISON OAKLAND, CA 94607	3078710 0.32 MI SW							X					X								
7C	GIN'S ARCO SERVICE 706 HARRISON OAKLAND, CA 94607	1255725 0.32 MI SW																	X			
8A	LEE MONTGOMERY PROPERTY 1600 HARRISON ST OAKLAND, CA 94612	8579905 0.15 MI NW																	X			
8A	CHEVRON 1633 HARRISON OAKLAND, CA 94612	1585425 0.16 MI N							X					X								
8B	YWCA OF OAKLAND 1515 WEBSTER OAKLAND, CA 94612	7033103 0.20 MI NW							X					X					X			
8C	OGDEN SERVICE CORP. 1700 WEBSTER ST OAKLAND, CA 94612	8598750 0.25 MI NW																	X			
8C	DOUGLAS PARKING CO 1721 WEBSTER OAKLAND, CA 94612	4046294 0.26 MI NW																	X			
8C	DOUGLAS PARKING CO. 1721 WEBSTER ST OAKLAND, CA 94612	8598752 0.26 MI NW							X										X			
8C	DOUGLAS MOTOR SERVICE 1721 WEBSTER OAKLAND, CA 94612	1261231 0.26 MI NW												X								
8C	I D G ARCHITECTS 1730 FRANKLIN ST RM 300 OAKLAND, CA 94612	3766784 0.31 MI NW																			X	
8C	1X TOOTHMAN DEVELOPMENT COR 1736 FRANKLIN ST OAKLAND, CA 94612	7732590 0.31 MI NW							X													
8D	PACIFIC BELL 1519 FRANKLIN STREET OAKLAND, CA 94612	314946 0.26 MI NW							X					X					X		X	
8D	A C TRANSIT 1600 FRANKLIN ST OAKLAND, CA 94612	7005717 0.27 MI NW																	X			
8D	PACIFIC BELL (Q1-002) 1587 FRANKLIN ST OAKLAND, CA 94612	7733350 0.28 MI NW																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
8D	PACIFIC BELL 1587 FRANKLIN STREET OAKLAND, CA 94612	314959 0.28 MI NW							X										X		X	
9	UNKNOWN 133 17TH STREET OAKLAND, CA 94612	2124866 0.17 MI NE																		X		
9	PRIVATE RESIDENCE 123 17TH ST OAKLAND, CA 94612	64506827 0.17 MI NE																	X			
9	LAKE POINT TOWERS LTD 101 LAKESIDE DR OAKLAND, CA 94612	930114 0.20 MI NE							X													
10A	1X OAKLAND MUSEUM 1000 OAK ST OAKLAND, CA 94607	7006187 0.20 MI S																	X			
10B	BART METRO CENTER 101 8TH ST OAKLAND, CA 94607	64507673 0.28 MI S																	X			
10B	BART METRO CENTER 101 8TH ST OAKLAND, CA 94607	3191450 0.28 MI S							X													
10B	METROCENTER 101 008TH OAKLAND, CA 94607	4495595 0.28 MI S																	X			
11A	FRANK MAR COMMUNITY HOUSING PROJECT 383 13TH ST OAKLAND, CA 94612	6531844 0.20 MI W																				X
11A	TRIBUNE TOWER COMPLEX 409 13TH ST OAKLAND, CA 94612	305081 0.22 MI W																			X	X
11A	PARKING GARAGE 420 13TH ST OAKLAND, CA 94612	64506802 0.23 MI W																	X			
11A	1330 BROADWAY GARAGE 420 13TH OAKLAND, CA 94612	4495939 0.23 MI W																	X			
11A	ZIMMERMAN INVESTMENTS 420 13TH OAKLAND, CA 94612	7430160 0.23 MI W												X								
11A	ZIMMERMAN INVESTMENTS 420 13TH ST OAKLAND, CA 94612	7430145 0.23 MI W							X													
11B	BACHARACH AND BORSUK PROP 1432 1434 FRANKLIN OAKLAND, CA 94612	5354639 0.23 MI NW							X					X								

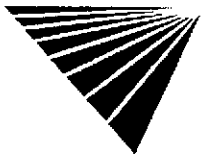
MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
11B	COMMERCIAL BUILDING 405 14TH ST OAKLAND, CA 94612	64506810 0.25 MI NW																	X			
11B	FINANCIAL CENTER BUILDING 405 14TH ST OAKLAND, CA 94612	7430171 0.25 MI NW							X													
11C	LLOYD A WISE OLDSMOBILE 0440E 14TH ST OAKLAND, CA 94612	64506937 0.30 MI NW																	X			
11C	WALGREENS 2393 1330 BROADWAY OAKLAND, CA 94612	11503991 0.30 MI W																			X	
11C	ZIMMERMAN INVESTMENTS 1330 BROADWAY OAKLAND, CA 94612	3981817 0.30 MI W							X													
11C	ZIMMERMAN INVESTMENTS 1330 BROADWAY OAKLAND, CA 94612	10802364 0.30 MI W							X													
11C	P M REALTY GROUP 1333 BROADWAY STE 1050 OAKLAND, CA 94612	8572108 0.32 MI W																	X			
11C	CITY OF OAKLAND REDEV GAL BROADWAY SAN PABLO OAKLAND, CA 94612	6324897 0.32 MI NW												X								
12	PGE REGIONAL HEADQUARTERS 1919 WEBSTER OAKLAND, CA 94612	327811 0.33 MI N							X										X			
12	KAISER FOUNDATION HEALTH PLAN 1935 WEBSTER OAKLAND, CA 94612	4046295 0.34 MI N																	X			
12	MOBIL 1975 WEBSTER ST OAKLAND, CA 94612	3781524 0.38 MI N							X													
12A	19TH HARRISON ST. 1833 HARRISON OAKLAND, CA 94612	3197139 0.24 MI N																	X			
12A	PRENTIS COPLEY INVESTMENT 1833 HARRISON ST OAKLAND, CA 94612	64603322 0.24 MI N							X													
12A	DOUGLAS PARKING 1833 HARRISON ST OAKLAND, CA 94612	8579906 0.24 MI N																	X			
12A	VACANT LOT 1881 HARRISON OAKLAND, CA 94612	3197140 0.25 MI N																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
12A	WORLD SAVINGS AND LOAN 1901 HARRISON ST OAKLAND, CA 94612	475373 0.28 MI N																			X	
13A	HARRINGTON MCINNIS, INC. 125 10TH ST OAKLAND, CA 94607	64506964 0.26 MI SE																	X			
13A	GEO V ARTH AND SON 110 TENTH STREET OAKLAND, CA 94607	169992 0.27 MI SE																			X	
13A	STANDARD ELECTRIC SUPPLY 113 10TH ST OAKLAND, CA 94607	64506961 0.27 MI SE																	X			
13A	HEYMAN PROPERTIES 71 10TH ST OAKLAND, CA 94607	64506956 0.32 MI SE																	X			
13B	LANEY COLLEGE 900 FALLON OAKLAND, CA 94607	237430 0.28 MI S							X										X			
13B	LANEY JUNIOR COLLEGE 900 FALLON ST OAKLAND, CA 94607	13567788 0.28 MI S							X													
14	REGILLUS CONDOMINIUMS 200 LAKESIDE OAKLAND, CA 94612	930197 0.27 MI NE							X					X								
15	PACIFIC RENAISSANCE PLAZA 1000 FRANKLIN OAKLAND, CA 94607	4558357 0.30 MI W							X					X								
15	TRANS PACIFIC CENTER 1000 BROADWAY OAKLAND, CA 94607	8572103 0.36 MI W																	X			
16A	CLOROX 1221 BROADWAY OAKLAND, CA 94607	1592226 0.32 MI W																			X	
16B	RAMALEA PACIFIC 1111 BROADWAY OAKLAND, CA 94607	1583042 0.34 MI W							X													
16B	EAGLE MARINE SERVICES, LIMITED 1111 BROADWAY OAKLAND, CA 94607	7240254 0.34 MI W																	X			
17A	ASIAN HEALTH SERVICES 814 WEBSTER STREET OAKLAND, CA 94607	7434984 0.33 MI SW				X																
17A	KEEP ON TRUCKIN 370 8TH OAKLAND, CA 94607	7431022 0.33 MI W												X								

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
17A	1X PORT OF OAKLAND 370 8TH ST OAKLAND, CA 94606	6531872 0.33 MI W																				X
17A	BILL LOUIE'S TEXACO 800 FRANKLIN OAKLAND, CA 94607	1235109 0.36 MI W																	X			
17A	BILL LOUIE'S AUTO SERVICE 800 FRANKLIN ST OAKLAND, CA 94607	11498791 0.36 MI W							X													
17A	ALEX SHAW ASSOCIATES 800 FRANKLIN OAKLAND, CA 94607	1142008 0.36 MI W												X								
17B	BAY ALARM CO 325 7TH ST OAKLAND, CA 94607	1248519 0.34 MI SW																	X			
17B	BAY ALARM CO. 325 7TH ST OAKLAND, CA 94607	64507646 0.34 MI SW																	X			
17B	BAY ALARM COMPANY 325 007TH OAKLAND, CA 94607	4015388 0.35 MI SW																	X			
17C	1X SALVATION ARMY 601 WEBSTER OAKLAND, CA 94607	7006607 0.37 MI SW																	X			
17C	SALVATION ARMY REHAB. CENTER 601 WEBSTER ST OAKLAND, CA 94607	63598557 0.37 MI SW																	X			
18	1450 SAN PABLO AVE OAKLAND, CA 94612	12714277 0.34 MI NW																	X			
18	OAKLAND CITY OF REDEV GALLERIA UNKNOWN BROADWAY SAN PABLO OAKLAND, CA 94612	64549082 0.36 MI NW							X													
18	OAKLAND CITY OF REDEV GALLERIA UNKNOWN BROADWAY SAN PABLO OAKLAND, CA 94612	64599771 0.36 MI NW							X													
18A	OWNER/OPERATOR 508 16TH ST OAKLAND, CA 94612	64506818 0.38 MI NW																	X			
18B	LLOYD A WISE HONDA 0500E 14TH ST OAKLAND, CA 94612	1 64506939 0.39 MI W																	X			
18B	OAKLAND REDEVELOPMENT AGENCY 1300 CLAY STREET OAKLAND, CA 94607	2007333 0.45 MI W										X										X

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
18B	OAKLAND FEDERAL BUILDING 1301 CLAY OAKLAND, CA 94612	1583497 0.46 MI W							X										X			
18C	OAKLAND CITY HALL #1 CITY HALL PLAZA OAKLAND, CA 94612	305011 0.42 MI NW							X												X	
18C	CITY OF OAKLAND CLAY ST OAKLAND, CA 94612	930160 0.46 MI NW												X					X			
18C	CITY OF OAKLAND 1417 CLAY ST OAKLAND, CA 94612	10807810 0.46 MI NW							X										X			
19	KAISER REGIONAL PARKING 1901 FRANKLIN OAKLAND, CA 94612	930182 0.36 MI NW							X					X								
19	KAISER PERMANENTE 410 19TH ST OAKLAND, CA 94612	64505590 0.37 MI NW																	X			
19	KAISER REGIONAL OFFICE GARAGE 410 19TH ST OAKLAND, CA 94612	12361886 0.37 MI NW																	X			
19	BLUE CROSS BUILDING 1950 FRANKLIN OAKLAND, CA 94612	1244358 0.39 MI N																	X			
19	KAISER FNDN HLTH PLAN OFC BLDG 1950 FRANKLIN ST OAKLAND, CA 94612	223519 0.39 MI N																	X		X	
19A	REGIONAL OFFICES 1924 BROADWAY OAKLAND, CA 94612	3192888 0.42 MI NW																	X			
19A	EAST BAY CAMERA EXCHANGE 1936 BROADWAY OAKLAND, CA 94612	3192889 0.43 MI NW																			X	
19B	WELLS FARGO BANK 415 20TH ST OAKLAND, CA 94612	463640 0.44 MI N																			X	
20	CHEVRON 609 OAK OAKLAND, CA 94607	930209 0.36 MI S							X					X					X			
20	T T AUTO REPAIR 610 OAK ST OAKLAND, CA 94607	8588278 0.36 MI S							X										X			
20	T T AUTO 610 OAK ST OAKLAND, CA 94607	3982721 0.36 MI S							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
21A	JAL-VUE WINDOW CORPORATION 295 6TH ST OAKLAND, CA 94606	64507334 0.37 MI SW																	X			
21A	JAL-VUE WINDOW CORPORATION 295 6TH OAKLAND, CA 94606	1252814 0.37 MI SW																	X			
21A	PORT OF OAKLAND 295 6TH ST OAKLAND, CA 94607	4051523 0.37 MI SW							X													
21B	AM/PM SERVICE CO 251 5TH OAKLAND, CA 94607	4017166 0.42 MI SW																	X			
21B	PORT OF OAKLAND 251 5TH OAKLAND, CA 94607	3976520 0.42 MI SW																			X	
21C	CALTRANS DISTRICT 4 415 HARRISON ST OAKLAND, CA 94607	66511 0.46 MI SW																			X	
21C	PE O'HARE COMPANY 309 4TH ST OAKLAND, CA 94607	1260312 0.49 MI SW							X													
21C	P.E. O'HAIR CO. 309 4TH ST OAKLAND, CA 94607	64506248 0.49 MI SW																	X			
21C	P.E. O'HAIR CO. 309 004TH OAKLAND, CA 94607	4015182 0.49 MI SW																	X			
22A	CMA ASSET MANAGERS INC 500 12TH ST OAKLAND, CA 94607	5706778 0.39 MI W																			X	
22B	OAKLAND CONVENTION CENTER 550 10TH ST OAKLAND, CA 94607	64505865 0.46 MI W																	X			
22C	BRAMALEA PACIFIC 12TH CLAY OAKLAND, CA	930109 0.46 MI W												X								
22C	BRAMALEA PACIFIC UNKNOWN 12TH CLAY OAKLAND, CA	64609148 0.46 MI W							X													
22C	BRAMALEA PACIFIC UNKNOWN 12TH CLAY OAKLAND, CA 94601	64575275 0.46 MI W							X													
22C	PROJECT REPORT 1155 CLAY ST OAKLAND, CA 94607	6531941 0.47 MI W																				X



X = search criteria; • = tag-along (beyond search criteria).
For more information call VISTA Information Solutions, Inc. at 1 - 800 - 767 - 0403.
Report ID: 434301901 Date of Report: September 12, 2000
Version 2.6.1

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
22D	BRAMALEA PACIFIC UNKNOWN 13TH JEFFERSON ST OAKLAND, CA	64597950 0.52 MI W							X													
22D	CITY CENTER GARAGE WEST SITE 12TH ST JEFFERSON ST OAKLAND, CA	4558440 0.53 MI W																				X
22E	AC TRANSIT 601 11TH ST OAKLAND, CA 94607	8567979 0.55 MI W																		X		
23	KAISER CONVENTION CENTER 10 10TH ST OAKLAND, CA 94606	64505585 0.40 MI SE																	X			
23	1X KAISER CONVENTION CENTER 10 10TH ST OAKLAND, CA 94606	7005092 0.40 MI SE																	X			
24A	KAISER CENTER MALL WEBSTER 20TH OAKLAND, CA 94643	1219614 0.40 MI N																	X			
24A	344 20TH ST OAKLAND, CA 94612	12713987 0.41 MI N																	X			
24A	LONGS DRUG STORE NO 386 344 20TH ST OAKLAND, CA 94612	5707042 0.41 MI N																			X	
24A	KAISER CENTER MALL 344 20TH ST OAKLAND, CA 94612	64597326 0.41 MI N							X													
24B	KAISER CENTER GARAGE 300 LAKESIDE DR OAKLAND, CA 94612	223493 0.42 MI N							X										X			
24B	KAISER CENTER 300 LAKESIDE DR OAKLAND, CA 94612	6922407 0.42 MI N							X													
24C	ORDWAY BUILDING 1 KAISER PLAZA OAKLAND, CA 94612	8581210 0.50 MI N							X													
24C	ORDWAY BUILDING 1 KAISER OAKLAND, CA 94612	1219615 0.50 MI N							X										X			
24C	ORDWAY BUILDING 1 KAISER PLAZA, STE 335 OAKLAND, CA 94612	64505924 0.50 MI N																	X			
24C	ORDWAY THE ONE KAISER PLAZA OAKLAND, CA 94612	311647 0.50 MI N																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
24C	UNKNOWN 2101 WEBSTER/2ND ST. OAKLAND, CA 94612	2134517 0.51 MI N																		X		
24C	WEBSTER ST PARTNER 2101 WEBSTER ST OAKLAND, CA 94612	8598754 0.51 MI N																	X			
24C	PACIFIC BELL 2150 WEBSTER STREET OAKLAND, CA 94612	315077 0.53 MI N																			X	
25A	OAK ST SHELL #204-5510-0428 105 5TH ST OAKLAND, CA 94607	1251215 0.42 MI S							X										X			
25A	OAK ST. SHELL #204-5510-0428 105 5TH ST OAKLAND, CA 94607	64507591 0.42 MI S																	X			
25A	SHELL OIL COMPANY 105 005TH OAKLAND, CA 94607	4015250 0.42 MI S																	X			
25A	LAKESIDE NON-FERROUS METALS CORP 412 MADISON ST OAKLAND, CA 94607	3[illegible]982 0.45 MI S				X			X										X			
25A	SANTA RITA JAIL BOILER FOUND UNKNOWN 4TH MADIGAN DUBLIN, CA 94568	64557319 0.46 MI SW							X													
25A	SANTA RITA JAIL BOILER FOUND UNKNOWN 4TH MADIGAN DUBLIN, CA 94568	64603373 0.46 MI SW							X													
25B	POST TOOL 400 OAK ST OAKLAND, CA 94607	4222868 0.49 MI S							X													
25B	POST TOOL 400 OAK ST OAKLAND, CA 94607	12639973 0.49 MI S							X													
25B	PENN PARTNERS 333 OAK ST OAKLAND, CA 94607	3767821 0.51 MI S							X													
26A	APARTMENT BUILDING 1455 1ST AVE OAKLAND, CA 94606	64506945 0.43 MI E																	X			
26B	TIME OIL COMPANY 255 E. 14TH ST OAKLAND, CA 94606	1581704 0.52 MI SE							X													
27A	SHELL 461 8TH ST OAKLAND, CA 94607	1176601 0.44 MI W							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
27A	SHELL 461 8TH OAKLAND, CA 94607	7431026 0.44 MI W												X								
27A	SHELL 461 8TH ST OAKLAND, CA 94607	12639379 0.44 MI W							X													
27A	HALL OF JUSTICE 455 7TH ST OAKLAND, CA 94607	64506380 0.46 MI W																	X			
27B	SALVATION ARMY 810 CLAY ST OAKLAND, CA 94607	64597012 0.52 MI W							X													
27C	OAKLAND-PIEDMONT MUNI COURT 661 WASHINGTON OAKLAND, CA 94607	7250848 0.52 MI W																	X			
27C	POLICE TRANSPORTATION LOT 495 6TH ST OAKLAND, CA 94607	64505608 0.53 MI W																	X			
27C	POLICE LOT FUELING 501 6TH ST OAKLAND, CA 94607	12361891 0.55 MI W																	X			
27D	BART CORPORATION YARD 540 7TH ST E OAKLAND, CA 94607	12666823 0.54 MI W							X													
28A	ICE VENTURES PROJECT 540 17TH ST OAKLAND, CA 94612	6531851 0.46 MI NW																				X
28B	1555 CLAY ST OAKLAND, CA 94612	12714056 0.47 MI NW																	X			
28C	STITCH IN TIME 1611 CLAY ST OAKLAND, CA 94612	400628 0.48 MI NW																			X	
28C	BLUE PRINT SERVICE CO. 1700 JEFFERSON OAKLAND, CA 94612	930195 0.54 MI NW							X					X					X			
28C	B P S OAKLAND 1700 JEFFERSON OAKLAND, CA 94612	3197554 0.54 MI NW																			X	
28C	BLUE PRINT SERVICE CO. 1700 JEFFERSON ST OAKLAND, CA 94612	64507215 0.54 MI NW																	X			
29A	CONTROLCO INC. 70 4TH ST OAKLAND, CA 94607	64506765 0.47 MI S																	X			

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			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
29A	BALCO PROPERTIES 55 4TH ST OAKLAND, CA 94607	1591587 0.48 MI S							X													
29A	ALAMEDA COUNTY WAREHOUSE 39 4TH ST OAKLAND, CA 94607	10265 0.49 MI S																			X	
29A	BART OAKLAND STORE ROOM 25 4TH ST OAKLAND, CA 94607	3191180 0.50 MI S																			X	
29B	PEERLESS COFFEE 225 FALLON ST OAKLAND, CA 94607	4558346 0.56 MI S							X													
29B	PEERLESS COFFEE 225 FALLON OAKLAND, CA 94607	7432324 0.56 MI S							X					X								
29B	OAKLAND FIRE TRAINING FACILITY 250 FALLON ST OAKLAND, CA 94607	8577420 0.57 MI S																	X			
29B	GEORGE VUKASIN 210 FALLON ST OAKLAND, CA 94607	8577419 0.57 MI S																		X		
29C	MACY MOVERS 200 VICTORY COURT OAKLAND, CA 94607	4045145 0.59 MI S							X										X			
30A	CHEVRON 1911 TELEGRAPH OAKLAND, CA 94612	930234 0.48 MI NW							X					X								
30A	CAPWELL'S PARKING GARAGE 1911 TELEGRAPH AVE OAKLAND, CA 94612	8596906 0.48 MI NW																	X			
30B	MERRITT TIRE AND BRAKE 2025 TELEGRAPH AVE OAKLAND, CA 94612	8596907 0.55 MI NW																	X			
30B	GOODYEAR SERVICE STATION 2025 TELEGRAPH AVE OAKLAND, CA 94612	4223096 0.55 MI NW							X													
30B	2101 TELEGRAPH ASSOCIATES, INC 2101 TELEGRAPH AVE OAKLAND, CA 94612	8596908 0.59 MI NW																	X			
31	EAST BAY TIRE CO. 225 003RD OAKLAND, CA 94607	4015126 0.51 MI SW																	X			
31	EAST BAY PACKING COMPANY 208 JACKSON OAKLAND, CA 94607	1213764 0.55 MI SW							X					X					X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
31	MILLER PACKING COMPANY 201 002ND OAKLAND, CA 94607	4015057 0.56 MI SW												X					X			
31	MILLER PACKING CO. II 206 2ND ST OAKLAND, CA 94607	64506233 0.56 MI SW																	X			
31	MILLER PACKING 206 2ND ST OAKLAND, CA 94607	1259748 0.56 MI SW							X													
31	MILLER PACKING COMPANY 201 SECOND STREET OAKLAND, CA 94607	64506235 0.56 MI SW																	X			
31	OAKLAND PORT OF AMTRAK SITE UNKNOWN ALICE ST 2ND ST OAKLAND, CA	64597293 0.57 MI SW							X													
31	OAKLAND PORT OF AMTRAK SITE UNKNOWN ALICE ST 2ND ST OAKLAND, CA 94607	64544930 0.57 MI SW							X													
31	FUTURE AMTRAK STATION 245 2ND ST OAKLAND, CA 94607	7291026 0.57 MI SW							X													
31	FUTURE AMTRAK STATION 245 2ND ST OAKLAND, CA 94607	4222290 0.57 MI SW							X													
31	FUTURE AMTRAK STATION 245 2ND ST OAKLAND, CA 94607	64506214 0.57 MI SW																	X			
31	PORT OF OAKLAND (FUTURE AMTRAK 245 2ND OAKLAND, CA 94607	4496011 0.57 MI SW																	X			
31	FUTURE AMTRAK STATION 245 2ND OAKLAND, CA 94607	7430526 0.57 MI SW												X								
31	PORT OF OAKLAND AMTRAK SI ALICE ST 2ND ST OAKLAND, CA 94607	6848095 0.58 MI SW												X								
31	UNITED BEVERAGE DISTRIBUTORS 105 JACKSON OAKLAND, CA 94607	1218308 0.59 MI SW																	X			
31	UNITED BEVERAGE 105 JACKSON OAKLAND, CA 94607	6604757 0.59 MI SW							X					X								
31	UNION PACIFIC RAILROAD MP5.8 RAILROAD STATION OAKLAND, CA 94607	6922478 0.60 MI SW																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
32A	TT AUTO RPR 330 WEBSTER ST OAKLAND, CA 94607	930249 0.53 MI SW							X										X			
32B	MEYER PLUMBING SUPPLY 311 2ND ST OAKLAND, CA 94607	5350302 0.59 MI SW							X													
32B	MEYER PLUMBING SUPPLY 311 2ND ST OAKLAND, CA 94607	12639280 0.59 MI SW							X													
32C	ATT OAKLAND MAIN 1587/1601 FRANKLIN ST OAKLAND, CA 94607	32126 0.65 MI SW																			X	
32C	PORT OF OAKLAND 321 EMBARCADERO COVE OAKLAND, CA 94606	64507041 0.65 MI SW																	X			
32C	CAPITOL SUPPLY COMPANY 351 EMBARCADERO OAKLAND, CA 94606	1154977 0.65 MI SW				X																
32C	GOLDEN STATE DIESEL 351 EMBARCADERO OAKLAND, CA 94606	4025918 0.65 MI SW																	X			
32C	PORT OF OAKLAND EMBARCADERO CV MARINA SITE OAKLAND, CA 94606	335893 0.65 MI SW					X		X										X		X	
33A	KOTZ PROPERTY 202 MADISON ST OAKLAND, CA 94607	7005989 0.56 MI SW																	X			
33B	VUKASIN/SOUTHERN PACIFIC TRANSPORT. 54 EMBARCADERO @ FALLON OAKLAND, CA	3781304 0.63 MI S										X										X
33B	105 EMBARCADERO 105 EMBARCADERO OAKLAND, CA 94607	4498591 0.63 MI S																	X			
33B	WASTE CONSOLID DISPOSAL INC 105 EMBARCADERO OAKLAND, CA 94607	460218 0.63 MI S																			X	
33B	ABLE WAREHOUSE 105 EMBARCADERO OAKLAND, CA 94606	8576840 0.63 MI S																	X			
33B	PGE OAKLAND MGP SITE(2 SITES) 50 MARKET ST 630 EMBARCADERO OAKLAND, CA 94607	3863685 0.63 MI S										X										X
33B	SUNSET WHOLESALE COMPANY 105 EMBRACADERO OAKLAND, CA 94607	4222551 0.63 MI S							X					X								

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
33B	54 EMBARCADERO FALLON ST EMBARCADERO DR OAKLAND, CA 94606	905 0.64 MI S					X															
33B	UNKNOWN #1 EMBARCADERO OUT TO THE WEST TO THE OAKLAND, CA 94607	8576837 0.65 MI S																		X		
34A	AC TRANSIT - CENTRAL FACILITY 0626E 14TH ST OAKLAND, CA 94612	64506942 0.56 MI NW																	X			
34A	OAKLAND CITY OF 1330 MARTIN LUTHER KING OAKLAND, CA 94612	12639933 0.60 MI W							X													
34A	OAKLAND REDEVELOPMENT AGENCY 13TH/14TH/JEFFERSON/ML KING OAKLAND, CA	8291153 0.61 MI W										X										
34B	OAKLAND COMMUNITY DEVELOP 690 15TH OAKLAND, CA 94612	7430251 0.60 MI NW												X								
34B	OAKLAND COMMUNITY DEVELOPMENT 690 15TH ST OAKLAND, CA 94612	1291756 0.60 MI NW							X													
34B	FIRE STATION #1 1605 MARTIN L KING WAY OAKLAND, CA 94612	7006092 0.62 MI NW																	X			
34B	FIRE STATION #1 1605 MARTIN L KING WAY OAKLAND, CA 94612	64507529 0.62 MI NW																	X			
35A	UNOCAL 200 18TH ST OAKLAND, CA 94606	12639274 0.57 MI E							X													
35A	UNOCAL 200 18TH OAKLAND, CA 94606	5350251 0.57 MI E							X													
35A	UNOCAL SERVICE STATION #0064 200 E 18TH OAKLAND, CA 94606	439719 0.57 MI E																	X			
35A	UNOCAL SS #0064 200E 18TH ST OAKLAND, CA 94606	8568302 0.57 MI E																	X			
35B	FRENCH UNIQUE CLEANERS 290 E 18TH STREET OAKLAND, CA 94606	160271 0.65 MI E																			X	
35B	WALGREENS 1535 301 E 18TH ST OAKLAND, CA 94606	7031512 0.67 MI E																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
36A	PACIFIC BELL 80 GRAND AVE OAKLAND, CA 94612	315556 0.57 MI N																			X	
36A	CALTRANS DIST 4 111 GRAND AVE OAKLAND, CA 94612	3766933 0.57 MI N																	X		X	
36A	RMC LONESTAR 333 23RD AVENUE OAKLAND, CA 94612	5350346 0.63 MI N																	X	X		
36A	R M C LONESTAR 333 23RD AVE OAKLAND, CA 94612	64505886 0.63 MI N																	X			
36B	LAKE MERRITT TOWERS II 155 GRAND OAKLAND, CA 94612	4986255 0.59 MI N							X					X								X
36B	PACIFIC BELL 180 GRAND AVE OAKLAND, CA 94612	315010 0.60 MI N																			X	
36B	THE HERTZ CORPORATION 2251 BROADWAY OAKLAND, CA 94612	1243985 0.62 MI N																	X			
36B	WESTERN PIONEER INSURANCE CO 2270 BROADWAY OAKLAND, CA 94612	64506087 0.62 MI N																	X			
36C	OAKLAND TRIBUNE 2300 VALDEZ OAKLAND, CA 94612	64506230 0.67 MI N																	X			
36C	OAKLAND TRIBUNE OLD 2302 VALDEZ OAKLAND, CA 94612	7434892 0.67 MI N							X					X								
36C	FOREIGN BODY SHOP 2350 WEBSTER ST OAKLAND, CA 94612	156310 0.68 MI N																			X	
36D	NEGHERBON AUTO CENTER 2345 BROADWAY OAKLAND, CA 94612	3152601 0.69 MI N																			X	
36D	NEGHERBON LINCON MERCURY 2345 BROADWAY ST OAKLAND, CA 94612	3077549 0.69 MI N							X													
36D	NEGHERBON AUTO CENTER 2345 BROADWAY OAKLAND, CA 94612	64506105 0.69 MI N																	X			
36D	SATURN OF OAKLAND 2355 BROADWAY OAKLAND, CA 94612	3192892 0.70 MI N																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
37A	BRAMALEA USA INC 901 999 JEFFERSON OAKLAND, CA 94607	2745770 0.57 MI W												X								
37A	HOUSEWIVES MARKET 818 JEFFERSON ST OAKLAND, CA 94607	13567854 0.58 MI W							X													
37A	HOUSEWIVES MARKET 818 JEFFERSON ST OAKLAND, CA 94607	10829101 0.58 MI W							X													
37A	DOULGAS N SALTER 901 9 JEFFERSON ST OAKLAND, CA 94607	64599106 0.59 MI W							X													
37A	DOULGAS N SALTER 901 9 JEFFERSON ST OAKLAND, CA 94607	64547683 0.59 MI W							X													
37B	OAKLAND PARKING STRUCTURE 585 7TH ST OAKLAND, CA 94607	64505694 0.60 MI W																	X			
37B	OAKLAND PARKING STRUCTURE 585 7TH OAKLAND, CA 94607	1224524 0.60 MI W																	X			
37B	OAKLAND CITY OF PARKING STRUCT UNKNOWN 7TH JEFFERSON ST OAKLAND, CA 94607	64549332 0.61 MI W							X													
37B	OAKLAND CITY OF PARKING STRUCT UNKNOWN 7TH JEFFERSON ST OAKLAND, CA 94607	64599874 0.61 MI W							X													
38A	ALCO HEALTH HEADQUARTERS BLDG 499 5TH ST OAKLAND, CA 94607	64606556 0.58 MI W																	X			
38A	ALAMEDA CTY HEALTH HEADQUARTER 499 5TH ST OAKLAND, CA 94607	10793110 0.58 MI W							X													
38B	PROBATION CENTER 400 BROADWAY OAKLAND, CA 94607	1224525 0.58 MI SW																	X			
38B	ALAMEDA COUNTY PROBATION CENTER 400 BROADWAY OAKLAND, CA 94607	12991897 0.58 MI SW																	X			
38B	EXPRESS AUTO SERVICE 333 BROADWAY OAKLAND, CA 94607	8572089 0.60 MI SW							X										X			
38B	EXPRESS AUTO SERVICE 333 BROADWAY OAKLAND, CA 94607	3781224 0.60 MI SW							X										X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
38B	WESTERN ELECTRO MECHANICAL INC 300 BROADWAY OAKLAND, CA 94607	8572085 0.60 MI SW																	X			
39	CALTRANS UNKNOWN 6TH GROVE JEFFERSON OAKLAND, CA 94607	64600976 0.58 MI NA							X													
39	CALTRANS 6TH GROVE JEFFERSON OAKLAND, CA 94607	6674488 0.58 MI NA												X								
39	CALTRANS UNKNOWN 6TH GROVE JEFFERSON OAKLAND, CA 94607	64553008 0.58 MI NA							X													
40A	STERN PROPERTY 1033 4TH AVE OAKLAND, CA 94606	5350493 0.59 MI SE							X													
40A	STERN PROPERTY 1033 4TH OAKLAND, CA 94606	7430722 0.59 MI SE												X								
40A	PADILLA BROS 430 E 10TH ST OAKLAND, CA 94606	317678 0.62 MI SE																			X	
40A	MERRITT ROOF CO. 1044 5TH AVE OAKLAND, CA 94606	64505792 0.67 MI SE																	X			
40A	MERRITT ENVIRONMENTAL CORP 1044 5TH AVE OAKLAND, CA 94606	13510638 0.67 MI SE							X													
40A	MERRITT ROOF COMPANY 1044 005TH OAKLAND, CA 94606	4015281 0.67 MI SE																	X			
40B	OAKLAND SHOP 601 E 008TH OAKLAND, CA 94606	4015466 0.67 MI SE																	X			
40B	IMPOSSIBLE EXCAVATING CORP ARD 850 5TH AVE OAKLAND, CA 94606	64005565 0.67 MI SE																	X			
40B	KEEP ON TRUCKING 370 008TH OAKLAND, CA 94606	4015462 0.69 MI SE																	X			
40B	PERALTA COMMUNITY COLLEGE 333 E 8TH OAKLAND, CA 94606	4017485 0.69 MI SE																	X			
40C	UNKNOWN 1021 6TH AVE OAKLAND, CA 94606	8569008 0.73 MI SE																			X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
40C	RYAN PAINTS 630 E 10TH ST OAKLAND, CA 94606	363990 0.76 MI SE					X										X				X	
40C	1X AMERICAN INK PRODUCTS INC 630 E. 10TH ST OAKLAND, CA 946060000	930163 0.76 MI SE							X													
40D	BART OAKLAND SHOP 601E 8TH ST OAKLAND, CA 94606	64506487 0.75 MI SE																	X			
40D	BART OAKLAND SHOP 601 EAST 8TH ST OAKLAND, CA 94606	38707 0.75 MI SE																	X		X	
40D	BART OAKLAND MAINT FACILITY 601 8TH ST E OAKLAND, CA 94606	11498444 0.75 MI SE							X													
41A	CHEVRON 210 GRAND OAKLAND, CA	1147831 0.60 MI NE							X					X					X			
41A	90019 210 GRAND OAKLAND, CA 94610	1255838 0.60 MI NE																	X			
41A	RESIDENTIAL/APARTMENTS 214 GRAND AVE OAKLAND, CA 94610	8578652 0.60 MI NE																	X			
41A	PACIFIC GAS ELECTRIC 100 BAY ST. OAKLAND, CA 94610	8573082 0.62 MI NE																		X		
41B	UNKNOWN 2300 HARRISON ST OAKLAND, CA 94612	2212769 0.63 MI N																		X		
41B	LAKE MERRITT LODGE 2332 HARRISON ST OAKLAND, CA 94612	4824963 0.64 MI N							X													
41B	7 ELEVEN 2350 HARRISON ST OAKLAND, CA 94612	4558429 0.64 MI N							X													
42A	CENTURY PETROLEUM 403 E 12TH ST OAKLAND, CA 94606	7849711 0.61 MI SE																	X			
42A	CENTURY PETROLEUM 403 E 12TH OAKLAND, CA 94606	4016385 0.62 MI SE																	X			
42B	TUNE UP MASTERS #325 450 14TH ST E OAKLAND, CA 94606	11498350 0.65 MI SE							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
42B	TUNE-UP MASTERS #325 450E 14TH ST OAKLAND, CA 94606	8568836 0.65 MI SE																	X			
42B	TED W. DANG 1445 5TH AVE OAKLAND, CA 94606	64506572 0.68 MI SE																	X			
42B	EASTLAKE ASSOCIATES 1445 5TH AVE OAKLAND, CA 94606	1591642 0.68 MI SE							X													
42B	TED W DAUG 1445 5TH OAKLAND, CA 94606	4017210 0.68 MI SE																	X			
42B	SHELL OIL CO 510 E 14TH ST OAKLAND, CA 94601	377286 0.69 MI SE																			X	
42B	SHELL 510 14TH OAKLAND, CA 94606	7430223 0.70 MI SE												X								
42B	N P SHELL 510 E. 14TH ST OAKLAND, CA 94606	930168 0.70 MI SE							X										X			
42C	AP SERVICE 550E 12TH ST OAKLAND, CA 94606	8568946 0.71 MI SE																	X			
43A	CHEVRON #93600 2200 TELEGRAPH OAKLAND, CA 94612	4044370 0.62 MI NW																	X			
43B	EXXON SERVICE STATION #7-0235 2225 TELEGRAPH OAKLAND, CA 94612	3779099 0.64 MI N							X										X			
43B	TEXACO EXXON 2225 TELEGRAPH OAKLAND, CA 94612	1216281 0.64 MI N												X								
43B	GULF 460 GRAND OAKLAND, CA 94612	3982219 0.64 MI N												X					X			
43B	DAVE'S COMPLETE AUTO SERV 2250 TELEGRAPH OAKLAND, CA 94612	2745788 0.64 MI N												X								
43B	TONY'S BEACON STATION 2250 TELEGRAPH OAKLAND, CA 94612	1244143 0.64 MI N																	X			
43B	DAVE'S STATION 2250 TELEGRAPH AVE OAKLAND, CA 94612	8596909 0.64 MI N							X										X			

