

P & D ENVIRONMENTAL

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Oakland, CA 94611
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ALCO
HAZMAT

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September 26, 1994
Report 0067.R1

Mr. Edward T. Simas
2307 Pacific Ave.
Alameda, CA 94501

① determine D Td

SUBJECT: SOIL INVESTIGATION REPORT
Former Service Station
5330 Foothill Blvd.
Oakland, CA

Dear Mr. Simas:

P&D Environmental (P&D) is pleased to present this report documenting the drilling of six exploratory boreholes, designated as B1 through B6, for the collection of soil samples at the subject site. This work was performed in accordance with an undated work plan prepared by Alisto Engineering Group which was approved in a letter from Ms. Eva Chu of Alameda County Department of Environmental Health (ACDEH) dated July 1, 1994 and P&D's August 4, 1994 response to an Invitation To Bid dated July 29, 1994. A Site Location Map (Figure 1), a Site Plan showing the locations of soil samples collected at the time of tank removal (Figure 2), a Site Plan showing soil boring and stockpiled soil sample collection locations (Figure 3), and a Site Plan showing the locations of exploratory boreholes B1 through B6 (Figure 4) are attached with this report.

All work was performed under the direct supervision of an appropriately registered professional. This report is prepared in accordance with guidelines set forth in the document "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites" dated August 10, 1990 and "Appendix A - Workplan for Initial Subsurface Investigation" dated August 20, 1991.

BACKGROUND

The site is presently used as a parking lot for a transmission repair shop. It is P&D's understanding that prior to the purchase of the site by Mr. Edward T. Simas, the site was operated as a gasoline station. It is also P&D's understanding that the site was acquired by Mr. Edward T. Simas in February, 1983, for a period of six months. Based on conversations with Mr. Edward T. Simas, the service station was not operating at the time that the site was purchased, and that the service station was not put into service during the six months that it was owned by Mr. Edward T. Simas. Based upon conversations with Ms. Eva Chu of the ACDEH, it is P&D's understanding that the site is presently owned by Mr. Miguel Flores of Redwood City, California and Mr. Jorge Del Rio of Palo Alto, California.

Review of the ACDEH file for the site reveals only one report dated May 19, 1989, prepared by Polymatrix Associates (Polymatrix) of Hayward, California which documents previous investigation activities at the site. Review of the Polymatrix report indicates that three gasoline underground storage tanks were removed from the site in June, 1988. At the time of tank removal, soil and groundwater samples were reported to have been collected on June 29 and 30, 1988 by TMA/Norcal of Richmond California.

Review of a July 16, 1988 letter report prepared by TMA/Norcal (attached as an Appendix to the May 19, 1989 Polymatrix report) indicates that a total of six soil samples were collected from beneath the ends of the tanks; two groundwater samples were collected from the tank pit; and one soil sample was collected from stockpiled soil removed from the tank pit. No chain of custody documentation was attached with the TMA/Norcal report.

Review of the laboratory analytical reports provided in the TMA/Norcal report indicates that four of the samples were received at the laboratory on June 30, 1988 and five of the samples were received at the laboratory on July 6, 1988. The samples were analyzed using Modified EPA Method 8015 for gasoline range (C5-C12), jet fuel range (C10 to C16), and diesel range (C9 to C22) fuel hydrocarbons. The laboratory analytical results of the soil samples collected from the tank pit indicate that jet fuel and diesel-range compounds were not detected. However, gasoline-range compounds with concentrations ranging up to 627 parts per million (ppm) were detected in soil samples collected from the tank pit. The results of the soil samples collected from the fuel tank pit are summarized in Table 1.

Review of the laboratory analytical results of the water samples collected from the tank pit indicate that 6.0 ppm of diesel-range compounds were detected in sample 2300-2-3, and 257 ppm of gasoline-range compounds were detected in sample 2300-3-1. The results of the water samples collected from the fuel tank pit are summarized in Table 2. Review of the laboratory analytical results of the soil sample collected from the stockpiled soil indicates that 1,951 ppm of gasoline-range compounds were detected. The results of the soil sample collected from the stockpiled soil are summarized in Table 3. A copy of the Site Plan attached to the July 16, 1988 TMA/Norcal report showing the sample collection locations is attached with this report as Figure 2.

Review of the Polymatrix May 19, 1989 report indicates that on April 22, 1989 Polymatrix collected two soil samples (designated as Slurry ES and Slurry WS) from the stockpiled soil, and a total of two soil samples (designated as 180 and 625) from two soil borings in the former tank pit. At the time that the samples were collected, the pit was reported to not have been backfilled, although the walls of the pit had caved into the pit. In addition, the stockpiled soil was reported to have been aerated. Review of a Polymatrix letter report dated May 12, 1989 (attached as an appendix to the May 19, 1989 Polymatrix report) indicates that the soil samples were collected from the borings at a depth of nine feet. The May 12, 1989 letter report states that all of the soil samples were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G) using a headspace method.

Review of the laboratory analytical reports attached to the May 12, 1989 letter indicate that the results of the soil samples collected from the boreholes in the tank pit showed 260 ppm TPH-G in sample #180, and that TPH-G was not detected in sample #625. The laboratory report indicates that the TPH-G compounds were "higher boiling hydrocarbons not characteristic of gasoline." The results of the soil boring samples are summarized in Table 4.

Review of the results of the soil samples collected from the stockpiled soil showed 10 ppm TPH-G in sample Slurry ES, and 79 ppm TPH-G in sample Slurry WS. The laboratory report indicates that the TPH-G compounds were "higher boiling hydrocarbons not characteristic of gasoline." The results of the stockpiled soil samples are summarized in Table 5. A copy of the Site Plan from the May 12, 1989 Polymatrix report showing the sample collection locations for the boring and stockpiled soil samples is attached with this report as Figure 3.

FIELD ACTIVITIES

On August 10, and 12, 1994 P&D personnel oversaw the drilling of boreholes B1 through B6 at the subject site by Exploration Geoservices, Inc. of San Jose, California. Following sample collection, all of the boreholes were backfilled with neat cement by Exploration Geoservices, Inc. The locations of the soil borings are shown on the attached Site Plan, Figure 4.

Prior to performing field work, a permit was obtained from the Alameda County Water Agency, Zone 7; notification was provided to the ACDEH of the

scheduled drilling date; Underground Safety Alert was notified for buried utility location; and a site health and safety plan was prepared.

Soil Boring and Soil Sampling

The soil borings were drilled using truck-mounted 6-inch outside diameter hollow stem auger drilling equipment. Borings B1, B2, B3 and B6 were drilled to a total depth of 20.5 feet. Boring B4 was drilled to a total depth of 50.5 feet. At the request of Ms. Eva Chu of the ACDEH during a site visit on August 12, 1994, borehole B5 was drilled to a total depth of 25.5 feet to explore conditions beneath the former tank pit. Groundwater was not encountered in any of the boreholes with the exception of borings B4 and B5, which were located in the former tank pit. In borings B4 and B5, groundwater was encountered at a depth of 6 and 10 feet, respectively. However, the groundwater encountered in these boreholes appears to have been perched groundwater, and was not encountered below the depths of 9 feet in boring B4 and 12 feet in boring B5. The perched groundwater is interpreted to be water which accumulated in the tank pit backfill material.

Soil samples were collected in all of the boreholes at a maximum of five foot intervals, except for borehole B4 which was continuously sampled. Soil samples were collected using a California modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30 inches. Blow counts were recorded every six inches. The soil samples were classified lithologically in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. In addition, the soil samples were evaluated in the field using a Model 580B OVM Photoionization Detector (PID) equipped with a 10.0 eV bulb and calibrated against a 100 ppm isobutylene standard. PID readings were recorded on the boring logs.