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			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
43B	TEXACO COMPANIES INC 500 GRAND OAKLAND, CA 94612	*1585109* *0.66 MI* *N*												X					X			
43C	PACIFIC BELL 545 WEST GRAND AVENUE OAKLAND, CA 94612	*316051* *0.68 MI* *NW*																			X	
43C	WEATHERFORD BMW 575 W GRAND AVENUE OAKLAND, CA 94612	*3196435* *0.69 MI* *NW*																			X	
43C	U S POST OFFICE 577 W GRAND OAKLAND, CA 94612	*4017971* *0.69 MI* *NW*																	X			
43C	US POSTAL SERVICE 577 GRAND AVE W OAKLAND, CA 94612	*64544552* *0.69 MI* *NW*							X													
43C	WEST GRAND CARRIER ANNEX 577WGRAND AVE OAKLAND, CA 94612	*64506637* *0.69 MI* *NW*																	X			
43C	578 WEST GRAND AVE. OAKLAND, CA 94612	*8578656* *0.70 MI* *NW*																		X		
44A	OAKLAND POLICE STATION UNKNOWN CLAY ST 5TH ST OAKLAND, CA 94607	*64600287* *0.63 MI* *W*							X													
44B	ALLIED POULTRY CO. INC. 333 CLAY ST OAKLAND, CA 94607	*8574109* *0.69 MI* *W*																	X			
44B	ALLIED FOOD SALES 333 CLAY ST OAKLAND, CA 94607	*11498632* *0.69 MI* *W*							X													
44B	ALLIED FOOD SALES 301 CLAY ST OAKLAND, CA 94607	*8574108* *0.70 MI* *W*																	X			
45A	CHAMPLIN FAMILY TRUST 485 ELLITA AVE OAKLAND, CA 94610	*12639641* *0.63 MI* *NE*							X													
45A	SHELL 350 GRAND OAKLAND, CA 94610	*1585108* *0.66 MI* *NE*												X					X			
45A	UNKNOWN 350 GRAND AVENUE OAKLAND, CA 94610	*2130720* *0.66 MI* *NE*																		X		
45A	DEVI OIL COMPANY 350 GRAND AVE OAKLAND, CA 94610	*11498833* *0.66 MI* *NE*							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
45A	GRAND AVE OIL CO 350 GRAND OAKLAND, CA 94610	4028370 0.66 MI NE																	X			
45A	QUIK STOP #46 363 GRAND OAKLAND, CA 94610	3196426 0.67 MI NE							X					X					X			
45A	QUIK STOP 363 GRAND AVE OAKLAND, CA	930186 0.67 MI NE							X													
46	LAWLER APARTMENTS 431 LEE ST OAKLAND, CA 94610	64596839 0.65 MI NE							X													
47	GLE TELEPHONE 670 009TH OAKLAND, CA 94607	4015510 0.65 MI W																	X			
47	TANK REMOVAL PLAN 670 9TH ST OAKLAND, CA 94607	64506034 0.66 MI W																	X			
47	GTE TELEPHONE COMPANY 670 9TH ST OAKLAND, CA 94607	64609172 0.66 MI W							X													
47	COCHRAN CELLI, INC. 1049 009TH OAKLAND, CA 94607	4015522 0.68 MI W																	X			
48A	PERALTA COLLEGE DISTRICT 501 5TH AVE OAKLAND, CA 94606	8568894 0.68 MI SE							X													
48A	PERALTA COLLEGE CORP YARD 501 5TH OAKLAND, CA 94606	3781180 0.68 MI SE																	X			
48A	PERALTA DISTRICT ADMIN CENTER 501 5TH AVE OAKLAND, CA 94606	325646 0.68 MI SE																			X	
48A	PERALTA COLLEGE CORP. YARD 501 5TH AVE OAKLAND, CA 94606	64506560 0.68 MI SE																	X			
48A	PERALTA MAINTENANCE YARD 501 5TH OAKLAND, CA 94606	7430856 0.68 MI SE												X								
48A	BART MAINTENANCE FACILITY UNKNOWN 5TH ST 8TH AVE OAKLAND, CA 94607	64564850 0.69 MI SE							X													
48A	BART MAINTENANCE FACILITY UNKNOWN 5TH ST 8TH AVE OAKLAND, CA	64605945 0.69 MI SE							X													

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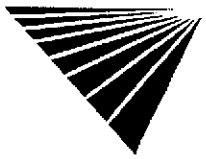
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
48A	BART MAINT FACILITY 5TH ST 8TH AVE OAKLAND, CA	1591729 0.69 MI SE												X								
48A	BART OAKLAND SHOP ANNEX 601 A EAST 8TH ST OAKLAND, CA 94606	1600598 0.72 MI SE																			X	
48B	255 5TH AVE OAKLAND, CA 94606	12713996 0.73 MI SE																	X			
48B	EBMUD SAN ANTONIO CREEK 255 5TH AVE OAKLAND, CA 94606	7005206 0.73 MI SE																	X			
48B	AM/PM SERVICE CO 251 5TH AVE OAKLAND, CA 94606	64506552 0.73 MI SE																	X			
48B	ALLIFT EQUIPMENT COMPANY 251 5TH AVE OAKLAND, CA 94606	11498425 0.73 MI SE							X													
48B	EBMUD SAN ANTONIO CREEK 225 5TH AVE OAKLAND, CA 94606	64505566 0.73 MI SE																	X			
48B	SAN ANTONIO CREEK WET WEATHER 225 FIFTH AVE. OAKLAND, CA 94606	64504836 0.73 MI SE																	X			
48B	EBMUD SAN ANTONIO CRK WW FCLTY 225 5TH AVE OAKLAND, CA 94606	64508944 0.73 MI SE																			X	
49A	PORT OF OAKLAND LOT 12 475 2ND ST OAKLAND, CA 94607	6531853 0.69 MI SW																				X
49B	UNION MACHINE WORKS 534 2ND ST OAKLAND, CA 94607	64506266 0.72 MI W																	X			
49B	UNION MACHINE WORKS 534 2ND ST OAKLAND, CA 94607	1591483 0.72 MI W							X													
49C	PORT OF OAKLAND 100 JACK LONDON SQUARE OAKLAND, CA 94607	64505915 0.73 MI SW																	X			
49C	100 JACK LONDON SQ OAKLAND, CA 94607	12714142 0.73 MI SW																	X			
49C	HYDRANT FUELING SYSTEM 66 JACK LONDON OAKLAND, CA 94607	4030567 0.74 MI SW																	X			
49C	UNK JACK LONDON SQUARE OAKLAND, CA 94607	8588351 0.75 MI SW																		X		

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
49C	LIVERMORE CITY OF 1767 PORTOLA AVE OAKLAND, CA 94607	6531852 0.76 MI SW																				X
49C	KAISER HOSPITAL 38TH BROADWAY OAKLAND, CA	6531908 0.76 MI SW																				X
49C	KAISER HOSPITAL 38TH BROADWAY OAKLAND, CA 94607	3795594 0.76 MI SW										X										
49C	EMPORIUM CAPWELL UNKNOWN 20TH BROADWAY OAKLAND, CA	64606745 0.76 MI SW							X													
49C	EMPORIUM-CAPWELL 20TH AND BROADWAY OAKLAND, CA 94612	1257773 0.76 MI SW																	X			
49C	EMPORIUM CAPWELL UNKNOWN 20TH BROADWAY OAKLAND, CA 94612	64568421 0.76 MI SW							X													
49C	SALTY DOG - JACK LONDON MARINA 53 JACK LONDON SQ OAKLAND, CA 94607	7085880 0.76 MI SW																	X			
49C	SALTY DOG (GAS DOCK) 53 JACK LONDON OAKLAND, CA 94607	1254245 0.76 MI SW																	X			
49C	SHELL OIL STATION 8TH BROADWAY OAKLAND, CA 94607	2132697 0.77 MI SW																		X		
49C	KTVU-TV 2 JACK LONDON SQUARE OAKLAND, CA 94607	233437 0.77 MI SW							X										X		X	
49C	KTVU INC. 2 JACK LONDON OAKLAND, CA 94607	4499844 0.77 MI SW																	X			
49C	PGE GAS PLANT OAKLAND 601 2A FIRST WASHINGTON OAKLAND, CA 94607	327866 0.78 MI SW					X															
49D	PORT OF OAKLAND 530 WATER ST OAKLAND, CA 94607	3205291 0.79 MI SW								X												
50	CHEVRON #4800 1700 CASTRO OAKLAND, CA 94612	4023852 0.69 MI NW							X										X			
51A	ST FRANCIS DE SALLES COMM CENTER 635 22ND ST OAKLAND, CA 94612	7668330 0.71 MI NW							X													



X = search criteria; • = tag-along (beyond search criteria).
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Report ID: 434301901 Date of Report: September 12, 2000
Version 2.6.1

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
51A	ST. FRANCIS DE SALES 635 22ND ST OAKLAND, CA 94612	64506857 0.71 MI NW																	X			
51A	VETERANS AFFAIRS OUTPATIENT CLINIC 2221 MARTIN LUTHER KING JR WY OAKLAND, CA 94612	8473407 0.76 MI NW																			X	
51B	OAKLAND BUS TERMINAL 2103 SAN PABLO AVE OAKLAND, CA 94612	12640144 0.73 MI NW							X													
51C	BEKINS MOVING STORAGE 2227 SAN PABLO OAKLAND, CA 94612	1241946 0.81 MI NW																	X			
51C	VACANT HWY 980 OVERPASS 701WGRAND AVE (BLOCK OF) OAKLAND, CA 94612	64506438 0.83 MI NW																	X			
52A	HERITAGE CLEANERS 384 GRAND AVE OAKLAND, CA 94610	193008 0.71 MI NE																			X	
52B	LAKE MERRITT BOATHOUSE 468 BELLEVUE WAY OAKLAND, CA 94610	8571662 0.78 MI NE																	X			
52B	LAKESIDE PARK 468 BELLEVUE OAKLAND, CA 94610	1176536 0.78 MI NE							X					X								
52B	SERVICE STATION 460 GRAND AVE OAKLAND, CA 94610	11498834 0.78 MI NE							X													
52B	BELLEVUE APARTMENTS 535 BELLEVUE AVE OAKLAND, CA 94610	8571663 0.82 MI NE																	X			
52C	EXXON COMPANY USA #70237 500 GRAND OAKLAND, CA 94610	3776858 0.83 MI NE							X										X			
53A	HEYMAN PROPERTIES 2341 VALLEY ST OAKLAND, CA 94612	8598213 0.71 MI N																	X			
53A	CUSTOM CARE CLEANERS 2430 TELEGRAPH OAKLAND, CA 94612	109723 0.77 MI N																			X	
53B	ALL PRO TRANSMISSIONS 2424 BROADWAY OAKLAND, CA 94612	3766087 0.75 MI N																			X	
53B	FORMER CHRYSLER 2417 BROADWAY OAKLAND, CA 94612	8572121 0.75 MI N							X										X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
53C	ATLANTIC GARAGE 2500 WEBSTER ST OAKLAND, CA 94612	30645 0.77 MI N																			X	
53C	QUAKER STATE REFINERY 2507 BROADWAY OAKLAND, CA 94612	8572122 0.80 MI N																		X		
53C	BROADWAY FORD 2560 WEBSTER OAKLAND, CA 94612	3204679 0.80 MI N																	X			
53C	BROADWAY MOTORS 2560 WEBSTER ST OAKLAND, CA 94612	58486 0.80 MI N							X										X			
53C	BAUER PORSCHE REPAIR INC 375 26TH ST OAKLAND, CA 94612	39700 0.84 MI N																			X	
53C	HR AUTO FINISHING 375 26TH ST OAKLAND, CA 94612	64506689 0.84 MI N																	X			
53C	1X BENZ-SHOP 381 26TH ST OAKLAND, CA 94612	7005157 0.84 MI N																	X			
53C	THE BENZ SHOP 381 26TH ST OAKLAND, CA 94612	64505660 0.84 MI N																	X			
53C	BAUER PORSCHE REPAIR 375 026TH OAKLAND, CA 94612	4015889 0.84 MI N																	X			
53C	CHEVRON #2506 2630 BROADWAY OAKLAND, CA 94612	4020434 0.85 MI N							X					X					X			
53D	BROADWAY MOTORS FORD 437 25TH ST OAKLAND, CA 94612	1600582 0.79 MI N																			X	
53D	BROADWAY MOTORS 437 25TH ST OAKLAND, CA 94612	58488 0.79 MI N																			X	
53D	VAL STROUGH LEXUS 447 25TH ST OAKLAND, CA 94612	3765612 0.79 MI N																			X	
53D	CATERING BY ANDRE 434 25TH ST OAKLAND, CA 94612	64506988 0.80 MI N																	X			
53D	CATERING BY ANDRE 434 25TH ST OAKLAND, CA 94612	7430471 0.80 MI N							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
53D	WAGNER PIGOZZI, INC. 465 25TH ST OAKLAND, CA 94612	64506888 0.80 MI N																	X			
53D	UNITED GLASS COMPANY 477 025TH OAKLAND, CA 94612	4015887 0.80 MI N																	X			
53D	UNITED GLASS CO. 477 25TH ST OAKLAND, CA 94612	64506240 0.81 MI N																	X			
53D	1X UNITED GLASS 477 25TH ST OAKLAND, CA 94612	1259866 0.81 MI N							X													
54	BILL COX CADILLAC 230 BAY OAKLAND, CA 94612	4021428 0.72 MI N							X					X					X			
54	PAT PATERSON CADILLAC 230 BAY PLACE OAKLAND, CA 94612	321269 0.72 MI N																			X	
55A	GROVE AUTO REPAIR 424 MARTIN LUTHER KING OAKLAND, CA 94607	11499054 0.72 MI W							X													
55A	TEXACO SERVICE STATION 424 MARTIN LUTHER KING JR WAY OAKLAND, CA 94607	421505 0.72 MI W																			X	
55A	PGE 50 MARTIN LUTHER KING JR. WAY ** OAKLAND, CA 94607	2141397 0.72 MI W							X											X	X	
55A	PG E POWER PLANT 50 MARTIN L KING WAY OAKLAND, CA 94607	64506499 0.72 MI W																	X			
55A	P G AND E SUBSTATION C 100 MARTIN LUTHER KING JR WY OAKLAND, CA 94607	4062648 0.72 MI W																			X	
55A	PG E POWER PLANT 510 MARTIN LUTHER KING OAKLAND, CA	3079437 0.74 MI W												X								
55B	LAKE MERRITT PUMP STATION 7TH ST AT E 8TH ST E 8TH ST OAKLAND, CA 94606	4043650 0.72 MI W																	X			
55C	CALTRANS UNKNOWN 6TH CASTRO ST OAKLAND, CA 94607	64599247 0.78 MI W							X													
55C	CALTRANS UNKNOWN 6TH CASTRO ST OAKLAND, CA 94607	64547742 0.78 MI W							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B													C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
56A	PACIFIC DRYDOCK REPAIR COMPANY 321 EMBARCADERO OAKLAND, CA 94606	4005822 0.72 MI S							X								X		X		X	
56A	KINDER MORGAN ENERGY 325 EMBARCADERO GOING OVER RR BRIDGE ME OAKLAND, CA 94606	11634473 0.72 MI S																		X		
56A	GOLDEN STATE DIESEL MARINE 351 EMBARCADERO COVE OAKLAND, CA 94606	8576842 0.74 MI S																	X			
56A	GOLDEN STATE DIESEL MARINE 351 EMBARCADERO OAKLAND, CA 94606	64599706 0.74 MI S							X													
56A	OAKLAND READY MIX CO 401 EMBARCADERO OAKLAND, CA 94606	4025919 0.75 MI S																	X			
56A	INSIGHT DESIGNS 499 EMBARCADERO BLDG B OAKLAND, CA 94606	209776 0.77 MI S																			X	
56B	BOARDWORKS THE 499 EMBARCADERO BLDG 2 OAKLAND, CA 94606	51796 0.78 MI SE																			X	
56B	ART SHOP 48 5TH AVE OAKLAND, CA 94606	12710426 0.82 MI S																		X		
56B	SEABREEZE YACHT CENTER 280 6TH AVE OAKLAND, CA 94606	1268397 0.83 MI SE										X									X	X
57	GRAND AUTO, INC 1800 PARK BLVD OAKLAND, CA 94606	177439 0.74 MI E																			X	
57	1X YUEN'S EXXON SERVICE 1901 PARK BLVD OAKLAND, CA 94606	3778148 0.76 MI E							X										X			
57	YUEN'S AUTOMOTIVE 1901 PARK OAKLAND, CA 94606	7429396 0.76 MI E												X								
57	MAY CLEANERS 1924 PARK BLVD OAKLAND, CA 94606	262692 0.78 MI E																			X	
58	MOBIL 5425 GROVE ST OAKLAND, CA 94609	5354893 0.77 MI W							X													
58A	GUARANTEE FORKLIFT 699 4TH OAKLAND, CA 94607	7430778 0.83 MI W												X								

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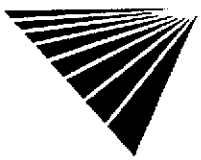
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
58A	GUARANTEE FORKLIFT INC 699 4TH ST OAKLAND, CA 94607	1268747 0.83 MI W							X										X		X	
58A	GUARANTEE FORKLIFT, INC. 699 4TH ST OAKLAND, CA 94607	64505509 0.83 MI W																	X			
58A	E-D COAT INC. 715 4TH ST. OAKLAND, CA 94607	134414 0.85 MI W															X	X			X	
58B	UNKNOWN 680 2ND ST OAKLAND, CA 94607	8568257 0.87 MI W																		X		
58B	COST PLUS IMPORTS-COFFEE PLANT 303 CASTRO STREET OAKLAND, CA 94607	5710445 0.89 MI W																	X			
59	OAKLAND ACURA 255 27TH ST OAKLAND, CA 94612	304975 0.77 MI N							X												X	
59	LABEL ART 290 27TH OAKLAND, CA 94612	4016859 0.82 MI N																	X			
59	LABEL ART 290 27TH ST OAKLAND, CA 94612	8568451 0.82 MI N							X													
59	LABEL ART 290 27TH ST OAKLAND, CA 94612	7733340 0.82 MI N							X													
59	LABEL ART 290 27TH ST OAKLAND, CA 94612	64506702 0.82 MI N																	X			
59	ACURA DEALERSHIP 294 27TH ST OAKLAND, CA 94612	8568452 0.82 MI N							X													
59	ACURA AUTO DEALERSHIP (OLD) 294 27TH OAKLAND, CA 94612	3781168 0.82 MI N																	X			
59	OAKLAND ACURA 294 27TH ST OAKLAND, CA 94612	64506707 0.82 MI N																	X			
59	GESTETNER CORP 300 27TH ST OAKLAND, CA 94612	170368 0.83 MI N																			X	
60A	CIRONI SUGAR 800 BRUSH ST OAKLAND, CA 94607	8572375 0.78 MI W																		X		



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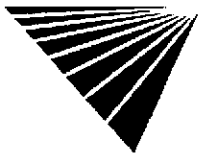
For more information call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403.**
Report ID: **434301901** Date of Report: **September 12, 2000**

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
60A	FRANCIS PLATING OF OAKLAND INC 785 7TH ST OAKLAND, CA 94607	158459 0.79 MI W		X			X										X			X	X	
60A	GREYHOUND LINE INC UNKNOWN 7TH BRUSH OAKLAND, CA	64609158 0.81 MI W							X													
60A	7TH ST. BRUSH ST. 7TH - BRUSH ST. OAKLAND, CA	1591718 0.81 MI W										X										
60A	GREYHOUND LINE INC UNKNOWN 7TH BRUSH OAKLAND, CA 94607	64575286 0.81 MI W							X													
61A	OAKLAND FIRE STATION #02 100 CLAY ST OAKLAND, CA 94607	7005450 0.78 MI W																	X			
61A	PORT OF OAKLAND/CINEMA PROJECT CLAY EMBARCADERO OAKLAND, CA 94607	1331981 0.78 MI W				X																
61B	CITY OF OAKLAND #2 ENGINE FIRE CLAY STREET OAKLAND, CA 94607	1254243 0.83 MI SW																	X			
61C	BRAMELEA PACIFIC 13TH JEFFERSON ST OAKLAND, CA	1585619 0.87 MI W												X								
61C	CITY OF OAKLAND PARKING S 7TH JEFFERSON ST OAKLAND, CA	7432845 0.88 MI W												X								
61C	PGE GAS PLANT OAKLAND 601 2 1ST BET JEFFERSON MARKET OAKLAND, CA 94607	327867 0.88 MI W					X															
61C	OAKLAND POWER PLANT 50 GROVE OAKLAND, CA 94612	4012805 0.91 MI W																	X			
61C	OAKLAND POWER PLANT 50 GROVE ST OAKLAND, CA 94612	1219556 0.91 MI W																	X			
61C	PGE EUCLID AND GRAND AVE OAKLAND, CA 94607	1593748 0.91 MI W																		X		
61C	OAKLAND POWER PLANT 50 MARTIN LUTHER KING OAKLAND, CA 94607	3767689 0.91 MI W												X								
62A	ATARCO CORP 2020 BRUSH ST OAKLAND, CA 94612	3766133 0.80 MI NW																			X	



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			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
62A	PEERLESS STAGES INC. 2021 BRUSH ST OAKLAND, CA 94612	7850371 0.81 MI NW							X										X			
62A	PEERLESS STAGES INC 2021 BRUSH OAKLAND, CA 94612	4020760 0.81 MI NW																	X			
62A	PEERLESS STAGES INC 2021 BRUSH ST OAKLAND, CA 94612	7815591 0.81 MI NW							X													
62B	HARRINGTON OLSON 769 22ND OAKLAND, CA 94612	7430433 0.85 MI NW												X								
62B	HERRINGTON OLSON INC. 769 22ND ST OAKLAND, CA 94612	64505679 0.85 MI NW																	X			
62B	HERRINGTON OLSON PHOTOGRAPHY 769 22ND ST OAKLAND, CA 94612	1246735 0.85 MI NW							X										X		X	
62C	OAK CENTER HOMES INC 827 TWENTIETH ST OAKLAND, CA 94607	1269253 0.89 MI NW																			X	
63	VERIDGE SERVICE CO 1211 7TH OAKLAND, CA 94606	7430951 0.80 MI SE												X								
63	HARLEY DAVIDSON MOTORCYCLE 744 12TH ST E OAKLAND, CA 94606	1498342 0.84 MI SE							X													
63	HARLEY DAVIDSON 744E 12TH STREET OAKLAND, CA 94606	8569153 0.84 MI SE																	X			
63	CAKEBREAD'S GARAGE 802E 12TH ST OAKLAND, CA 94606	8569235 0.88 MI SE																	X			
63	CAKEBREAD'S GARAGE 802 E 012TH OAKLAND, CA 94606	4015660 0.88 MI SE																	X			
63	CAKEBREAD'S GARAGE INC 802 12TH ST E OAKLAND, CA 94606	13567607 0.89 MI SE							X													
63	1X CAKEBREAD GARAGE 802 E. 12TH ST OAKLAND, CA 94606	6604086 0.89 MI SE							X													
63	J R USED AUTO PARTS 823 E. 12TH ST OAKLAND, CA 94606	3065439 0.90 MI SE							X													

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			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
63	J R USED AUTO PARTS 823 12TH OAKLAND, CA 94606	7430142 0.90 MI SE												X								
64	LAKE MERRIT STORM LIFT STATION 7TH AT E 8TH ST OAKLAND, CA 94606	64505616 0.81 MI SE																	X			
64	LAKE MERRIT PUMP STATION 7TH AT E 8TH ST OAKLAND, CA 94606	7005223 0.81 MI SE																	X			
64A	SOUTHERN PACIFIC RAILYARD 8TH ST E. 8TH AVE OAKLAND, CA	1176433 0.87 MI SE												X								
64A	SOUTHERN PACIFIC RAILYARD UNKNOWN 8TH ST E 8TH AVE OAKLAND, CA 94607	64570494 0.87 MI SE							X													
64A	SOUTHERN PACIFIC RAILYARD UNKNOWN 8TH ST E 8TH AVE OAKLAND, CA	64607588 0.87 MI SE							X													
65	JOHNSON PLATING PLAT 2526 TELEGRAPH AVE OAKLAND, CA 94612	220675 0.82 MI N															X				X	
65	RESIDENTIAL APARTMENT COMPLEX 498 25TH ST OAKLAND, CA 94612	64506891 0.83 MI N																	X			
65	SEARS AUTOMOTIVE CENTER 2630 TELEGRAPH OAKLAND, CA 94612	3983120 0.87 MI N							X					X					X			
66	CRESENT WESTERN WAREHOUSE CO 1 0800E 14TH ST OAKLAND, CA 94607	64506944 0.83 MI W																	X			
66	L. DAVIS 900 E 14TH ST OAKLAND, CA 94607	8568056 0.91 MI NW																		X		
67	RESIDENCE 2340 LAKESHORE OAKLAND, CA 94612	64505907 0.85 MI E																	X			
67	RESIDENCE 2332 HARRISON ST OAKLAND, CA 94612	64505908 0.85 MI E																	X			
68A	RESIDENCE 725E 15TH ST OAKLAND, CA 94606	8569145 0.86 MI SE																	X			
68B	OAK KOREAN METHODIST CHURCH 733E 17TH ST OAKLAND, CA 94606	8569151 0.91 MI E																	X			

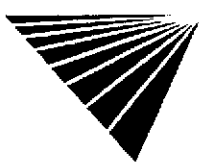
MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D			
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
69	RESIDENTIAL 1829 6TH AVE OAKLAND, CA 94606	64506648 0.86 MI E																	X			
70	UNK 1150 MARKET ST 11TH STREET OAKLAND, CA 94607	8585968 0.87 MI W																		X		
71	GERARD TIRE 2101 PARK BLVD OAKLAND, CA 94606	8590401 0.88 MI E																	X			
71	SHELL 2101 PARK OAKLAND, CA 94606	7429415 0.88 MI E												X								
71	GERARD TIRE 2101 PARK OAKLAND, CA 94606	4013452 0.88 MI E																	X			
71	SHELL OIL CO 2101 PARK BLVD OAKLAND, CA 94606	377275 0.89 MI E							X												X	
72	RESIDENTIAL APARTMENT COMPLEX 624 BROOKLYN AVE OAKLAND, CA 94606	7005395 0.89 MI E																	X			
73	FYNE BUILDING 774 GRAND AVE W OAKLAND, CA 94612	5354863 0.90 MI NW							X													
73	FYNE BUILDING 774 GRAND OAKLAND, CA 94612	7432572 0.90 MI NW												X								
73	MEADERS CLEANERS 800 W GRAND AVE OAKLAND, CA 94612	265958 0.93 MI NW							X					X							X	
73	MR. LINN 830 22ND ST OAKLAND, CA 94607	8568331 0.94 MI NW																		X		
73A	GREYHOUND LINE INC 2304 SAN PABLO OAKLAND, CA 94612	6848789 0.89 MI NW												X								
74	BROADWAY VOLKSWAGEN 2740 BROADWAY OAKLAND, CA 94612	58530 0.90 MI N							X					X							X	
74	JACK TRACY BUICK 2735 BROADWAY OAKLAND, CA 94612	214044 0.91 MI N																	X		X	
74	RAVIZZA COMMERCIAL REAL ESTATE 2735 BROADWAY OAKLAND, CA 94612	8572123 0.91 MI N																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
74	OAKLAND DODGE INC 2735 BROADWAY OAKLAND, CA 94612	3775791 0.91 MI N							X													
74	AUTOMOTIVE EXCHENGE SERV INC 288 28TH ST OAKLAND, CA 94611	33934 0.94 MI N															X				X	
74	SATURN OF OAKLAND 2820 BROADWAY OAKLAND, CA 94611	1600689 0.96 MI N																			X	
75	YOUNG'S ONE HOUR MARTINIZING 600 GRAND AVE, SUITE 100 OAKLAND, CA 94610	22434 0.91 MI NE																			X	
76A	MARKET STREET SHELL 610 MARKET ST OAKLAND, CA 94607	7006074 0.92 MI W							X										X			
76A	STEGMAN INC. MARKET STREET SHE 610 MARKET OAKLAND, CA 94607	1228603 0.92 MI W																	X			
76B	BAY AREA KENWORTH 425 MARKET ST SW SIDE OAKLAND, CA 94607	4866681 0.94 MI W																			X	
76B	MARINE TERMINALS CORP 333 MARKET OAKLAND, CA 94607	930203 0.95 MI W							X					X					X			
76B	SAFETY KLEEN CORP 7 178 01 404 MARKET ST OAKLAND, CA 94607	365214 0.96 MI W		X								X					X		X	X	X	X
76B	SAFETY KLEEN CORPORATION 404 MARKET ST OAKLAND, CA 94607	64609788 0.96 MI W							X													
76B	KELLYS TRUCK REPAIR INC 425 MARKET ST OAKLAND, CA 94607	3767648 0.96 MI W																			X	
76B	JOHNSTON SONS 801 3RD AVE OAKLAND, CA 94607	930123 0.97 MI W							X													
77	BETHLEHEM STEEL WEBSTER NORTH END ALAMEDA, CA 94501	64505547 0.92 MI SW																	X			
78	QUALITY BODY AND FENDER 2510 MARTIN LUTHR KNG WY OAKLAND, CA 94612	343623 0.92 MI NW																			X	
78	GILBERT LOPEZ 633 SYCAMORE ST OAKLAND, CA 94612	11499351 0.94 MI NW							X													

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
78	1X GIL LOPEZ 633 SYCAMORE ST OAKLAND, CA 94612	7812381 0.94 MI NW																	X			
78	GIL LOPEZ 633 SYCAMORE OAKLAND, CA 94612	4504729 0.94 MI NW																	X			
78	MOSTLY MUSTANGS 2576 MARTIN LUTHER KING OAKLAND, CA 94612	1586477 0.98 MI NW							X													
79A	SALLE'S PAINT BODY 1049 9TH AVENUE OAKLAND, CA 94606	365929 0.93 MI SE							X												X	
79A	COCHRAN CELLI, INC. 1049 9TH AVE OAKLAND, CA 94606	64507677 0.93 MI SE																	X			
79A	EAST BAY ENAMELING, INC 1024 9TH AVENUE OAKLAND, CA 94606	131761 0.94 MI SE																			X	
79B	PHOTON PRESS INC 1036 E 8TH ST OAKLAND, CA 94606	5520564 1.03 MI SE																			X	
80	BUILDING H-232, PORT OF OAKLAND 845 EMBARCADERO OAKLAND, CA 94606	1078297 0.93 MI SE		X			X														X	
80	PORT OF OAKLAND WAREHOUSE 845 EMBARCADERO OAKLAND, CA 94606	64505691 0.93 MI SE																	X			
80	CANNEY BLDG H 211 845 EMBARCADERO OAKLAND, CA 94606	12639645 0.93 MI SE							X													
80	LAKESIDE NON-FERROUS METALS 455 9TH AVE OAKLAND, CA 94606	64506032 0.97 MI SE																	X			
80	LIQUID CARBONIC SPEC GAS CORP 901 EMBARCADERO ST OAKLAND, CA 94606	245989 0.97 MI SE				X	X		X										X		X	
80	DEL MONTE PLANT #237 310 EAST 9TH AVENUE OAKLAND, CA 94601	3867320 0.98 MI SE										X										
80	1000 EMBARCADERO OAKLAND, CA 94606	8576845 0.99 MI SE																		X		
80	UNK 1000 EMBARCADERO SLIP # 203 OAKLAND, CA 94606	8576857 0.99 MI SE																		X		

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
81A	OAKLAND STATE GARAGE FLEET ADM 401 27TH ST OAKLAND, CA 94612	61587657 0.94 MI N																	X			
81A	OAKLAND STATE GARAGE 401 27TH ST OAKLAND, CA 94612	3191045 0.94 MI N																	X		X	
81A	TONY JOHN'S FOREIGN CAR SVC. 2730 TELEGRAPH AVE OAKLAND, CA 94612	8596910 0.96 MI N																	X			
81B	SHELL OIL CO 2800 TELEGRAPH OAKLAND, CA 94609	377277 0.99 MI N							X					X					X		X	
81B	PACIFIC BELL 2850 TELEGRAPH AVE OAKLAND, CA 94609	315178 1.03 MI N																			X	
82	HARBOR FACILITIES GARAGE (BLDG 205 BRUSH OAKLAND, CA 94607	1252824 0.95 MI W																	X			
82	OAKLAND POP 114 BRUSH ST. OAKLAND, CA 94607	64506169 0.95 MI W																	X			
83A	KEEP ON TRUCKING CO., INC. 370 8TH AVE OAKLAND, CA 94606	64507337 0.95 MI SE																	X			
83A	KEEP ON TRUCKING CO INC 370 8TH AVE OAKLAND, CA 94606	1252818 0.95 MI SE							X										X		X	
83A	PERALTA COLLEGE DISTRICT 333E 8TH ST OAKLAND, CA 94606	64506752 0.95 MI SE																	X			
83A	CARD LOCK FORMER BUILDING H 26 79 8TH AVE OAKLAND, CA 94606	12639377 0.96 MI SE							X													
83B	MARINE TERMINALS CORP 101 10TH ST OAKLAND, CA 94606	12639238 1.04 MI SE							X													
84	NAVAL SUPPLY CENTER, ALAM W. END CITY OF ALAMEDA, ANNEX SITE ALAMEDA, CA 94501	3155019 0.96 MI					X															
85A	MICRONESIAN CARGO INTERNATIONAL 955 7TH ST OAKLAND, CA 94607	5805163 0.96 MI W				X																
85A	GEORGE GONG PROPERTY 955 7TH ST OAKLAND, CA 94607	64506383 0.96 MI W																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
85A	ADELINE CLEANERS 985 7TH ST OAKLAND, CA 94607	6033 0.99 MI W																			X	
85B	BAKER MORTUARY 980 8TH ST OAKLAND, CA 94607	64506148 0.97 MI W																	X			
85C	CHANG'S AUTOMOTIVE 1009 7TH ST OAKLAND, CA 94607	5006064 1.03 MI W				X																
85C	VEND MART PROPERTY 1035 7TH ST OAKLAND, CA 94607	4222317 1.05 MI W							X													
85C	VEND MART PROPERTY 1035 7TH ST OAKLAND, CA 94607	12639370 1.05 MI W							X													
85C	MARBLE TECHNICS WEST 1035 7TH ST OAKLAND, CA 94607	5006065 1.05 MI W				X																
85C	VEND MART PROPERTY 1035 7TH OAKLAND, CA 94607	7430948 1.05 MI W												X								
85C	PACIFIC BELL 1075 7TH ST OAKLAND, CA 94607	64506389 1.11 MI W																	X			
85C	OAKLAND PCS SWITCH 1075 7TH ST. 1ST FLOOR OAKLAND, CA 94607	64506120 1.11 MI W																	X			
85C	PACIFIC BELL 1075 7TH OAKLAND, CA 94607	4823896 1.11 MI W																	X			
86A	OAKLAND FIRE STATION #15 455 27TH ST OAKLAND, CA 94612	64507306 0.96 MI N																	X			
86B	SCHOONBROOD BARBAGELATA PROP 554 27TH ST OAKLAND, CA 94612	6[illegible]388 1.01 MI N							X													
86B	N. SCHOONBROOD,J. BARBAGELATA 554 27TH ST OAKLAND, CA 94612	64505735 1.01 MI N																	X			
86C	AUTO TECH WEST 2703 MARTIN LUTHER KING OAKLAND, CA 94607	4034835 1.04 MI NW							X					X					X			
86C	AUTO TECH WEST 2703 MARTIN L KING WAY OAKLAND, CA 94612	64505851 1.05 MI NW																	X			



X = search criteria; • = tag-along (beyond search criteria).
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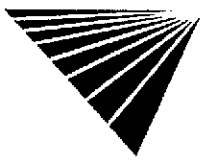
Report ID: **434301901** Date of Report: **September 12, 2000**

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
86C	ACME-WESTERN AMBULANCE 695 27TH ST OAKLAND, CA 94612	64506710 1.06 MI NW																	X			
86C	MASTER GRINDING 2768 GROVE ST OAKLAND, CA 94612	261591 1.08 MI N																			X	
86C	PORT OF OAKLAND RAIDERS ATHLETIC FIELD DOOLITTLE DR HARBOR BAY PKWY OAKLAND, CA	8502068 1.09 MI N																				X
86C	HARRIS DRY CLEANERS 2801 MARTIN LUTHER KING JR. WAY OAKLAND, CA 94609	4866697 1.10 MI N				X	X															
86C	TELEGRAPH CLEANERS 2801 2821 MARTIN LUTHER KING JR WY OAKLAND, CA 94609	62430410 1.10 MI N																				X
87	A H TRUCK REPAIR INC 1825 MARKET OAKLAND, CA 94607	8813 0.97 MI NW																	X			
87	SCOTT COMPANY OF CALIFORNIA 1919 MARKET ST OAKLAND, CA 94607	3567917 0.99 MI NW							X													
87	SCOTT COMPANY 1919 MARKET OAKLAND, CA 94607	7433441 0.99 MI NW							X					X								
87	AT T COMMUNICATIONS 1919 MARKET ST. ARKET ST. OAKLAND, CA 94607	4034453 0.99 MI NW																	X			
87	SCOTT BROADWAY 2014 MARKET ST OAKLAND, CA 94607	371323 1.00 MI NW																			X	
88A	EARL SCHEIB AUTO PAINTING 901 EAST 14TH ST OAKLAND, CA 94606	131534 0.97 MI SE																			X	
88B	915 FOOTHILL BLVD OAKLAND, CA 94606	8578088 1.01 MI SE																		X		
89A	ROBERT BUCHMAN 2235 PARK AVE OAKLAND, CA 94606	8590403 0.99 MI E																	X			
89B	CON AGRA 2201 7TH OAKLAND, CA 94606	7430972 1.09 MI E												X								
90A	OAKLAND INT'L AIRPORT 530 WATER ST OAKLAND, CA 94607	6532203 0.99 MI W																				X



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Report ID: **434301901** Date of Report: **September 12, 2000**
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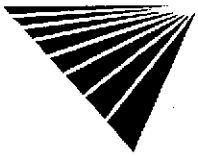
MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
90B	P G AND E FORMER GAS PLANT 50 MARKET ST OAKLAND, CA 94607	327833 1.05 MI W																			X	
90B	PG E OAKLAND MGP SITE 2 SITES 50 630 MARKET ST EMBARCADERO OAKLAND, CA 94607	62430809 1.05 MI W																				X
90B	UNKNOWN EAST 7TH AND LANCASTER ST OAKLAND, CA 94607	8581909 1.07 MI W																		X		
90B	3RD MARKET ST OAKLAND, CA 94607	8585948 1.07 MI W																		X		
90B	PORT OF OAKLAND 1 MARKET ST OAKLAND, CA 94607	288443 1.07 MI W																			X	
90B	STEVEDORING SVCS.HOWARD TERMINA 1 MARKET ST OAKLAND, CA 94607	7006072 1.07 MI W																	X			
90B	RAYMOND BROS TRUCKING 1-MARKET ST OAKLAND, CA 94607	8585949 1.07 MI W																		X		
90B	HOWARD TERMINALS 1 MARKET ST OAKLAND, CA 94607	8585950 1.07 MI W																	X	X		
90B	HOWARD TERMINAL 1 MARKET OAKLAND, CA 94607	4034408 1.07 MI W																	X			
90B	STEVEDORING SERVICES OF AMERICA 1 MARKET ST OAKLAND, CA 94607	389703 1.07 MI W																	X			
91	UNKNOWN 2500 SAN PABLO OAKLAND, CA 94612	8594667 0.99 MI NW																		X		
91	AUTOMOBILE SERVICE CO 820 ISABELLA OAKLAND, CA 94607	4030492 1.00 MI NW							X										X			
92A	CHEVRON #0121 3026 LAKESHORE OAKLAND, CA 94610	930196 1.00 MI NE							X					X					X			
92A	MACARTHUR AUTO SERVICE CENTER 1 0511 MACARTHUR BLVD OAKLAND, CA 94610	24506353 1.03 MI NE																	X			
92B	QUIK STOP MARKET #52 401 MERRITT AVE OAKLAND, CA 94610	8586264 1.04 MI E																	X			



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Report ID: **434301901** Date of Report: **September 12, 2000**
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MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
92B	QUIK STOP #52 401 MERRITT OAKLAND, CA 94606	3199699 1.04 MI E																	X			
92B	KONG PROPERTY 637 BEACON OAKLAND, CA 94610	6669092 1.05 MI E												X								
92B	OAKLAND CITY OF 637 BEACON ST OAKLAND, CA 94610	11498515 1.05 MI E							X													
92B	RESIDENTIAL 648 BEACON ST OAKLAND, CA 94610	8571052 1.06 MI E																	X			
92B	RESIDENTIAL 495 MERRITT AVE OAKLAND, CA 94610	8586265 1.08 MI E																	X			
93A	MARINER BOAT YARD 2415 MARINER SQUARE ALAMEDA, CA 94501	7433469 1.00 MI SW												X								
93A	MARINER BOAT YARD 2415 MARINER SQUARE DR ALAMEDA, CA 94501	64507359 1.00 MI SW																	X			
93A	MARINER BOAT YARD 2415 MARINER SQUARE DRIVE ALAMEDA, CA 94501	4222824 1.00 MI SW							X													
93A	BARNHILL CONSTRUCTION 2394 MARINER SQUARE ALAMEDA, CA 94501	7433468 1.01 MI SW												X								
93A	BARNHILL CONSTRUCTION 2394 MARINER SQUARE DR ALAMEDA, CA 94501	7032489 1.01 MI SW							X										X			
93B	OAKLAND NAVAL SUPPLY CTR/ 2155 MARINER SQUARE LOOP ALAMEDA, CA 94501	305050 1.08 MI SW			X		X															
93B	FLEET INDUSTRIAL SUPPLY C 2155 MARINER SQUARE LOOP ALAMEDA, CA 94501	5286407 1.08 MI SW												X								
93B	ALAMEDA FACILITY STR. 10 2155 MARINER SQUARE LOOP ALAMEDA, CA 94501	8586160 1.08 MI SW																	X			
93B	MACON TRUCKING CO. 2155 MARINERS SQUARE LOOP BTWN BLDGS 4 ALAMEDA, CA 94501	8586161 1.08 MI SW																		X		
93B	BETHLEHEM SHIPYARD WEBSTER AT WORK ST ALAMEDA, CA 94501	64505554 1.09 MI SW																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
93B	SHIP GOLDEN BEAR NO 8900856 GSU VALLEJO MARITIME ACADEMY VALLEJO, CA 94590	6509236 1.09 MI SW																			X	
94A	CHEVRON 850 GRAND OAKLAND, CA 94607	930250 1.00 MI NW							X					X								
94A	91853 850 W GRAND OAKLAND, CA 94607	1256304 1.00 MI NW																	X			
94A	CHEVRON STN. #91853 850WGRAND AVE OAKLAND, CA 94607	64506174 1.00 MI NW																	X			
94B	ARCO 889 W. GRAND AVENUE OAKLAND, CA 94607	930244 1.05 MI NW							X					X					X	X		
94B	ARCO STATION #02169 889WGRAND AVE OAKLAND, CA 94607	64507226 1.05 MI NW																	X			
94B	CAL-WEST PERIODICALS 2271 MARKET ST OAKLAND, CA 94607	8585962 1.08 MI NW																	X			
94B	LJ'S AUTO SERVICE 914WGRAND AVE OAKLAND, CA 94607	64506038 1.09 MI NW																	X			
94C	UNKNOWN 850 ATHENS AVE. OAKLAND, CA 94607	2233107 1.06 MI NW																		X		
94C	ELLIOTT AND ELLIOTT CO. 2336 MARKET OAKLAND, CA 94607	1254686 1.10 MI NW																	X			
95A	COOPERS AUTO BODY FRAME 295 29TH ST OAKLAND, CA 94611	101613 1.01 MI N																			X	
95A	HAGSTROM PROPERTIES 295 29TH ST OAKLAND, CA 94611	64506720 1.01 MI N																	X			
95A	EUROPEAN MOTORS 2915 BROADWAY OAKLAND, CA 94609	1214496 1.03 MI N							X										X		X	
95A	HOLLIDGE TRANSMISSION SVC INC 2943 BROADWAY OAKLAND, CA 94609	198148 1.04 MI N																			X	
95A	OAKLAND NISSAN 3000 BROADWAY OAKLAND, CA 94611	3766089 1.07 MI N																	X		X	

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
95A	ROGERS AUTOWORKS 3022 BROADWAY OAKLAND, CA 94611	358995 1.08 MI N																	X			
95B	UNKNOWN 251 30TH ST OAKLAND, CA 94611	8568587 1.10 MI N																		X		
95B	HAGSTROM PROPERTY 265 30TH ST OAKLAND, CA 94611	8568588 1.10 MI N							X													
95B	HAGSTROM PROPERTY 265 30TH ST OAKLAND, CA 94611	64506738 1.10 MI N																	X			
95B	THE BURROUGHS CO. 260 30TH ST OAKLAND, CA 94611	64505664 1.11 MI N																	X			
95B	ROBERT RUTH BURROWS TRUST 260 30TH ST OAKLAND, CA 94611	12639324 1.11 MI N							X													
95B	DOWNTOWN AUTO BODY FRAME 260 30TH ST OAKLAND, CA 94611	126943 1.11 MI N																			X	
95B	MEDICAL LAB 350 30TH ST OAKLAND, CA 94609	8568589 1.12 MI N																		X		
95B	BAY AREA RENTALS 3074 BROADWAY OAKLAND, CA 94611	7431543 1.12 MI N							X										X			
96	RESIDENCE 299 EUCLID AVE OAKLAND, CA 94610	11498710 1.01 MI NE							X													
96	SMITH PROPERTY 299 EUCLID AVE OAKLAND, CA 94610	4985680 1.01 MI NE																	X			
97A	MOALS BODY SHOP INC 937 E 2TH STREET OAKLAND, CA 94606	278673 1.02 MI W																			X	
97B	EAST BAY FORD TRUCK 333 FIBERT ST OAKLAND, CA 94607	131764 1.06 MI W							X										X		X	
97B	EAST BAY TIRE COMPANY 225 3RD ST OAKLAND, CA 94607	1223509 1.09 MI W							X													
97B	EAST BAY TIRE CO. 225 3RD ST OAKLAND, CA 94607	64505688 1.09 MI W																	X			

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
100B	RESIDENTIAL 400 SANTA CLARA AVE OAKLAND, CA 94610	8594931 1.12 MI NE																	X			
101A	GLASS ON THE MOVE 1111 12TH ST E OAKLAND, CA 94606	12639251 1.10 MI SE							X													
101A	GLASS ON THE MOVE 1111 E. 12TH ST OAKLAND, CA 94606	3781150 1.10 MI SE							X													
102	SHELL RAND LAKESHORE AVE OAKLAND, CA	930223 1.11 MI NE												X								

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
95B	ROY ANDERSON PAINTS 3080 BROADWAY OAKLAND, CA 94611	4497063 1.13 MI N																	X			
95B	ROY ANDERSON PAINTS 3080 BROADWAY OAKLAND, CA 94611	4222401 1.13 MI N							X					X					X			
95B	CONNELL OLDSMOBILE 3093 BROADWAY OAKLAND, CA 94609	1583058 1.14 MI N							X					X					X			
97D	PE O'HAIR COMPANY 339 3RD ST OAKLAND, CA 94607	3781172 1.14 MI W							X													
97D	PE O'HAIR COMPANY 339 3RD OAKLAND, CA 94607	7430626 1.14 MI W												X								
97D	ARATEX SERVICES, INC 330 CHESTNUT ST OAKLAND, CA 94607	24870 1.18 MI W							X					X					X		•	
98B	LAURENCE ORTHOPEDIC PROPE 3045 TELEGRAPH OAKLAND, CA 94609	3779101 1.14 MI N												X								
98B	TIMOTHY AKIN PROPERTY 3045 TELEGRAPH AVE OAKLAND, CA 94609	8596912 1.14 MI N																	X			

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
98B	B L ASSOCIATES 3045 TELEGRAPH AVE OAKLAND, CA 94609	11499362 1.14 MI N							X													
98C	WEST PAVILION SUMMIT MED CNTR 450 30TH ST OAKLAND, CA 94609	7005179 1.14 MI N																	X			
98C	WEST PAVILION SUMMIT MED CNTR 450 30TH ST OAKLAND, CA 94609	64505598 1.14 MI N																	X			
98C	PERALTA HOSPITAL 450 30TH ST OAKLAND, CA 94609	325648 1.14 MI N																	X		•	
98C	SUMMIT MEDICAL CENTER 3100 SUMMIT ST OAKLAND, CA 94609	5717692 1.15 MI N																	X			
98C	PROVIDENCE HOSPITAL 3100 SUMMIT OAKLAND, CA 94609	4013625 1.15 MI N																	X			
100A	PG E 3234 GRAND OAKLAND, CA 940610000	5354868 1.13 MI NE							X					X								
100B	COMMERCIAL PROPERTY 3315 GRAND AVE OAKLAND, CA 94610	8578676 1.18 MI NE																	X			
101A	GIBSON PAINT COMPANY 1199 E. 12TH ST. OAKLAND, CA 94606	171090 1.14 MI SE							X										X			
101A	GIBSON PAINT 1199 12TH OAKLAND, CA 94606	7430130 1.14 MI SE												X								
101A	GIBSON PAINT CO. 1199E 12TH ST OAKLAND, CA 94606	64507137 1.14 MI SE				•													X			
101A	COMMERCIAL TIRE CO. 1200E 12TH ST OAKLAND, CA 94606	8568011 1.15 MI SE																	X			
101A	COOPER TIRE SHOP FORMER 1200 12TH ST E OAKLAND, CA 94606	12639252 1.17 MI SE							X													
101A	UNKNOWN 1200 E 12TH OAKLAND, CA 94606	4016395 1.17 MI SE																	X			
101B	GLASS ON THE MOVE 1111E 12TH ST OAKLAND, CA 94606	8567984 1.15 MI SE																	X			

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
101C	OAKLAND FIRE STATION #4 1235 E. 14TH ST OAKLAND, CA 94606	6320314 1.21 MI SE							X													
102	THIAT 'JOE' LIANG (DBA JOE'S S 3201 LAKESHORE OAKLAND, CA 94610	3198072 1.15 MI NE																	X			
102	NEW COMMERCIAL DEVELOPMENT 3201 LAKESHORE AVE OAKLAND, CA 94610	3581676 1.15 MI NE																	X			
102	UNOCAL SS #5325 3220 LAKESHORE OAKLAND, CA 94610	1255006 1.16 MI NE																	X			
102	UNOCAL 3220 LAKESHORE OAKLAND, CA 94610	4825135 1.16 MI NE							X					X								
103A	REL'S FOODS INC. 975 W GRAND OAKLAND, CA 94607	1216625 1.14 MI NW																	X			
103A	REL'S FOODS INC. 975WGRAND AVE OAKLAND, CA 94607	64506041 1.14 MI NW																	X			
103A	COMMERCIAL PROPERTY 1000 W. GRAND OAKLAND, CA 94607	6604649 1.16 MI NW							X													
103A	GOOD STUFF FOOD CO 1000 W GRAND OAKLAND, CA 94607	4028401 1.16 MI NW																	X			
103A	GOOD STUFF FOOD CO., INC. 1000WGRAND AVE OAKLAND, CA 94607	64506969 1.16 MI NW																	X			
103B	ANDERSON PROPERTY 2139 LINDEN OAKLAND, CA 94607	1261820 1.20 MI NW																	X			
104A	SAFETY KLEEN 1147 10TH OAKLAND, CA 94607	7430041 1.14 MI W												X								
105A	MARINER SQUARE LTD 2204 MARINER SQUARE DR ALAMEDA, CA 94501	4222823 1.16 MI SW							X													
106	RINO PACIFIC 1101 5TH ST OAKLAND, CA 94607	64506568 1.16 MI W																	X			
106	J O TRUCK TERMINAL 1107 005TH OAKLAND, CA 94607	4015283 1.16 MI W																	X			

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	VISTA ID / DISTANCE / DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
106	J O TRUCK STOP OAKLAND 1107 5TH ST OAKLAND, CA 94607	64505565 1.16 MI W																	X			
106	J O TRUCK STOP OAKLNAD 1107 5TH ST OAKLAND, CA 94607	6479942 1.16 MI W																	X			
106	RINO PACIFIC OAKLAND TRUCKSTOP 1107 5TH ST OAKLAND, CA 94607	11498426 1.16 MI W							X													
106	CALTRANS CYPRESS PROJECT UNKNOWN 5TH ADELINE OAKLAND, CA 94607	64598700 1.22 MI W							X													
106	CALTRANS CYPRESS PROJECT UNKNOWN 5TH ADELINE OAKLAND, CA 94607	64546928 1.22 MI W							X													
107	FORMER CIVIC BANK OF COMM 730 29TH OAKLAND, CA 94609	7430501 1.18 MI NW												X								
107	CALOUS BLDG 730 29TH ST OAKLAND, CA 94609	11498401 1.18 MI NW							X													
107	OAKLAND LAUNDRY COMPANY 730 29TH STREET OAKLAND, CA 94609	1155091 1.18 MI NW				X																
107	CALOU'S LINEN SERVICE 730 29TH ST OAKLAND, CA 94609	64507659 1.18 MI NW																	X			
107	CALOU'S LINEN SERVICE 730 029TH OAKLAND, CA 94609	4015908 1.18 MI NW																	X			
108	ARCO STATION #00276 0600 MACARTHUR BLVD OAKLAND, CA 94610	1 64506355 1.18 MI E																	X			
109	ROSE EXTERMINATOR 1512E 12TH ST OAKLAND, CA 94606	8568093 1.19 MI SE																	X			
110	LEHAR SALES 150 CHESTNUT OAKLAND, CA 94607	3781249 1.20 MI W							X					X								
111A	OWNER/OPERATOR 2605 MARKET ST OAKLAND, CA 94607	8585963 1.20 MI NW																	X			
112	NATIONAL IMPORT 1148 18TH ST E OAKLAND, CA 94606	12639275 1.22 MI E							X													

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
112	NATIONAL IMPORT 1148 18TH ST E OAKLAND, CA 94607	4222285 1.22 MI E							X													
112	NATIONAL IMPORT 1148E 18TH ST OAKLAND, CA 94606	8567990 1.22 MI E																	X			
113A	UNOCAL 96 MACARTHUR OAKLAND, CA 94610	3767448 1.22 MI NE							X					X					X			
113A	BP 100 MACARTHUR OAKLAND, CA 94610	7433213 1.23 MI NE							X					X								
113A	BP OIL CO FACILITY NO 11102 100 MACARTHUR OAKLAND, CA 94610	3777484 1.23 MI NE							X										X			
113A	TOSCO NORTHWEST CO NO 11102 100 MACARTHUR BLVD OAKLAND, CA 94610	5521101 1.23 MI NE																	X		•	
113A	ARCO 71 MACARTHUR OAKLAND, CA 94610	930199 1.23 MI NE							X					X								
113A	ARCO 71 MACARTHUR BLVD OAKLAND, CA 94610	64575213 1.23 MI NE							X													
113A	UNOCAL SVC STA #1871 96 MC ARTHUR BLVD OAKLAND, CA 94610	439856 1.23 MI NE																	X			
114	CAL WEST PERIODICALS 2400 FILBERT ST OAKLAND, CA 94607	10817571 1.23 MI NW							X													
114	CAL WEST PERIODICALS 2400 FILBERT ST OAKLAND, CA 94607	3078345 1.23 MI NW							X													
115A	THREE H TRUCK AND AUTO CENTER 2801 SAN PABLO AVE EMERYVILLE, CA 94608	6679565 1.23 MI NW							X													
115A	THREE H AUTO TRUCK REPAIR 2801 SAN PABLO AVE EMERYVILLE, CA 94608	64507318 1.23 MI NW																	X			
116A	UNION OIL SS #3443 3374 GRAND OAKLAND, CA 94610	1254938 1.23 MI NE																	X			
116A	UNOCAL 3374 GRAND AVE OAKLAND, CA 94610	64602289 1.23 MI NE							X													

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/8 - 1 1/4 mile)	A			B											C			D		
	VISTA ID / DISTANCE / DIRECTION	NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
117	MERRITT HOSPITAL CARD PULM BD 365 HAWTHORNE ST OAKLAND, CA 94609	176604 1.24 MI N						X													
117	BROADWAY MEDICAL PLAZA 3300 WEBSTER OAKLAND, CA 94609	1589539 1.25 MI N						X					X								
118	IMPORT MOTORS 19 RANDWICK OAKLAND, CA 94611	1219697 1.24 MI N																X			
118	TAYMUREE FOREIGN AUTO CTR II 19 RANDWICK AVE OAKLAND, CA 94611	7813622 1.24 MI N																X			
119	PORT OF OAKLAND LANA KAI MARINA OAKLAND, CA 94606	1594330 1.25 MI SE									X										

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	A			B											C			D		
	VISTA ID / DISTANCE / DIRECTION	NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
104	CITY OF OAKLAND HOUSING AUTH 935 UNION ST OAKLAND, CA 94607	1589194 1.31 MI W						X													
105	JOHN BEERY ORGANIZATION 2420 MARINER SQUARE LOOP ALAMEDA, CA 94501	1586457 1.25 MI SW						X					X								
109	VACANT LOT 1515 14TH AVE OAKLAND, CA 94606	11498353 1.34 MI SE						X													
110	NORCAL METAL FABRICATORS 114 ADELINE ST OAKLAND, CA	5351058 1.26 MI W						X													
110	SCHNITZER STEEL PRODUCTS CO. FOOT OF ADELINE ST OAKLAND, CA 94607	1225078 1.27 MI W									X							•			
110	SCHNITZER STEEL PRODUCTS COMPA 1101 EMBARCADERO W THE OAKLAND, CA 94607	4657017 1.28 MI W						X													
111	MCCLYMONDS HIGH SCHOOL (POOL) 2607 MYRTLE OAKLAND, CA 94607	1218629 1.26 MI NW						X										•			

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	VISTA ID DISTANCE DIRECTION	A			B													C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
113	OAKLAND FIRE STATION #10 172 SANTA CLARA AVE OAKLAND, CA 94610	1176513 1.28 MI NE							X										•			
115	TUNE-UP MASTERS #318 2901 SAN PABLO AVE EMERYVILLE, CA 94608	8594669 1.30 MI NW							X										•			
116	TAYMUREE FOREIGN AUTO CTR 3509 GRAND AVE OAKLAND, CA 94610	418142 1.29 MI NE							X										•		•	
120	CATHOLIC DIOCESE OF OAKLAND 2220 10TH AVE OAKLAND, CA 94606	8567926 1.27 MI E							X													
121	EVERIDGE SERVICE CO 1211 7TH OAKLAND, CA 94607	1238358 1.27 MI W							X										•			
121	EVERIDGE SERVICE COMPANY 1211 7TH ST OAKLAND, CA 94607	13567642 1.27 MI W							X													
121	ALL MERCEDES DISMANTLERS 1225 7TH OAKLAND, CA 94607	7430952 1.28 MI W												X								
121	WESTERN PACIFIC RAILROAD UNION ST OAKLAND, CA 94607	5286414 1.31 MI W				X																
121	ALL MERCEDES DISMANTLERS INC 1255 7TH ST OAKLAND, CA 94607	11498440 1.33 MI W							X													
121	CONTAINER FREIGHT 1285 5TH ST OAKLAND, CA 94607	5006060 1.37 MI W				X			X													
122	TONG PROPERTY 3133 MARTIN LUTHER KING OAKLAND, CA 96409	4558548 1.29 MI N							X					X								
123	SABEK VACANT LOT 1230 14TH ST OAKLAND, CA 94607	4823804 1.29 MI W							X													
123	SABEK VACANT LOT 1230 14TH OAKLAND, CA 94607	7430198 1.29 MI W												X								
123	1X NABISCO BRANDS, INC. 1267 14TH ST OAKLAND, CA 94607	289009 1.34 MI W							X													
123	COMM AIR 1266 14TH ST OAKLAND, CA 94607	7430174 1.34 MI W							X													

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A			B											C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
123	COMM AIR 1266 14TH ST OAKLAND, CA 94607	13567608 1.34 MI W							X													
123	CARNATION DIARIES 1310 14TH ST OAKLAND, CA 94607	71028 1.38 MI W							X												•	
123	CARNATION DAIRY FACILITY 1310 14TH OAKLAND, CA 94607	7430199 1.38 MI W												X								
124	EBMUD 2130 ADELINE OAKLAND, CA 946230000	1177162 1.30 MI NW							X					X								
124	EBMUD OAKLAND CORP YARD 1200 21ST ST OAKLAND, CA 94607	7005140 1.35 MI NW							X										•			
124	EBMUD 1200 21ST ST OAKLAND, CA 94607	13567622 1.35 MI NW							X													
124	GARDINER PROPERTY 1920 UNION OAKLAND, CA 94607	7429398 1.38 MI NW												X								
124	GARDINER MFG COMPANY 1920 UNION ST OAKLAND, CA 94607	11499396 1.38 MI NW							X													
125	VINTAGE PROPERTIES 1150 MARINA VILLAGE PKWY ALAMEDA, CA 94501	1586458 1.32 MI S							X													
125	ALAMEDA REAL ESTATE INVES 1301 MARINA VILLAGE ALAMEDA, CA	7433460 1.34 MI SW												X								
125	ALAMEDA REAL ESTATE INVESTMENT 1301 MARINA VILLAGE PKWY ALAMEDA, CA 94501	1222825 1.35 MI SW							X													
126	VAL STROUGH CHEVROLET 327 34TH OAKLAND, CA 94609	7430583 1.33 MI N												X								
126	HENDRICK CHEV MAZDA ISUZU HYUNDAI 327 34TH ST OAKLAND, CA 94609	3976490 1.33 MI N							X										•		•	
126	KAISER FOUNDATION HEALTH 3451 PIEDMONT AVE OAKLAND, CA 94611	7433848 1.38 MI N							X										•			
126	KAISER FOUNDATION HEALTH 3505 BROADWAY OAKLAND, CA 94609	1176494 1.41 MI N							X					X								

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	VISTA ID DISTANCE DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
127	YORK STREET APARTMENTS 800 YORK ST OAKLAND, CA 94610	12640328 1.33 MI NE							X													
127	YORK STREET APARTMENTS 800 YORK ST OAKLAND, CA 94610	3080937 1.33 MI NE							X													
128	GOLDEN STATE LINEN SERVICE 958 28TH ST EMERYVILLE, CA 94608	11498400 1.34 MI NW							X													
128	KENT CROWLEY 3016 FILBERT ST EMERYVILLE, CA 94608	11498765 1.47 MI NW							X													
129	CONDON FREIGHT 324 UNION ST OAKLAND, CA 94607	97772 1.34 MI W				X			X										•			
129	CONDOR FREIGHT LINES 324 UNION OAKLAND, CA 94607	7429134 1.34 MI W												X								
129	FIVE CITY CENTER 1300 CLAY OAKLAND, CA 94607	1176262 1.40 MI W							X					X								
130	CITY OF OAKLAND E 12TH ST 14TH AVE OAKLAND, CA	3795497 1.35 MI SE										X										
130	MODERN AUTO BODY 1518 12TH ST E OAKLAND, CA 94606	11498344 1.42 MI SE							X													
131	CAL TECH METALS 841 EAST 31ST STREET OAKLAND, CA 94607	7291298 1.35 MI NW				X																
131	WSB ELECTRIC INC 3032 MARKET ST EMERYVILLE, CA 94608	4222819 1.39 MI NW							X										•			
131	WSB ELECTRIC COMPANY 3032 MARKET ST EMERYVILLE, CA 94608	8585964 1.39 MI NW							X													
132	NED CLYDE CONSTRUCTION 2311 ADELINE OAKLAND, CA 94612	1176402 1.36 MI NW							X					X								
132	EASTSHORE LINES INC 2400 ADELINE ST OAKLAND, CA 94607	12639401 1.37 MI NW							X													
132	PACIFIC CRYOGENICS 2311 MAGNOLIA ST OAKLAND, CA 94607	3777506 1.41 MI NW							X					X							•	

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
132	E-Z-EST PRODUCTS CO., INC. 2528 ADELINE OAKLAND, CA 94607	930145 1.41 MI NW										X							•			
132	AERVOE PACIFIC 2528 ADELINE ST OAKLAND, CA 94607	7431161 1.41 MI NW							X													
132	COLLINS PROPERTY 2452 MAGNOLIA OAKLAND, CA 946070000	930202 1.44 MI NW												X								
132	BLOUNT INTERNATIONAL, LTD. 2452 MAGNOLIA OAKLAND, CA 94607	1260596 1.44 MI NW							X										•			
132	LAHER SPRING AND ELECTRIC CAR 2419 MAGNOLIA ST OAKLAND, CA 94607	6532065 1.44 MI NW				X																
132	NORTHWESTERN VENETIAN SUPPLY CORP 1218 24TH ST OAKLAND, CA 94607	301881 1.45 MI NW										X									•	•
132	DONCO INDUSTRIES 2401 UNION ST. OAKLAND, CA 94607	3163092 1.49 MI NW					X															
133	TEXACO 2200 12TH OAKLAND, CA 94606	7430134 1.37 MI E												X								
133	CONTRACTORS EQUIPMENT REN 2250 12TH OAKLAND, CA 94606	7430135 1.38 MI E												X								
133	CONTRACTORS EQUIPMENT RENTAL 2250 E. 12TH ST OAKLAND, CA 94606	6667117 1.38 MI E							X													
133	SENNA AUTOMOTIVE 2301 12TH OAKLAND, CA 94601	7430136 1.39 MI E												X								
134	SUMMIT MEDICAL CENTER 3420 TELEGRAPH OAKLAND, CA 94609	4223094 1.37 MI N							X										•			
135	BUCHMAN PROPERTY 2833 PARK BLVD OAKLAND, CA 94610	11499174 1.37 MI E							X													
136	RIGGING INTERNATIONAL 1020 ATLANTIC AVE ALAMEDA, CA 94501	11498497 1.38 MI S							X													
137	KELLY'S TRUCK REPAIR 1390 7TH ST OAKLAND, CA 94607	5350790 1.41 MI W							X													

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A			B												C			D		
			NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
137	KELLY'S TRUCK REPAIR 1390 7TH ST OAKLAND, CA 94607	8569113 1.41 MI W							X													
137	CHEVRON 1395 7TH ST OAKLAND, CA 94607	930135 1.41 MI W							X													
137	CHEVRON 1395 7TH OAKLAND, CA 94607	7430954 1.41 MI W												X								
137	J AND A TRUCK RPR 500 KIRKAM ST IN BACK OAKLAND, CA 94607	3197766 1.43 MI W							X										•		•	
137	SMILO CHEM CO INC 500 KIRKHAM ST OAKLAND, CA 94607	384206 1.44 MI W				X	X														•	
137	SOUTHERN PACIFIC TRANS CO 5TH AVE KIRKHAM OAKLAND, CA 94606	3078931 1.44 MI W												X								
137	SOUTHERN PACIFIC TRANS COMPANY UNKNOWN 5TH AVE KIRKHAM OAKLAND, CA	5006095 1.44 MI W							X													
137	SOUTHERN PACIFIC TRANS COMPANY UNKNOWN 5TH AVE KIRKHAM OAKLAND, CA 94607	5852109 1.44 MI W							X													
137	SOUTHERN PACIFIC TRANS CO 5 TH AVE KIRKHAM OAKLAND, CA 94606	7434664 1.44 MI W												X								
138	PACIFIC PIPE COMPANY 1901 POPLAR ST OAKLAND, CA 94607	12640015 1.42 MI NW							X													
138	PACIFIC PIPE 1901 POPLAR ST OAKLAND, CA 94607	5356747 1.42 MI NW							X													
139	ARMORED TRANSPORT 1333 8TH ST OAKLAND, CA 94607	26679 1.44 MI W							X												•	
139	ARMORED TRANSPORT 1333 8TH OAKLAND, CA 94607	7431009 1.44 MI W												X								
139	CALIFORNIA SODA COMPANY 355 CYPRESS ST OAKLAND, CA 94607	7291661 1.50 MI W				X	X															
139	SF BAY AREA RAPID TRANSIT DISTRICT 349 MANDELA PARKWAY OAKLAND, CA 94607	7205875 1.50 MI W			X																	

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/4 - 1 1/2 mile) VISTA ID DISTANCE DIRECTION	A			B												C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
140	CONTAINER CARE LIMITED 1350 16TH ST OAKLAND, CA 94607 11498367 1.45 MI W							X													
140	COCA-COLA BOTTLING CO OF CA 1340 CYPRESS ST OAKLAND, CA 94607 92174 1.47 MI W							X					X					•		•	
141	ALAMEDA CITY BUREAU OF ELEC PCB SUBSTA 2004 WEBSTER ST AT ATLANTIC ALAMEDA, CA 94501 10272 1.46 MI SW					X														•	
142	BROOKS AUTO SERVICE 1101 28TH ST EMERYVILLE, CA 94608 7430485 1.46 MI NW							X													
143	1X PORT OF OAKLAND 1395 MIDDLE HARBOR RD OAKLAND, CA 94607 3978131 1.49 MI W							X													
144	WEST MCARTHUR SHELL 230 W MACARTHUR OAKLAND, CA 94611 377273 1.50 MI N							X					X					•			
145	NAVAL SUPPLY CENTER 3RD ST OAKLAND, CA 64603461 1.50 MI W							X													