Detectable concentrations of organic vapors and petroleum hydrocarbon odors were recorded in all of the borings except for boring B1. In borings B4 and B5, organic vapors and petroleum hydrocarbon odors were not detected until depths of 7 and 12 feet, respectively. In borings B3 and B6, petroleum hydrocarbon odors were not detected until depths of 3 and 7 feet, respectively.

Based upon PID readings, lithologic changes, and discussions with Ms. Eva Chu of the ACDEH during her site visit on August 12, 1994, soil samples were collected from the borings for laboratory analysis at the following depths. In boring B1, one soil sample was retained from the 10 foot depth. In boring B2, two soil samples were retained from the 15 and 20 foot depths. In boring B3, one soil sample was retained from the 20 foot depth. In boring B4, four soil samples were retained from the 15, 25, 35 and 50 foot depths. In boring B5, one soil sample was retained from the 25 foot depth. In boring B6, two soil samples were retained from the 10 and 20 foot depth.

After borehole B4 had been drilled to a depth of 50.5 feet, the augers were withdrawn from the lower 20 feet of the borehole. The borehole remained open to a depth of approximately 50 feet. After 5.5 hours, the borehole was monitored for the presence of water with an electric water level indicator. No water was detected in the borehole, and therefore no grab groundwater sample was collected.

Soil samples collected from the boreholes were retained for laboratory analysis in the following manner. After sample collection, the ends of the brass tubes were wrapped in aluminum foil, covered with plastic endcaps, labeled, and placed in ziplock baggies. The capped brass tubes were then placed into a cooler with ice pending delivery to McCampbell Analytical Laboratory in Pacheco, California. McCampbell Analytical Laboratory is a State-certified hazardous waste testing laboratory. Chain of custody procedures were followed for all sample handling. Copies of the boring logs for boreholes B1 through B6 are attached with this report.

The hollow stem augers were steam cleaned prior to use in each borehole. Soil cuttings and steam cleaning water generated during drilling activities were placed into DOT-approved 55-gallon drums and stored onsite pending appropriate disposal.

GEOLOGY AND HYDROGEOLOGY

Based on review of regional geologic maps from U.S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E.J. Helley and K.R. Lajoie, 1979 the subject site is underlain by Holocene coarse-grained alluvium (Q_{hac}). The alluvium is described as unconsolidated, moderately sorted permeable sand and silt with coarse sand and gravel. The site borders on subsurface materials identified on the geologic maps as Late Pleistocene alluvium (Q_{pa}). The alluvium is described as typically consisting of weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand and gravel and is considered to overlie bedrock on the alluvial plain marginal to San Francisco Bay.

The results of our subsurface investigation indicate that the site is underlain predominantly by fine-grained materials (silty clay, clayey silt or silt) with occasional lenses of sand. However, in the vicinity of borings B1, B2 and B4 at the southern and southwestern sections of the site, a significant sand layer appears to be present. The sand layer varies widely in thickness from greater than 11 feet at B1, to 7.5 feet at B2 and 3 feet at B4. Significant sand layers were not encountered elsewhere in soil borings at the site.

Fill materials were encountered in boreholes B2, B4 and B5 to a depth of approximately 3, 6 and 12 feet, respectively. The fill material encountered in boreholes B4 and B5 is interpreted to be fuel tank pit backfill material.

In borehole B1, sand and clayey sand was encountered between the depths of 10 feet and the total depth explored of 20.5 feet. In borehole B2, sand was encountered between the depths of approximately 8 and 16 feet. Below the sand in borehole B2, silty clay was encountered to the total depth explored of 20.5 feet. In borehole B4, sand was encountered between the depths of approximately 8 and 12 feet, beneath which was silty clay to a depth of approximately 28 feet, which in turn was underlain by silt to the total depth explored of 50.5 feet. The silty clay encountered in borehole B4 changed in color from gray to brown at a depth of 25 feet.

In borehole B5, silt was encountered beneath the fill material between the depths of approximately 12 and 18 feet, beneath which silty clay was encountered to the total depth explored of 25.5 feet. In boreholes B3 and B6, silty clay was encountered to the total depth explored of 20.5 feet.

The depth to groundwater and the groundwater flow direction at the site are unknown. Groundwater was not encountered at the site to the total depth explored of 50.5 feet, with the exception of perched water which was encountered in the former tank pit in boreholes B4 and B5 at a depth of 6 and 10 feet, respectively. Groundwater was not encountered below the depths of 9 feet in boring B4 and 12 feet in boring B5. The perched groundwater encountered in borings B4 and B5 is interpreted to be water which accumulated in the tank pit backfill material.

LABORATORY ANALYTICAL RESULTS

The soil samples from boreholes B1 through B6 were analyzed for TPH-G using EPA Method 5030 in conjunction with Modified EPA Method 8015 (GC/FID); BTEX using EPA Method 8020; and for total lead using EPA Method 6010. In accordance with discussions with Ms. Eva Chu of the ACDEH, samples B2-15.0, B2-20.0, B4-15.0 and

B5-25.0 were analyzed for TPH-D using EPA Method 3550 in conjunction with Modified EPA Method 8015 (GC/FID).

The laboratory analytical results of the soil sample collected from borehole B1 show that TPH-G and BTEX were not detected. In borehole B2 at a depth of 15 feet, TPH-G and TPH-D were detected at concentrations of 1,700 and 860 ppm, respectively. However, at a depth of 20 feet, both TPH-G and TPH-D were not detected. Review of the laboratory analytical report indicates that the results reported as TPH-D are diesel-range gasoline compounds.

In borehole B3, TPH-G was detected at a concentration of 180 ppm. TPH-D was not analyzed for this sample. In borehole B4 at a depth of 15 feet, TPH-G and TPH-D were detected at concentrations of 8,600 and 2,500 ppm, respectively. However, at a depth of 25 feet, TPH-G concentrations had reduced to 51 ppm, and at the depths of 35 and 50 feet TPH-G concentrations had further reduced to 12 and 11 ppm, respectively. Analysis for TPH-D was only performed for the sample from a depth of 15 feet in borehole B4. Review of the laboratory analytical report indicates that the results reported as TPH-D are diesel-range gasoline compounds.

In borehole B5 at a depth of 25 feet, TPH-G and TPH-D were detected at concentrations of 3,700 and 1,200 ppm, respectively. Review of the laboratory analytical report indicates that the results reported as TPH-D are diesel-range gasoline compounds. In borehole B6 at the depths of 10 and 20 feet, TPH-G was detected at concentrations of 25 and 2,600 ppm, respectively. Analysis for TPH-D was not performed for either of the samples from borehole B6.

Total lead was detected in all of the samples at concentrations ranging from 2.4 to 11 ppm. The laboratory analytical results of the soil samples are summarized in Table 6. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

DISCUSSION AND RECOMMENDATIONS

Review of the site geology indicates that to a depth of approximately 20 feet the site is underlain predominantly by silty clay and minor clayey silt, with sand or clayey sand encountered in boreholes B1, B2 and B4. Below a depth of approximately 28 feet in boring B4, silt was encountered to the total depth explored of 50.5 feet (the total depth explored at the site). Groundwater was not encountered in any of the boreholes, with the exception of perched water which was encountered in tank pit backfill material in borings B4 and B5.

Review of the laboratory analytical results indicates that TPH-G and BTEX were detected in all of the boreholes except for borehole B1. In borehole B2, TPH-G was detected at a concentration of 1,700 ppm at a depth of 15 feet. However, a clay layer was encountered in borehole B2 beginning at a depth of 16 feet, and analysis of the soil sample from borehole B2 at a depth of 20 feet shows that TPH-G was not detected at this depth.