MAP ID	SITES IN THE SURROUNDING AREA (within 1 1/2 - 2 miles) VISTA ID DISTANCE DIRECTION	A			B												C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
146	NAVAL SUPPLY CENTER 2155 MARINER SQ LOOP BLDG 4 ALAMEDA, CA 94501 10281 1.68 MI	X	X													•				•	
146	ALAMEDA NAVAL AIR STATION 2,616 ACRES IN ALAMEDA, CALIFORNIA ALAMEDA, CA 94501 7005255 1.68 MI			X																	

UNMAPPED SITES	VISTA ID	A			B											C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
CRYER BOAT YARD PORT OF OAKLAND FORMER 1899 DNNISON ST OAKLAND, CA 94607	7291508																				X
PORT OF OAKLAND EAST BASIN MARINA 0 JACK LONDON SQUARE OAKLAND, CA 94607	62430596																				X
NCPA TODD SHIPYARD UNKNOWN UNKNOWN ALAMEDA, CA 94501	64600791							X													
NCPA TODD SHIPYARD UNKNOWN UNKNOWN ALAMEDA, CA 94501	64551914							X													
PORT OF OAKLAND-HOWARD TERMINAL EMBARCADERO (MARKET - GROVE) OAKLAND, CA	1593130										X										
TRACT 5716 TANK EXCAVATOR INDEPENDENCE WAY ALAMEDA, CA 94501	5355248												X								
UNKNOWN 1901 LAKESIDE DR. OAKLAND, CA 94612	2130718																		X		
VANCANT LOT 11TH ST OAKLAND, CA 94607	5350097												X								
123 17TH STREET AND MISSION MARIPOSA AR OAKLAND, CA 94612	8568131																		X		
CROWLEY MARINE SERVICES PORT OF BENICIA WEST END OAKLAND, CA 94612	8571756																		X		
CROWLEY MARINE SERVICES UNION OIL DOCK OAKLAND, CA 94612	8566536																		X		
CROWLEY MARINE SERVICES UNION OIL DOCK OAKLAND, CA 94612	8566537																		X		
OLD OAKLAND TRIBUNE GARAG VALDEZ 13TH OAKLAND, CA 94612	930243												X								
530 WATER ST OAKLAND, CA 94607	8599716																		X		
PACIFIC GAS ELECTRIC 8 MILES EAST OF OAKDALE ON HWY 120/108 OAKLAND, CA 94612	8588295																		X		
UNKNOWN 86 E ST (ALLEY OAKLAND, CA 94612	8595688																		X		

UNMAPPED SITES	VISTA ID	A			B												C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
UNKNOWN 531 WATER ST. SLIP #13 OAKLAND, CA 94607	2141370																		X		
UNKNOWN 18TH AND POPLAR ST. OAKLAND, CA 94612	2229353																		X		
MATRECON INC 3815 ATLANTIC AVE ALAMEDA, CA 94501	262080																			X	
APPLE RENT-A-CAR 22ND AND TELEGRAPH OAKLAND, CA 94612	8596904																		X		
UNKNOWN N/W CORNER OF FORTUNE WAY AND BANCROFT OAKLAND, CA 94612	8571757																		X		
BRAMALEA PACIFIC UNKNOWN 13TH JEFFERSON ST OAKLAND, CA 94612	64674189							X													
VALLEY TIRE 8029 ATLANTIC ALAMEDA, CA 94501	7431304												X								
UNKNOWN EAST 8TH ST 37TH AVE OAKLAND, CA 94612	8568734																		X		
UNKNOWN NB 880 AT OAK ST OFFRAMP OAKLAND, CA 94612	2242350																		X		
CALTRANS HWY 880 DAVIS ST TO 5TH AVE OAKLAND, CA 94607	7856155																			X	
ORRELL - KEEFE INC GRAND AVE OVERPASS OAKLAND, CA 94607	312203																			X	
SFPP LP OAKLAND STATION SEVENTH STREET OAKLAND, CA 94607	390452																			X	
CYPRESS FREEWAY/BIKEWAY PROJECT MARITIME TO SHELLMOUND STREET EMERYVILLE, CA 94608	64707531				X																
EMERYVILLE MARKETPLACE BTW 64TH POWELL ST ON N S, BY HWY 80 EMERYVILLE, CA 94608	64707450				X																
JUDSON STEEL UNKNOWN SHELLMOUND ST EMERYVILLE, CA 94608	64542504							X													

UNMAPPED SITES	VISTA ID	A			B												C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
SAN FRANCISCO BAY BRIDGE UNKNOWN BAY BRIDGE TOLL PLAZA SE EMERYVILLE, CA 94608	64542636							X													
YERBA BUENA (CATELLVS) EMERYVILLE, CA	4823228										X										
SAN FRANCISCO BAY BRIDGE UNKNOWN BAY BRIDGE TOLL PLAZA SE EMERYVILLE, CA	64596189							X													
INTERSTATE HIGHWAY 80/EMERYVILLE INTERSTATE 80 EMERYVILLE, CA 94608	6532043				X																
YERBA BUENA (CATELLVS) EMERYVILLE, CA	4570472										X										
SHELL DEVELOPMENT COMPANY EMERYVILLE, CA 94608	501030441							X													
EMERYVILLE MARKETPLACE BETW 64TH, POWELL,I80, SPRR TR EMERYVILLE, CA 94608	11492998					X															
PORT OF OAKLAND UNION POINT BASIN MARINA OAKLAND, CA 94607	6462141																		X	X	
JUDSON STEEL UNKNOWN SHELLMOUND ST EMERYVILLE, CA	64596044							X													
PORT OF OAKLAND HANGER 6 OAKLAND AIRPORT OAKLAND, CA 94607	335894																			X	
EMERYVILLE REDEVELOPMENT AGENCY TRANSO LACOSTE SITE EMERYVILLE, CA 94608	64600637							X													
UNKNOWN 568 BELLEVIEW SAILBOAT HOUSE OFF GRAND OAKLAND, CA 94610	2221716				•														X		
MARIN TUG BARGE, INC CRESCENT 6 ALAMEDA, CA 94501	258289																			X	
NABISCO 928 9TH AVE OAKLAND, CA 94606	2241110																		X		
OAKLAND, CA 94610	8566534																		X		
CITY OF OAKLAND +PIEDMONT OAKLAND, CA 94610	8566535																		X		
MUIR BEACH OAKLAND, CA 94610	8585831																		X		
1301 EMBARCADERO OAKLAND, CA 94606	8576848																		X		

UNMAPPED SITES	VISTA ID	A			B												C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
AIRCRAFT CARRIER HORNET F D N PIER_3 ALAMEDA POINT N A S ALAMEDA, CA 94501	7858620																			X	
CITY OF OAKLAND +PIEDMONT INDIAN CREEK,1424 TRESTLE GLEN RD OAKLAND, CA 94610	8578378																		X		
SHIP CAPE BORDA NO 507344 NAS ALAMEDA PIER 1 BERTH 5 ALAMEDA, CA 94501	7858060																			X	
ALAMEDA (DISTRICT 7) ALAMEDA, CA 94501	501006623																	X			
FLEET INDUSTRIAL SUPPLY C 541 ACRES EASTERN SHORE OF TH OAKLAND, CA 94625	7431148												X								
PORT OF OAKLAND HANGER 6 11007 AIRPORT OAKLAND, CA 94614	7431274												X								
UNKNOWN CHILDREN'S PARK, OAKLAND GRIZZLEY PEAK OAKLAND, CA 94606	8573331																		X		
1955 EMBARDEAERO COVE OAKLAND, CA 94606	8576862																		X		
DREW RESOURCES VIRGINIA ST BETWEEN 4TH 5TH OAKLAND, CA 94606	8568880																		X		
UNKNOWN SEABREEZE MARINA 280 6TH AVE OAKLAND, CA 94606	2241066																		X		
USCG SUPPORT CENTER UNKNOWN COAST GUARD ISLAND ALAMEDA, CA 94501	64542672							X													
TRACT 5716 TANK EXCAVATORS UNKNOWN INDEPENDENCE WY ALAMEDA, CA 94501	64542685							X													
NORMANDY PROJECT TRACT 4495 UNKNOWN MECARTNEY RD ALAMEDA, CA 94501	64542785							X													
UNKNOWN GRISLEY PEAK BLVD, 1/4 MI NORTH OF SOUT OAKLAND, CA 94606	8578797																		X		
PGE - OAKLAND 50 MARKET BETWEEN FIRST AND GROVE STREET OAKLAND, CA 94607	64707558				X																
UNKNOWN EB 11580 AT 106 HWY FOOTHILL BLVD OAKLAND, CA 94606	2234879																		X		

UNMAPPED SITES	VISTA ID	A			B											C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
MANDELA PARKWAY CORRIDOR MANDELA PARKWAY BETWEEN 34TH AND 8TH STS OAKLAND, CA 94607	64707526				X																
OAKLAND POLICE STATION UNKNOWN CLAY ST 5TH ST OAKLAND, CA 94607	64675571							X													
PACIFIC GAS ELECTRIC AM PM SALES AND SERVICE 251 FIFTH AVE OAKLAND, CA 94606	8568977																		X		
SS KAINALU OFFICIAL NO 557149 SAN FRANCISCO HOMEPORT ALAMEDA, CA 94501	3202813																			X	
SS KAI MOKU OFFICIAL NO 573223 SAN FRANCISCO HOMEPORT ALAMEDA, CA 94501	3202812																			X	
PACIFIC BELL ROUND TOP OAKLAND, CA 94611	314641																			X	
UNKNOWN E. 12TH ST AND 16TH AVENUE OAKLAND, CA 94606	2137310																		X		
FLEET INDUSTRIAL SUPPLY C 7TH MARITIME OAKLAND, CA 94625	64829523					X															
UKNOWN 7TH ST MARTIN DR OAKLAND, CA 94606	2235060																		X		
ALAMEDA NAVAL AIR STATION UNKNOWN MAIN ST ALAMEDA, CA 94501	64551912							X													
ALAMEDA NAVAL AIR STATION UNKNOWN UNKNOWN ALAMEDA, CA 94501	64551907							X													
SHELL OIL CO WCE PIPELINES CONTRA COSTA CO PIPELINES ALAMEDA, CA 90700	377028																			X	
FLEET INDUSTRIAL SUPPLY CENTER, OAKLAND 541 ACRES; EASTERN SHORE OF THE SF BAY OAKLAND, CA 94625	64707536			X																	
UNKNOWN SEA BREEZE YACHT CENTER 605 EMBARCADERO OAKLAND, CA 94606	2226628																		X		
CYPRESS FREEWAY-3RD STREET SOUNDWALL 2RD STREET BETWEEN CENTER AND PERALTA ST OAKLAND, CA 94607	64707520				X																

UNMAPPED SITES	VISTA ID	A			B											C			D		
		NPL	CORRACTS	SPL	SCL	CERCLIS/NFRAP	TSD	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	WATER WELLS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR	SPILLS
PACIFIC BELL ROUND TOP FORMERLY KRE OAKLAND OAKLAND, CA 94611	1601456																			X	
PACIFIC BELL ROUND TOP FORMERLY KRE OAKLAND OAKLAND, CA 94611	1601446																			X	
ALAMEDA NAVAL AIR STATION UNKNOWN MAIN ST ALAMEDA, CA 94501	64600790							X													
ALAMEDA NAVAL AIR STATION UNKNOWN UNKNOWN ALAMEDA, CA 94501	64600787							X													
UNKNOWN 5TH AVE OFF EMBARCADERO DR. OAKLAND, CA 94606	2220204																		X		
USCG SUPPORT CENTER UNKNOWN COAST GUARD ISLAND ALAMEDA, CA	64596200							X													
UNKNOWN 4201 WAYING AVE OAKLAND, CA 94606	2212803																		X		
NAS GAS STATION ATLANTIC MAIN ALAMEDA, CA 94501	64596872							X													
NORMANDY PROJECT TRACT 4495 UNKNOWN MECARTNEY RD ALAMEDA, CA	64596269							X													
NAS ALAMEDA B 117 AVE G ALAMEDA, CA 94501	7432471												X								
TRACT 5716 TANK EXCAVATORS UNKNOWN INDEPENDENCE WY ALAMEDA, CA	64596214							X													
UNKNOWN 1036 CALCOTT PLACE OAKLAND, CA 94606	2135092																		X		
CROWLEY MARITIME CORPORATION PACIFIC DRY DOCK AND REPAIR YD OAKLAND, CA	4570533										X										
OAKLAND ARMY BASE (FORMERLY ASI LEA OAKLAND, CA	4570445										X										
GENERAL ELECTRIC COMPANY 100 WOODLAWN AVENUE OAKLAND, CA	4826802									X											
OAKLAND ARMY BASE (FORMERLY ASI LEA OAKLAND, CA 94626	4823458										X										

LETTER OF TRANSMITTAL

7001

To:	***Ms. Eva Chu***	Date:	***June 11, 2001***
	Environmental Health		
	QIC 30440	Subject:	***MTBE Fate and Transport Screening***
			AlcoPark, 165-13th St., Oakland

I am sending you:

☒ Attached ☐ Under separate cover

via: ☐ US Mail ☐ Overnight/FedEx ☐ Hand carried ☐ Messenger

The following items:

☐ Drawings ☐ Specifications ☐ Shop Drawings ☒ Submittals

☐ Samples ☐ Copy of Letter ☐ Change Order ☐ Other:

Copies	Date or No.	Description
1	*6-8-01*	***MTBE Fate and Transport Screening Report for AlcoPark***

These are transmitted as checked below:

☐ Approved as Submitted ☐ Resubmit __ Copies for Approval ☐ For Approval

☐ Approved as Noted ☐ Submit __ Copies for Distribution ☒ For Your Files

☐ Returned for Correction ☐ Return __ Corrected Copies ☒ As Requested

☐ For Review and Comment ☐ Returning Loaned Item(s) ☐ Other

Remarks: ***Here is PSI's ecological supplement to their November 10, 2000 Site Conceptual Model report. After wading through all the CYA language, the report indicates, based on conservative assumptions, that the ecology of Lake Merritt is not expected to be significantly impacted. The next question is, can we reduce monitoring frequency at AlcoPark?***

Rod Freitag, Environmental Program Manager
County of Alameda - General Services Agency
Technical Services Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612
Tel. (510) 208-9522

If Enclosures Are Not As Noted, Notify Me At Once

h:\data\winword\transmittal letter.doc

PSI Information To Build On
Engineering • Consulting • Testing

June 8, 2001

County of Alameda
Engineering & Environmental Management Department
1401 Lakeside Drive, 11th Floor
Oakland, CA 94612

Attn: Mr. Rod Freitag, P.E.
Environmental Program Manager

Re: MTBE Fate and Transport Screening Report
Alcopark Fueling Facility
165 13th Street
Oakland, California 94612
PSI Project No.: 575-1G008

Dear Mr. Freitag:

In accordance with our agreement dated January 25, 2001, Professional Service Industries, Inc. (PSI) has conducted a preliminary screening estimate on fate and transport of the MTBE groundwater plume at the above referenced property. This screening is preliminary in nature in that very limited site-specific information was available and that the full scope of work required to obtain this information was not approved by the County of Alameda General Services Agency (client). The client further understands that actual conditions may vary greatly from the estimates provided in this report.

PROJECT OBJECTIVES

The objective of the project is to provide a preliminary estimate of the time for migration of the MTBE plume from the source area to Lake Merritt and a preliminary estimate of the concentration of the MTBE plume front at the boundary of Lake Merritt within the predicted time interval.

MODELS FOR MULTIDIMENSIONAL TRANSPORT

The Domenico analytical model was used to conduct this screening estimate. The model was used first with only the multidimensional transport equation for both longitudinal and transverse dispersion as well as advection. The second use of the model also included a first-order decay reaction. Both iterations were run using the RBCA Tool Kit for Chemical Releases software developed by Groundwater Services, Inc.

The Domenico model was selected because of its ease of use and it applicability for this type of screening. However, as with all models, a number of assumptions regarding site conditions are required to be made. If site conditions do not meet these assumptions then the validity of the model becomes questionable. As part of this project, PSI is unable to verify conditions because of the absence of sufficient and suitable site specific information.

An essential component to modeling is calibration, the process of demonstrating that the model is capable of producing field-measured values of the concentrations downgradient of the site. In general, calibration of the model is performed by manual trial-and-error selection of input parameters. The main parameters used to calibrate the model include source definition, dispersion, sorption, and biodegradation parameters. The modeling effort performed for the Alcopark Fueling Facility is considered preliminary in nature because of insufficient data to calibrate the model. The site-specific data including source definition (i.e., width and length of the contaminant plume), hydraulic parameters, and downgradient concentrations of MTBE are not available and therefore have not been assessed. These data are are needed as part of the model calibration effort.

In lieu of the site specific data, PSI completed this modeling effort using some conservative assumptions. A description of the factors effecting the concentration of MTBE entering Lake Merritt is discussed below along with the results predicted by the model.

LATERAL GROUNDWATER DILUTION ATTENUATION FACTOR

To account for attenuation of affected groundwater concentrations between the source and Lake Merritt, the Domenico Analytical Solute Transport Model was used. This model uses a vertical plane source situated perpendicular to groundwater flow to simulate the release of MTBE from the mixing zone to the migrating groundwater. The model takes into account the effects of advection, dispersion, sorption, and biodegradation. Given a representative source zone concentration the model predicts the steady-state plume concentration at any location along the centerline of the plume in the downgradient flow direction, based upon one-dimensional advective flow and three-dimensional dispersion. The location of Lake Merritt is assumed to be on the centerline of the plume, directly downgradient of the source zone at a distance of 402 meters (or ¼ mile).

GROUNDWATER SOURCE TERM

The Domenico Model assumes the contaminant source is a vertical plane that is perpendicular to groundwater flow, that releases dissolved constituents into the groundwater passing through the plane. The contaminant source zone was assigned a transverse dimension of 61 meters and a thickness of 3 meters. It should be noted that these data are not site-specific, as such information is unavailable at this time, but

rather based upon the professional judgement and experience of PSI geologists inOakland, California working on similar projects under similar conditions. The model assumes the source to have a constant concentration of 13,000 micrograms per liter (µg/L). This concentration was selected because it is the maximum concentration of MTBE detected in any of the wells since monitoring began in March of 1989.

Flow and Mixing Parameters

The degree of contaminant mixing predicted by the model is a function of the lateral, transverse, and vertical dispersion coefficients, hydraulic conductivity, hydraulic flow gradient, and effective soil porosity. The model calculates the dispersion coefficients based upon the method employed in ASTM 1739-95, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites.* The hydraulic conductivity, hydraulic gradient, and effective soil porosity were assigned values of 0.0001 meters per second, 0.004, and 10%, respectively. The hydraulic gradient was estimated from site groundwater elevations. The remaining parameters were selected from published material on the hydraulic characteristics of the Merritt Sands.

Retardation Factors

The rate of plume migration can be reduced due to sorption of MTBE to the solid matrix of the Merritt Sands. The retardation factor used in the model is calculated based upon a model default value of 12 cubic centimeters per gram (cm^3/g) for the organic carbon partition coefficient of MTBE and a default value of 0.001 for the fraction organic carbon present in the Merritt Sands. In addition to considering the effects of retardation, the model may also be used to estimate fate and transport based upon steady-state conditions, which ignore retardation.

First-Order Decay Parameters

Under steady-state conditions, biodegradation is one of the primary mechanisms responsible for the reduction of organic contaminant mass during transport of a groundwater plume. As such, a first-order decay reaction was used for one of the two modeling iterations based upon the half-life in groundwater of MTBE as obtained from the Handbook of Environmental Degradation Rates by Phillip H. Howard, et. al..

Key Assumptions

The following key assumptions were used in the groundwater solute transport model:

- The maximum concentration of MTBE in groundwater is assumed constant over time with no depletion.
- The dimensions of the groundwater source zone were estimated values based upon professional judgement and experience
- The aquifer thickness is assumed infinite, neglecting boundary effects on vertical dispersion.
- The lateral, transverse, and vertical dispersion coefficients are fixed in proportion.

- Lake Merritt is assumed to be downgradient and on the centerline of the groundwater plume.
- The biodegradation rate used in the model is a textbook value and not based on field data.

MODEL RESULTS

The results of the modeling estimate concentrations of MTBE in the groundwater at the perimeter of Lake Merritt may range from 20 to 180 µg/L and would take from 7 to 10 years, respectively to reach steady-state conditions. As indicated above, these results are estimates only, and significant additional investigations would be necessary to provide a more precise assessment of the fate and transport of the MTBE plume

ECOLOGICAL RISK OF MTBE

An ecological risk assessment of the impacts of MTBE on Lake Merritt was not conducted as part of this scope of work. PSI did review two studies on the ecological risk associated with groundwater contaminated with MTBE impacting surface water bodies. These studies were the following:

- Determination of the Ecological Risk Associated with a Groundwater Plume of MTBE at Port Hueneme, California, Bates, Kuvakas, Leonard, McKagan, Donald Bren School of Environmental Science Management, University of California at Santa Barbara (UCSB)
- Ecological Risk of MTBE in Surface Waters by Michael Johnson of the John Muir Institute of the Environment, University of California at Davis (UCD).

These studies cannot be directly correlated to risks that may or may not be present at Lake Merritt because no research has been done to correlate the environment (including flora and fauna) at Lake Merritt with that of the surface water bodies discussed in the case studies. Nevertheless, these case studies do provide some general information that may be useful in providing perspective to the conditions in the study area.

The UCSB study documents a study that has made "preliminary calculations to determine the freshwater concentrations of MTBE at which No Observable Adverse Effects (NOAEL) are expected for a range of organisms. The results found the NOAEL for acute exposure to be 151,000 µg/L and 51,000 µg/L for chronic exposure. Similar tests show that, for MTBE concentrations in marine environments, NOAEL for acute and chronic effects occur are 50,000 and 17,000 µg/L MTBE, respectively". Additionally, the study indicates that due to low bioconcentration of MTBE, that MTBE accumulation in indigenous microorganism community is unlikely.

The UCD study supports the findings found in the UCSB study with their conclusions stating that "there is little toxicity of MTBE to aquatic organisms, with the most sensitive taxonomic group being green algae" and that the "most conservative toxicity reference value calculated for rainbow trout is 7,000 µg/L."

CONCLUSIONS

The results of the preliminary MTBE Fate and Transport Screening Assessment estimates of the MTBE concentration in the groundwater at the perimeter of Lake Merritt would range from 20 to 180 µg/L. Although an ecological risk assessment was not conducted for Lake Merritt, a review of two case studies suggests that adverse effects to marine and freshwater environments occur at significantly higher concentrations

LIMITATIONS

The information provided in this preliminary Fate and Transport Screening prepared by PSI, Project Number 575-1G008, is intended exclusively for Alameda County General Services Agency for the Alcopark Fueling Facility. No unnamed third party shall have the right to rely on this report without the express written consent of PSI, as well as payment of the then current reliance letter fee. The professional services provided have been performed in accordance with practices generally accepted by other appropriate environmental professionals, geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. PSI is not an insurer and makes no guarantee or warranty that the services supplied will avert or mitigate occurrences, or the consequences of occurrences, that the services are designed to prevent or ameliorate. The work provided herein is based on extremely limited site specific data and therefore actual results may vary significantly from the estimates made here. Furthermore, the results of this screening should not be relied upon for agency closure. As referenced throughout this report, PSI recommends that additional and site-specific data would be needed to provide more accurate and definitive conclusions, to calibrate the model. A copy of select assumptions made in this report are attached as Exhibit A. Actual site conditions may vary, which may significantly alter the predicted model results. This report is issued with the understanding that Alameda County General Services Agency is responsible for ensuring that the information contained in this report is brought to the attention of the appropriate regulatory agency, if any.

Thank you for choosing PSI as your consultant for this project. If you have any questions, or if we can be of additional service, please call us at (510) 434-9200.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Mark R. Underhill, R.G. (OR: G1745)
Senior Geologist

Jeffery Friedman, R.G. (CA: 5677)
Senior Technical Professional

Enclosures

DOMENICO ADVECTION-DISPERSION MODEL		
Model Assumptions	**Explanation**	**Applicability**
Infinite Source	Groundwater source term constant over time with no depletion.	The infinite source assumption is very conservative and does not represent actual conditions but presents a worst case scenario in regard to this parameter.
Vertical Dispersion	Assumes one-directional (downward) vertical dispersion.	As the source of the release is located at the top of the aquifer this assumption is valid.
Infinite Aquifer Thickness	Neglects boundary effects on vertical dispersion.	According to the Environmental Solutions report Final Preliminary Endangerment Assessment, Container Freight, 1285 5th Street, Oakland, CA the thickness of the Merritt Sands aquifer is approximately 18 meters in thickness. As the plume is estimated to be 3 meters in thickness boundary effects are not likely to be an issue.
Dispersion Coefficient	Fixed proportions assumed among longitudinal, transverse, and vertical dispersion coefficients.	Determining dispersion coefficients can be difficult therefore, the simulation was performed using the dispersivity relationship employed in ASTM E-1739, which assumes the aquifer is homogeneous and isotropic and that vertical variations in head are negligible. The degree to which these assumptions matches actual conditions is unknown.
Receptor Location	Downgradient receptor assumed to be on plume centerline.	Based upon the location of Lake Merritt and the groundwater flow direction as measured at the site, this assumption is valid.
Biodegradation Rate	First-order of decay rate may be specified by user per site data.	The model is sensitive to decay rates therefore the model was run both with and without decay rates and when used the highest half-life value was used from the Handbook of Environmental Degradation Rates, Howard, et. al., 1991.

AKI K. NAKAO, Director

1401 LAKESIDE DRIVE, OAKLAND, CALIFORNIA 94612 510 208 9700 FAX 510 208 9711 www.acgov.org/gsa/

September 28, 2005

TO: Don Hwang, Hazmat Specialist, HCSA-Environmental Health

FROM: Rod Freitag, Environmental Program Manager, GSA-TSD

SUBJECT: GROUNDWATER MONITORING REPORT AND CASE CLOSURE REQUEST FOR ALCOPARK, 165 - 13TH STREET, OAKLAND, CA

Enclosed for your records is the report documenting groundwater monitoring results for the August, 2005 sampling event. Groundwater monitoring is currently performed semiannually, in accordance with Environmental Health's requirements.

GSA formally requests that groundwater monitoring be suspended and that this case be closed. This request is justified based on groundwater monitoring data accumulated during the past sixteen years, the lack of sensitive receptors, and the stability of the plume. It is also justified based on the attached August 20, 2001 email from Alameda County Environmental Health indicating that the case would be evaluated for closure when MTBE concentrations are consistently below 1000 ppb. MTBE concentrations have not exceeded this level in over two years.

If you have any questions or need additional information, please contact me at x29522. Thank you for your attention this matter.

RDF:rdf:i:\e&em\prjt\env\7001\August 2005 report transmittal

Enclosures

cc: Ariu Levi, Division Chief, HCSA-Environmental Health
Donna Drogos, Supv. Hazardous Materials Specialist, HCSA-Environmental Health

7001

Freitag, Rod, GSA-Technical Services Department

From: Chu, Eva, Env. Health
Sent: Monday, August 20, 2001 11:52 AM
To: Freitag, Rod, GSA-Technical Services Department
Subject: Alco Park

Hi Rod,

I case I never got back to you, you requested I approve the reduction in monitoring frequency at Alco Park. It's approved to conduct semi-annual monitoring at the site. Sampling should be in February and July of each year until further notice. As the MTBE concentrations continue to decrease to less than 1,000 ppb consistently, I will then evaluate for possible closure.

evachu

Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
(510) 567-6762
(510) 337-9335 fax

SEMI-ANNUAL
GROUNDWATER MONITORING REPORT
THIRD QUARTER, 2005
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

Prepared for

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California

Prepared by

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September 12, 2005
575-4G009

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Alameda County General Services Agency (ACGSA), for the evaluation of subsurface conditions as they pertain to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

This report is issued with the understanding that ACGSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.

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Senior Hydrogeologist

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Project Geologist

1. INTRODUCTION

Professional Service Industries, Inc. (PSI) was retained by the Alameda County General Services Agency (ACGSA) to perform the semi-annual groundwater monitoring at the ACGSA Alcopark Fueling Facility - Site No. 2, located at 165 13th Street, Oakland, California. The site location is presented on Figure 1.

The groundwater monitoring was prompted by a request by the Alameda County Health Care Services Agency (ACHCSA), which requested additional information on the extent of petroleum hydrocarbon impacted groundwater (ACHCSA, 1997a).

1.1 SCOPE OF WORK

The scope of work consisted of the following tasks:

- Measure the depth to water in the site wells and prepare a groundwater elevation map.
- Determine the groundwater flow direction and gradient.
- Collect and chemically analyze groundwater samples from wells MW-1, MW-6 and MW-7.
- Prepare a report documenting the field procedures, analytical results, and presenting our conclusions regarding the data generated.

1.2 SITE BACKGROUND

The ACGSA operates two 10,000-gallon Underground Storage Tanks (USTs) at the Alcopark fueling station to fuel Alameda County vehicles. Three groundwater monitoring wells were installed at the site in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at Dispenser No. 1. Initial sample results indicated the presence of BTEX (benzene, toluene, ethyl-benzene, and xylenes). in the groundwater. Subsequent sample results indicated the presence of Total Petroleum Hydrocarbons as Gasoline (TPH-G). Based on the analytical data, it was concluded that contaminants detected on-site had originated from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of an upgradient source (ACGSA, 1997).

In their letter dated May 30, 1997, the ACHCSA instructed ACGSA to resume groundwater monitoring at Alcopark (ACHCSA, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G and BTEX

concentrations in the downgradient well. Methyl tert-Butyl ether (MTBE) was also detected. Additional samples collected in October, 1997 provided similar results (ACGSA, 1997). In their letter dated September 11, 1997, the ACHCSA directed ACGSA to investigate the extent and stability of the plume.

To better define groundwater conditions downgradient of the USTs, two borings were drilled on March 23, 1998. A grab groundwater sample was collected from one of the borings, and Well MW-6 was installed in the other boring. One additional small-diameter groundwater monitoring well (MW-7) was installed by PSI in September, 1999 and the analytical results are presented in the PSI report dated October 14, 1999.

ACHCSA issued a letter, dated July 18, 2000, requiring ACGSA to prepare a Site Conceptual Model in accordance with the Regional Water Quality Control Board's final draft "Guideline for Investigation and Cleanup of MTBE and Other Ether-Based Oxygenates." The Site Conceptual Model, dated November 10, 2000, indicated that there are no drinking water wells within ½ mile of the site, and Lake Merritt, the nearest surface water receptor, is salt water and not a potential source of drinking water. Based on these findings, it was concluded that, "...an Interim Remedial Action should not be required for the subject site because the migration of MTBE contaminated groundwater to the nearest receptor, Lake Merritt, is unlikely. Furthermore, since no potential drinking water sources are at risk, a risk assessment is not necessary for the site."

After reviewing the Site Conceptual Model report, ACHCSA required that a supplemental fate and transport screening be done to assess potential MTBE impacts on the Lake Merritt ecosystem. On June 8, 2001, a report was issued indicating no expectation of a significant impact on the ecology of Lake Merritt.

Groundwater sampling is currently being conducted semi- annually, in accordance with ACHCSA's requirements.

1.2.1 STORAGE TANK SYSTEM UPDATES

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations. This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (ACGSA, 1997).

2. GROUNDWATER MONITORING ACTIVITIES

A PSI representative performed groundwater-monitoring activities on August 17, 2005. The activities were performed in accordance with PSI standard procedures presented in Appendix A, and procedures described in an ACHCSA letter describing collection of samples without purging the wells (ACHCSA, 1997a).

2.1 GROUNDWATER ELEVATION AND FLOW DIRECTION

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in monitoring wells MW-1, MW-4, and MW-5. The groundwater measurements were converted to groundwater elevations and the data were plotted on a groundwater elevation map (presented as Figure 2). The groundwater elevation data are presented in Table 1.

PSI's interpretation of the groundwater elevation data indicates the groundwater is flowing to the east-southeast under a hydraulic gradient of 0.006. The flow direction is consistent with the flow direction determined for previous quarterly monitoring events.

2.2 GROUNDWATER SAMPLING

Monitoring wells MW-1, MW-6, and MW-7 were sampled without purging, as requested in the ACHCSA letter dated September 11, 1997. The groundwater samples were collected with disposable polyethylene tubing equipped with a check valve. The groundwater samples were collected according to PSI's standard protocol, included in Appendix A, and were stored in an iced cooler through delivery to the analytical laboratory and maintained under Chain-of-Custody protocol.

To minimize the possibility of cross-contamination between sampling locations, most of the sampling equipment used is disposable. To further minimize the possibility of cross-contamination, the water sounder and all other reusable sampling equipment were cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to their use in the next well.

3. LABORATORY ANALYSIS PROGRAM

The groundwater samples collected during this investigation were submitted to McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is a State of California Department of Health Services certified environmental laboratory (Environmental Laboratory Accreditation Program #1644). A summary of the analytical methods is presented below.

The groundwater samples collected at the site were analyzed for the following constituents by the indicated methods:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) in accordance with Environmental Protection Agency (EPA) Method 8015-Modified.
- Volatile Organic Compounds (VOCs) by EPA Method 8260.

The samples were transported to the laboratory under Chain-of-Custody protocol. A copy of the chain of custody form is included in Appendix B.

3.1 ANALYTICAL RESULTS

The analytical data is summarized in Table 1. Laboratory reports are presented in Appendix B.

VOCs including MTBE were detected in the samples from all three groundwater-monitoring wells sampled for this monitoring event.

- TPH-G was detected in the sample from wells MW-1 (4,100 ug/l), MW-6 (2,800 ug/l), and MW-7 (66 ug/l).
- Benzene was detected in wells MW-1 (410 ug/l), MW-6 (820 ug/l), and MW-7 (9.3 ug/l). The benzene concentrations have increased in all wells sampled (MW-1, MW-6, and MW-7) since the previous sampling event. Figure 3 depicts the benzene concentration with time in MW-1, MW-6, and MW-7. Benzene concentrations have varied with time and have not shown a consistent overall trend.
- MTBE was detected in wells MW-1 (59 ug/l), MW-6 (610 ug/l) and MW-7 (230 ug/l). The MTBE concentrations increased in wells MW-1 and MW-6 and decreased in well MW-7 since the previous sampling event. Figure 4 depicts the MTBE concentration with time in MW-1, MW-6, and MW-7.

- Additional VOCs, commonly associated with gasoline-impacted groundwater, were detected in the groundwater samples. The maximum concentrations for each of the additional VOCs detected are presented below.

  - Naphthalene at 360 ug/L in MW-1
  - 1,2,4 Trimethylbenzene at 790 ug/L in MW-1
  - Xylenes at 1,500 ug/L in MW-1
  - Tert-Amyl methyl ether (TAME) at 110 ug/L in MW-6
  - Ethyl Benzene at 380 ug/L in MW-1
  - t-Butyl alcohol (TBA) at 490 ug/L in MW-6
  - Isopropylbenzene at 22 ug/L in MW-1
  - Naphthalene at 360 ug/L in MW-1
  - N-Propyl benzene at 64 ug/L in MW-1
  - Toluene at 35 ug/L in MW-1
  - 1,3,5 – Trimethylbenzene at 160 ug/L in MW-1

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented in this report, the following conclusions have been reached:

- Groundwater elevations measured at the site range from approximately 15.59 to 15.82 feet above msl.

- Groundwater flow direction is to the east-southeast with a gradient of 0.006.

- The groundwater samples collected from wells MW-1, MW-6 and MW-7 contained measurable concentrations of TPH-G and VOCs, with MTBE and benzene being the primary contaminants of concern.

Based on the groundwater sampling since 1989, the lack of sensitive receptors, and the stability of the plume, PSI recommends that the groundwater sampling schedule should be changed from semi-annual to annual.

5. REFERENCES

ACGSA, 1997, Request For Proposal (RFP) for Groundwater Services, December 2.

ACHCSA, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.