In the former tank pit, TPH-G was detected in borehole B4 at a depth of 15 feet and in borehole B5 at a depth of 25 feet at concentrations of 8,600 and 3,700 ppm, respectively. However, in borehole B4, the TPH-G concentration had attenuated to 51 ppm at a depth of 25 feet. Review of the TPH-G concentrations in the samples from borehole B4 at the depths of 35 and 50 feet indicate that the detected TPH-G concentrations of 12 and 11 ppm appear evenly distributed in the silt which is encountered in this borehole from a depth of 28 feet to the total depth explored of 50.5 feet. BTEX concentrations also appear evenly distributed at the depths of 35 and 50 feet in a similar fashion to the TPH-G concentrations in borehole B4.

In borehole B3, TPH-G was detected at a concentration of 180 ppm at a depth of 20 feet. The reduced TPH-G concentration in borehole B3 at a depth 20 feet relative to the TPH-G concentration of 3,700 ppm detected in borehole B5 at a depth of 25 feet may indicate that the horizontal extent of petroleum hydrocarbons detected in borehole B5 is attenuating to the west at the 20 foot depth.

In borehole B6, TPH-G was detected at the depths of 10 and 20 feet at concentrations of 25 and 2,600 ppm, respectively. The increasing TPH-G concentration with increasing depth indicates that the source of the TPH-G in the vicinity of borehole B6 is not the ground surface. The elevated TPH-G concentration encountered at a depth of 20 feet in borehole B6 appears to be the result of the lateral migration of petroleum hydrocarbons from areas of higher concentration, such as in the vicinity of borehole B5.

Review of the laboratory analytical reports indicates that all of the results reported as TPH-D are diesel-range gasoline compounds. Review of the total lead results shows that none of sample results exceeded 11 ppm, indicating background lead concentrations for all of the samples.

Based on the sample results, P&D recommends that three additional soil borings be drilled to a depth of 50 feet to further define the extent of petroleum hydrocarbons detected in soil at the site. One borehole should be located adjacent to Belvedere Street, in the northeast corner of the property. One borehole should be located approximately 40 feet to the west of borehole B6. The other borehole should be located adjacent to Foothill Boulevard, approximately one half way between the two former fuel pump islands.

DISTRIBUTION

Copies of this report should be distributed to Ms. Eva Chu at the ACDEH, and to Mr. Kevin Graves at the San Francisco Bay Regional Water Quality Control Board. Copies of the report should be accompanied by a transmittal letter signed by Mr. Edward T. Simas.

LIMITATIONS

This report was prepared solely for the use of Mr. Edward T. Simas. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgement based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly-revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

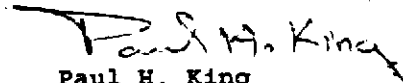
This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or

entities which is used in this report. This report presents our professional judgement based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

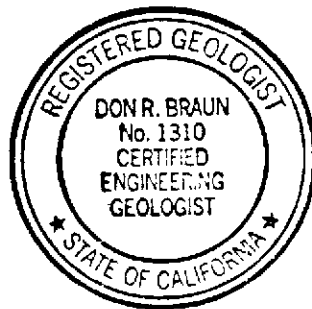
Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental



Paul H. King
Hydrogeologist



Don R. Braun
Certified Engineering Geologist
Registration No.: 1310
Expiration Date: 6/30/96

dlk/PHK
0067.R1

Attachments: Tables 1, 2, 3, 4, 5 & 6
Site Location Map (Figure 1)
Site Plan Showing Sample Locations by TMA/Norcal (Figure 2)
Site Plan Showing Sample Locations by Polymatrix (Figure 3)
Site Plan Showing Borehole Locations by P&D (Figure 4)
Boring Logs
Laboratory Analytical Reports
Chain of Custody Documentation

TABLE 1
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES
(Samples collected from tank pit by TMA/Norcal on June 29 and 30, 1988)

Sample No.	Gasoline	Jet Fuel	Diesel
2300-2-2	84.3	ND	ND
2300-2-4	182	ND	ND
2300-3-3	120	ND	ND
2300-3-4	ND	ND	ND
2300-3-6	ND	ND	ND
2300-3-7	627	ND	ND

ND = Not Detected.

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 2
SUMMARY OF LABORATORY ANALYTICAL RESULTS
WATER SAMPLES

(Samples collected from tank pit by TMA/Norcal on June 29 and 30, 1988)

Sample No.	Gasoline	Jet Fuel	Diesel
2300-2-3	ND	ND	6.0
2300-3-1	257	ND	ND

ND = Not Detected.

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 3
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLE
(Samples collected from stockpiled soil by TMA/Norcal on June 29, 1988)

Sample No.	Gasoline	Jet Fuel	Diesel
2300-2-1	1,951	ND	ND

ND = Not Detected.
Results are in parts per million (ppm), unless otherwise indicated.

TABLE 4
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES
(Samples collected from soil borings by PolyMatrix on April 29, 1989)

Sample No.	Gasoline	Jet Fuel	Diesel
#180*	260	NA	NA
#625	ND	NA	NA

ND = Not Detected.

NA = Not Analyzed.

* Review of the laboratory analytical report indicates that the sample contains, "higher boiling hydrocarbons not characteristic of gasoline."

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 5
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES

(Samples collected from stockpiled soil by PolyMatrix on April 29, 1989)

Sample No.	Gasoline	Jet Fuel	Diesel
Slurry ES*	10	NA	NA
Slurry WS*	79	NA	NA

ND = Not Detected.

NA = Not Analyzed.

* Review of the laboratory analytical report indicates that the sample contains, "higher boiling hydrocarbons not characteristic of gasoline."

Results are in parts per million (ppm), unless otherwise indicated.

TABLE 6
SUMMARY OF LABORATORY ANALYTICAL RESULTS
SOIL SAMPLES
(Samples collected from soil borings by P&D on August 10 and 12, 1994)

Sample No.	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
B1-10.0	NA	ND	ND	ND	ND	ND	2.5
B2-15.0	860**	1,700	5.9	38	23	110	2.4
B2-20.0	ND	ND	0.11	0.0080	ND	0.014	3.2
B3-20.0	NA	180	4.0	6.0	2.7	14	9.3
B4-15.0	2,500**	8,600	77	630	170	1,100	9.5
B4-25.0	NA	51	2.5	3.7	0.88	4.6	5.2
B4-35.0	NA	12	1.5	2.1	0.22	1.2	5.9
B4-50.0	NA	11	1.5	2.0	0.020	1.1	5.0
B5-25.0	1,200**	3,700	27	150	63	360	7.0
B6-10.0	NA	25	0.045	0.011	0.040	0.14	10
B6-20.0	NA	2,600	10	74	37	180	11

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

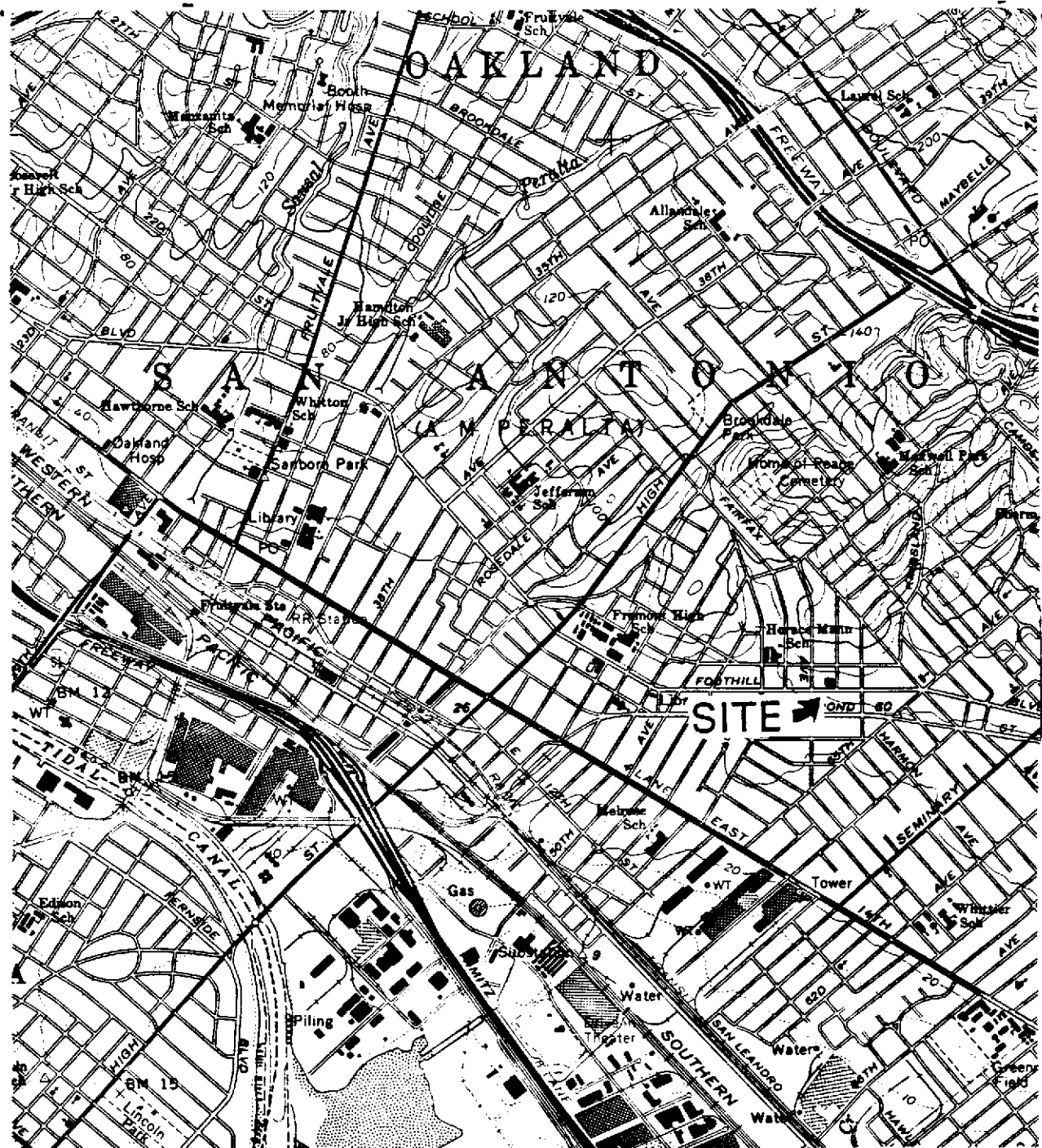
NA = Not Analyzed.

ND = Not Detected.

** Review of the laboratory analytical reports indicates that the results reported as TPH-D consist of diesel-range gasoline compounds. Results are in parts per million (ppm), unless otherwise indicated.

P & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916



Base Map From
U.S. Geological Survey
Oakland East, Calif.
7.5 Minute Quadrangle
Photorevised 1980

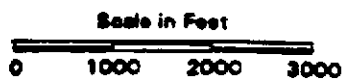
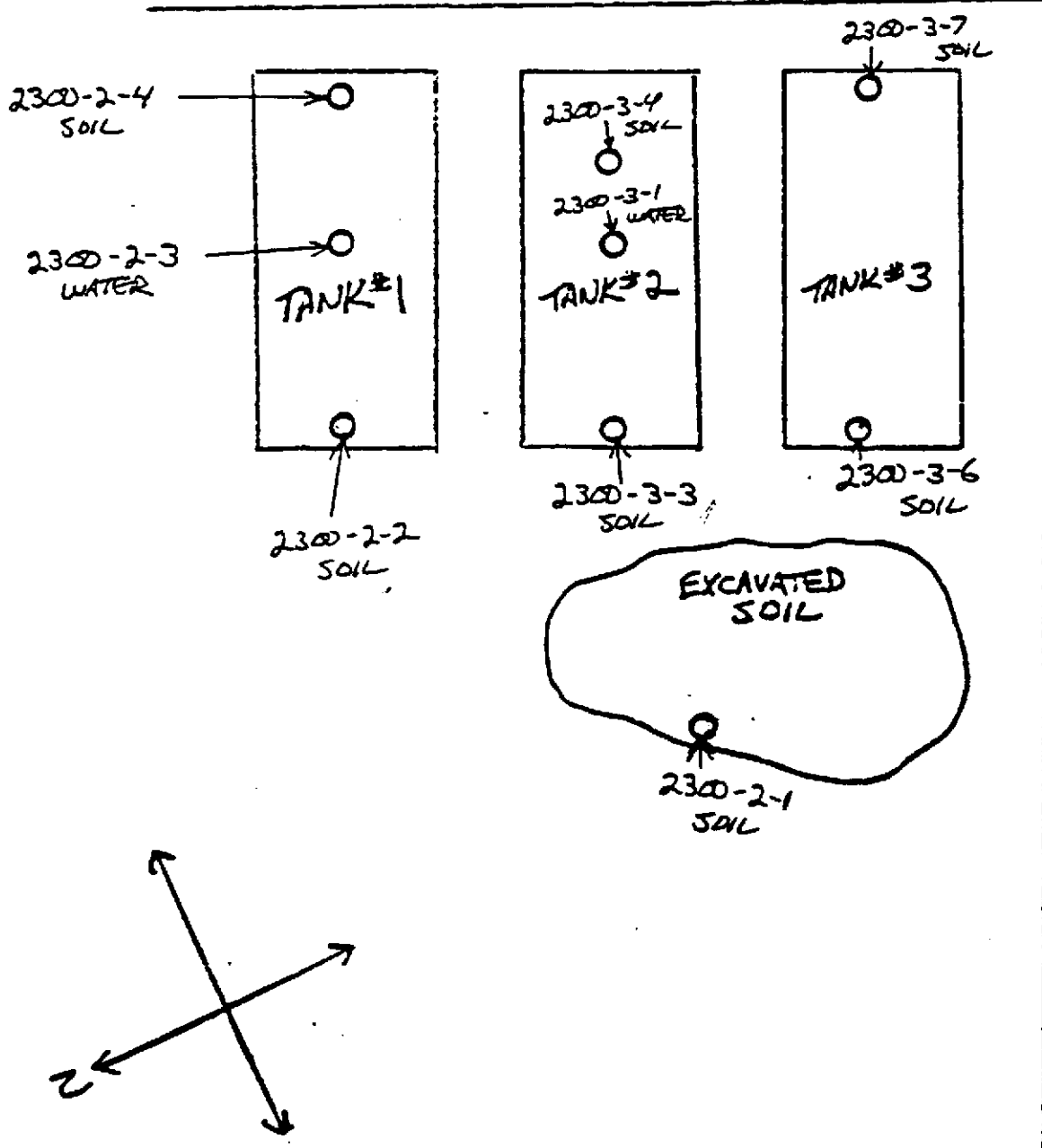


Figure 1
SITE LOCATION MAP
Former Service Station
5330 Foothill Blvd.
Oakland, California

P & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916

BELVEDERE



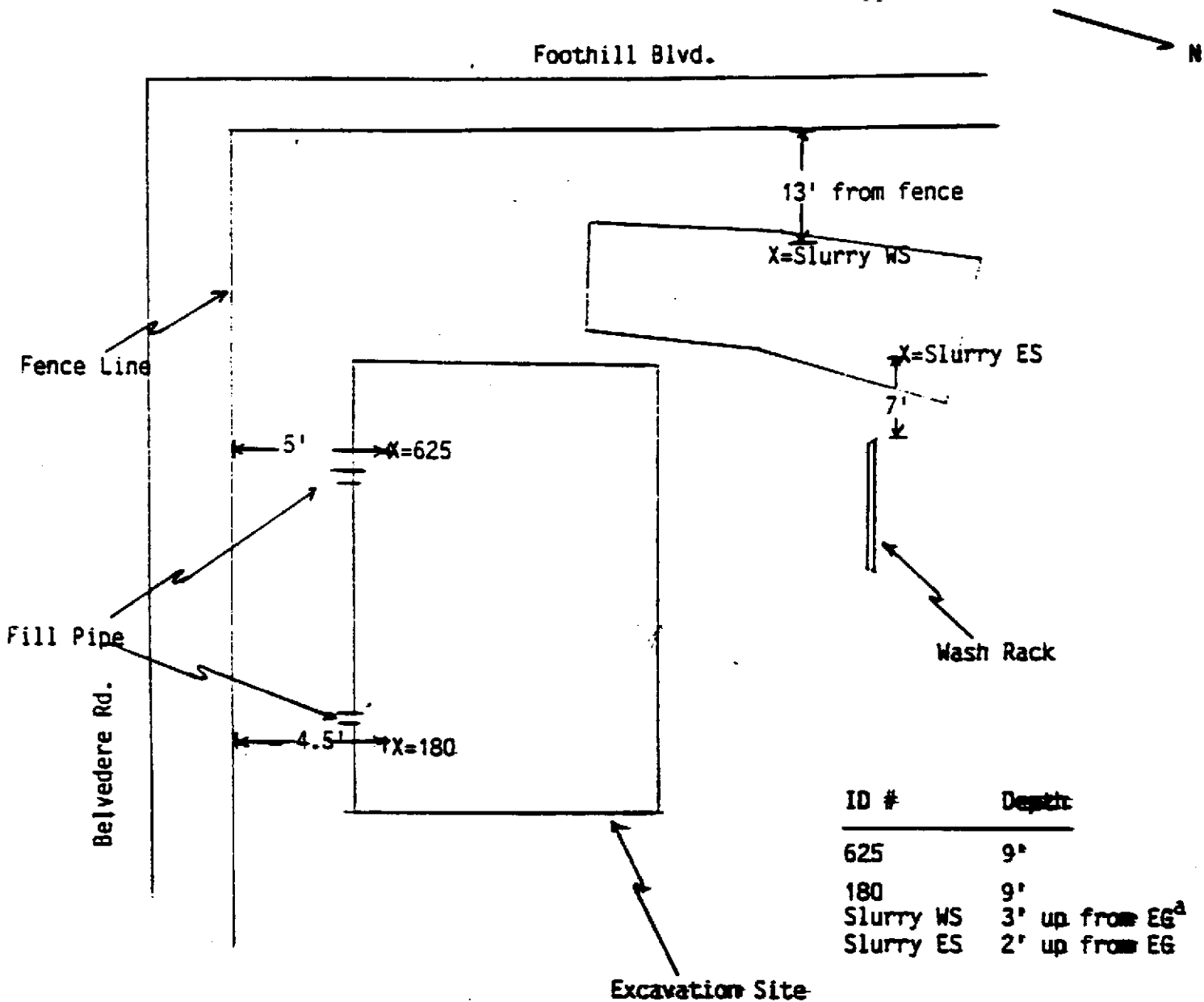
FOOTHILL BLVD.

Base Map From
TMA/Norcal
Dated July 16, 1988

Figure 2
SITE PLAN
Former Service Station
5330 Foothill Blvd.
Oakland, California

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4020 Panama Court
 Oakland, CA 94611
 Telephone (510) 658-6916



ID #	Depth
625	9'
180	9'
Slurry WS	3' up from EG ^a
Slurry ES	2' up from EG

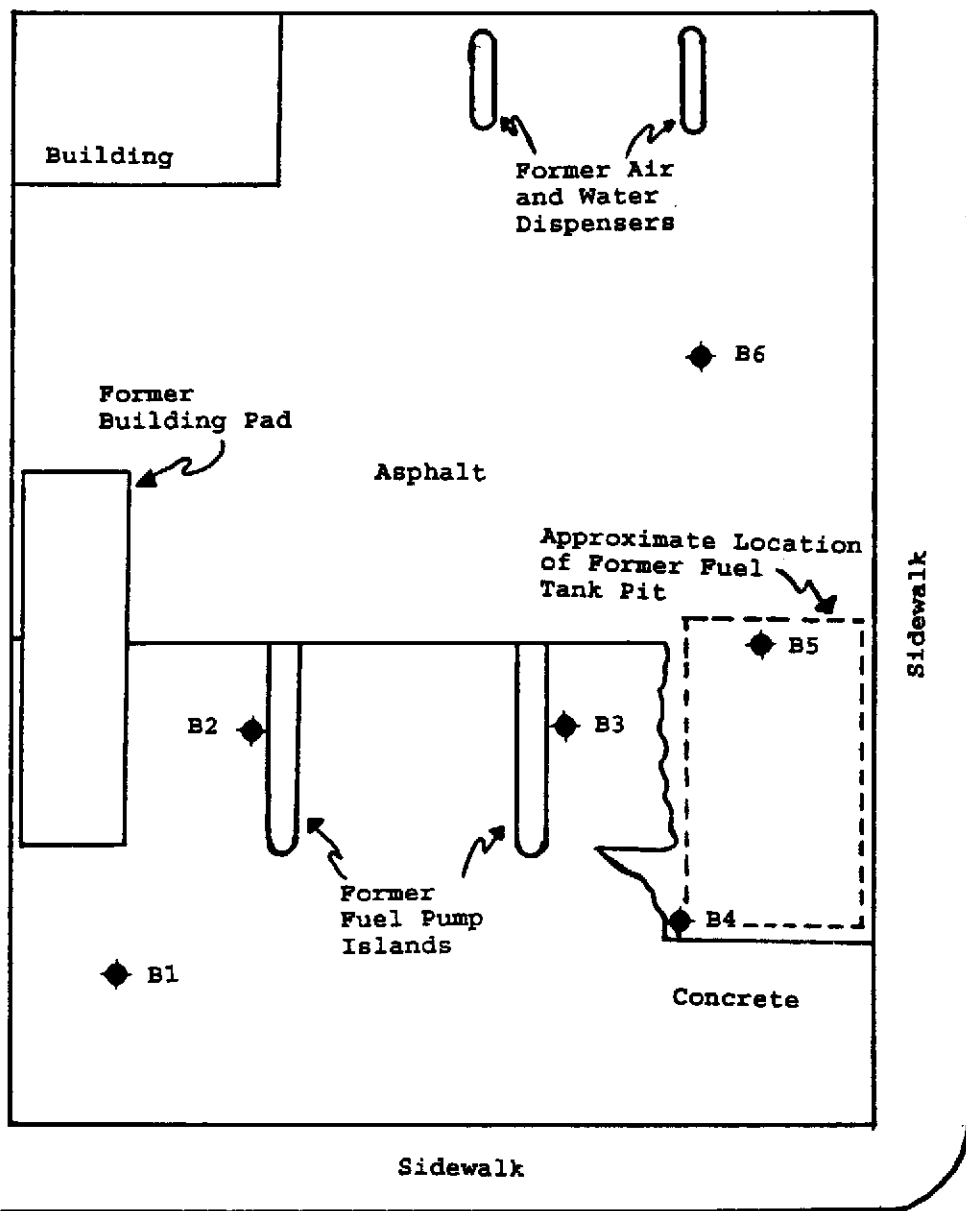
a - EG, Existing Grade.