ACHCSA, 1997b, Continuation of Groundwater Monitoring Request, Letter to Mr. Jim DeVos, May 20.

USGS, 1980, Oakland West, California, topographic map.

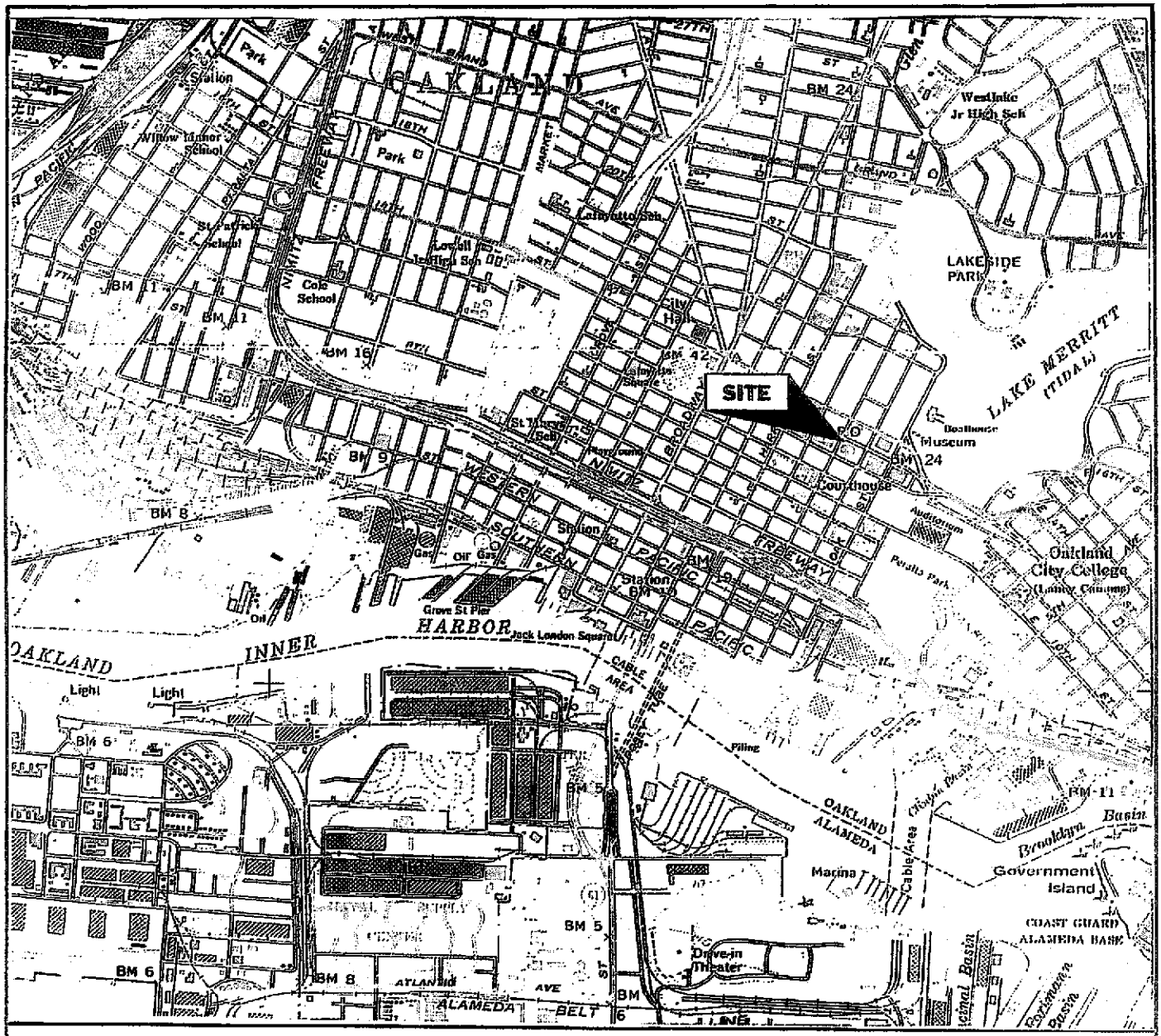
TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA SUMMARY
ALCOPARK FUELING FACILITY SITE NO. 2
OAKLAND, CALIFORNIA

			All concentrations in ug/l (PPB).					
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1	3/21/1989	12.2	ND	NA	21	3.9	0.4	4.5
	7/26/1990	12.3	1,400	NA	200	45	ND	53
	10/25/1990	12.1	1,200	NA	ND	7.3	2.2	46
	1/25/1991	11.9	270	NA	23	1.5	ND	3.1
	4/25/1991	11.8	230	NA	ND	ND	ND	ND
	8/27/1991	11.8	8,300	NA	370	64	ND	120
	11/25/1991	11.7	810	NA	9.3	ND	7.8	32
	6/11/1992	12.85	2,600	NA	810	16	21	42
	7/16/1997	14.36	19,000	ND (150)	1,400	2,800	500	2,600
	10/21/1997	13.92	14,000	29	1,200	1,000	590	2,800
	3/11/1998	17.14	NS	NS	NS	NS	NS	NS
	4/1/1998	17.14	ND (50)	6.3	5.4	ND (0.5)	ND (0.5)	0.82
	7/15/1998	16.41	71	57	31	ND (0.5)	ND (0.5)	3.1
	10/22/1998	15.62	5,100	360	520	140	250	950
	9/9/1999	15.42	2,400	400	680	140	130	370
	1/18/2000	14.49	4,100	180	420	11	210	350
	5/4/2000	16.19	NS	NS	NS	NS	NS	NS
	8/22/2000	15.34	9,400	410	1,200	130	410	920
	2/8/2001	14.53	NS	NS	NS	NS	NS	NS
	7/20/2001	14.60	9,600	ND (50)	1,000	300	350	2,000
	2/18/2002	15.08	1,500	ND (100)	260	6.5	2.8	49
	7/19/2002	14.84	180	28	68	ND (1.7)	ND (1.7)	6.8
	2/10/2003	14.83	210	11	14	0.75	ND (0.5)	4.0
	7/15/2003	14.80	370	4.6	31	0.99	22	75
	2/12/2004	14.87	1,800	29	170	2.7	140	87
	7/7/2004	14.81	800	37	120	ND (2.5)	67	38
	3/24/2005	15.92	ND (50)	4.7	4	ND (0.5)	2.5	2
	8/17/2005	15.60	4,100	59	410	35	380	1,500
MW-4	3/21/1989	12.4	ND	NA	13	1.4	1.0	ND
	7/26/1990	12.5	NA	NA	0.8	ND	ND	ND
	10/25/1990	12.2	NA	NA	120	1.2	1.1	0.9
	1/25/1991	12.0	NA	NA	230	2.8	1.2	2.0
	4/25/1991	13.0	170	NA	12	ND	ND	2.3
	8/27/1991	11.8	ND	NA	87	1.3	0.8	0.8
	11/25/1991	11.8	1,400	NA	ND	1.7	8.6	3.6
	6/11/1992	12.93	560	NA	150	1.8	1.8	1.1
	7/16/1997	14.46	50	ND	ND	ND	ND	ND
	10/21/1997	14.10	ND	ND	ND	ND	ND	ND
	3/11/1998	17.39	NS	NS	NS	NS	NS	NS
	4/1/1998	17.40	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/15/1998	16.92	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	10/22/1998	15.75	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	9/9/1999	15.57	NS	NS	NS	NS	NS	NS
	1/18/2000	14.32	NS	NS	NS	NS	NS	NS
	5/4/2000	16.34	NS	NS	NS	NS	NS	NS
	8/22/2000	15.47	NS	NS	NS	NS	NS	NS
	2/8/2001	14.73	NS	NS	NS	NS	NS	NS
	7/20/2001	14.72	NS	NS	NS	NS	NS	NS
	2/18/2002	15.05	NS	NS	NS	NS	NS	NS
	7/19/2002	14.97	NS	NS	NS	NS	NS	NS
	2/10/2003	14.94	NS	NS	NS	NS	NS	NS
	7/15/2003	14.94	NS	NS	NS	NS	NS	NS
	2/12/2004	14.93	NS	NS	NS	NS	NS	NS
	7/7/2004	14.94	NS	NS	NS	NS	NS	NS
	3/24/2005	16.05	NS	NS	NS	NS	NS	NS
	8/17/2005	15.62	NS	NS	NS	NS	NS	NS
MW-5	3/21/1989	12.2	ND	NA	ND	ND	ND	ND
	7/26/1990	12.4	670	NA	0.8	ND	ND	ND
	10/25/1990	12.1	120	NA	13	ND	ND	ND
	1/25/1991	11.9	120	NA	3.2	ND	ND	ND
	4/25/1991	12.3	ND	NA	ND	ND	ND	ND
	8/27/1991	11.5	ND	NA	20	ND	0.5	ND
	11/25/1991	11.7	190	NA	2.7	ND	0.8	2.5
	6/11/1992	12.85	150	NA	37	ND	ND	ND
	7/16/1997	14.33	ND	22	ND	ND	ND	ND
	10/21/1997	13.88	ND	14	ND	ND	ND	ND
	3/11/1998	17.14	NS	NS	NS	NS	NS	NS

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA SUMMARY
ALCOPARK FUELING FACILITY SITE NO. 2
OAKLAND, CALIFORNIA

All concentrations in ug/l (PPB).								
Well	Date	Groundwater Elevation	TPH-G	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-5 (cont.)	4/1/1998	17.14	ND (50)	11	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/15/1998	16.43	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	10/22/1998	15.60	ND (50)	ND (5.0)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	9/9/1999	15.44	NS	NS	NS	NS	NS	NS
	1/18/2000	14.67	NS	NS	NS	NS	NS	NS
	5/4/2000	16.18	NS	NS	NS	NS	NS	NS
	8/22/2000	15.32	NS	NS	NS	NS	NS	NS
	2/8/2001	14.53	NS	NS	NS	NS	NS	NS
	7/20/2001	14.59	NS	NS	NS	NS	NS	NS
	2/18/2002	14.94	NS	NS	NS	NS	NS	NS
	7/19/2002	14.83	NS	NS	NS	NS	NS	NS
	2/10/2003	14.83	NS	NS	NS	NS	NS	NS
	7/15/2003	14.80	NS	NS	NS	NS	NS	NS
	2/12/2004	14.87	NS	NS	NS	NS	NS	NS
	7/7/2004	14.82	NS	NS	NS	NS	NS	NS
	3/24/2005	15.91	NS	NS	NS	NS	NS	NS
	8/17/2005	15.59	NS	NS	NS	NS	NS	NS
MW-6	4/1/1998	NA	740	4,600	9.8	3.2	3.0	15
	7/15/1998	NA	6,200	11,000	280	43	180	350
	7/15/1998	NA	NA	13,000	ND (500)	ND (500)	ND (500)	ND (500)
	10/22/1998	NA	4,700	9,600	450	13	200	200
	10/22/1998	NA	NA	9,100	470	ND (250)	ND (250)	ND (250)
	9/9/1999	NA	6,600	3,700	2,500	43	310	250
	1/18/2000	NA	3,500	4,600	800	ND (5.0)	40	13
	5/4/2000	NA	NS	NS	NS	NS	NS	NS
	8/22/2000	NA	1,400	1,700	370	4.8	12	35
	2/8/2001	NA	NS	NS	NS	NS	NS	NS
	7/20/2001	NA	1,100	800	240	2.9	2.3	3.4
	2/18/2002	NA	1,500	570	260	ND (2.0)	11	4.3
	7/19/2002	NA	1,800	800	1,400	ND (50)	ND (50)	ND (50)
	2/10/2003	NA	4,000	830	1,000	ND (50)	ND (50)	ND (50)
	7/15/2003	NA	4,100	1,200	2,200	ND (25)	180	260
	2/12/2004	NA	7,200	980	1,600	ND (25)	100	440
	7/7/2004	NA	4,000	840	1,500	ND (25)	150	210
	3/24/2005	NA	4,600	480	520	ND (10)	86	280
	8/17/2005	NA	2,800	610	820	ND (17)	190	250
MW-7	9/9/1999	NA	92	1,200	1.6	ND (0.5)	ND (0.5)	ND (0.5)
	1/18/2000	NA	ND	2,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	5/4/2000	NA	140	1,100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	8/22/2000	NA	160	830	0.62	ND (0.5)	ND (0.5)	ND (0.5)
	2/8/2001	NA	130	650	ND (0.5)	0.53	ND (0.5)	ND (0.5)
	7/20/2001	NA	56	400	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	2/18/2002	NA	ND (50)	200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	7/19/2002	NA	ND (50)	300	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	2/10/2003	NA	ND (50)	140	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	7/15/2003	NA	ND (50)	140	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
	2/12/2004	NA	ND (50)	100	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.7)
	7/7/2004	NA	56	200	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
	3/24/2005	NA	ND (50)	350	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
	8/17/2005	NA	66	230	9.3	ND (5.0)	ND (5.0)	6.8
W-B1	3/23/1998	NA	3,100	4,200	250	18	160	290

Notes:
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. ( ) denotes detection limit.
Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.



REFERENCE:
U.S.G.S. OAKLANDWEST, CALIFORNIA, 1959
PHOTOREVISED 1980

ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
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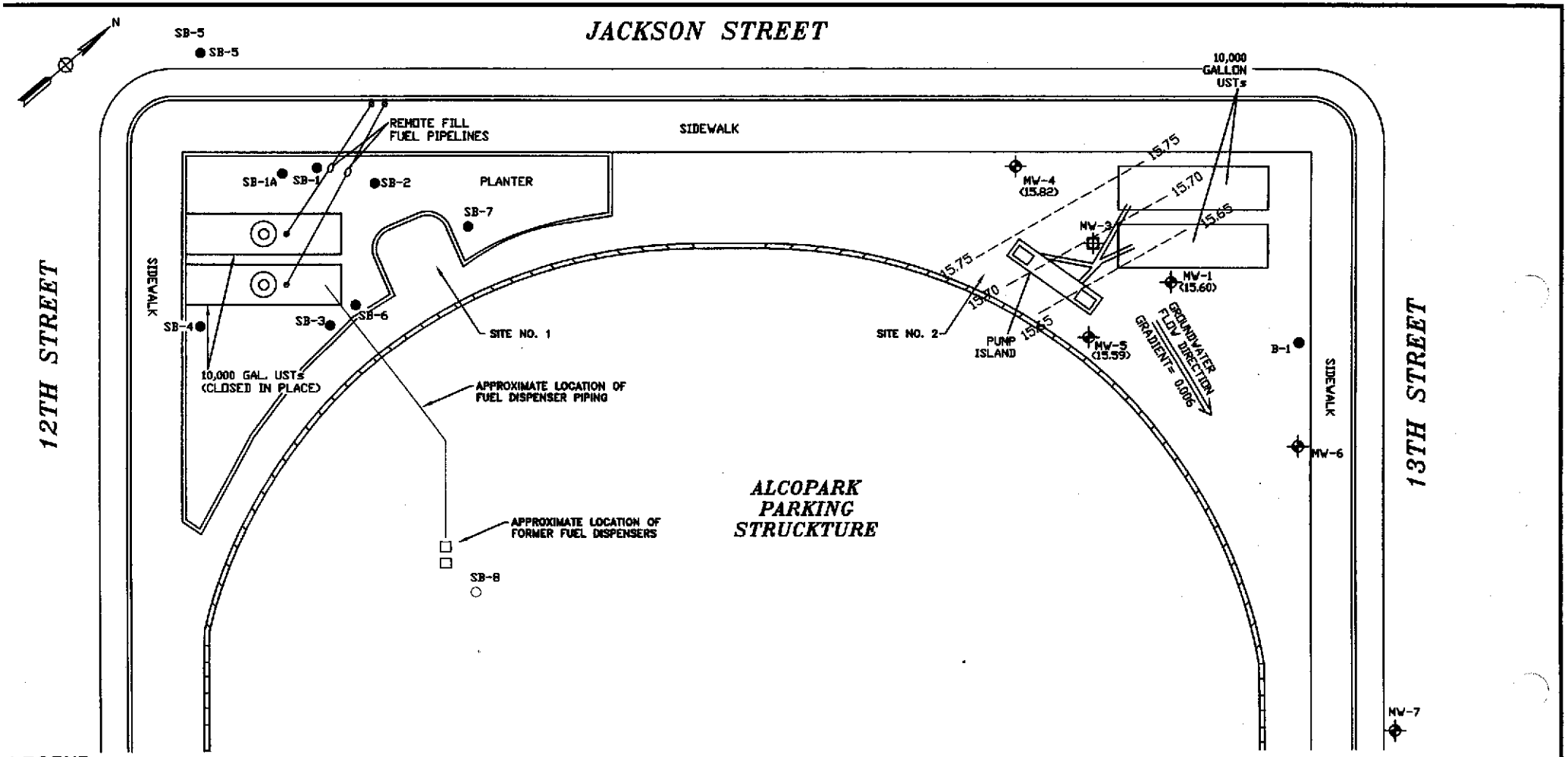
SITE LOCATION
ALCOPARK FUELING STATION
165 13TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 3/04	CKD BY:	FIGURE NO: 1
FILE NO: 4G009-1	F.P.	DRAWN BY: B.S.



LEGEND:

MW-5 (15.59) – MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION INDICATED IN FEET MSL

15.70 – GROUNDWATER CONTOUR (ELEVATION INDICATED IN FEET MSL)

MW-3 – VADOSE MONITORING WELL LOCATION

B-1 – SOIL BORING

– UNDERGROUND PIPING

0 10 20
APPROXIMATE SCALE (FEET)

ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
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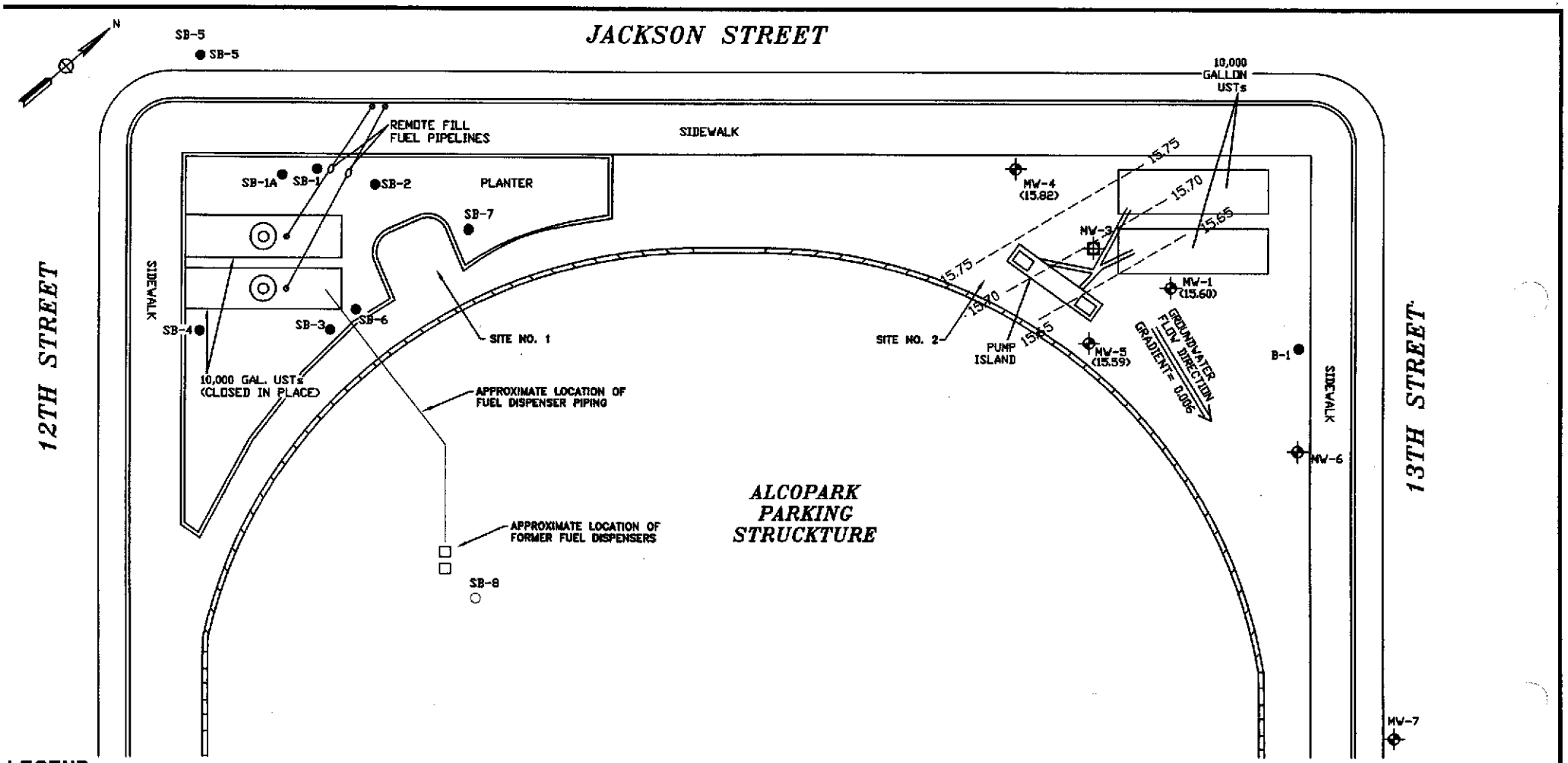
GROUNDWATER ELEVATION MAP – 8/17/05
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-40009

DATE: 9/05	CKD BY: F.P.	FIGURE NO.: 2
FILE NO.: 40009-10		DRAWN BY: B. STOZEK



LEGEND:

MW-5 (15.59) – MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION INDICATED IN FEET MSL

15.70 – GROUNDWATER CONTOUR (ELEVATION INDICATED IN FEET MSL)

MW-3 – VADOSE MONITORING WELL LOCATION

B-1 – SOIL BORING

– UNDERGROUND PIPING

0 10 20
APPROXIMATE SCALE
(FEET)

PSI ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
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GROUNDWATER ELEVATION MAP – 8/17/05
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 9/05	CKD BY: F.P.	FIGURE NO.: 2
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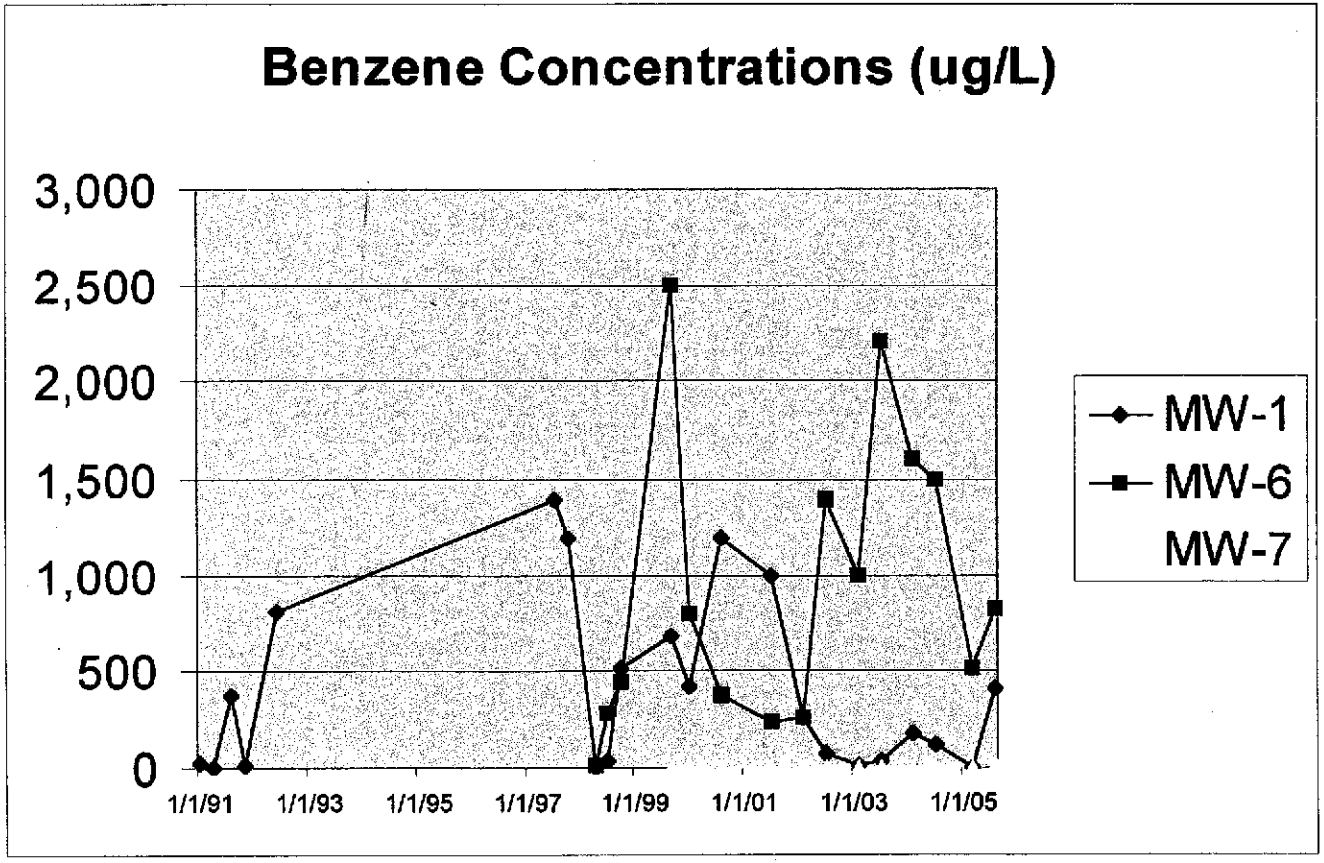

ENVIRONMENTAL GEOTECHNICAL
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BENZENE VS. TIME
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 9/05	CKD BY: F.P.	FIGURE NO.: 3
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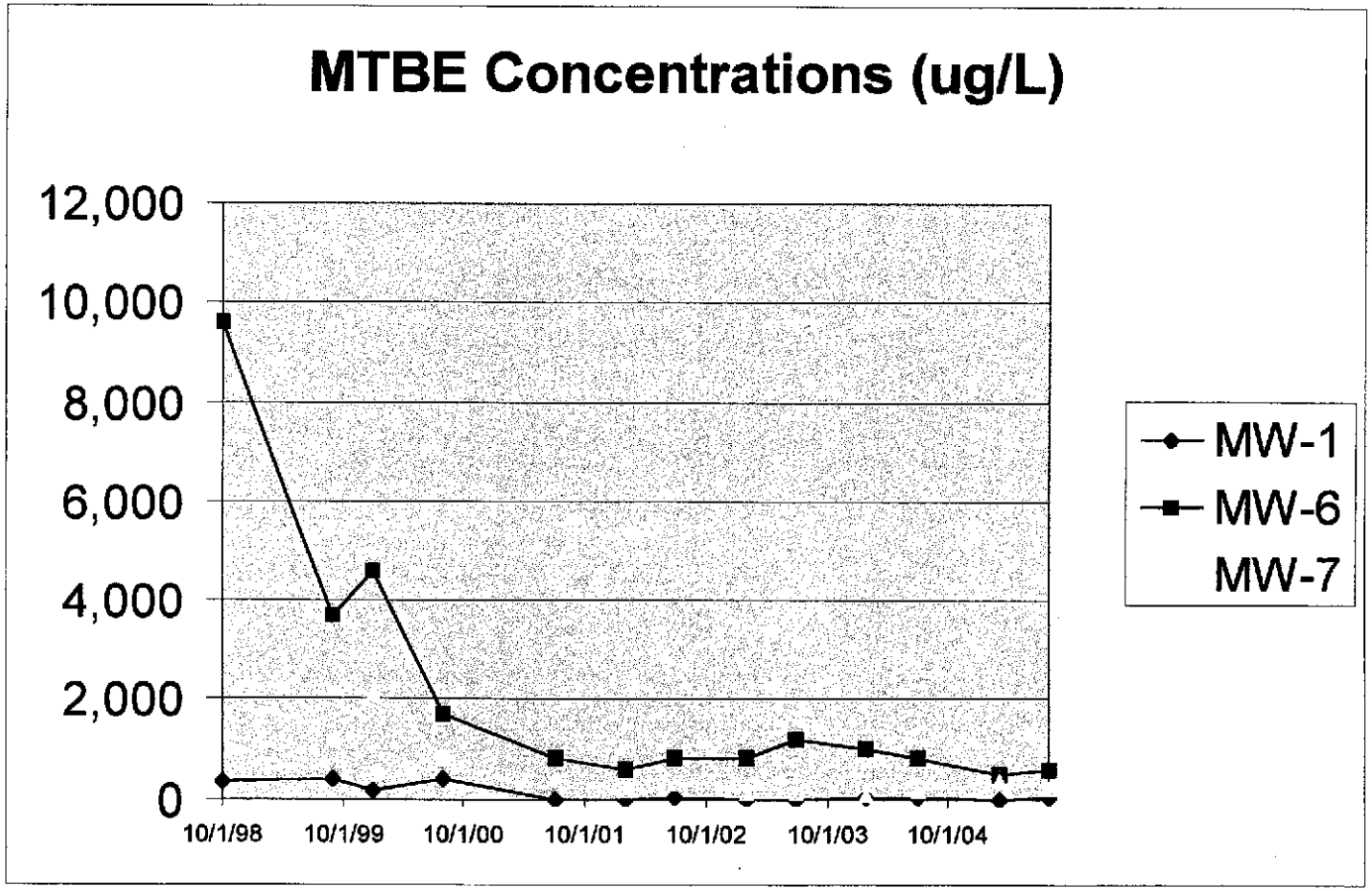

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CONSULTING · ENGINEERING · TESTING

MTBE VS. TIME
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-4G009

DATE: 8/05	CKD BY: F.P.	FIGURE NO.: 4
FILE NO.: 3G028-MTBE		DRAWN BY: B. STOZEK

APPENDIX A

GROUNDWATER SAMPLING FIELD PROCEDURES & WATER ELEVATIONS

APPENDIX A

GROUND-WATER SAMPLING

The following procedures will be used for ground water sampling:

1. All non-dedicated equipment shall be washed prior to entering the well with an Alconox solution, followed by two deionized water rinses.

2. Prior to purging wells, depth-to-water will be measured using an electronic sounder with an accuracy of approximately 0.01 foot. The measurements will be made to the top of the well casing on the north side.

4. Free floating product thickness and depth-to-ground water will be measured in wells containing free floating product using a Solinst oil-water interface probe to an accuracy of approximately 0.01 foot. The measurements will be made to the top of the well casing on the north side.

5. Water samples will be collected with a Teflon disposable bailer. In the case of grab groundwater sampling, samples will be collected with a disposable Teflon lined plastic tube equipped with a check valve. The water collected will be immediately decanted into laboratory-supplied vials and bottles. The containers will be overfilled, capped, labeled, and placed in a chilled cooler, prior to delivery to the laboratory for analysis.

6. Chain of custody procedures, including chain of custody forms, will be used to document water sample handling and transport from collection to delivery to the laboratory for analysis.

7. Ground-water samples will be delivered to a State-certified environmental laboratory within approximately 24 hours of collection.

FLUID MEASUREMENT FIELD DATA

SHEET: 1 OF 1

DATE: 8/17/05 | PROJECT NAME: ALCO PARK | PROJECT NO: 575-46009

WATER LEVEL MEASUREMENT INSTRUMENT: Solinst | SERIAL NO:

PRODUCT DETECTION INSTRUMENT: | SERIAL NO:

EQUIP. DECON: ☐ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE ☐ TAP WATER FINAL RINSE

☐ TAP WATER WASH ☐ LIQUINOX WASH ☐ DIST/DEION 2 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE ☐ AIR DRY

WELL NUMBER	GROUND SURFACE ELEVATION	TOP OF CASING ELEVATION	DEPTH TO PRODUCT BELOW TOC	DEPTH TO WATER BELOW TOC	WELL DEPTH BELOW TOC.	PRODUCT THICKNESS	WATER TABLE ELEVATION	ACTUAL TIME
MW-1				17.40	34.10			13:42
MW-4				17.81	34.60			13:35
MW-5				17.42	34.25			13:38

REMEMBER TO CORRECT PRODUCT THICKNESS FOR DENSITY BEFORE CALCULATING WATER TABLE ELEVATION

PREPARED BY: B.S.