Base Map From
 PolyMatrix Associates
 Dated May 12, 1989

Figure 3
SITE PLAN
 Former Service Station
 5330 Foothill Blvd.
 Oakland, California

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4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916



Sidewalk

Belvedere Street

Foothill Boulevard

LEGEND

◆ Soil Boring Location

Base Map From
P&D Environmental
August, 1994



0 10 20
Scale in Feet

Figure 4
SITE PLAN
Former Service Station
5330 Foothill Blvd.
Oakland, California

BORING NO: B1		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland			
BORING LOCATION: Near gate at southwest corner of site		ELEVATION & DATUM: N/A					
DRILLING AGENCY: Exploration Geoservices Inc.		DRILLER: Dan and Danny		DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig				8/10/94		8/10/94	
COMPLETION DEPTH: 20		BEDROCK DEPTH: None Encountered		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: None Encountered		NO. OF SAMPLES: 1 (soil)					

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	PID	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS
0	Concrete						Borehole drilled using truck mounted 6" OD hollow stem auger drill rig. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30". Borehole terminated at 20.5'. Borehole backfilled with neat cement grout on 8/10/94.
0-5	Light brown silty CLAY (CL); minor fine sand, minor black speckled mottling, moist, hard. No Petroleum Hydrocarbon (PHC) odor.	CL	No well constructed	0		16 23 40	
5-10	Brown sandy CLAY (CL); fine sand, minor coarse sand, extensive gray mottling, moist, hard. No PHC odor.					13 29 30	
10-15	Brown SAND (SP); fine to medium sand, sand coarsening downwards, minor coarse sand, minor clay, gray mottling, very moist, very dense. No PHC odor.	SP		0			
15-20	Green-brown clayey SAND (SC); fine to coarse sand, minor fine gravel 1/4 to 1/2" diameter, moist, very dense. No PHC odor.	SC		0		16 20 30	
20-20.5	Brown SAND (SW); fine to coarse sand, minor clay, minor fine gravel 1/4 to 1/2 diameter, minor orange mottling, moist, very dense. No PHC odor.	SW		0		16 23 36	
20.5-30							
25							
30							

BORING NO: B2		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland				
BORING LOCATION: On west side of western pump island			ELEVATION & DATUM: N/A					
DRILLING AGENCY: Exploration Geoservices Inc.			DRILLER: Dan and Danny		DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig					8/10/94		8/10/94	
COMPLETION DEPTH: 20.5'			BEDROCK DEPTH: None Encountered		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: None Encountered			NO. OF SAMPLES: 2 (soil)					
DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	PID	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS	
0	Concrete		No well constructed				Borehole drilled using truck mounted 6" OD hollow stem auger drill rig. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30".	
	Brown silty fine SAND(SM)(FILL); moist, moderate Petroleum Hydrocarbon(PHC) odor (gasoline).	SM		409				
	Gray fine SAND(SP)(FILL); moist, very strong PHC odor.	SP						
	Gray SILTY CLAY(CL); moist, stiff, moderate PHC (gasoline) odor.	CL		141		3 5 7		
5								
	Gray SAND(SP); minor clay, coarsening downwards to medium and coarse sand, moist, dense, very strong PHC (gasoline) odor.	SP		422		7 13 19		
10								
	Brown SAND(SP); fine sand with pockets of fine to coarse SAND(SW) with minor fine gravel, 1/4 to 1/2" diameter, moist, dense, very strong PHC (gasoline) odor.	SP SW		452		15 18 20		
15								Driller reports clay layer at approx 16".
	Light brown SILTY CLAY (CL); minor black speckled discoloration, minor orange mottling, moist, very stiff. No PHC odor.	CL						
20				5		6 12 12	Borehole terminated at 20.5'. Borehole backfilled with neat cement grout on 8/10/94.	
25								
30								

BORING NO: B3		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland			
BORING LOCATION: East side of middle pump island		ELEVATION & DATUM: N/A					
DRILLING AGENCY: Exploration Geoservices Inc.		DRILLER: Dan and Danny		DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig				8/12/94		8/13/94	
COMPLETION DEPTH: 20.5'		BEDROCK DEPTH: None Encountered		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: None Encountered		NO. OF SAMPLES: 1 (soil)					

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	PID	SAMPLE INTERVAL	BLOW COUNT PER 8"	REMARKS
0	Concrete						Borehole drilled using truck mounted 6" OD hollow stem auger drill rig. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30".
	Dark brown SILTY CLAY (CL); minor fine to coarse sand, moist. No Petroleum Hydrocarbon (PHC) odor.	CL	No well constructed				
	Brown SILTY CLAY (CL); minor fine sand, orange and gray mottling, moist, hard. No PHC odor.			4		9	
5				4		16	
						21	
	Gray SILTY CLAY (CL); minor fine to coarse sand, orange mottling, moist, very stiff. Moderate PHC odor.			117		7	
10				138		10	
						15	
	Gray SILTY CLAY (CL); minor fine sand, orange and gray mottling, moist, very stiff. Strong PHC odor.			225		7	
15				170		9	
						14	
	Gray SILTY CLAY (CL); minor fine sand, orange and gray mottling, moist, very stiff. Strong PHC odor.			325		9	Borehole terminated at 20.5'. Borehole backfilled with neat cement grout on 8/13/94.
20				319		12	
						15	
25							
30							

BORING NO: B4		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland			
BORING LOCATION: Near southeast corner of site				ELEVATION & DATUM: N/A			
DRILLING AGENCY: Exploration Geoservices Inc.				DRILLER: Dan and Danny		DATE & TIME STARTED	DATE & TIME FINISHED
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig						8/12/94	8/13/94
COMPLETION DEPTH: 50.5'		BEDROCK DEPTH: None Encountered		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: None Encountered		NO. OF SAMPLES: 4(soil)					
DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	RID	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS
0	Asphalt						
	Brown SILTY GRAVEL (GM)(FILL); gravel 1/4 to 2" diameter, dry. No Petroleum Hydrocarbon (PHC) odor.	GM	No well constructed				Borehole drilled using truck mounted 6" OD hollow stem auger drill rig. Borehole continuously sampled. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30". Groundwater encountered at 6' is interpreted to be perched water which accumulated in tank pit backfill material. 9" recovery on drive from 22.5 to 24.0'.
	Brown SAND(SP)(FILL); fine to medium sand, moist, loose. No PHC odor.	SP		0		3	
				0		3	
				0		3	
5	Brown SANDY CLAY(CL)(FILL); fine to medium sand, moist, stiff, saturated at 6.0'. No PHC odor.	CL		0		2	
				0		2	
				0		1	
				0		4	
				0		6	
	Gray SILTY CLAY(CL); minor fine sand, saturated, hard, strong PHC (old gasoline) odor. Small lens of fine sand 1" thick at 8.5'			244		7	
				371		5	
				135		7	
	Gray CLAYEY SAND(SC); fine to coarse sand, moist. Strong PHC odor.	SC		256		13	
10				419		9	
						18	
	Gray fine SAND(SP); moist. Strong PHC odor.	SP		358		6	
				130		8	
						10	
	Gray SILTY CLAY (CL); orange mottling, moist. Strong PHC odor.	CL		217		6	
						8	
				213		10	
						18	
						3	
15				375		6	
				321		13	
						4	
				311		6	
						9	
				463		12	
				400		5	
						11	
				357		25	
				377		8	
20						10	
				88		15	
						6	
				73		10	
						12	
				52		18	
						4	
	Grade to gray mottled brown silty clay.			148		6	
						10	
				285		8	
25	Brown SILTY CLAY (CL); orange mottling, minor black speckled mottling, moist, hard. Moderate PHC (gasoline) odor.					14	
				184		18	
						9	
				50		9	
				35		16	
						23	
	Brown SILT (ML); orange mottling, moist, very stiff. Strong PHC (gasoline) odor.	ML		352		8	
				82		10	
						14	
30				368		8	
						16	
				277		22	

BORING NO: B4		PROJECT NO: 0067		PROJECT NAME Mr. Edward T. Simas - Oakland			
BORING LOCATION: Near southeast corner of site		ELEVATION & DATUM: N/A				DATE & TIME STARTED	
DRILLING AGENCY: Exploration Geoservices Inc.		DRILLER: Dan and Danny		DATE & TIME STARTED 8/12/94		DATE & TIME FINISHED 8/13/94	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig		BEDROCK DEPTH: None Encountered					
COMPLETION DEPTH: 50.5'		NO. OF SAMPLES: 4(soil)		LOGGED BY: PHK		CHECKED BY:	
FIRST WATER DEPTH: None Encountered							

DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	PID	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS			
30	Brown SILT(ML); orange mottling, moist, very stiff. Moderate PHC (gasoline) odor.	ML	No well constructed	183		9				
									12	
										15
										22
										10
										15
										28
										10
										16
										19
35	moist, very stiff. Moderate PHC (gasoline) odor.			129		6				
									9	
										13
										18
										9
	moist, very stiff. Moderate PHC (gasoline) odor.			15		11				
									22	
										7
										12
										16
40	moist, hard. Minor PHC (gasoline) odor.			27		6				
									8	
										13
										23
										10
										22
	moist, hard At 46'- 1" thick layer of fine sand. Strong PHC (gasoline) odor.			42		22				
									7	
										12
										16
										6
										8
	moist, hard Strong PHC odor.			12		13				
									23	
										10
										22
										22
										10
45	moist, hard At 46'- 1" thick layer of fine sand. Strong PHC (gasoline) odor.			10		18				
									24	
										10
										15
										18
										25
	moist, hard. Strong PHC odor.			20		18				
									22	
										30
										15
										10
										30
50	moist, hard. Strong PHC odor.			27		15	6" recovery on drive from 47.5 to 49.0'. Borehole terminated at 50.5'. Removed 20' auger. Waited 5-1/2 hours. No water entered borehole. Borehole backfilled with neat cement grout 8/13/94.			
									30	
										15
										10
										30
										133
55										
60										

BORING NO: B5		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland					
BORING LOCATION: On east side of former eastern pump island (in tank pit)		ELEVATION & DATUM: N/A				DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING AGENCY: Exploration Geoservices Inc.		DRILLER: Dan and Danny				8/12/94		8/13/94	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig		BEDROCK DEPTH: None Encountered				LOGGED BY: PHK		CHECKED BY:	
COMPLETION DEPTH: 25.5'		FIRST WATER DEPTH: None Encountered				NO. OF SAMPLES: 1 (soil)			
DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	PID	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS		
0	Asphalt		No well constructed				Borehole drilled using truck mounted 6"OD hollow stem auger drill rig. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30".		
0	Brown SILTY CLAY(CL)(FILL); abundant fine to medium sand, minor coarse sand, trace gravel up to 1/2" diameter, moist, stiff. No Petroleum Hydrocarbon(PHC) odor.	CL							
5	wet at 5.0'.			0		4 6 7			
10	saturated at 10.0', stiff. No PHC odor.			0		3 4 5			
10	Gray CLAYEY SILT(ML); moist, hard. Moderate PHC (gasoline) odor.	ML							
15	Moderate PHC (gasoline) odor.			30		8 14 20			
20	Brown SILTY CLAY (CL); extensive orange mottling, minor gray mottling, minor black speckled mottling, moist, hard. Strong PHC (gasoline) odor.	CL							
20				221		10 16 25			
25	Brown SILTY CLAY (CL); extensive orange mottling, minor gray mottling, minor black speckled mottling, moist, very stiff. Strong PHC (gasoline) odor.								
25				297		11 13 15			
30							Borehole terminated at 25.5 ft. on 8/12/94. Borehole backfilled with neat cement grout on 8/13/94.		

BORING NO: B6		PROJECT NO: 0067		PROJECT NAME: Mr. Edward T. Simas - Oakland					
BORING LOCATION: On north end of former tank pit		ELEVATION & DATUM: N/A				DATE & TIME STARTED		DATE & TIME FINISHED	
DRILLING AGENCY: Exploration Geoservices Inc.		DRILLER: Dan and Danny				8/12/94		8/13/94	
DRILLING EQUIPMENT: Mobile B56 Hollow Stem Auger Rig		BEDROCK DEPTH: None Encountered				LOGGED BY: PHK		CHECKED BY:	
COMPLETION DEPTH: 20.5'		FIRST WATER DEPTH: None Encountered				NO. OF SAMPLES: 2 (soil)			
DEPTH (FT.)	DESCRIPTION	GRAPHIC COLUMN	WELL CONSTRUCTION LOG	MD	SAMPLE INTERVAL	BLOW COUNT PER 6"	REMARKS		
0	Asphalt						Borehole drilled using truck mounted 6"OD hollow stem auger drill rig. Samples collected using a 2-1/2" OD California Modified split spoon sampler lined with brass tubes driven by a 140 pound hammer falling 30".		
		CL	No well constructed						
	Brown SILTY CLAY(CL); minor fine to coarse sand, minor black speckled mottling, moist, very stiff.			3		7			
5	No Petroleum Hydrocarbon(PHC) odor.			4		18			
	Brown SILTY CLAY(CL); minor fine to coarse sand, minor black speckled mottling, gray and orange mottling, moist.			70		9			
10	Strong PHC (gasoline) odor.			109		23			
	Brown SILTY CLAY(CL); minor fine to coarse sand, minor black speckled mottling, moist, very stiff, higher clay content.			15		9			
15	Moderate PHC (gasoline) odor.			68		15			
	Brown SILTY CLAY(CL); minor fine to coarse sand, minor black speckled mottling, diffuse gray and orange mottling, moist, hard, strong.			321		9			
20	Strong PHC (gasoline) odor.			280		23	Borehole terminated at 20.5 ft. on 8/12/94. Borehole backfilled with neat cement grout on 8/13/94.		
25									
30									

P & D Environmental 4020 Panama Ct. Oakland, CA 94611	Client Project ID: # 0067; Simas-Oakland	Date Sampled: 08/10/94
		Date Received: 08/11/94
	Client Contact: Paul King	Date Extracted: 08/12/94
	Client P.O:	Date Analyzed: 08/12/94

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with 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) ⁺	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
40261	B1-10.0	S	ND	ND	ND	ND	ND	100
40262	B2-15.0	S	1700,b	5.9	38	23	110	131 [#]
40263	B2-20.0	S	ND,a	0.11	0.008	ND	0.014	95
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L	0.5	0.5	0.5	0.5		
	S	1.0 mg/kg	0.005	0.005	0.005	0.005		

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

[#] cluttered chromatogram; sample peak co-elutes 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 are significant; no recognizable pattern; 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 phase is present.

P & D Environmental 4020 Panama Ct. Oakland, CA 94611	Client Project ID: # 0067; Simas-Oakland	Date Sampled: 08/10/94
		Date Received: 08/11/94
	Client Contact: Paul King	Date Extracted: 08/12/94
	Client P.O:	Date Analyzed: 08/12/94

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
40262	B2-15.0	S	860,d	107
40263	B2-20.0	S	ND,d	102
Detection Limit unless otherwise stated; ND means Not Detected	W		50 ug/L	
	S		10 mg/kg	

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

cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ 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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light(CL) or heavy(CH) diesel compounds are significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

McCAMPBELL ANALYTICAL INC.