PSI
Rev. 12/95

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries 4703 Tidewater Ave., Suite B Oakland, CA 94601	Client Project ID: #575-4G009; ALCO PARK	Date Sampled: 08/17/05
		Date Received: 08/18/05
	Client Contact: Frank Poss	Date Reported: 08/26/05
	Client P.O.:	Date Completed: 08/26/05

WorkOrder: 0508318

August 26, 2005

Dear Frank:

Enclosed are:

1). the results of 3 analyzed samples from your **#575-4G009; ALCO PARK project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue S #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Professional Service Industries	Client Project ID: #575-4G009; ALCO PARK	Date Sampled: 08/17/05
4703 Tidewater Ave., Suite B		Date Received: 08/18/05
Oakland, CA 94601	Client Contact: Frank Poss	Date Extracted: 08/20/05-08/25/05
	Client P.O.:	Date Analyzed: 08/20/05-08/25/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method: SW5030B Analytical methods: SW8015Cm Work Order: 0508318

Lab ID	Client ID	Matrix	TPH(g)	DF	% SS
001A	MW-1	W	4100,a	5	102
002A	MW-6	W	2800,a	5	111
003A	MW-7	W	66,a	1	118

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccam[illegible]com E-mail: main@mccampbell.com

Professional Service Industries	Client Project ID: #575-4G009; ALCO PARK	Date Sampled: 08/17/05
		Date Received: 08/18/05
4703 Tidewater Ave., Suite B	Client Contact: Frank Poss	Date Extracted: 08/19/05
Oakland, CA 94601	Client P.O.:	Date Analyzed: 08/19/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0508318

Lab ID	0508318-001B
Client ID	MW-1
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<170	33	5.0	Acrolein (Propenal)	ND<170	33	5.0
Acrylonitrile	ND<67	33	2.0	tert-Amyl methyl ether (TAME)	ND<17	33	0.5
Benzene	410	33	0.5	Bromobenzene	ND<17	33	0.5
Bromochloromethane	ND<17	33	0.5	Bromodichloromethane	ND<17	33	0.5
Bromoform	ND<17	33	0.5	Bromomethane	ND<17	33	0.5
2-Butanone (MEK)	ND<67	33	2.0	t-Butyl alcohol (TBA)	ND<170	33	5.0
n-Butyl benzene	ND<17	33	0.5	sec-Butyl benzene	ND<17	33	0.5
tert-Butyl benzene	ND<17	33	0.5	Carbon Disulfide	ND<17	33	0.5
Carbon Tetrachloride	ND<17	33	0.5	Chlorobenzene	ND<17	33	0.5
Chloroethane	ND<17	33	0.5	2-Chloroethyl Vinyl Ether	ND<33	33	1.0
Chloroform	ND<17	33	0.5	Chloromethane	ND<17	33	0.5
2-Chlorotoluene	ND<17	33	0.5	4-Chlorotoluene	ND<17	33	0.5
Dibromochloromethane	ND<17	33	0.5	1,2-Dibromo-3-chloropropane	ND<17	33	0.5
1,2-Dibromoethane (EDB)	ND<17	33	0.5	Dibromomethane	ND<17	33	0.5
1,2-Dichlorobenzene	ND<17	33	0.5	1,3-Dichlorobenzene	ND<17	33	0.5
1,4-Dichlorobenzene	ND<17	33	0.5	Dichlorodifluoromethane	ND<17	33	0.5
1,1-Dichloroethane	ND<17	33	0.5	1,2-Dichloroethane (1,2-DCA)	ND<17	33	0.5
1,1-Dichloroethene	ND<17	33	0.5	cis-1,2-Dichloroethene	ND<17	33	0.5
trans-1,2-Dichloroethene	ND<17	33	0.5	1,2-Dichloropropane	ND<17	33	0.5
1,3-Dichloropropane	ND<17	33	0.5	2,2-Dichloropropane	ND<17	33	0.5
1,1-Dichloropropene	ND<17	33	0.5	cis-1,3-Dichloropropene	ND<17	33	0.5
trans-1,3-Dichloropropene	ND<17	33	0.5	Diisopropyl ether (DIPE)	ND<17	33	0.5
Ethylbenzene	380	33	0.5	Ethyl tert-butyl ether (ETBE)	ND<17	33	0.5
Freon 113	ND<330	33	10	Hexachlorobutadiene	ND<17	33	0.5
Hexachloroethane	ND<17	33	0.5	2-Hexanone	ND<17	33	0.5
Isopropylbenzene	22	33	0.5	4-Isopropyl toluene	ND<17	33	0.5
Methyl-t-butyl ether (MTBE)	59	33	0.5	Methylene chloride	ND<17	33	0.5
4-Methyl-2-pentanone (MIBK)	ND<17	33	0.5	Naphthalene	360	33	0.5
Nitrobenzene	ND<330	33	10	n-Propyl benzene	64	33	0.5
Styrene	ND<17	33	0.5	1,1,1,2-Tetrachloroethane	ND<17	33	0.5
1,1,2,2-Tetrachloroethane	ND<17	33	0.5	Tetrachloroethene	ND<17	33	0.5
Toluene	35	33	0.5	1,2,3-Trichlorobenzene	ND<17	33	0.5
1,2,4-Trichlorobenzene	ND<17	33	0.5	1,1,1-Trichloroethane	ND<17	33	0.5
1,1,2-Trichloroethane	ND<17	33	0.5	Trichloroethene	ND<17	33	0.5
Trichlorofluoromethane	ND<17	33	0.5	1,2,3-Trichloropropane	ND<17	33	0.5
1,2,4-Trimethylbenzene	790	33	0.5	1,3,5-Trimethylbenzene	160	33	0.5
Vinyl Chloride	ND<17	33	0.5	Xylenes	1500	33	0.5

Surrogate Recoveries (%)			
%SS1:	112	%SS2:	105
%SS3:	91		

Comments:

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Professional Service Industries	Client Project ID: #575-4G009; ALCO PARK	Date Sampled: 08/17/05
4703 Tidewater Ave., Suite B		Date Received: 08/18/05
	Client Contact: Frank Poss	Date Extracted: 08/19/05
Oakland, CA 94601	Client P.O.:	Date Analyzed: 08/19/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0508318

Lab ID	0508318-002B
Client ID	MW-6
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<170	33	5.0	Acrolein (Propenal)	ND<170	33	5.0
Acrylonitrile	ND<67	33	2.0	tert-Amyl methyl ether (TAME)	110	33	0.5
Benzene	820	33	0.5	Bromobenzene	ND<17	33	0.5
Bromochloromethane	ND<17	33	0.5	Bromodichloromethane	ND<17	33	0.5
Bromoform	ND<17	33	0.5	Bromomethane	ND<17	33	0.5
2-Butanone (MEK)	ND<67	33	2.0	t-Butyl alcohol (TBA)	490	33	5.0
n-Butyl benzene	ND<17	33	0.5	sec-Butyl benzene	ND<17	33	0.5
tert-Butyl benzene	ND<17	33	0.5	Carbon Disulfide	ND<17	33	0.5
Carbon Tetrachloride	ND<17	33	0.5	Chlorobenzene	ND<17	33	0.5
Chloroethane	ND<17	33	0.5	2-Chloroethyl Vinyl Ether	ND<33	33	1.0
Chloroform	ND<17	33	0.5	Chloromethane	ND<17	33	0.5
2-Chlorotoluene	ND<17	33	0.5	4-Chlorotoluene	ND<17	33	0.5
Dibromochloromethane	ND<17	33	0.5	1,2-Dibromo-3-chloropropane	ND<17	33	0.5
1,2-Dibromoethane (EDB)	ND<17	33	0.5	Dibromomethane	ND<17	33	0.5
1,2-Dichlorobenzene	ND<17	33	0.5	1,3-Dichlorobenzene	ND<17	33	0.5
1,4-Dichlorobenzene	ND<17	33	0.5	Dichlorodifluoromethane	ND<17	33	0.5
1,1-Dichloroethane	ND<17	33	0.5	1,2-Dichloroethane (1,2-DCA)	ND<17	33	0.5
1,1-Dichloroethene	ND<17	33	0.5	cis-1,2-Dichloroethene	ND<17	33	0.5
trans-1,2-Dichloroethene	ND<17	33	0.5	1,2-Dichloropropane	ND<17	33	0.5
1,3-Dichloropropane	ND<17	33	0.5	2,2-Dichloropropane	ND<17	33	0.5
1,1-Dichloropropene	ND<17	33	0.5	cis-1,3-Dichloropropene	ND<17	33	0.5
trans-1,3-Dichloropropene	ND<17	33	0.5	Diisopropyl ether (DIPE)	ND<17	33	0.5
Ethylbenzene	190	33	0.5	Ethyl tert-butyl ether (ETBE)	ND<17	33	0.5
Freon 113	ND<330	33	10	Hexachlorobutadiene	ND<17	33	0.5
Hexachloroethane	ND<17	33	0.5	2-Hexanone	ND<17	33	0.5
Isopropylbenzene	ND<17	33	0.5	4-Isopropyl toluene	ND<17	33	0.5
Methyl-t-butyl ether (MTBE)	610	33	0.5	Methylene chloride	ND<17	33	0.5
4-Methyl-2-pentanone (MIBK)	ND<17	33	0.5	Naphthalene	300	33	0.5
Nitrobenzene	ND<330	33	10	n-Propyl benzene	ND<17	33	0.5
Styrene	ND<17	33	0.5	1,1,1,2-Tetrachloroethane	ND<17	33	0.5
1,1,2,2-Tetrachloroethane	ND<17	33	0.5	Tetrachloroethene	ND<17	33	0.5
Toluene	ND<17	33	0.5	1,2,3-Trichlorobenzene	ND<17	33	0.5
1,2,4-Trichlorobenzene	ND<17	33	0.5	1,1,1-Trichloroethane	ND<17	33	0.5
1,1,2-Trichloroethane	ND<17	33	0.5	Trichloroethene	ND<17	33	0.5
Trichlorofluoromethane	ND<17	33	0.5	1,2,3-Trichloropropane	ND<17	33	0.5
1,2,4-Trimethylbenzene	230	33	0.5	1,3,5-Trimethylbenzene	ND<17	33	0.5
Vinyl Chloride	ND<17	33	0.5	Xylenes	250	33	0.5

Surrogate Recoveries (%)			
%SS1:	113	%SS2:	104
%SS3:	94		

Comments:

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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Professional Service Industries	Client Project ID: #575-4G009; ALCO PARK	Date Sampled: 08/17/05
4703 Tidewater Ave., Suite B		Date Received: 08/18/05
	Client Contact: Frank Poss	Date Extracted: 08/19/05
Oakland, CA 94601	Client P.O.:	Date Analyzed: 08/19/05

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0508318

Lab ID	0508318-003B
Client ID	MW-7
Matrix	Water

Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND<50	10	5.0	Acrolein (Propenal)	ND<50	10	5.0
Acrylonitrile	ND<20	10	2.0	tert-Amyl methyl ether (TAME)	26	10	0.5
Benzene	9.3	10	0.5	Bromobenzene	ND<5.0	10	0.5
Bromochloromethane	ND<5.0	10	0.5	Bromodichloromethane	ND<5.0	10	0.5
Bromoform	ND<5.0	10	0.5	Bromomethane	ND<5.0	10	0.5
2-Butanone (MEK)	ND<20	10	2.0	t-Butyl alcohol (TBA)	ND<50	10	5.0
n-Butyl benzene	ND<5.0	10	0.5	sec-Butyl benzene	ND<5.0	10	0.5
tert-Butyl benzene	ND<5.0	10	0.5	Carbon Disulfide	ND<5.0	10	0.5
Carbon Tetrachloride	ND<5.0	10	0.5	Chlorobenzene	ND<5.0	10	0.5
Chloroethane	ND<5.0	10	0.5	2-Chloroethyl Vinyl Ether	ND<10	10	1.0
Chloroform	ND<5.0	10	0.5	Chloromethane	ND<5.0	10	0.5
2-Chlorotoluene	ND<5.0	10	0.5	4-Chlorotoluene	ND<5.0	10	0.5
Dibromochloromethane	ND<5.0	10	0.5	1,2-Dibromo-3-chloropropane	ND<5.0	10	0.5
1,2-Dibromoethane (EDB)	ND<5.0	10	0.5	Dibromomethane	ND<5.0	10	0.5
1,2-Dichlorobenzene	ND<5.0	10	0.5	1,3-Dichlorobenzene	ND<5.0	10	0.5
1,4-Dichlorobenzene	ND<5.0	10	0.5	Dichlorodifluoromethane	ND<5.0	10	0.5
1,1-Dichloroethane	ND<5.0	10	0.5	1,2-Dichloroethane (1,2-DCA)	ND<5.0	10	0.5
1,1-Dichloroethene	ND<5.0	10	0.5	cis-1,2-Dichloroethene	ND<5.0	10	0.5
trans-1,2-Dichloroethene	ND<5.0	10	0.5	1,2-Dichloropropane	ND<5.0	10	0.5
1,3-Dichloropropane	ND<5.0	10	0.5	2,2-Dichloropropane	ND<5.0	10	0.5
1,1-Dichloropropene	ND<5.0	10	0.5	cis-1,3-Dichloropropene	ND<5.0	10	0.5
trans-1,3-Dichloropropene	ND<5.0	10	0.5	Diisopropyl ether (DIPE)	ND<5.0	10	0.5
Ethylbenzene	ND<5.0	10	0.5	Ethyl tert-butyl ether (ETBE)	ND<5.0	10	0.5
Freon 113	ND<100	10	10	Hexachlorobutadiene	ND<5.0	10	0.5
Hexachloroethane	ND<5.0	10	0.5	2-Hexanone	ND<5.0	10	0.5
Isopropylbenzene	ND<5.0	10	0.5	4-Isopropyl toluene	ND<5.0	10	0.5
Methyl-t-butyl ether (MTBE)	230	10	0.5	Methylene chloride	ND<5.0	10	0.5
4-Methyl-2-pentanone (MIBK)	ND<5.0	10	0.5	Naphthalene	ND<5.0	10	0.5
Nitrobenzene	ND<100	10	10	n-Propyl benzene	ND<5.0	10	0.5
Styrene	ND<5.0	10	0.5	1,1,1,2-Tetrachloroethane	ND<5.0	10	0.5
1,1,2,2-Tetrachloroethane	ND<5.0	10	0.5	Tetrachloroethene	ND<5.0	10	0.5
Toluene	ND<5.0	10	0.5	1,2,3-Trichlorobenzene	ND<5.0	10	0.5
1,2,4-Trichlorobenzene	ND<5.0	10	0.5	1,1,1-Trichloroethane	ND<5.0	10	0.5
1,1,2-Trichloroethane	ND<5.0	10	0.5	Trichloroethene	ND<5.0	10	0.5
Trichlorofluoromethane	ND<5.0	10	0.5	1,2,3-Trichloropropane	ND<5.0	10	0.5
1,2,4-Trimethylbenzene	ND<5.0	10	0.5	1,3,5-Trimethylbenzene	ND<5.0	10	0.5
Vinyl Chloride	ND<5.0	10	0.5	Xylenes	6.8	10	0.5

Surrogate Recoveries (%)			
%SS1:	112	%SS2:	106
%SS3:	94		

Comments:

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0508318

EPA Method: SW8015Cm	Extraction: SW5030B	BatchID: 17607	Spiked Sample ID: 0508286-004A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	94.3	89	5.84	100	102	1.60	70 - 130	70 - 130
MTBE	ND	10	92.5	90.8	1.84	91.4	98	7.06	70 - 130	70 - 130
Benzene	ND	10	91.7	91.5	0.281	104	110	5.03	70 - 130	70 - 130
Toluene	ND	10	90.9	91.3	0.491	103	108	4.28	70 - 130	70 - 130
Ethylbenzene	ND	10	93.2	93.3	0.120	107	111	4.00	70 - 130	70 - 130
Xylenes	ND	30	95	95	0	96	96.3	0.347	70 - 130	70 - 130
%SS:	107	10	98	101	2.92	107	112	4.73	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17607 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0508318-001A	8/17/05 1:50 PM	8/20/05	8/20/05 11:37 PM	0508318-002A	8/17/05 2:05 PM	8/21/05	8/21/05 12:09 AM
0508318-003A	8/17/05 2:35 PM	8/25/05	8/25/05 8:52 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 2nd Avenue South, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0508318

EPA Method: SW8260B	Extraction: SW5030B				BatchID: 17629			Spiked Sample ID: 0508323-007B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	116	119	3.02	107	101	5.66	70 - 130	70 - 130
Benzene	ND	10	115	115	0	111	108	2.55	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	99.4	106	6.90	96.4	89.6	7.34	70 - 130	70 - 130
Chlorobenzene	ND	10	114	112	1.57	110	108	1.42	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	103	102	1.15	97.9	92	6.15	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	109	110	0.762	112	108	4.31	70 - 130	70 - 130
1,1-Dichloroethene	ND	10	115	116	0.516	111	111	0	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	119	114	4.61	113	109	3.57	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	113	116	2.38	106	101	4.64	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	0.52	10	109	113	3.36	105	99.2	5.33	70 - 130	70 - 130
Toluene	ND	10	113	107	5.11	108	107	0.770	70 - 130	70 - 130
Trichloroethene	ND	10	93	93	0	89.4	87.5	2.23	70 - 130	70 - 130
%SS1:	107	10	103	103	0	102	102	0	70 - 130	70 - 130
%SS2:	100	10	100	97	2.91	99	100	1.14	70 - 130	70 - 130
%SS3:	103	10	107	111	3.00	107	109	2.46	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 17629 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0508318-001B	8/17/05 1:50 PM	8/19/05	8/19/05 7:34 PM	0508318-002B	8/17/05 2:05 PM	8/19/05	8/19/05 8:16 PM
0508318-003B	8/17/05 2:35 PM	8/19/05	8/19/05 8:59 PM				

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

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

PS10: 0560518

McCAMPBELL ANALYTICAL, INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY
EDF Required? Coelt (Normal) No Write On (DW) No

Report To:	Frank Poss/Rod Frietag
Bill To:	Rod Frietag Alameda GSA
Company:	PSI
	4703 Tidewater Ave, Suite B
	Oakland, CA 94601
E-Mail:	Frank.Poss@PSIUSA.com
Tele:	(510) 434-9200
Fax:	(510) 434-9200
Project #:	575-46009
Project Name:	ALCO PARK
Project Location:	Oakland, CA
Sampler Signature:	Brian Stozek

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other
1 MW-1		8/17/05	13:50									X		
+2 MW-6		↓	14:05									X		
+2 MW-7		↓	14:35									X		

Analysis Request

MTBE / BTEX & TPH as Gas (602 / 8021 + 8015)	MTBE / BTEX ONLY (EPA 602 / 8021)	TPH as Diesel / Motor Oil (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other			Comments
																TPH-G/8260 w/oxy			Filter Samples for Metals analysis: Yes / No
																X			
																X			
																X			

Relinquished By:	Date:	Time:	Received By:
Brian Stozek	8/18/05	12:00	
	8/18/05	14:35	
	8/19/05	5:45	

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

COMMENTS:

PRESERVATION | VOAS | O&G | METALS pH<2 | OTHER

Environmental
Science &
Engineering, Inc.
A CILCORP Company

3:3: 917002

April 22, 1992

Project No. 6-92-5314

Mr. Ravi Arulanantham
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94021

SUBJECT: **Alcopark Facility, 165-13th Street, Oakland, California**

Dear Mr. Arulanantham:

Environmental Science & Engineering, Inc. (ESE) was contracted by the County of Alameda General Services Agency (GSA) to provide professional environmental consulting services related to the removal of one waste oil storage tank located at the subject facility. ESE presents this post-closure report in accordance with Alameda County Health Care Agency (HCA) permit requirements. The following information is submitted in support of this tank closure.

TANK HISTORY

The County of Alameda General Services Agency owned and operated one 550 gallon waste oil storage tank at the subject facility. Alcopark, a county-owned parcel, is located on the corner of 13th and Jackson Streets in Oakland, California (see Figure 1, "Location Map' and Figure 2, "Site Plan"). The tank, which was of single walled, carbon steel construction, was located in the basement of this facility.

The Alcopark basement is used for vehicle parking and the maintenance of county-owned vehicles. The waste oil tank was utilized for the storage of used crankcase motor oil, and was filled via three remote fills. The remote fills are a network of buried pipe which gravity feeds the waste oil tank (see Figure 3, "Tank Plan"). The waste oil storage tank was routinely evacuated every three months. The tank, which was buried below the floor, was precision tested in 1989 and tested tight at that time. It should be noted that noticeable spillage of waste oil around the tank fill riser (located within a concrete sump directly over the tank) was observed during the preliminary site visit.

Two operational gasoline storage tanks exist at this site on the corner of 13th and Jackson, 4 feet below street level. A piping leak from these tanks has occurred in the past, and

gasoline constituents have been detected in ground water beneath these tanks. As a result, ground-water monitoring has been initiated in the vicinity of the gasoline tanks.

TANK CLOSURE ACTIVITIES

1. Evacuation of existing waste oil in the tank was conducted by Waste Oil Recovery of Oakland, California, on Wednesday, February 12, 1992. Approximately 100 gallons of waste oil and water (used to rinse the tank) were removed. Additionally, a small amount (<5 gallons) of waste oil pooled within the concrete containment sump around the fill neck, was also removed. These fluids were transported by Waste Oil Recovery to Demenno Kerdoon, 200 N. Alameda, Compton, California, State-licensed treatment storage and disposal facility (TSDF). A copy of the disposal manifest is attached.

2. Permits for this tank removal were procured by Aqua Science Engineers (ASE), subcontractor to ESE, from the cognizant agencies. This tank closure was conducted under Alameda County Health Care Agency permit HCA 7782. Copies of these permits are attached.

3. Excavation and removal, of a nine foot by nine foot section of concrete from the basement floor over the tank, was conducted on Thursday, February 13, 1992. Soil was removed to free the tank from the excavation pit. This soil was temporarily stockpiled near the excavation (see Figure 3 for stockpile location). The tank internal atmosphere was rendered inert by the addition of 15 pounds of dry ice. In the presence of Mr. Ravi Arulanantham of HCA and Mr. Marlon Brundle of the City of Oakland Fire Prevention Bureau, the waste oil storage tank was lifted from the excavation and loaded onto a flatbed truck. The tank was inspected, and while no holes were found, corrosion along the bottom two feet of the tank was noted. The tank was manifested as a hazardous waste, and transported to Erikson Environmental, of Richmond, California, a state licensed TSDF. A copy of the tank manifest is attached.

4. Piping from the three remote fills to the tank was cut and capped at the limit of excavation. This piping was rinsed, grouted and abandoned in place. Removal of the piping would have required the removal of an area of concrete flooring in a personnel work area and a disruption of vehicle maintenance work.

5. The final dimensions of the tank excavation were nine feet by ten feet by eight and one-half feet in depth. The tank top was located five feet below the concrete floor and the bottom of the tank was nine feet below the concrete floor. Soil excavated from the tank pit consisted of a silty sand imported tank fill material. After tank removal, this imported tank fill material was completely excavated and removed from the tank pit.

Native soil was observed to consist of a sandy silt, containing up to 50 percent sand. No native soil was removed during excavation activities.

Ground water was encountered at eight and one-half feet below ground surface, contaminated by a hydrocarbon sheen. This depth to ground water is consistent with that observed in the monitoring wells located near the fuel tanks at the intersection of Jackson and 13th Street. After excavation of backfill, a small lens of hydrocarbon stained soil was noted on the southeast excavation pit wall between four and six feet below the concrete floor. No root holes or other potential contaminant pathways were observed.

6. Soil samples were collected by ESE from two side walls of the excavation pit (as directed by the HCA representative) and from three locations near the remote fill ports in the service bay area (see Figure 3) as required by HCA Permit. The two excavation pit soil samples, sample identifications (ID's) WOTP-FE-8' and WOTP-DL-8', were collected at a depth of eight feet below the concrete floor. The three remote fill soil samples, sample ID's: WOL-1-4', WOL-2-4' and WOL-3-4' were collected at a depth of four feet below the concrete floor adjacent to each remote fill. Additionally, four soil stockpile samples, sample ID's: SS-WO-1, 2, 3 and 4, were collected (see Figure 3). These samples were collected approximately 18 inches below the surface of the stockpile at the locations shown. Soil samples from around the remote fill line were collected utilizing a slide hammer sampler fitted with two-inch diameter brass rings. Soil samples from the stockpiled soil were collected manually utilizing two inch brass rings. Soil samples from the excavation pit were collected utilizing a four inch hand auger bit. Soil was transferred from the auger bucket to two-inch diameter brass rings. The brass sampling ring ends were covered with Teflon tape, plastic end caps, and sealed with duct tape.

   A ground-water sample was collected from standing ground-water within the excavation pit (see Figure 3) after approximately 60 gallons of water was purged from the pit. This sample, sample ID WOP-GW-8.5', was collected at a depth of eight and one-half feet below ground surface utilizing a disposable polyethylene bailer. The sample was placed in four, one-liter amber bottles, four 90 ml VOA's and one plastic pint bottle. The purge water was stored in two 55 gallon drums, and remains on site.

   All samples were placed in a cooler with ice and transported to Curtis and Tompkins, Ltd., a California Department of Health Services (DHS) certified analytical laboratory. All samples were analyzed by the following methods:

- EPA Method 8015M for Total Volatile Hydrocarbons (TVH) as Gasoline;
- EPA Method 8020 for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX);
- EPA Method 8015M for Total Extractable Hydrocarbons (TEH) as Diesel;
- Standard Methods for Water & Wastewater (SMWW) 5520 for Total Oil and Grease (TOG);
- EPA Method 8270 for Semi-Volatile Organics;
- Methods 6010, 7421 for Total Lead, Cadmium, Chromium, Zinc and Nickel; and
- EPA Method 8010 for Chlorinated Organics.

7. Tables 1-4 summarize sample ID's, analytical methods, and analytical results. Copies of laboratory reports and chain of custody documentation are attached.

8. On Friday, February 14, 1992 Aqua Science Engineers backfilled and compacted the excavation with clean import fill (crushed rock). This area was repaved with reinforced concrete to match the former condition.

9. The stockpiled soil resulting from the excavation was transported off-site to Santa Rita Rehabilitation Center, Dublin, California on March 13, 1992. Based on laboratory results this material is viewed as non-hazardous waste soil and was transported without manifest. The soil, approximately 25 cubic yards, was delivered to Santa Rita and spread over plastic sheeting. This material will be periodically turned/aerated. Prior to final disposal or re-use of this soil, it will be resampled and analyzed for oil and grease, petroleum hydrocarbons and semi-volatile hydrocarbons. Final disposition of this material will be reported to HCA.

DISCUSSION

Analysis of soil samples collected from tank pit sidewalls after removal of tank backfill (sample ID WOTP-DL-8' and WOTP-FE-8)' resulted in non-detectable concentrations of TVH-gasoline, Benzene, Toluene, Ethylbenzene, TEH-diesel/kerosene, TOG, semi-volatile organics, chlorinated organics, and total lead (Pb). Sample WOTP-FE-8' had nondetectable concentrations of total xylenes and sample WOTP-FE-8' had 6.8 micrograms per kilogram total xylenes. Concentrations of Cadmium (Cd), Chromium (Cr), and Zinc (Zn) are each less than the State of California, Title 22, Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC). Concentrations of Nickel (Ni) are less than TTLC but exceed STLC. The concentrations of Ni are consistent with concentrations of Ni measured in soil samples from the remote fill area and soil stockpiles.

Analysis of the composite soil sample of tank piping runs (Sample ID COMP WOL-1, 2, 3) resulted in detectable concentrations of TVH-gasoline, Toluene, and Total Xylenes. TEH-

diesel and TOG were also detected. No chlorinated hydrocarbons were detected. Concentrations of Zn, Cd , and Pb were below STLC limits and concentrations of Ni were consistent with all observed concentrations of Ni from soil stockpiles and tank pit. Analysis of the tank piping run soil composite for semi-volatile organics reported constituents in concentrations ranging from 380 to 740 micrograms per kilogram.

Analysis of a composite of soil samples collected from the stockpile (sample ID COMP SS-WO-1, 2, 3, 4) resulted in detectable concentrations of TVH-gasoline, Toluene, Ethylbenzene, Xylenes, TEH-diesel, and TOG. Concentrations of metals (Cd, Cr, Zn, Pb, and Ni) were consistent with metal concentrations from other soil samples analyzed from the site. Analysis for chlorinated hydrocarbons reported concentrations of trichloroethylene. Analysis for semi-volatile organics reported a maximum concentration of 3,100 micrograms per kilogram.

Analysis of the ground water sample collected from the tank pit (sample ID WOP-GW-8.5') resulted in detectable concentrations of TVH-gasoline, BTEX, and kerosene. Concentrations of metals are less than Maximum Contaminant Level (MCL), where applicable, and less than STLC's for other metals. Concentrations of chlorinated organics were detected to a maximum of 320 micrograms per liter. Concentrations of semi-volatile organics to a maximum of 120 micrograms per liter were detected.

CONCLUSIONS

Based on the results of soil samples collected from the tank pit walls at 8 feet below floor level, it appears that the walls of the tank pit were not impacted by waste oil constituents. The observed spillage in the vicinity of the tank riser apparently migrated vertically through the granular import tank backfill, around the sides of the tank, and into ground water.

Low concentrations of waste oil constituents were detected in soil samples collected at the remote fills along the waste oil tank pipe run. Low concentrations of volatile organics, semi-volatile organics, and TEH-diesel were detected in soils collected along the pipe run. No chlorinated organics were detected. This remote-fill piping sloped downward to the tank and contained product only during filling of the tank. The line was empty during all other times. The source of the detectable concentrations of waste oil constituents in the soil samples collected from the vicinity of each of the tank remote-fill pipes is not apparent. Each remote-fill pipe was sealed at the floor surface. Due to the concrete floor's vapor barrier, spillage of waste oil from the floor surface to the subsurface is not likely.

Low concentrations of semi-volatile organics, volatile organics, TOG, and chlorinated organics were detected in the soil stockpiles. This is probably a result of past poor waste

oil management practices and local spillage in the vicinity of the tank riser. This soil material was classified as non-hazardous and transported off site.

Analysis of the ground-water sample collected from the open tank excavation indicated detectable concentrations of TVH-gasoline, TEH-diesel, BTEX, semi-volatile organics, chlorinated organics, and metals. Ground-water monitoring for gasoline constituents has been conducted for the last 1.5 years at this facility. It is conceivable that the observed gasoline and BTEX in the ground water may originate from this other source (gasoline tanks located on the corner of 13th Street and Jackson Street). The diesel fuel observed in the ground-water probably originated from the waste oil tank overspillage. Of the semi-volatile organics found in the ground water, only napthalene was found in soil from the tank pit and fill areas and none of the chemicals reported are listed in California Drinking Water Standards. Of the chlorinated compounds, only tetrachloroethylene (PCE) was found in soil and of the compounds detected in ground water, only PCE and 1,1,trichloroethane (TCA) exceed MCLs.

RECOMMENDATIONS

Based on the concentrations of petroleum hydrocarbons observed in soil samples, ESE recommends that closure be granted for the vadose zone and no further vadose zone investigation work be required.

• • • •

Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other hydrogeologists and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

Please contact Patrick Galvin at (510) 685-4053 with any questions regarding this work.

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Patrick Galvin
Senior Engineer

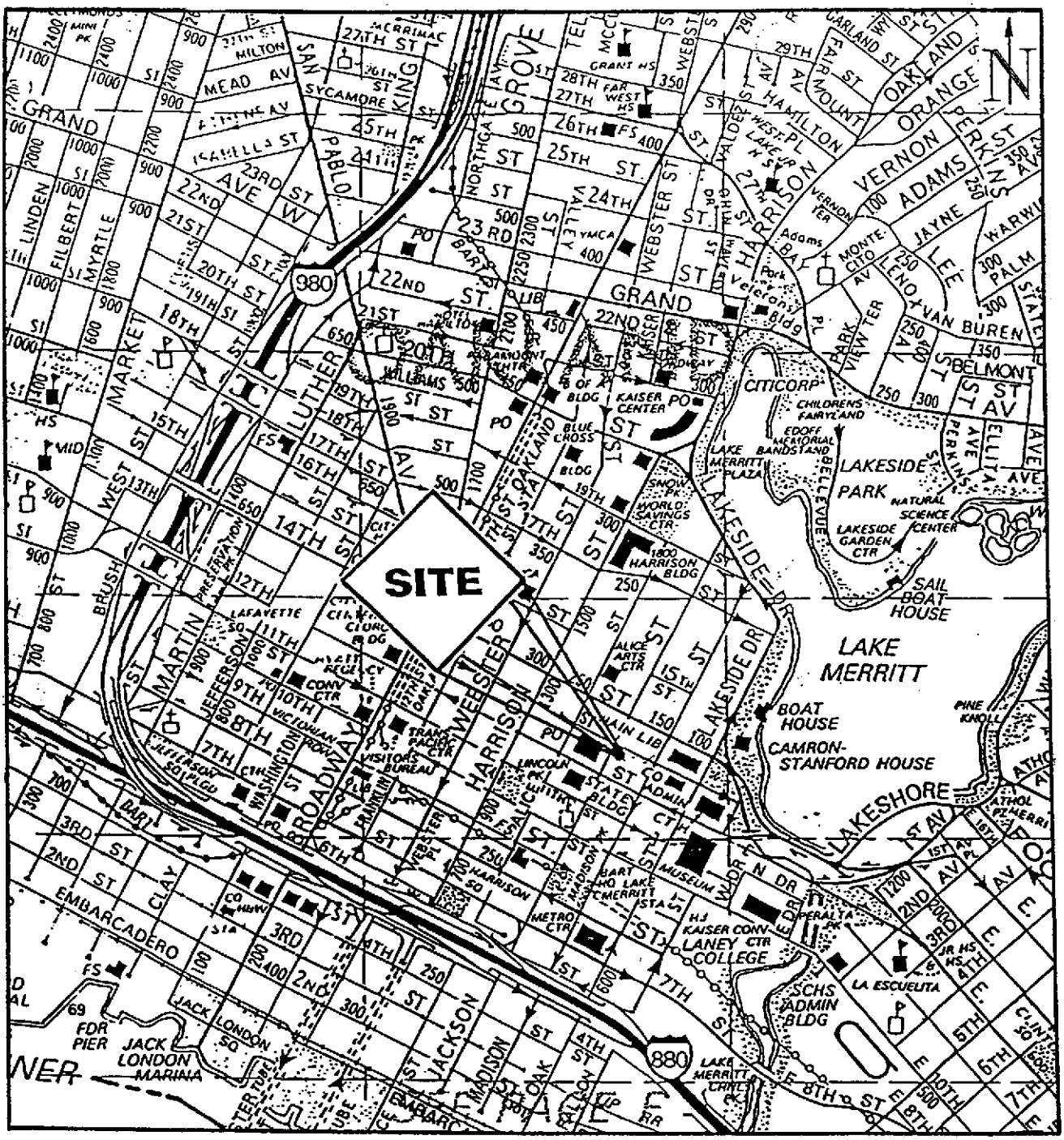
Michael E. Duillon FOR
Susan Wickham, RG 3851
Senior Geologist

Figures (3)

Tables (4)
Attachments (4)

F:\..\5314\CLOSURE.RPT

FIGURES



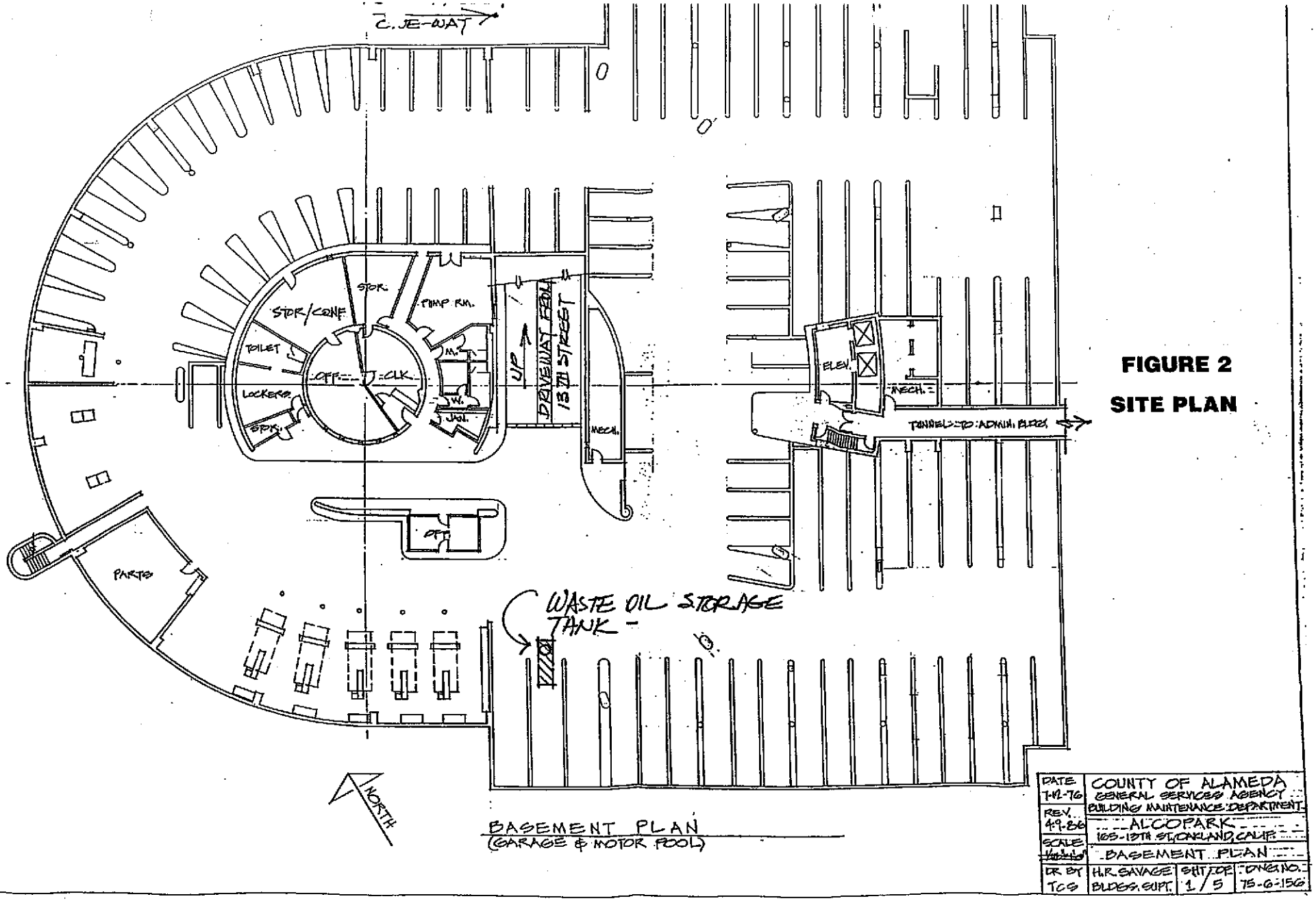
SCALE

0 1250 FEET

ESE A CELCORP COMPANY	Environmental Science & Engineering, Inc.
ALAMEDA COUNTY ALCOPARK OAKLAND, CA	
FIGURE 1 LOCATION MAP	

DRAWN BY	APPROVED BY	REVISED
CVS		5/91 CVS

DATE	FILE NAME	PROJ. NO.
11/90	F1LM10	6-90-5042

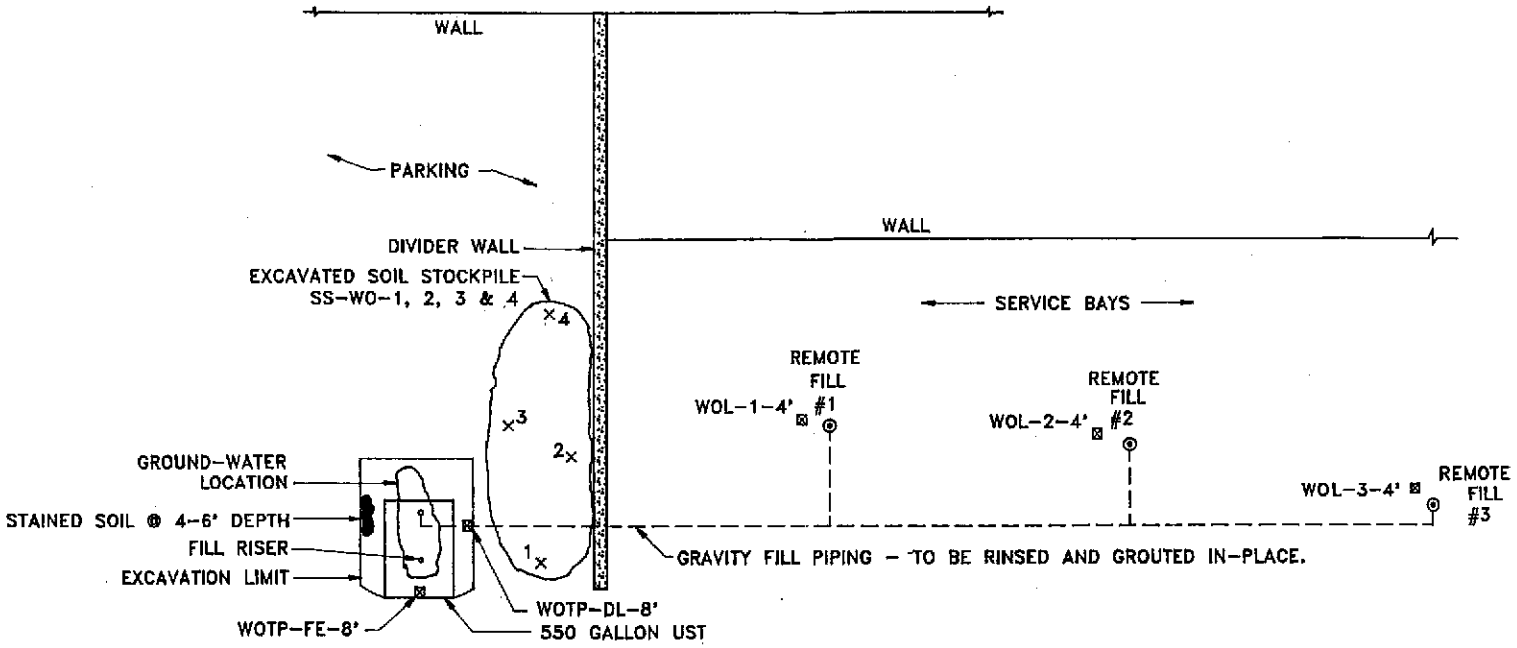


BASEMENT PLAN
(GARAGE & MOTOR POOL)

FIGURE 2

SITE PLAN

DATE 7-12-76	COUNTY OF ALAMEDA GENERAL SERVICES AGENCY BUILDING MAINTENANCE DEPARTMENT		
REV. 4-9-86	ALCOPARK 165-13TH ST, OAKLAND, CALIF.		
SCALE ~~1/8"=1'~~	BASEMENT PLAN		
DR BY TCG	H.R. SAVAGE BLDGS. SUPT.	SHT/OF 1/5	DWG NO. 75-6-156



ESE Environmental Science & Engineering, Inc.