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

P & D Environmental 4020 Panama Ct. Oakland, CA 94611	Client Project ID: # 0067; Simas-Oakland	Date Sampled: 08/10/94
		Date Received: 08/11/94
	Client Contact: Paul King	Date Extracted: 08/12/94
	Client P.O:	Date Analyzed: 08/13/94

Lead*

EPA analytical method 239.2 or 6010⁺


Lab ID	Client ID	Matrix	Extraction ^o	Lead*
40261	B1-10.0	S	TTLC	2.5
40262	B2-15.0	S	TTLC	2.4
40263	B2-20.0	S	TTLC	3.2
Detection Limit unless otherwise stated; ND means Not Detected	W	TTLC	0.005mg/L	
	S	TTLC	1.0 mg/kg	
	---	STLC,TCLP	0.20 mg/L	

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

⁺ Lead is analysed using EPA method 7420 (AA Flame) for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

DHS Certification No. 1644

 Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/12/94

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	1.924	1.945	2.03	95	96	1.1
Benzene	0.000	0.170	0.172	0.2	85	86	1.2
Toluene	0.000	0.174	0.176	0.2	87	88	1.1
Ethylbenzene	0.000	0.172	0.172	0.2	86	86	0.0
Xylenes	0.000	0.534	0.534	0.6	89	89	0.0
TPH (diesel)	0	326	318	300	109	106	2.4
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR AA METALS

Date: 08/13/94

Matrix: Soil

Analyte	Concentration (mg/kg, mg/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.0	0.9	0.9	1	89	91	2.2
Total Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Zinc	N/A	N/A	N/A	N/A	N/A	N/A	N/A
STLC Lead	0.00	9.84	9.56	10.0	98	96	2.9
TCLP Lead	0.00	0.90	0.39	1.0	90	89	1.1

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

F & D ENVIRONMENTAL

4020 Panama Court
Oakland, CA 94611
Telephone (510) 658-6916

CHAIN OF CUSTODY RECORD

2751APD69 PAGE 1 OF 1

PROJECT NUMBER: 0067		PROJECT NAME: XTRA OEL - Oakland			NUMBER OF CONTAINERS	ANALYSIS(ES):			PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE) Paul H. King						TPH-Ges	BTEX	Total Lead		
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION						
B1-10.0	8/10/94		Soil	Borehole B1	1	X	X	X	ICE	Normal Temperature
B2-15.0	"		"	" B2	1	X	X	X	"	" "
B2-20.0	"		"	" B2	1	X	X	X	"	" "
										40261
										40262
										40263
15/17 ✓ PROPER CONTAINER ✓ HEAD SPACE ABSENT ✓					PRESERVATIVE APPROPRIATE CONTAINERS ✓ VENT ✓ O & C ✓ METALS ✓ OTHER ✓					
RELINQUISHED BY: (SIGNATURE) Paul H. King		DATE 8/10/94	TIME 9:25 AM	RECEIVED BY: (SIGNATURE) Heidi Ricca		TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3		LABORATORY: McCampbell Analytical		
RELINQUISHED BY: (SIGNATURE) Heidi Ricca		DATE 8/10/94	TIME 10:00 AM	RECEIVED BY: (SIGNATURE) Ed Hamilton		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 5		LABORATORY CONTACT: Ed Hamilton		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		LABORATORY PHONE NUMBER: (510) 798-1620				
					SAMPLE ANALYSIS REQUEST SHEET ATTACHED: () YES (X) NO					
					REMARKS:					

P & D Environmental 4020 Panama Ct. Oakland, CA 94611	Client Project ID: # 0067; Edward T. Simas-Oakland	Date Sampled: 08/12/94
	Client Contact: Paul King	Date Received: 08/13/94
	Client P.O:	Date Extracted: 08/15/94
		Date Analyzed: 08/15/94

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
40301	B4-15.0	S	2500,d	97
40305	B5-25.0	S	1200,d	98
Detection Limit unless otherwise stated; ND means Not Detected	W	50 ug/L		
	S	10 mg/kg		

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

cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

⁺ 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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light(CL) or heavy(CH) diesel compounds are significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

McCAMPBELL ANALYTICAL INC.

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

P & D Environmental 4020 Panama Ct. Oakland, CA 94611	Client Project ID: # 0067; Edward T. Simas-Oakland	Date Sampled: 08/12/94
		Date Received: 08/13/94
	Client Contact: Paul King	Date Extracted: 08/17/94
	Client P.O.:	Date Analyzed: 08/17/94

Lead*

EPA analytical method 239.2 or 7420*

Lab ID	Client ID	Matrix	Extraction ^o	Lead*
40300	B3-20.0	S	TTLC	9.3
40301	B4-15.0	S	TTLC	9.5
40302	B4-25.0	S	TTLC	5.2
40303	B4-35.0	S	TTLC	5.9
40304	B4-50.0	S	TTLC	5.0
40305	B5-25.0	S	TTLC	7.0
40306	B6-10.0	S	TTLC	10
40307	B6-20.0	S	TTLC	11
Detection Limit unless otherwise stated; ND means Not Detected	W	TTLC		0.005mg/L
	S	TTLC		4.0 mg/kg
	---	STLC,TCLP		0.20 mg/L

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L
 * Lead is analysed using EPA method 7420(AA Flame)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples
^o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

DHS Certification No. 1644

 Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/15/94

Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.000	2.052	1.986	2.03	101	98	3.3
Benzene	0.000	0.174	0.174	0.2	87	87	0.0
Toluene	0.000	0.184	0.182	0.2	92	91	1.1
Ethylbenzene	0.000	0.178	0.176	0.2	89	88	1.1
Xylenes	0.000	0.560	0.548	0.6	93	91	2.2
TPH (diesel)	0	318	312	300	106	104	2.0
TRPH (oil & grease)	0.0	19.9	19.3	20.8	96	93	3.1

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

McCAMPBELL ANALYTICAL INC.

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

QC REPORT FOR AA METALS

Date: 08/17/94

Matrix: Soil

Analyte	Concentration (mg/kg, mg/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.0	1.1	1.1	1	112	110	1.8
Total Cadmium	0.0	1.0	0.9	1	98	93	5.2
Total Chromium	0.0	1.0	1.0	1	98	95	3.1
Total Nickel	0.0	0.9	0.9	1	91	86	5.6
Total Zinc	0.0	1.6	1.5	1.5	104	99	4.6
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Organic Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

P & D ENVIRONMENTAL

300 Monte Vista, #101
Oakland, CA 94611
Telephone (510) 658-6916

CHAIN OF CUSTODY RECORD

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PROJECT NUMBER:		PROJECT NAME:			NUMBER OF CONTAINERS	ANALYSIS(ES):				PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE)		DATE				PAH-GAS	IN-TR	IN-B	IN-L		
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION							
185-2000	8/12/94		Soil		1	X	X	X		None	Abnormal Trace Arsenic
184-1500	"		"		1	X	X	X		"	" " "
184-2500	"		"		1	X	X	X		"	" " "
184-3500	"		"		1	X	X	X		"	" " "
184-5000	"		"		1	X	X	X		"	" " "
185-2500	"		"		1	X	X	X		"	" " "
186 1000	"		"	off hold	1	X	X	X		"	" " "
186 2000	"		"	8-17-94 AC	1	X	X	X		"	" " "
					40300						
					40301						
					40302						
					40303						
					40304						
					40305						
					40306						
					40307						
<input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> HEAD SPACE ABSENT		<input checked="" type="checkbox"/> PRESERVATIVE APPROPRIATE <input checked="" type="checkbox"/> CONTAINERS		VOLS: <input type="checkbox"/> D&M <input type="checkbox"/> OTHER							
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF SAMPLES (THIS SHIPMENT)		LABORATORY:			
[Signature]		8-13-94	15:50	[Signature]		8		McCampbell Analytical			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF CONTAINERS (THIS SHIPMENT)		LABORATORY CONTACT:		LABORATORY PHONE NUMBER:	
[Signature]				[Signature]		8		Ted Hamilton		(510) 798-1320	
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: () YES (X) NO					
REMARKS:											