ALAMEDA COUNTY GSA
ALCOPARK
165 13th ST, OAKLAND CALIFORNIA

FIGURE 3
TANK PLAN

DRAWN BY	APPROVED BY	REVISED
DWR		4/92 DWR
DATE	FILE NAME	PROJ. NO.
6/91	F1UST10	6-90-5122

TABLES

TABLE 1 - ANALYTICAL RESULTS
SOIL SAMPLES FROM EXCAVATION PIT WALLS

SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (µg/Kg)	TOLUENE (µg/Kg)	ETHYL BENZENE (µg/Kg)	TOTAL XYLENES (µg/Kg)	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	OIL & GREASE (mg/Kg)	SEMI VOLATILE ORGANICS (8270) (µg/Kg)	CHLORINATED HYDROCARBONS (8010) (µg/Kg)
WOTP-DL-8'	ND	ND	ND	ND	6.8	ND	ND	ND	ND	ND
WOTP-FE-8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

	TOTAL METALS (mg/Kg)				
SAMPLE ID	CADMIUM	CHROMIUM	LEAD	NICKEL	ZINC
WOTP-DL-8'	0.28	39.7	ND	30.9	18.2
WOTP-FE-8'	ND	43.6	ND	35.1	20.4

ND = Not detected at or above reporting limit.

TABLE 2 - ANALYTICAL RESULTS
SOIL SAMPLES FROM REMOTE FILL AREAS

SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (µg/Kg)	TOLUENE (µg/Kg)	ETHYL BENZENE (µg/Kg)	TOTAL XYLENES (µg/Kg)	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	OIL & GREASE (mg/Kg)	CHLORINATED HYDROCARBONS (8010) (µg/Kg)
COMP WOL-1, 2, 3	1.8	ND	11	ND	21	**	140	70	ND

	TOTAL METALS (mg/Kg)				
SAMPLE ID	CADMIUM	CHROMIUM	LEAD	NICKEL	ZINC
COMP WOL-1, 2, 3	ND	41.2	ND	30.8	25.5

	SEMI VOLATILE ORGANICS (8270) (µg/Kg)		
SAMPLE ID	PHENANTHRENE	FLUORANTHENE	PYRENE
COMP WOL-1, 2, 3	740	440	380

ND = Not detected at or above reporting limit.

** Kerosene range not reported

TABLE 3 - ANALYTICAL RESULTS
STOCKPILE SOIL SAMPLES

	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (µg/Kg)	TOLUENE (µg/Kg)	ETHYL BENZENE (µg/Kg)	TOTAL XYLENES (µg/Kg)	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	OIL & GREASE (mg/Kg)
COMP	SS-WO-1	13*	ND	39	99	710	ND	53	250
	SS-WO-2								
	SS-WO-3								
	SS-WO-4								

TOTAL METALS (mg/Kg)

	SAMPLE ID	CADMIUM	CHROMIUM	LEAD	NICKEL	ZINC
COMP	SS-WO-1	ND	42.0	ND	31.7	32.5
	SS-WO-2					
	SS-WO-3					
	SS-WO-4					

SEMI VOLATILE ORGANICS (8270) (µg/Kg)

	SAMPLE	NAPHTHALENE	2-METHYLNAPHTHALENE	ACENAPHTHENE	DIBENZOFURAN	FLUORENE	PHENANTHRENE	FLUORANTHENE	INDENO (1,2,3-cd) PYRENE	BENZO (K) FLUORANTHENE
COMP	SS-WO-1	1,400	1,300	510	350	570	3,100	1,700	340	1,000
	SS-WO-2									
	SS-WO-3									
	SS-WO-4									

CHLORINATED HYDROCARBONS (8010) (µg/Kg)

	SAMPLE	TETRACHLOROETHYLENE
COMP	SS-WO-1	330
	SS-WO-2	
	SS-WO-3	
	SS-WO-4	

ND = Not detected at or above reporting limit.
* Pattern does not match gasoline standard.

TABLE 4 - ANALYTICAL RESULTS
GROUND-WATER SAMPLE FROM EXCAVATION PIT

SAMPLE ID	TVH AS GASOLINE (µg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	KEROSENE RANGE (µg/L)	DIESEL RANGE (µg/L)	OIL & GREASE (mg/L)
WOP-GW-8.5'	2,800	52	200	40	310	19,000	**	ND

TOTAL METALS (µg/L)

SAMPLE ID	CADMIUM	CHROMIUM	LEAD	NICKEL	ZINC
WOP-GW-8.5'	ND	ND	5.7	70	270

SEMI VOLATILE ORGANICS (8270) (µg/L)

SAMPLE ID	PHENOL	2-METHYLPHENOL	4-METHYLPHENOL	NAPHTHALENE
WOP-GW-8.5'	102	90	120	30

CHLORINATED HYDROCARBONS (8010) (µg/L)

SAMPLE ID	TRICHLOROFLUOROMETHANE	1,1-DICHLOROETHENE	1,1,1-TRICHLOROETHANE	TETRACHLOROETHENE
WOP-GW-8.5'	110	5.5	320	75

** Diesel Range not reported.

Environmental
Science &
Engineering, Inc.
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JAN 7 1993

January 6, 1993

ESE Project No. 6-92-5413

Mr. Jim de Vos
Alameda County General
Services Agency
4400 MacArthur Boulevard
Oakland, California

SUBJECT: **Report of Findings, Subsurface Investigation for Former Used Oil Tank, ALCOPARK Facility, 165 13th Street, Oakland, California**

Dear Mr. de Vos:

Environmental Science & Engineering, Inc. (ESE) was contracted by Alameda County General Services Agency (ACGSA) to perform a subsurface investigation adjacent to the location of a former underground used oil storage tank. This investigation was conducted due to the results obtained from soil and ground water samples collected during the used oil tank removal (ESE, April, 1992). This report presents an overview of the site history for the former used oil tank and the findings and conclusions of subsurface investigation.

BACKGROUND

The County of Alameda General Services Agency owned and operated one 550-gallon used oil underground storage tank at the subject facility. ALCOPARK, a county-owned parcel, is located on Jackson Street between 12th and 13th Streets in Oakland, California (see Figure 1 - Location Map and Figure 2 - Site Plan). The tank, which was of single-walled, carbon steel construction, was located in the basement of this facility.

The Alcopark basement is used for vehicle parking and the maintenance of county-owned vehicles. The used oil tank was utilized for the storage of used crankcase motor oil, and was filled via three remote fills. The remote fills are a network of buried pipe which gravity feeds to the used oil tank. The used oil storage tank was routinely evacuated every three months. The tank, which was buried below the floor, was precision tested in 1989 and tested tight at that time. Noticeable spillage of waste oil around the tank fill riser (located within a concrete sump directly over the tank) was observed during a preliminary site visit by ESE.

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

In February 1992, ESE coordinated and performed oversight of the evacuation and removal of the used oil tank from the site. It was observed that the lowermost portion of the tank was in contact with ground water. The tank was inspected by ESE upon its removal and while no holes were observed, corrosion was observed along the bottom portion of the tank. Piping from the remote fills was capped, grouted and abandoned in place. ESE collected two soil samples from the side walls of the excavation at a depth immediately above the static water in the tank pit. Additionally, a ground water sample was collected from the tank pit subsequent to the removal of 60-gallons of ground water from the pit.

Total Petroleum Hydrocarbons as Gasoline (TPH-G), Total Extractable Petroleum Hydrocarbons (TEPH), Oil and Grease (O&G), Semi-Volatile Organic Compounds (semi-VOCs) and Halogenated Volatile Organic compounds (HVOs) were not detected in the soil samples collected from the used oil pit. However, Total Xylenes were detected in one sample at a concentration of 6.8 milligrams per Kilogram (mg/Kg) or parts per million (ppm).

TPH-G, TEPH (characterized as Kerosene) and Benzene were detected in the ground water sample collected from the tank pit at concentrations of 2,800 micrograms per Liter (ug/L) or parts per billion (ppb), 19,000 ug/L and 52 ug/L, respectively. The semi-VOCs, Phenol, 2-Methylphenol, 4-Methylphenol and Napthalene were detected in the ground water sample at concentrations ranging from 30 ug/L to 120 ug/L. The HVOs Trichlorofluoromethane, 1,1-Dichloroethene (DCE), 1,1,1-Trichloroethane (TCA) and Tetrachloroethene (PCE) were detected in the ground water sample at concentrations ranging from 5.5 ug/L to 320 ug/L. O&G was not detected in the ground water sample. The metals Cadmium, Chromium, Lead, Nickel and Zinc detected in soil and ground water sample collected from the tank pit were below Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) values respectively.

SUBSURFACE INVESTIGATION

Soil Boring and Sampling

On October 29, 1992 ESE supervised the drilling and installation of ground water monitoring well MW-6. The well number MW-6 was chosen due to the presence of three ground water monitoring wells and two vadose zone monitoring wells previously installed at the ALCOPARK facility, adjacent to two fuel USTs at the corner of 13th and Jackson Street (Figure 2). Well MW-6 was drilled and installed at a location adjacent to the northeast corner of the excavation. This is in a presumed downgradient location with respect to the former used oil UST. The ground water flow direction for this site was

determined from measured ground water elevations in three wells located at the ALCOPARK facility at the intersection of 13th and Jackson Streets (Figure 2).

The drilling was performed by Soils Exploration Services, Inc. (SES) of Vacaville, California. SES used a low-clearance rig due to limited overhead space. Soil samples were collected from the boring between four and eight feet bgs. Ground water was encountered at a depth of seven feet bgs. Soil samples were collected by driving a split-spoon sampler, lined with brass sleeves, 24-inches through the center of and ahead of the hollow stem augers. The samplers were driven by dropping a 140-pound hammer 30-inches onto rods attached to the top of the sampler. The number of blows required to drive the sampler each six-inch interval were noted and appear on the geologic boring log (Appendix A). The ends of two brass sleeves from the lower sample interval were covered with Teflon-lined plastic end caps, which were sealed to the brass sleeve with duct tape, labeled and placed on ice. The soil samples were transported under chain of custody to Sequoia Analytical (Sequoia) of Concord, California. A portion of the soil sample from the upper sample interval was sealed in a new ziploc® bag for approximately 15 minutes to allow for the volatilization of any volatile organic compounds (VOCs) present in the soil. After approximately 15-minutes the sample was screened for VOCs using a photoionization detector (PID). The PID reading appear on the geologic boring log (Appendix A).

Well Installation, Development and Surveying

Monitoring well MW-6 was installed on October 29, 1992. A graphic presentation of MW-6 is included on the geologic boring log (Appendix A). The well was constructed of new 2-inch diameter schedule 40 polyvinylchloride (pvc) pipe. The lower portion of the PVC pipe is perforated with slot openings, 0.020-inch in width. The perforated section of pipe extends from 5-feet below ground surface (bgs) to 20-feet bgs where it is sealed with a PVC cap. The annular space surrounding the perforated pipe and one-foot above the top of the perforated interval was backfilled with No. 3 Monterey Sand. The well was developed by utilizing surging and bailing techniques. Approximately 20 gallons of ground water was purged from well MW-6 during the development process. All water generated during well development and associated cleaning procedures was stored on site in 55-gallon drums pending proper disposal.

The top of the PVC casing for each new well was marked and surveyed by ESE relative to the elevations of wells MW-1, MW-4 and MW-5, located at 13th and Jackson Streets. This mark on the top of casing for each well will be used as the reference datum for the measurement of the depth to ground water for each well.

Ground Water Monitoring
On November 5, 1992, ESE measured the depth to water in well MW-6 and in wells MW-1, MW-4 and MW-5 (located at 13th and Jackson Streets) using an electric water level probe. Depth to water measurements are presented in Table 1 - Ground Water Elevation Data. Subsequent to measuring the depth to water, well MW-6 was purged and ground water samples were collected.

Ground water samples were collected subsequent to purging ten well-casing volumes of ground water from well MW-6 using a submersible pump. The ground water sampling data form is included as Appendix B. During the well purging process conductivity, temperature and pH of the purge water was monitored by ESE. Once the temperature, conductivity and pH of the ground water had stabilized, the ground water sample was collected from well MW-6. The ground water sample was collected by lowering a new disposable polyethylene bailer into the well using new disposable nylon cord. The filled bailer was then retrieved, emptied, then filled again. The ground water from this bailer was then decanted into four 40-milliliter glass vials and three one-liter bottles. The sample containers contained appropriate preservatives as defined by the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Storage Tank Sites (San Francisco Bay Regional Water Quality Control Board, August 1990). The samples were then labeled and placed on ice in a cooler for transport under chain of custody to Sequoia.

RESULTS

Soil Samples
Laboratory analytical reports with chain of custody documentation for the soil sample are presented as Attachment C. TPH-G, BTEX, O&G and HVOs were not detected in the soil sample collected from MW-6 at a depth of 6.5 feet bgs, collected immediately above the occurrence of the ground water table. TEPH at a concentration of 1 mg/Kg was detected in the soil sample from a depth of 6.5 feet bgs in MW-6.

Ground Water Flow
Ground water flow beneath the site was calculated from depth to water measurements collected from wells MW-1, MW-4, MW-5 and MW-6. Ground water elevation data, and a graphical presentation of the ground water gradient is presented on Figure 3 - Ground Water Elevations. Ground water flow beneath the site on November 5, 1992 was towards the southeast at a gradient of 0.0037 foot per foot.

Ground Water Samples
Laboratory analytical reports with chain of custody documentation for the ground water sample are presented as Attachment D. TPH-G, TEPH, O&G and Ethylbenzene were not detected in the ground water sample collected from well MW-6. Benzene, Toluene, Total Xylenes and the HVO compounds Chloroform, PCE, and TCA were detected in the ground water sample collected from well MW-6 at concentrations of 1.0 ug/L, 0.79 ug/L, 2.7 ug/L, 0.54 ug/L, 1.7 ug/L, and 8.3 ug/L, respectively.

CONCLUSIONS AND RECOMMENDATIONS

- The metals Cadmium, Chromium, Lead, Nickel and Zinc detected in the soil and the ground water samples collected from the tank pit, during tank removal activities, were below TTLC and STLC values respectively.

- TPH-G, BTEX, HVOs and O&G were not detected in the soil sample analyzed from MW-6 (collected at a depth of 6.5 feet bgs). TEPH was detected at a concentration of 1 mg/Kg in the soil sample analyzed from MW-6.

- None of the compounds detected in the ground water sample collected from well MW-6 exceeded primary Maximum Contaminant Levels (MCLs) for drinking water as defined by the United States Environmental Protection Agency (EPA) or by California State Department of Health Services (DHS). However, benzene was detected at the DHS primary MCL of 1.0 ug/L.

- ESE recommends continuing the monitoring of monitoring well MW-6 for three additional quarters as typically required by regulatory agencies for ground water investigations. At the end of that time, ESE will evaluate the data and make recommendations for further activities to be performed in pursuit of case closure.

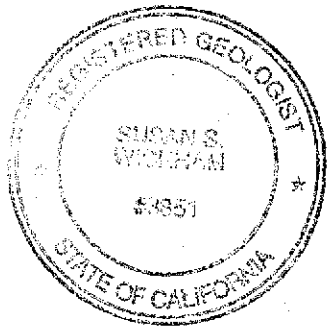
• • • • •

Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other hydrogeologists and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

If you have any questions regarding the material presented in this report, please do not hesitate to contact the undersigned at (510) 685-4053.

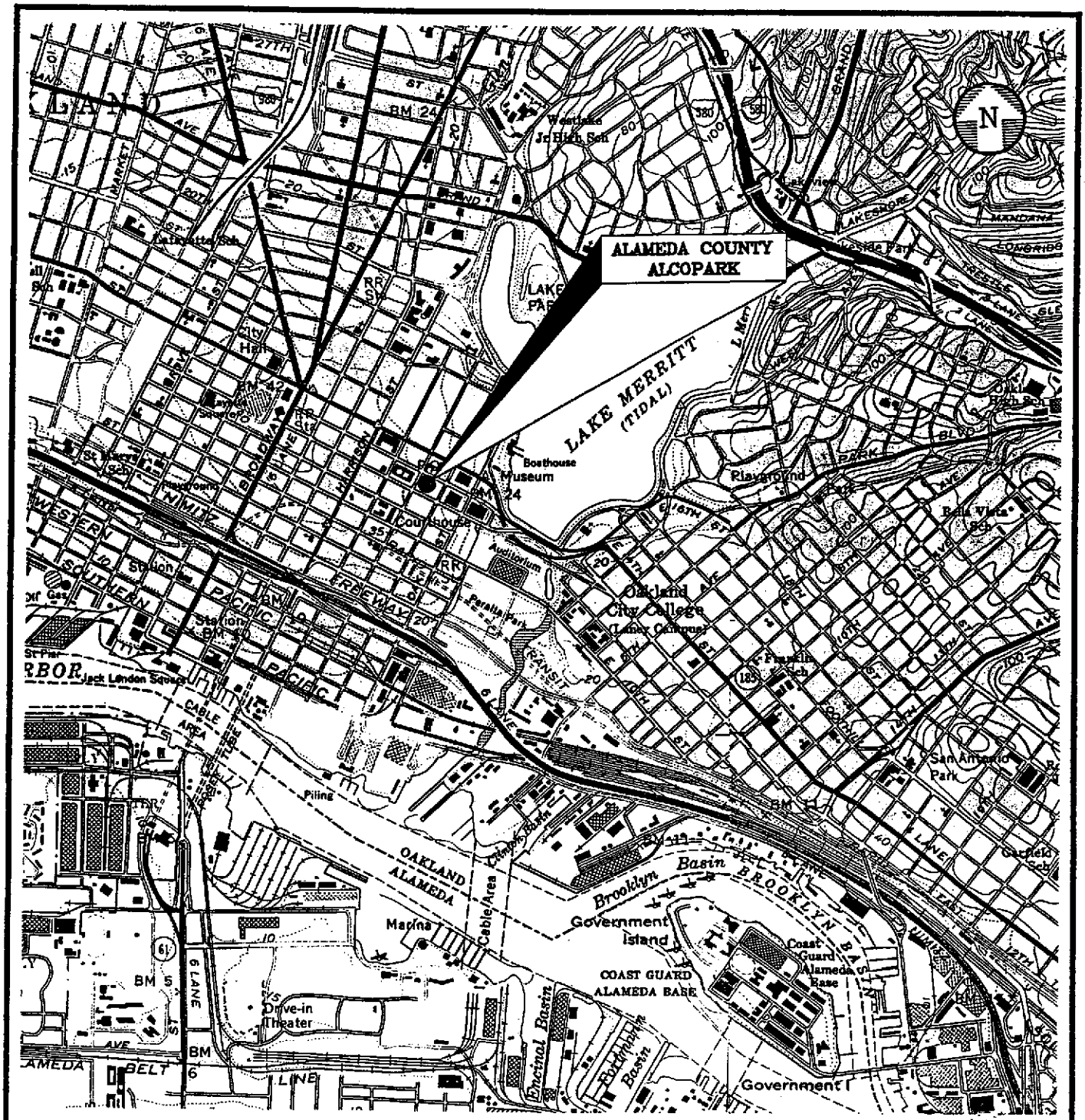
Michael K. Edmonson
Project Geologist

Susan S. Wickham
Senior Geologist
California Registered Geologist No. 3851

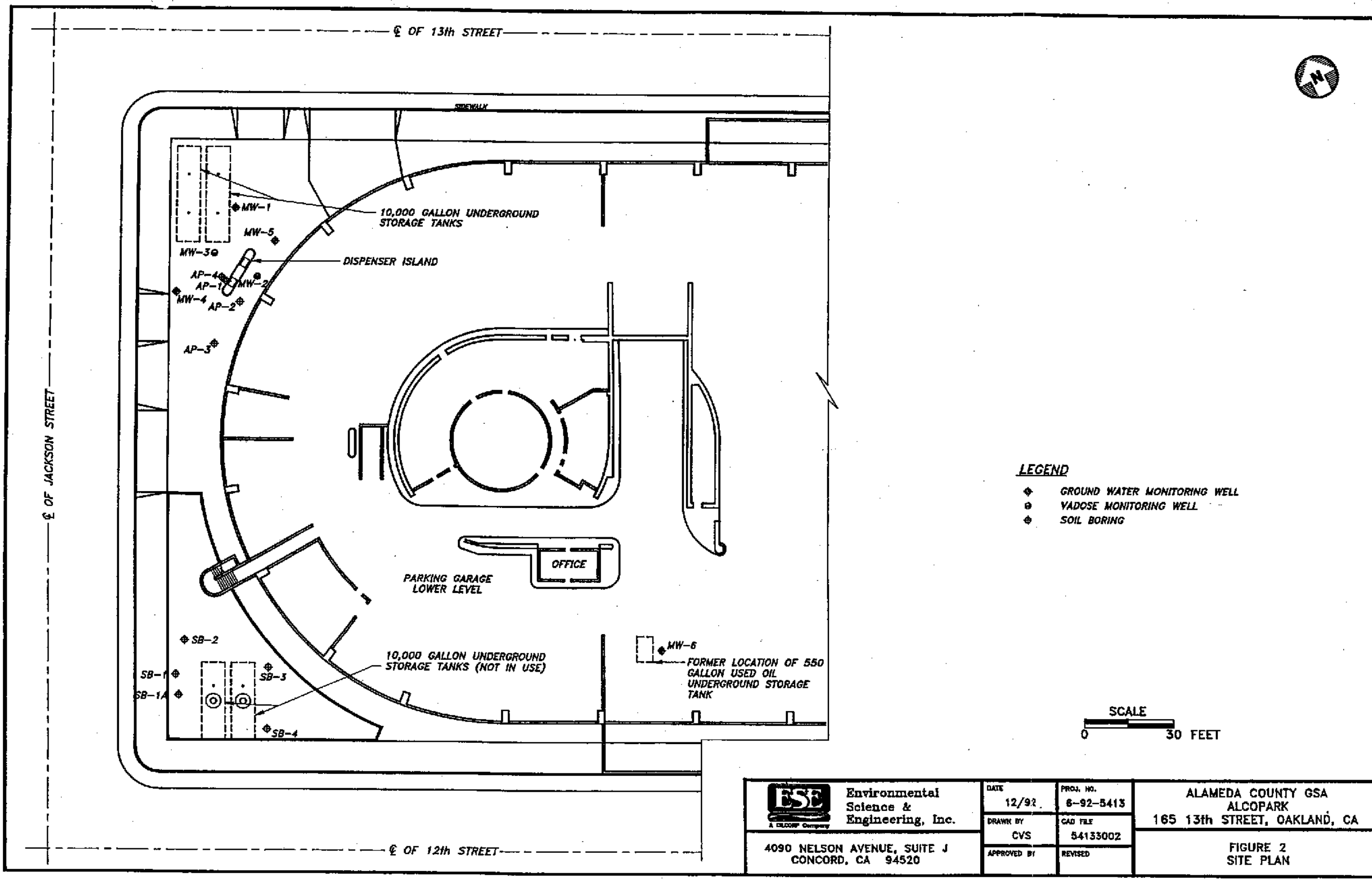


Attachments:

Figures (3)
Attachment A - Geologic Boring Log
Attachment B - Ground Water Sampling Data Form
Attachment C - Analytical Reports: Soil Samples
Attachment D - Analytical Reports: Ground Water Samples



ESE A CH2M HILL COMPANY	Environmental Science & Engineering, Inc.
ALEMEDA COUNTY ALCOPARK OAKLAND, CALIFORNIA	
FIGURE 1 LOCATION MAP	
DRAWN BY: DWR	APPROVED BY:
REVISED:	
DATE: 10/91	FILE NAME: F2TOP010
PROJ. NO.: 6-90-5042	

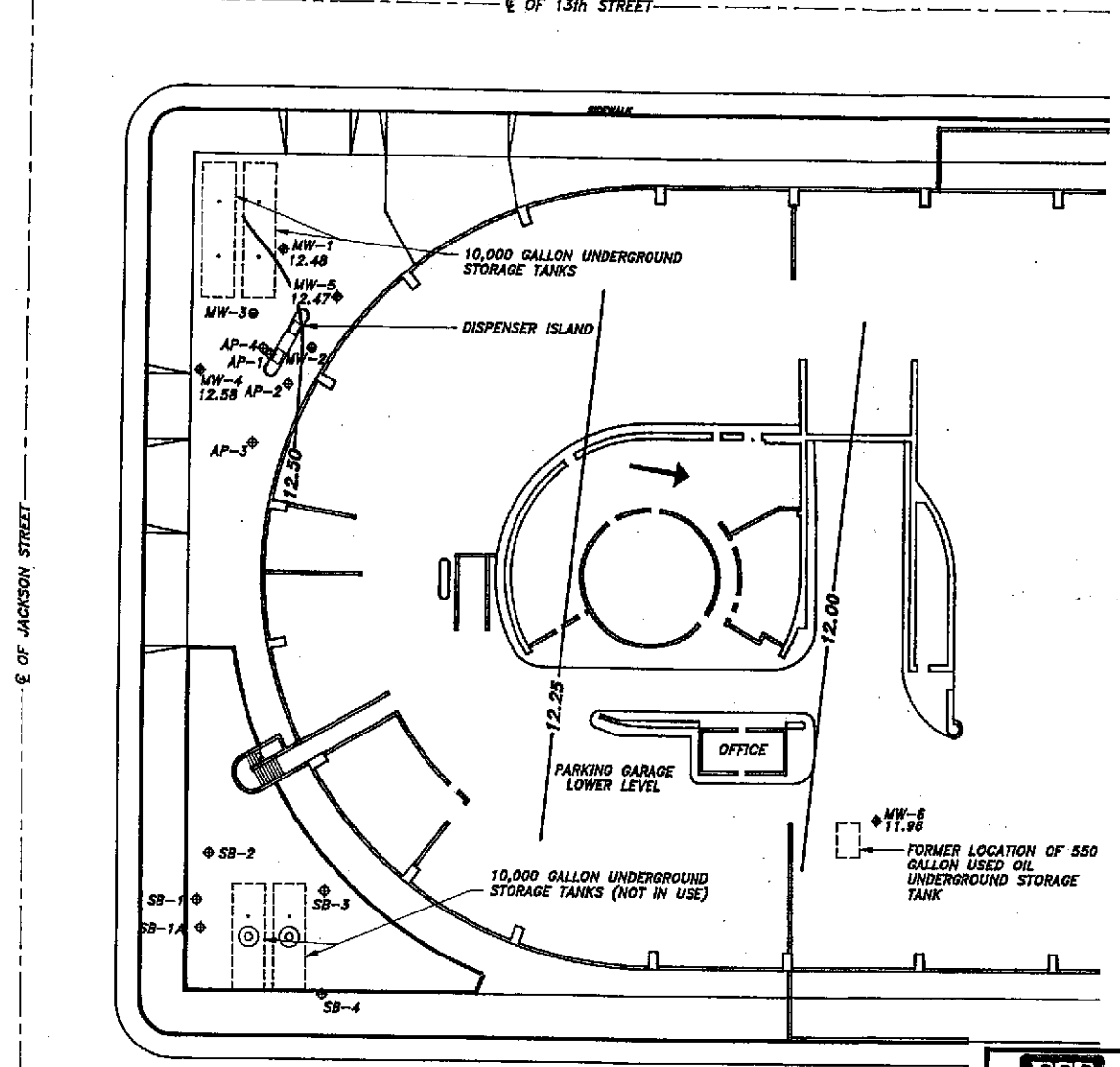


Environmental Science & Engineering, Inc.
A CILCORP Company
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 12/92	PROJ. NO. 6-92-5413
DRAWN BY CVS	CAD FILE 54133002
APPROVED BY	REVISED

ALAMEDA COUNTY GSA
ALCOPARK
165 13th STREET, OAKLAND, CA

FIGURE 2
SITE PLAN



WELL NO.	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO WATER (FEET)	GROUND WATER ELEVATION (FEET)
MW-1	11/5/92	33.00	20.52	12.48
MW-4	11/5/92	33.63	21.05	12.58
MW-5	11/5/92	33.01	20.54	12.47
MW-6	11/5/92	19.47	7.51	11.96

LEGEND

- ◆ GROUND WATER MONITORING WELL
- ⊖ VADOSE MONITORING WELL
- ⊕ SOIL BORING
- 11.96 GROUND WATER ELEVATION IN FEET RELATIVE TO A COMMON DATUM
- —12.00— GROUND WATER ELEVATION CONTOUR IN FEET RELATIVE TO A COMMON DATUM
- → GROUND WATER FLOW DIRECTION

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Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE	PROJ. NO.
12/92	5-92-5413
DRAWN BY: CVS	CAD FILE: 54133002
APPROVED BY:	REVISED:

ALAMEDA COUNTY GSA
ALCOPARK
165 13th STREET, OAKLAND, CA

FIGURE 3
GROUND WATER ELEVATIONS
NOVEMBER 5, 1992

APPENDIX A

GEOLOGIC BORING LOGS

Environmental Science & Engineering, Inc.

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BORING LOG AND WELL COMPLETION SUMMARY

MW-6

Page 1 of 1

WELL COMPLETION

Completion Depth: 20 FEET

Size/Type	From	To
Casing: 2" PVC Sch. 40	5	0
Screen: 2"-0.02" slot PVC	20	5
Filter: #3 Monteray Sand	20	4
Seal: Bentonite Pellets	4	3.5
Grout /sand slurry	3.5	1.5
Concrete	1.5	0

Well Cap or Box: Flush Traffic box with locking well cap.

Project Name: ALCOPARK Project No: 6-92-5413

Location: 165 13th Street
Oakland, California

Driller: Solis Exploration Services, Inc.
Method: Hollow Stem Auger - Access II
Hole Diameter: 8 in. O.D. Total Depth: 20 Feet
Ref. Elevations: NA
Logged By: Kerry Lefever

Dates:
Start: 10-29-92
Finish: 10-29-92

Depth (ft)	Lithologic Description	USC	Graphic Log: Sample/Blows	Graphic Log: Lithology	Graphic Log: Well Installation	Vapor	Remarks: Water, drilling/completion, summary, sample type
0	Concrete						
1	SILTY SAND; orange-brown, dense, fine grained sand, moist, no odor.	SM					
2							
3							
4			22				
5			30				
6			22				
7		SP	48			2	
8	SAND; brown, wet, fine grained sand, no odor.		17				Water at 7 Feet
9			23				
10			24				
11							
12							
13							
14							
15							
16	GRAVELLY SAND; brown, wet, some clay, fine to coarse grained sand.	SW					
17							
18							
19							
20							Total Depth = 20 Feet
21							
22							

REGISTERED GEOLOGIST
STATE OF CALIFORNIA

APPENDIX B

GROUND WATER SAMPLING DATA FORM

WELL SAMPLING FIELD LOG

PROJECT NAME: Alcopark
PROJECT MANAGER: MIKE
SAMPLER: Paul M / Chris V.
GROUNDWATER: YES
OTHER:
DATE: 11-5-92
CLIENT: Alameda Co. GSA
SAMPLE LOCATION I.D. MW-6
START TIME:

CASING ELEVATION (FT): DATUM: CASING DIAMETER: 2" X 4" OTHER

DEPTH TO WATER (FT): 7.51 DEPTH OF WELL (FT): 18.65 DIFFERENCE (FT): 11.14

WATER ELEVATION (FT): CALCULATED WELL VOLUME (GAL): 2 gal

ACTUAL PURGE VOLUME (GAL): 20 GAL MINIMUM PURGE VOLUME (3 x WV): 6 gal

FIELD MEASUREMENTS

TIME	Volume (GAL)	pH (Units)	x1000 E.C.	Temp.	Clarity & Color	Other
	0	6.78	0.69	67.9	BRWN	
	4	6.36	0.66	67.6	"	
	8	6.42	0.65	67.4	"	
	10	6.51	0.63	67.3	"	

PURGE METHOD

__Pneumatic Displacement Pump __Other

__Bailer (Teflon/PVC/SS) X Submersible Pump

SAMPLE METHOD

__Bailer (Teflon/PVC/SS) __Dedicated

X Bailer (Disposable) __Other

WELL INTEGRITY:

REMARKS: PURGED 10 GAL AT 2 GPM THEN 10 MORE AT ≈ 4 GPM THEN DRIED UP. Down Stairs 1 Soil drum 2 damaged drums and 3 with purge water. MW-1 = 20.52 ft ~~MW-4 = 21.05 ft~~ MW-5 - 20.54 UPSTAIRS - 4 WATER - 4 SOIL DRUMS

SIGNATURE: Chris H. Valliff CHECKED BY:

SELECTED WELL CASING DIAMETERS VOLUMES PER UNIT LENGTH

WELL CASING I.D. (inches)	GAL/FT	CUBIC FT/FT
2.0	0.1632	0.0218
4.0	0.6528	0.0873
6.0	1.4690	0.1963

CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY
Feet of Water	Lbs/Sq. Inch	0.4335
Lbs/Sq. Inch	Feet of Water	2.3070
Cubic Feet	Gallons	7.4800
Gallons	Liters	3.7850
Feet	Meters	0.3048
Inches	Centimeters	2.5400

APPENDIX C

ANALYTICAL REPORTS: SOIL SAMPLES

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Alcopark/#6-92-5413	Sampled:	Oct 29, 1992
4090 Nelson Ave., Suite J	Sample Matrix:	Soil	Received:	Oct 30, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Nov 12, 1992
Attention: Michael Edmonson	First Sample #:	210-1037		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 210-1037 MW-6 @ 6.5'
Purgeable Hydrocarbons	1.0	N.D.
Benzene	0.005	N.D.
Toluene	0.005	N.D.
Ethyl Benzene	0.005	N.D.
Total Xylenes	0.005	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	11/2/92
Instrument Identification:	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Alocopark/ #6-92-5413	Sampled:	Oct 29, 1992
4090 Nelson Ave., Suite J	Sample Matrix:	Soil	Received:	Oct 30, 1992
Concord, CA 94520	Analysis Method:	EPA 3550/8015	Reported:	Nov 12, 1992
Attention: Michael Edmonson	First Sample #:	210-1037		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 210-1037 MW-6 @ 6.5'
Extractable Hydrocarbons	1.0	1.0
Chromatogram Pattern:		Diesel

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	11/6/92
Date Analyzed:	11/10/92
Instrument Identification:	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Alcopark/#6-92-5413	Sampled:	Oct 29, 1992
4090 Nelson Ave., Suite J	Matrix Descript:	Soil	Received:	Oct 30, 1992
Concord, CA 94520	Analysis Method:	EPA 413.1 (Gravimetric)	Extracted:	Nov 3, 1992
Attention: Michael Edmonson	First Sample #:	210-1037	Analyzed:	Nov 9, 1992
			Reported:	Nov 12, 1992

TOTAL RECOVERABLE OIL & GREASE

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
210-1037	MW-6 @ 6.5'	N.D.

Detection Limits:	30

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

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(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	Alcopark/#6-92-5413	Sampled:	Oct 29, 1992
4090 Nelson Ave., Suite J	Sample Descript:	Soil, MW-6 @ 6.5'	Received:	Oct 30, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Nov 3, 1992
Attention: Michael Edmonson	Lab Number:	210-1037	Reported:	Nov 12, 1992

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethylvinyl ether	10	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	5.0	N.D.
1,3-Dichlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	5.0	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
cis-1,2-Dichloroethene	5.0	N.D.
trans-1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	50	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.
4090 Nelson Ave., Suite J
Concord, CA 94520
Attention: Michael Edmonson

Client Project ID: Alcopark/#6-92-5413
QC Sample Group: 210-1037
Reported: Nov 12, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel	Oil and Grease
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA8015	EPA 413.1
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer	D. Newcomb
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Nov 3, 1992	Nov 3, 1992	Nov 3, 1992	Nov 3, 1992	Nov 10, 1992	Nov 3, 1992
QC Sample #:	211-0013	211-0013	211-0013	211-0013	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2	10	5000
Conc. Matrix Spike:	0.40	0.41	0.41	1.4	9.7	4600
Matrix Spike % Recovery:	100	103	103	116	97	92
Conc. Matrix Spike Dup.:	0.40	0.41	0.41	1.4	9.3	4600
Matrix Spike Duplicate % Recovery:	100	103	103	116	93	92
Relative % Difference:	0.0	0.0	0.0	0.0	4.2	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.
4090 Nelson Ave., Suite J
Concord, CA 94520
Attention: Michael Edmonson

Client Project ID: Alcopark/#6-92-5413
QC Sample Group: 210-1037
Reported: Nov 12, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill	K.Nill
Reporting Units:	µg/Kg	µg/Kg	µg/Kg
Date Analyzed:	Nov 3, 1992	Nov 3, 1992	Nov 3, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10
Conc. Matrix Spike:	9.7	10	9.0
Matrix Spike % Recovery:	97	100	90
Conc. Matrix Spike Dup.:	8.3	9.3	8.2
Matrix Spike Duplicate % Recovery:	83	93	82
Relative % Difference:	16	7.3	7.1

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

DATE 10/29/92 PAGE ____ OF ____

CHAIN OF CUSTODY RECORD

ESE Environmental Science & Engineering, Inc.
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-5323

PROJECT NAME ALCOPARK
ADDRESS 165 13th Street
Oakland
PROJECT NO. 6-92-5413
SAMPLED BY Kerry Lefever
LAB NAME

SAMPLE #	DATE	TIME	LOCATION	TPH 418.1	TPH-Gasoline (8015)	TPH-Diesel (8015)	BTEX (8020)	HVOs (8010)						MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-6@6.5'	10/29/92	1115	Alcopark	X	X	X	X	X	210037					SOIL	1	BRASS RING (2" diam)
MW-6@7'	10/29/92	1120	garage basement	H	H	H	H	H						SOIL	1	BRASS RING (1.5" diam)

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. Kerry Lefever	Mike Edmonson	10/30/92	9:00
2. Mike Edmonson	[signature]	10-30-92	11:40AM
3.			
4.			
5.			

2 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: MIKE EDMONSON

SPECIAL SHIPMENT REQUIREMENTS

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):
Standard Turnaround Time X = Analyze
H = Hold

SAMPLE RECEIPT	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

APPENDIX D

ANALYTICAL REPORTS: GROUND WATER SAMPLES

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alcopark-WO, Oakland	Sampled:	Nov 5, 1992
4090 Nelson Ave., Suite J	Sample Matrix:	Water	Received:	Nov 6, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Nov 18, 1992
Attention: Michael Edmonson	First Sample #:	211-0309		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 211-0309 MW-6
Purgeable Hydrocarbons	50	N.D.
Benzene	0.5	1.0
Toluene	0.5	0.79
Ethyl Benzene	0.5	N.D.
Total Xylenes	0.5	2.7
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	11/10/92
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	101

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alcopark-WO, Oakland	Sampled:	Nov 5, 1992
4090 Nelson Ave., Suite J	Sample Matrix:	Water	Received:	Nov 6, 1992
Concord, CA 94520	Analysis Method:	EPA 3510/3520/8015	Reported:	Nov 18, 1992
Attention: Michael Edmonson	First Sample #:	211-0309		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 211-0309 MW-6
Extractable Hydrocarbons	50	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	11/11/92
Date Analyzed:	11/16/92
Instrument Identification:	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alcopark-WO, Oakland	Sampled:	Nov 5, 1992
4090 Nelson Ave., Suite J	Matrix Descript:	Water	Received:	Nov 6, 1992
Concord, CA 94520	Analysis Method:	EPA 413.1 (Gravimetric)	Extracted:	Nov 11, 1992
Attention: Michael Edmonson	First Sample #:	211-0309	Analyzed:	Nov 12, 1992
			Reported:	Nov 18, 1992

TOTAL RECOVERABLE OIL & GREASE

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
211-0309	MW-6	N.D.

Detection Limits:	**5.0**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alcopark-WO, Oakland	Sampled:	Nov 5, 1992
4090 Nelson Ave., Suite J	Sample Descript:	Water, MW-6	Received:	Nov 6, 1992
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Nov 12, 1992
Attention: Michael Edmonson	Lab Number:	211-0309	Reported:	Nov 18, 1992

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	0.54
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	1.7
1,1,1-Trichloroethane	0.50	8.3
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.
4090 Nelson Ave., Suite J
Concord, CA 94520
Attention: Michael Edmonson

Client Project ID: #6-92-5413/Alcopark-WO, Oakland
QC Sample Group: 211-0309
Reported: Nov 18, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel	Oil and Grease
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA8015	EPA 413.1
Analyst:	A.T.	A.T.	A.T.	A.T.	K.Wimer	D. Newcomb
Reporting Units:	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Date Analyzed:	Nov 10, 1992	Nov 10, 1992	Nov 10, 1992	Nov 10, 1992	Nov 17, 1992	Nov 11, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60	300	100
Conc. Matrix Spike:	20	22	22	66	281	97
Matrix Spike % Recovery:	100	110	110	110	94	97
Conc. Matrix Spike Dup.:	21	23	24	69	279	99
Matrix Spike Duplicate % Recovery:	105	115	120	115	93	99
Relative % Difference:	4.9	4.4	8.7	4.4	0.70	2.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.
4090 Nelson Ave., Suite J
Concord, CA 94520
Attention: Michael Edmonson

Client Project ID: #6-92-5413/Alcopark-WO, Oakland
QC Sample Group: 211-0309
Reported: Nov 18, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill	K.Nill
Reporting Units:	µg/L	µg/L	µg/L
Date Analyzed:	Nov 12, 1992	Nov 12, 1992	Nov 12, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10
Conc. Matrix Spike:	11	11	11
Matrix Spike % Recovery:	110	110	110
Conc. Matrix Spike Dup.:	11	11	10
Matrix Spike Duplicate % Recovery:	110	110	100
Relative % Difference:	0.0	0.0	9.5

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

DATE 11/5/92 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

PROJECT NAME ALCOMARK - WO

ADDRESS 165 13th St
Oakland, CA

PROJECT NO. 6-92-5413

SAMPLED BY Chris Volcheff

LAB NAME Sequoia

ESE Environmental Science & Engineering, Inc.
A CH2M HILL company
4090 Nelson Avenue
Suite J
Concord, CA 94520
(415) 685-4053
Fax (415) 685-3023

SAMPLE #	DATE	TIME	LOCATION	ANALYSES TO BE PERFORMED: O&G (413.1)	TPH-D (8015 mod)	TPH-G (8015)	BTEX (8020)	HVOs (8010)	Metals - Cd, Cr, Pb, Ni, Zn					MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)
MW-6	11/5/92	10:10	Alcomark	X	X	X	X	X	Hold					Aq.	7	3 liters 4 VOA's
																2110309AF
															7	MKE

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1. Chris Volcheff			
2.		11-6-92	1215PM
3.			
4.			
5.			

7 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Mike Edmonson

SPECIAL SHIPMENT REQUIREMENTS: Cold Transport

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	
CONFORMS TO RECORD	

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

Standard Turnaround Time

X = Analyze
H = Hold

91-7002

General Services Agency

Darlene Smith, Director

BUILDING MAINTENANCE DEPARTMENT
4400 MacArthur Boulevard
Oakland, California 94619
Telephone (510) 535-6200
FAX (510) 535-6245

Hilton T. Hunt, Deputy Director
GSA-Building Maintenance Department

October 15, 1993

Mr. Jeff Shapiro
Hazardous Materials Specialist
Environmental Health Services
80 Swan Way, Room 200
Oakland, California 94621

Subject: QUARTERLY GROUND-WATER MONITORING REPORT, FORMER USED OIL TANK, ALCOPARK FACILITY, 165 13TH STREET, OAKLAND, CALIFORNIA

Dear Mr. Shapiro:

Per our October 15, 1993 telephone conversation, enclosed is a copy of the October 5, 1993 Third Quarter 1993 Ground-Water Monitoring Report, Former Used Oil Tank, Alcopark Facility, 165 13-th Street, Oakland, California. This report was prepared by Environmental Science & Engineering, Inc. (ESE).

Please note that ESE has performed four consecutive quarters of ground-water monitoring activities for the Well MW-6 located adjacent to the former used oil tank. Since this monitoring program was initiated in November 1992, none of the compounds detected in the ground-water samples collected from Well MW-6 have exceeded primary Maximum Contaminant Levels for drinking water as defined by the United States Environmental Protection Agency or by California State Department of Health Services. Thus, ESE is recommending that this case be closed by the Regional Water Quality Control Board and no further action be taken for the former used oil tank.

Therefore, we plan no further action concerning the former used oil tank. We request that Environmental Health Services recommend closure as soon as possible. Should you have any questions regarding this report, or the Alcopark facility, please feel free to contact me at (510) 535-6277. Your continued cooperation and assistance is appreciated.

Sincerely,

Andrew B. Garcia

Andrew B. Garcia
Environmental Project Manager

ABG:abg:HZM00278
91-7002 Bldg. #1921

Enclosure

cc: Mr. Rich Hiet - with enclosure
Regional Water Quality Control Board
2101 Webster Street, Room 500
Oakland, California 94612
Mr. Jim de Vos - W/O

File: 71-7002
Bldg #192
OCT 07 1993

Environmental Science & Engineering, Inc.
A CILCORP Company

TO: Alameda County
General Services Agency
4400 MacArthur Boulevard
Oakland, California 94619

DATE: October 5, 1993

ATTN: Mr. Pete Kinney

JOB NUMBER: 6-92-5413

SUBJECT: Former Used Oil Tank, Alcopark Facility, 165 13th Street, Oakland, California

WE ARE TRANSMITTING THE FOLLOWING:

Three copies of the following report:

- Third Quarter 1993 Ground Water Monitoring Report

Please forward one copy of each report to:

Alameda County
Health Care Services
80 Swan Way, Room 200
Oakland, California 94621

Regional Water Quality
Control Board
2101 Webster Street, Room 500
Oakland, California 94612

DIST:
LB
FILE
ORIGINATOR

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

BY _____
Michael K. Edmonson
Senior Project Geologist

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Environmental
Science &
Engineering, Inc.
A CILCORP Company

October 5, 1993

Mr. Jim de Vos
Alameda County General
Services Agency
4400 MacArthur Boulevard
Oakland, California 94619

SUBJECT: **THIRD QUARTER 1993 GROUND WATER MONITORING REPORT**
FORMER USED OIL TANK, ALCOPARK FACILITY
165 13TH STREET, OAKLAND, CALIFORNIA
ESE PROJECT NO. 6-92-5413

Dear Mr. de Vos:

Environmental Science & Engineering, Inc. (ESE) was contracted by Alameda County General Services Agency (GSA) to perform quarterly ground water monitoring of one well (MW-6) located adjacent to the location of a former underground used oil storage tank. This monitoring program was initiated based on the results obtained from soil and ground water samples collected during the used oil tank removal (ESE, 1992). This report presents an overview of the site history for the former used oil tank and the findings and conclusions of the third quarter 1993 monitoring event.

BACKGROUND

The County of Alameda owned and operated one 550-gallon used oil underground storage tank at the subject facility. ALCOPARK, a county-owned parcel, is located on Jackson Street between 12th and 13th Streets in Oakland, California (see Figure 1 - Location Map and Figure 2 - Ground Water Elevations). The tank, which was of single-walled, carbon steel construction, was located in the basement of this facility.

In February 1992, ESE coordinated and performed oversight of the evacuation and removal of the used oil tank from the site (ESE, 1992). The tank removal activities were witnessed by Alameda County Health Care Services (ACHCS) and Oakland Fire Department inspectors. It was observed that the lowermost portion of the tank was in contact with

ground water. The tank was inspected by ESE upon its removal and while no holes were observed, corrosion was observed along the bottom portion of the tank. Piping from remote fills was capped, grouted and abandoned in place. ESE collected two soil samples from the side walls of the excavation at a depth immediately above the static water in the tank pit. After the removal of 60-gallons of ground water from the pit, a ground water sample was collected.

Total Petroleum Hydrocarbons as Gasoline (TPH-G), Total Petroleum Hydrocarbons as Diesel (TPH-D), Oil and Grease (O&G), Semi-Volatile Organic Compounds (semi-VOCs) and Halogenated Volatile Organic compounds (HVOs) were not detected in the soil samples collected from the used oil pit. However, Total Xylenes were detected in one sample at a concentration of 6.8 milligrams per Kilogram (mg/Kg) or parts per million (ppm).

Table 1 - Analytical Results: Ground Water Samples presents a summary of ground water analytical data collected during the tank removal activities. TPH-G, TPH-D (characterized as Kerosene) and Benzene were detected in the ground water sample collected from the tank pit at concentrations shown on Table 1. The semi-VOCs, Phenol, 2-Methylphenol, 4-Methylphenol and Napthalene were detected in the ground water sample at concentrations shown on Table 1. The HVOs Trichlorofluoromethane, 1,1-Dichloroethene (DCE), 1,1,1-Trichloroethane (TCA) and Tetrachloroethene (PCE) were detected in the ground water sample at concentrations shown on Table 1. O&G was not detected in the ground water sample. The metals Cadmium, Chromium, Lead, Nickel and Zinc detected in soil and ground water samples collected from the tank pit were below Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) values respectively.

In October 1992 ESE installed ground water monitoring well MW-6, approximately four feet downgradient of the former used oil tank (ESE, 1993). TPH-G, Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX), O&G, and HVOs were not detected in the soil sample collected from MW-6 at a depth of 6.5 feet bgs, collected immediately above the occurrence of the ground water table. TPH-D at a concentration of 1 mg/Kg was detected in the soil sample from a depth of 6.5 feet bgs in MW-6 (Table 1). TPH-G, TPH-D, O&G and Ethylbenzene were not detected in the ground water sample collected from well MW-6. Benzene, Toluene, Total Xylenes and the HVO compounds Chloroform, PCE, and TCA were detected in the ground water sample collected from well MW-6 at concentrations shown on Table 1.

GROUND WATER MONITORING

On September 8, 1993, ESE measured the depth to water in well MW-6 and in wells MW-1, MW-4 and MW-5 (located at 13th and Jackson Streets) using an electric water level probe. Depth to water measurements are presented on Figure 2. Subsequent to measuring the depth to water, well MW-6 was purged and ground water samples were collected.

Ground water samples were collected subsequent to purging four well-casing volumes of ground water from well MW-6 using a disposable polyethylene bailer. The ground water sampling data form is included as Appendix A. During the well purging process conductivity, temperature and pH of the purge water was monitored by ESE. Once the temperature, conductivity and pH of the ground water had stabilized, the ground water sample was collected from well MW-6. The ground water sample was collected by lowering a new disposable polyethylene bailer into the well using new disposable nylon cord. The filled bailer was then retrieved, emptied, then filled again. The ground water from this bailer was then decanted into four 40-milliliter glass vials and three one-liter bottles. The sample containers contained appropriate preservatives as defined by the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Storage Tank Sites (San Francisco Bay Regional Water Quality Control Board, 1990). The samples were then labeled and placed on ice in a cooler for transport under chain of custody to Sequoia.

RESULTS

Ground Water Flow

The ground water gradient beneath the site was calculated from depth to water measurements from well MW-1, MW-4, MW-5 and MW-6. Wells MW-1, MW-4 and MW-5 are located at the corner of 13th and Jackson Street at the ALCOPARK facility (Figure 2). Ground water elevation data and a graphical presentation of ground water elevations on September 8, 1993 is presented on Figure 2. Ground water flow beneath the site on September 8, 1993 was towards the east at a gradient of 0.005 foot per foot.

Ground Water Samples

The ground water sample collected on September 8, 1993, from well MW-6 was analyzed for O&G, TPH-G, TPH-D, BTEX, and HVOs by Standard Method 5520, and EPA Methods 8015 modified, 8015, 8020 and 8010, respectively. Laboratory analytical reports with chain of custody documentation for the ground water sample are presented as Attachment B. Ground water analytical data is summarized on Table 1.

TPH-G, TPH-D, O&G and BTEX were not detected in the ground water sample collected from well MW-6. HVO compounds: Chloroform, PCE, and TCA were detected in the ground water sample collected from well MW-6 at concentrations of 0.52 ug/L, 1.4 ug/L, and 1.3 ug/L, respectively.

CONCLUSIONS AND RECOMMENDATIONS

- ESE has performed four consecutive quarters of ground water monitoring activities for the well (MW-6) located adjacent to the former used oil tank. Ground water flow beneath the site has been consistently towards the east to southeast. Since this monitoring program was initiated (November 1992), none of the compounds detected in the ground water samples collected from well MW-6 have exceeded primary Maximum Contaminant Levels (MCLs) for drinking water as defined by the United States Environmental Protection Agency (EPA) or by California State Department of Health Services (DHS).

- ESE recommends that this case be closed by the Regional Water Quality Control Board, and that no further action be taken for the former used oil tank.

REFERENCES

Environmental Science & Engineering, Inc. (ESE), 1992a, Report of Waste Oil Tank Removal, Alcopark Facility, 165-13th Street, Oakland, California, April 22, 1992.

Environmental Science & Engineering, Inc. (ESE), 1993, Report of Findings, Subsurface Investigation for Former Used Oil Tank, Alcopark Facility, 165 13th Street, Oakland, California, Janaury 6, 1993.

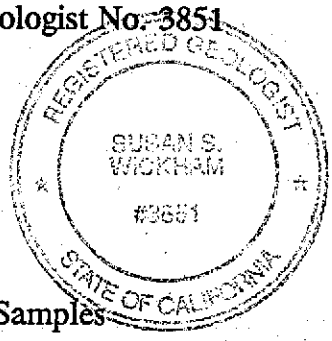
San Francisco Bay Regional Water Quality Control Board (RWQCB), 1990, Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Storage Tank Sites, August, 1990.

. . . . .

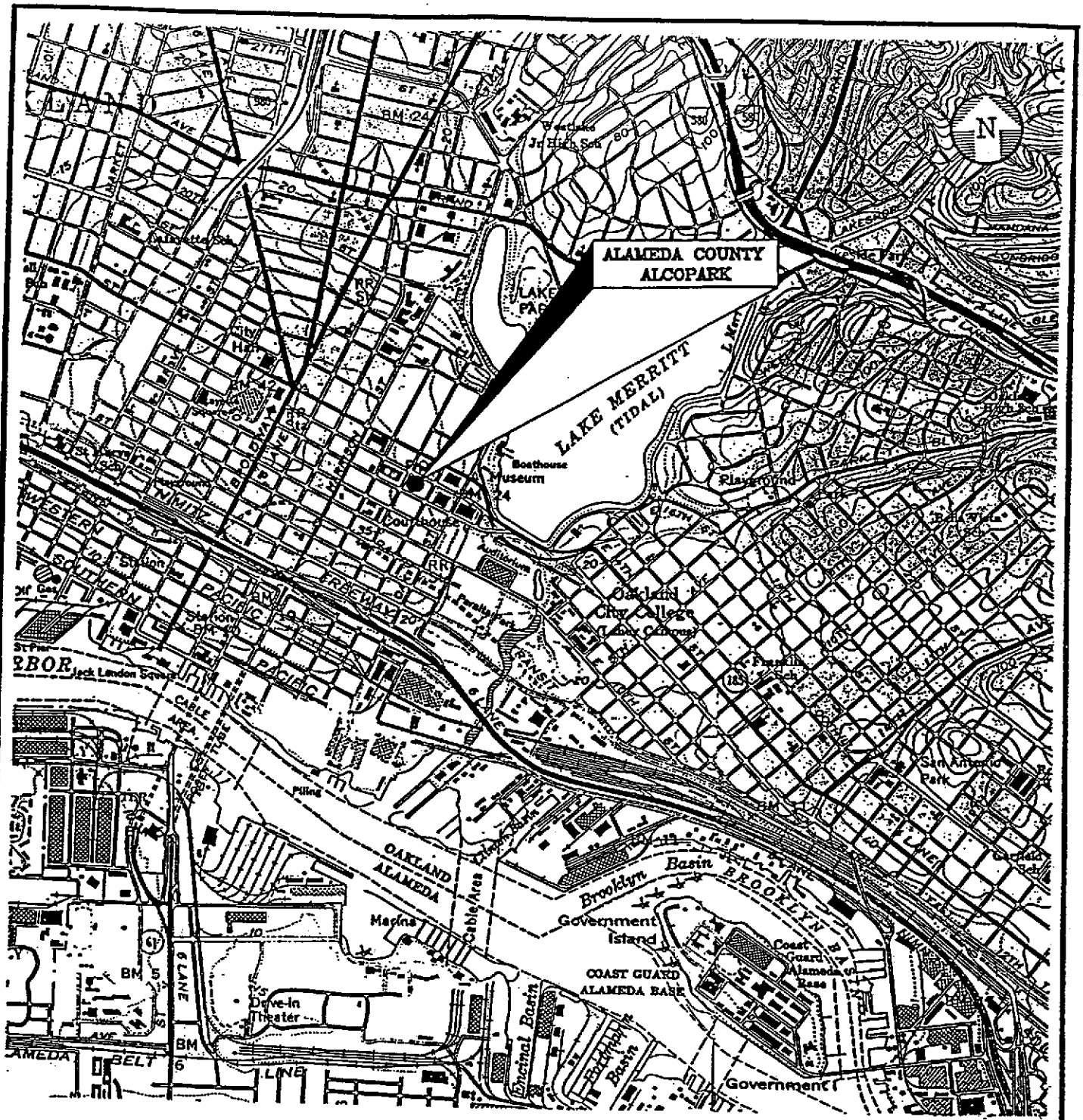
Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other hydrogeologists and engineers practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report.

Michael K. Edmonson
Project Geologist

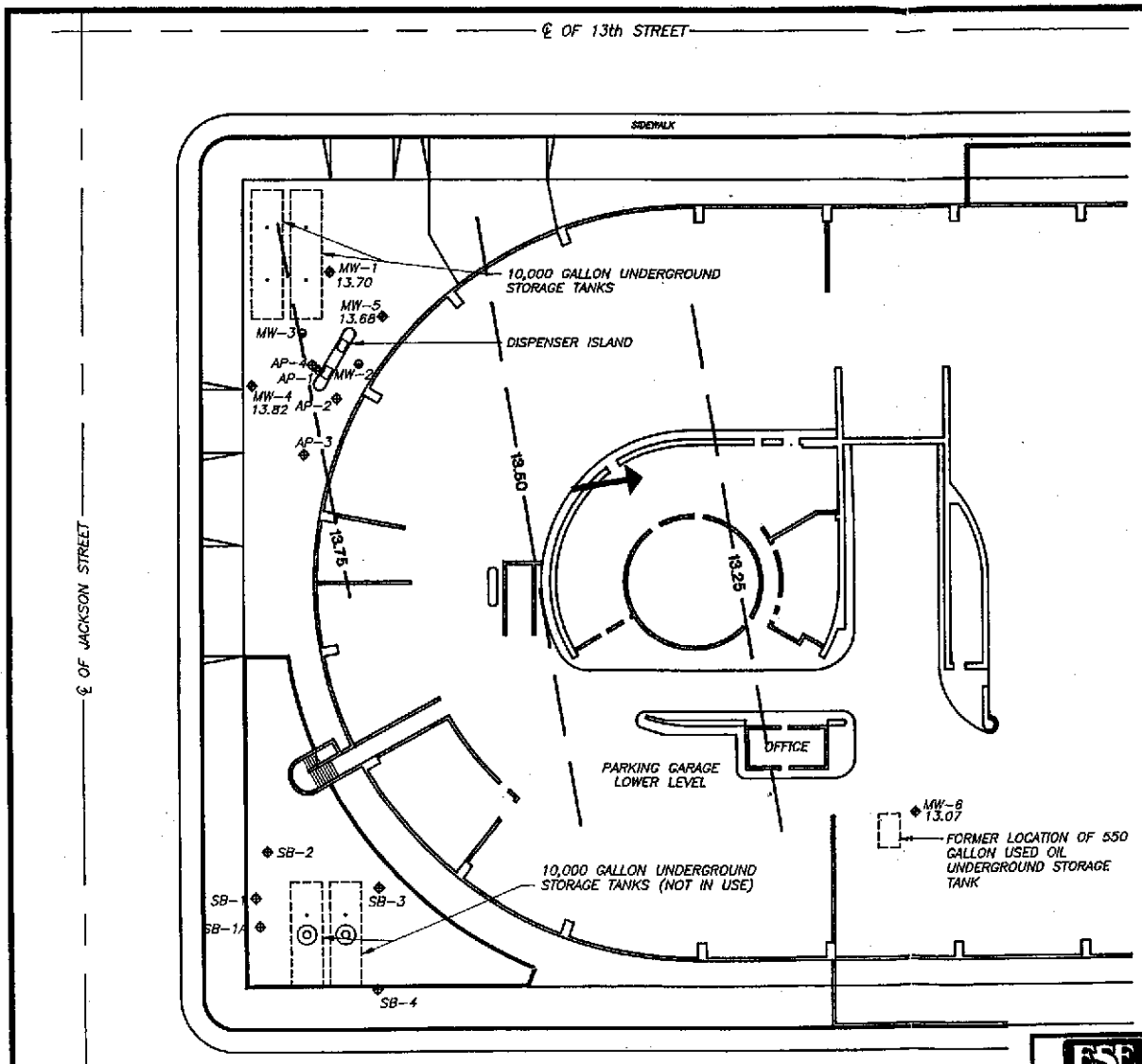
Susan S. Wickham
Senior Geologist
California Registered Geologist No. 3851



Attachments:
Figures (2)
Table (1)
Attachment A - Ground Water Sampling Data Form
Attachment B - Analytical Reports: Ground Water Samples



ESE A CH2M HILL COMPANY	Environmental Science & Engineering, Inc.
ALEMEDA COUNTY ALCOPARK OAKLAND, CALIFORNIA	
FIGURE 1 LOCATION MAP	
DRAWN BY: DWR	APPROVED BY:
REVISED:	
DATE: 10/91	FILE NAME: F2TOP010
PROJ. NO.: 6-90-6042	



WELL NO.	DATE	TOP OF CASING ELEVATION (FEET)	DEPTH TO WATER (FEET)	GROUND WATER ELEVATION (FEET)
MW-1	09/08/93	33.00	19.30	13.70
MW-4	09/08/93	33.63	19.81	13.82
MW-5	09/08/93	33.01	19.33	13.68
MW-6	09/08/93	19.47	6.40	13.07

LEGEND

- ◆ GROUND WATER MONITORING WELL
- ○ VADOSE MONITORING WELL
- ◆ SOIL BORING
- 13.07 GROUND WATER ELEVATION IN FEET RELATIVE TO A COMMON DATUM
- —13.50— GROUND WATER ELEVATION CONTOUR IN FEET RELATIVE TO A COMMON DATUM
- → GROUND WATER FLOW DIRECTION

DEPTH TO WATER MEASUREMENTS ARE RELATIVE TO THE TOP OF CASING OF EACH WELL

CONTOUR INTERVAL = 0.25 FEET

SCALE
0 30 FEET

ESE A GILCORP Company
Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 8/93
REVISED 10/93 MKE
CAD FILE 54133004

GROUND WATER ELEVATIONS
SEPTEMBER 8, 1993

ALAMEDA COUNTY GSA
ALCOPARK
165 13th STREET, OAKLAND, CA

FIGURE NO. 2
PROJ. NO. 6-92-5413

TABLE 1

ANALYTICAL RESULTS: GROUND WATER SAMPLES

ALCOPARK FACILITY
165 13TH STREET
OAKLAND, CALIFORNIA

Sample ID	Date Collected	TPH-G (µg/L)	TPH-D (µg/L)	O&G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	HVOs (µg/L)	Semi-VOCs (µg/L)	Metals (µg/L)
Tank Pit	02/13/92	2,800	19,000*	<5	52	200	40	310	a	b	c
MW-6	11/05/92	<50	<50	<5	1.0	0.79	<0.5	2.7	d	--	--
MW-6	02/04/93	<50	<50	<5	0.66	<0.5	<0.5	<0.5	e	--	--
MW-6	05/10/93	<50	<50	<5	<0.5	<0.5	<0.5	<0.5	f	--	--
MW-6	09/08/93	<50	<50	<5	<0.5	<0.5	<0.5	<0.5	g	--	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
O&G = Oil and Grease
HVOs = Halogenated Volatile Organic compounds
Semi-VOCs = Semi-Volatile Organic Compounds
Metals = Cadmium, Chromium, Lead, Nickel and Zinc
< = less than listed detection limit
-- = not analyzed
ug/L = micrograms per Liter
mg/L = milligrams per Liter
a = Trichlorofluoromethane, 110; 1,1-Dichloroethaene, 5.5; 1,1,1-Trichloroethene, 320; Tetrachloroethene, 75.
b = Phenol, 102; 2-Methylphenol, 90; 4-Methylphenol, 120; Naphthalene, 30.
c = Lead, 5.7; Nickel, 70; Zinc, 270.
d = Chloroform, 0.54; Tetrachloroethene, 1.7; 1,1,1-Trichloroethane, 8.3.
e = Tetrachloroethene, 1.1; 1,1,1-Trichloroethane, 3.2.
* = characterized as Kerosene
f = Chloroform, 0.52; Tetrachloroethene, 1.1; 1,1,1-Trichloroethane 1.6.
g = Chloroform, 0.52; Tetrachloroethene, 1.4; 1,1,1-Trichloroethane, 1.3.

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ATTACHMENT A

GROUND WATER SAMPLING DATA FORM

Environmental Science & Engineering, Inc.
A CILCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: Alameda
PROJECT NO.: 6-92-5413
DATE: Sept 8, 93

SAMPLE LOCATION I.D.: MW-6
SAMPLER: Paul Marsden
PROJECT MANAGER: Mike E.

CASING DIAMETER

2" X
4" X
Other___

SAMPLE TYPE

Ground Water X
Surface Water___
Treat. Influent___
Treat. Effluent___
Other___

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: 0 (ft.)
DEPTH TO WATER: 6.49 (ft.)
DEPTH OF WELL: 12.54' (ft.)

PRODUCT THICKNESS: 0 (ft.)
WATER COLUMN: 6.14 (ft.)
WELL CASING VOLUME: 1.5 (gal)

MINIMUM PURGE VOLUME
(3 or 4 WCV): 7.5 (gal)
ACTUAL VOLUME PURGED: 8 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
	0	7.49	.59	68.2°		Silty
	2	7.62	.55	66.9°		
	4	7.31	.52	66.7°		
	6	7.29	.52	66.1°		

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Hydac 9 UNIT# 9009 DATE: 7/14 TIME: 8a BY: CV.
TURBIDITY: TYPE___ UNIT#___ DATE:___ TIME:___ BY:___

PURGE METHOD

___Displacement Pump
___Bailer (Teflon/PVC/SS)
___Other
X Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS)
X Bailer (Disposable)
___Dedicated
___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	MW-6	1600	9-8-93		
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER: Paul Marsden
PROJECT MANAGER: Mike E.

4090 Nelson Avenue, Suite I Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

ATTACHMENT B

ANALYTICAL REPORT: GROUND WATER SAMPLE

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alco Park	Sampled:	Sep 8, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received:	Sep 9, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Sep 21, 1993
Attention: Mike Edmonson	First Sample #:	309-0545		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 309-0545 MW-6
Purgeable Hydrocarbons	50	N.D.
Benzene	0.5	N.D.
Toluene	0.5	N.D.
Ethyl Benzene	0.5	N.D.
Total Xylenes	0.5	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	9/18/93
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	96

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alco Park	Sampled:	Sep 8, 1993
4090 Nelson Ave., Ste J	Sample Matrix:	Water	Received:	Sep 9, 1993
Concord, CA 94520	Analysis Method:	EPA 3510/3520/8015	Reported:	Sep 21, 1993
Attention: Mike Edmonson	First Sample #:	309-0545		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 309-0545 MW-6
Extractable Hydrocarbons	50	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	9/15/93
Date Analyzed:	9/17/93
Instrument Identification:	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

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Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alco Park	Sampled:	Sep 8, 1993
4090 Nelson Ave., Ste J	Matrix Descript:	Water	Received:	Sep 9, 1993
Concord, CA 94520	Analysis Method:	SM 5520 B&F (Gravimetric)	Extracted:	Sep 14, 1993
Attention: Mike Edmonson	First Sample #:	309-0545	Analyzed:	Sep 15, 1993
			Reported:	Sep 21, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
309-0545	MW-6	N.D.

Detection Limits:	5.0

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

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Environmental Science & Engineering, Inc.	Client Project ID:	#6-92-5413/Alco Park	Sampled:	Sep 8, 1993
4090 Nelson Ave., Ste J	Sample Descript:	Water, MW-6	Received:	Sep 9, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Sep 16, 1993
Attention: Mike Edmonson	Lab Number:	309-0545	Reported:	Sep 21, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	0.86
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	1.4
1,1,1-Trichloroethane	0.50	1.3
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager