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Sunol Pump Station Underground Storage Tank Removal Report

City and County of
San Francisco

March 1994

Prepared For:

City and County of San Francisco
San Francisco Water Department
1000 El Camino Real
Millbrae, California 94030

Prepared By:

Camp Dresser & McKee Inc.
100 Pringle Avenue, Suite 300
Walnut Creek, California 94596

CDM

environmental engineers, scientists,
planners, & management consultants

CAMP DRESSER & MCKEE INC.

One Walnut Creek Center
100 Pringle Avenue, Suite 300
Walnut Creek, California 94596
510 933-2900, Fax: 510 933-4174

March 10, 1994

Mr. Ronald Krzyzanowski
Environmental Protection Coordinator
City and County of San Francisco
Bureau of Construction Management
Bayview Plaza
3801 3rd Street, Suite 600
San Francisco, California 94214

Subject: *Underground Storage Tank Removal Report
Sunol Pump Station, Alameda County*

Dear Mr. Krzyzanowski:

Camp Dresser and McKee (CDM) is pleased to present this report for the removal of three underground storage tanks at the Sunol Pump Station in Sunol, California. The underground storage tanks (USTs) were removed in November 1994 at the direction of the City and County of San Francisco.

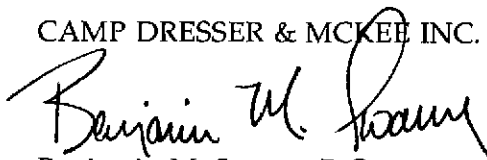
Soil samples collected from beneath the USTs and visual observation of the USTs upon removal, evidenced minor leakage from around the tank fill pipes and piping joints. **Approximately 75 cubic yards of petroleum impacted soil was removed from the excavation during the tank removal and stockpiled on site.** The excavation is open but is completely fenced to prevent unauthorized access.

A copy of this report should be forwarded to the Alameda County Health Department and the Alameda County Fire Department for official verification of UST removal.


If you have any questions the attached report, please call.

Sincerely,

CAMP DRESSER & MCKEE INC.



Benjamin M. Swann, R.G.
Hydrogeologist



Jeff Willett, P.E.
Project Manager

cc: Paul Mazza, San Francisco Water Department

9005#23.041

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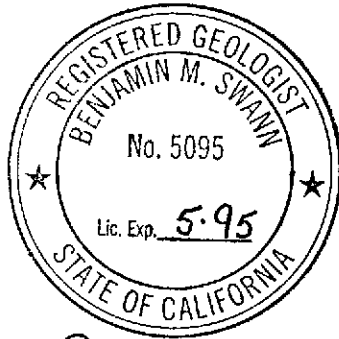
Figures

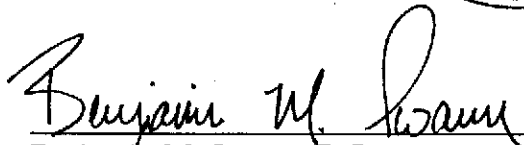
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A	Laboratory Analytical Results
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C	Tank Removal Permits and ACH Inspection Forms
D	Report of Soil Boring Assessment, August 1993

PROFESSIONAL CERTIFICATION




Benjamin M. Swann, R.G.
Hydrogeologist

Prepared by CDM under the profession supervision of the person whose seal and signature appear hereon.

This report has been prepared for the exclusive use of the City and County of San Francisco as it pertains to the Sunol Pump Station located in the city of Sunol, California. Our services have been performed in accordance with applicable State and local ordinances, and generally accepted practices in the geosciences and environmental engineering field.

In the event that changes in the nature of the property occur, or additional relevant information about the property is brought to our attention, the conclusions and recommendations contained in this report may not be valid unless these changes and additional relevant information are reviewed by CDM and the conclusions of this report modified or verified in writing.

Sunol Pump Station Underground Storage Tank Removal Report

Introduction

This report presents the results of the underground storage tank (UST) removal activities at Sunol Pump Station located in the City of Sunol, California. The subject work was undertaken at the request of the City and County of San Francisco Water Department, to remove three single walled steel tanks.

The tank removal activities were conducted on November 8 through November 16, 1993, consisting of the removal of three USTs and the associated subsurface piping, and the collection of soil samples from beneath or adjacent to the USTs for chemical characterization. Reference information in the form of analytical results, hazardous waste manifests, permits, and a previous assessment report (discussed in the Background section of this report) are attached as appendices.

Site Location and Physiography

The subject site is located approximately 1 mile west of the 680 Freeway and one half mile south of the city of Sunol on the southern side of the Sunol Valley (see Figure 1). The site is bounded on the south by Alameda Creek which flows in a channel elevation of approximately 15 feet below the site grade. Located 200 feet east of the site is the historic Water Temple built on the City of San Francisco aqueduct.

Presently, the Sunol Pump Station consists of a single pump house building housing diesel operated high flow water pumps for the aqueduct. The diesel and oil USTs serving the pumps have been removed from the ground and the excavation entirely fenced to prohibit unauthorized access; the excavation has not been backfilled. Clean and petroleum hydrocarbon impacted soils are stockpiled separately on plastic sheeting upon the pavement.

Background

On June 25, 1993, six soil boring were drilled at the Sunol Pump Station to evaluate the soil conditions around the three underground storage tanks (see Appendix D for Report of Soil Boring Assessment). Soil borings were drilled to a depth of 20 feet where groundwater was encountered.

All soil borings appeared to be free of hydrocarbon constituents with the exception of soil boring BH-4, drilled in the middle of the tank area, and boring BH-6, drilled adjacent to the waste lube oil tank (see Figure 2). The 15-foot soil sample from soil boring BH-4 exhibited 410 mg/kg of total oil and grease (TOG) and 90 mg/kg of diesel. A groundwater sample collected from boring BH-4 at 20 feet exhibited a minor hydrocarbon sheen and odor. A soil sample collected from a depth of 15 feet in boring BH-6 exhibited 60 mg/kg of TOG. Groundwater samples collected from soil borings BH-1 and BH-6 did not evidence field measurable hydrocarbons constituents.

Based upon the results of this work, CDM concluded that hydrocarbon constituents would likely be encountered to a limited areal extent during removal of the underground storage tanks.

Underground Storage Tank Removal

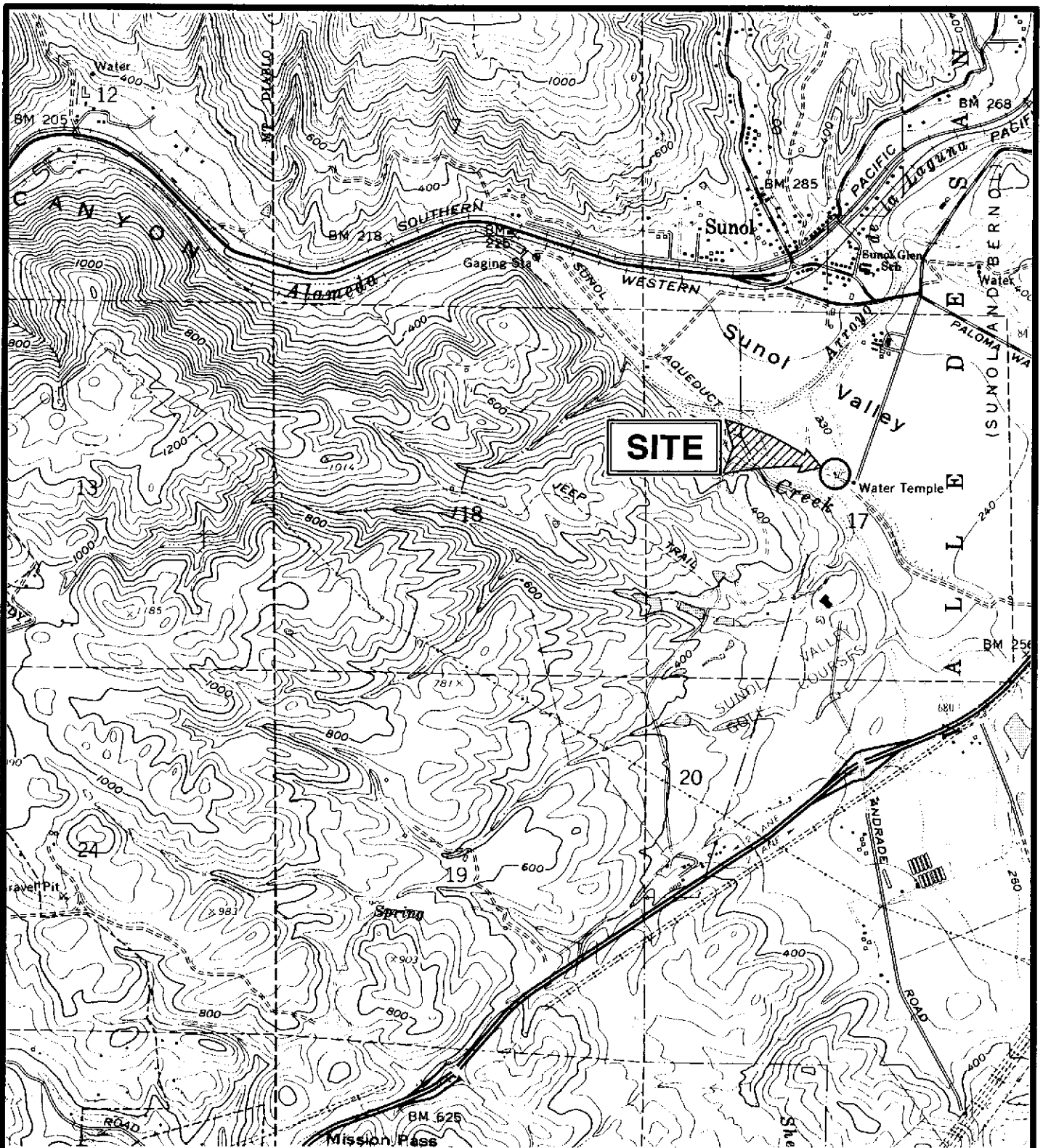
On November 8th and 9th, L&W Environmental Services of San Francisco exposed the tops of the three USTs buried at a depth of approximately four feet below grade. The USTs consisted of one 10,000 gallon diesel tank, one 400 gallon lube oil tank, and one 400 gallon waste oil tank. The USTs were constructed of single-walled steel and the product and vent piping was one inch and 2-inch copper pipe. The USTs removal was scheduled with the Alameda County Department of Environmental Health (DEH) and the Alameda County Fire Department (ACFD) for November 10th.

On November 10th the three UST were rinsed with water to remove any residual oil or diesel by Waste Oil Recovery Inc. for recycling at Demenno Kerdoon, an oil recycling facility in Compton, California (see Appendix B for rinsate manifest). The USTs were purged of hydrocarbon vapors with dry ice to reduce the lower explosive limit (LEL) of the tanks to below 10%. Following tank purging, the two 400 gallon tanks were successfully removed, however, the 10,000 gallon diesel tank was set in a concrete footing at a depth of approximately 10 feet below grade and could not be removed. Removal of this tank was rescheduled for November 16th and arrangements were made to have the concrete footing demolished to facilitate removal of the tank.

The 10,000 gallon diesel tank was successfully removed on November 16th after the concrete footing was broken away. The tank was again purged of hydrocarbon vapor and removed with the on-site direction of the ACFD and the DEH (see Appendix C for DEH inspection notes). All three tanks were removed from the site under manifest to Erickson Inc. for scrap metal recycling (see Appendix B for manifest copies).

Soil Sample Collection and Analysis

At the direction of the DEH, seven soil samples were collected in the excavation side walls and beneath the former UST locations for chemical analysis (see Figure 2 for soil sample locations). The concrete pad beneath the



0 1000 2000 4000
SCALE 1:24000

REFERENCE: USGS TOPOGRAPHIC MAP, NILES CA. 15 MINUTE QUADRANGLE.

SUNOL PUMPING STATION

SITE LOCATION MAP

CDM
environmental engineers, scientists,
planners, & management consultants

Figure No. 1

former location of the diesel tank was not removed; therefore, soil samples were not collected directly beneath the diesel tank. Soil samples were also collected from three separate soil stockpiles representing soil from beneath the diesel tank, the waste oil tank and the lube oil tank. At the decision of the DEH, soil sample analysis varied dependant upon the sample location as follows:

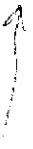
- Diesel UST soil samples - Total petroleum hydrocarbons (TPH), and Benzene, toluene, ethylbenzene, and xylene (BTEX).
- Lube Oil UST soil samples - Total Oil and Grease (TOG).
- Waste Oil UST & Product Line soil samples - TPH, BTEX, TOC, volatile organic compounds (VOCs), base neutral acids, and metals.

Results of the analysis evidenced diesel oil in soil surrounding the former location of the 10,000 gallon diesel tank at levels up to 1,200 milligrams/kilograms (mg/kg). TOG was also detected beneath the former lube oil tank at a concentration of 3,200 mg/kg. Four base neutral acid compounds (including chrysene and pyrene) were detected at a concentration of less than 1 mg/kg beneath the former waste oil tank location. All other analytes were non-detect (ND) or, for metals, at background levels (See Table 1 and Figure 2 for sample analysis results).

chrysene
pyrene

||

carcinogens



Soil samples collected from the three soil ~~stockpiles~~ exhibited similar results as the those detected in soils beneath the three tanks. ~~Stockpiled soil~~ originating from beneath the diesel tank exhibited 50 mg/kg for diesel; soil from the waste oil tank area exhibited petroleum hydrocarbons from 180 mg/kg to 2,300 mg/kg and numerous semivolatile compounds; and soil stockpiled from the lube oil tank were nondetect for TOG.

Extent of Hydrocarbon Impacted Soil

Minor petroleum hydrocarbon releases likely resulting from overfilling and piping joints were identified during removal of the diesel and lube oil tank. Leakage was not evident on the waste oil tank system (see Figure 2). Results of the soil sampling and analysis evidenced hydrocarbons in the sidewalls of the diesel tank excavation and beneath the lube oil tank. Hydrocarbon impacted soil was identified during the boring assessment work primarily in the center of the tank cluster (BH-4 area). Hydrocarbon impacted soil was not detected in borings BH-1 through BH-3 around the diesel UST and only limited hydrocarbon impact was identified in the vicinity of the waste and lube oil USTs.

PNAs? →

These results suggest that the extent of hydrocarbons in soil around the diesel UST is of limited extent. Hydrocarbons detected in boring BH-4 extended to a depth of 20 feet likely impacting the area between the lube oil tank and the

Table 1
Laboratory Analytical Results
Diesel Tank Samples

Sample #	Test Constituents (mg/kg)				
	TPH-diesel	Benzene	Toluene	Ethylbenzene	Xylene
3177B West end	ND	ND	ND	ND	ND
3177B North end	1,200	ND	.010	ND	ND
3177B South end	880	ND	ND	ND	ND
3177B East end	360	ND	ND	ND	.008
3177B Stockpile	50	ND	ND	ND	ND

Method Detection Limit for BTEX = .005 mg/kg
Method Detection Limit for TPH diesel = 1 mg/kg

Lube Oil Tank Samples

Sample #	Total Oil and Grease (mg/kg)
3177B-L-CF (Exe. Bottom)	3200
3177B Stockpile	ND

Method Detection Limit for TOC = 50 mg/kg

Table 1 (continued)
Waste Oil and Product Line Samples

Sample ID	TOG (mg/kg)	BTEX (mg/kg)	TPH Diesel (mg/kg)	TPH Gasoline (mg/kg)	VOCs (µg/kg)	Base Acid Extractables (µg/kg)
3177 WCF (Exc. Bottom)	ND	ND	ND	ND	ND	Phenanthrene = .20 Fluoranthene = .70 Pyrene = .48* Chrysene = .23*
3177 PL (Product Line)	ND	ND	1.1	ND	ND	ND
3177B Stockpile	2,300	xylene = .012	780	180	ND	Acenaphthene = .50 Fluorene = .37 Phenanthrene = 1.50 Anthracene = .67 Fluoranthene = 6.70 Benzo(a) anthacene = 1.50 Bis (2-eth)phthalate = 2.30 Chrysene = 1.30*

VOC Method Detection Limit = 1 to 50 µg/kg
 TOG Method Detection Limit = 50 mg/kg
 TPH Method Detection Limit = 1 mg/kg
 Base Acid Extractables Method Detection Limit = 0.12 mg/kg to 0.61 mg/kg
 BTEX Method Detection Limit = .005 mg/kg

* carcinogen

area beneath the lube oil and the 10,000 tank. CDM has estimated 30 additional yards of impacted soils in this area.

During the course of the tank removal, approximately 125 cubic yards of soil was excavated of which approximately 75 cubic yards was impacted with petroleum hydrocarbons.

Conclusions

The three USTs have been removed from the ground and minor petroleum hydrocarbons soil impact has been identified beneath the lube oil tank and in the side walls of the diesel excavation sidewalls. Approximately 75 cubic yards of petroleum hydrocarbon impacted soil has been removed from the ground and is stockpiled on-site.

DEPTH	DIESEL
5	ND
10	ND
15	ND
20	ND

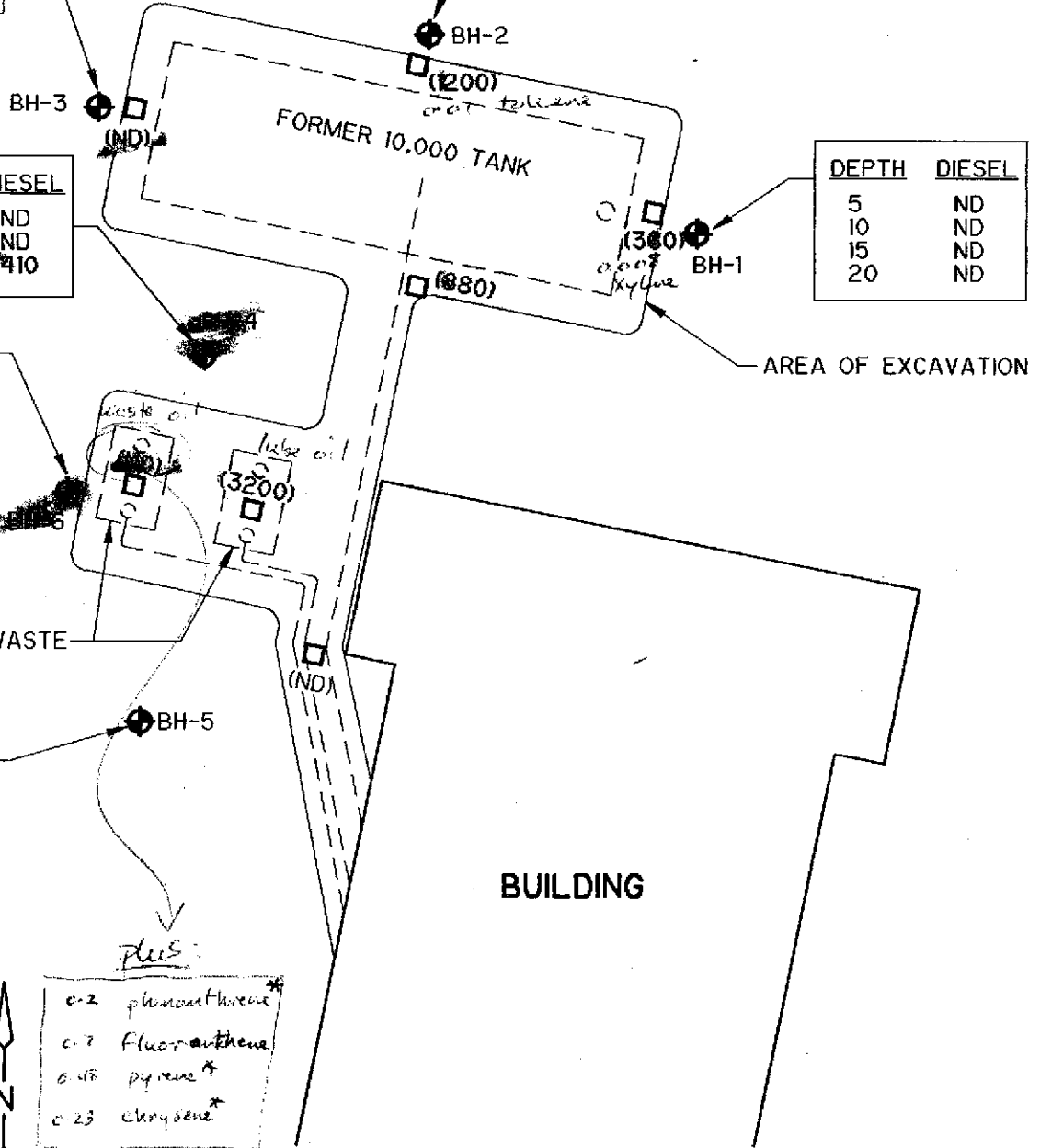
DEPTH	DIESEL
5	ND
10	ND
15	ND
20	ND

DEPTH	TOG	DIESEL
5	ND	ND
10	ND	ND
15	90	410

DEPTH	DIESEL
5	ND
10	ND
15	ND
20	ND

DEPTH	TOG
5	ND
10	ND
15	60

DEPTH	TOG
10	ND
15	ND
20	ND
23	ND



EXPLANATION

- ⊕ SOIL BORING LOCATIONS
- SOIL SAMPLE LOCATIONS
- (880) HYDROCARBON CONCENTRATION
- TOG TOTAL OIL AND GREASE
- ALL HYDROCARBON CONCENTRATION ARE MILLIGRAMS/KILOGRAMS (mg/kg)

SUNOL PUMPING STATION

SITE PLAN AND SAMPLE LOCATIONS



environmental engineers, scientists, planners, & management consultants

Figure No. 2

CDM/CADD ST6

03/1995

02/01/94

CS0101C

X:\WORK\5800\MPR

Appendix A
Laboratory Analytical Results

CHAIN OF CUSTODY

REG RUSH 24 hr.

SAMPLERS: (Signature)						ANALYSIS REQUESTED															
PROJECT NAME: (Print) Sunol Pump Station																	JOB NUMBER: 3177B				
DESCRIPTION: removal of underground storage tank																					
ADDRESS: 505 Paloma Way, Sunol CA 94586																					
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	SAMPLE LOCATION	TOTAL PETROLEUM & HYDROCARBONS as BTEX	VOC - EPA 8240	TOTAL OIL AND GREASE	TETRAETHYL LEAD	EPA - 8270	METALS	Pesticides	REMARKS								
3177B-W-10.5'	11/16/93	3:40	X		West end, outside concrete backfill	X	X														
3177B-N-6'	11/16/93	3:45	X		North end, outside concrete backfill	X	X														
3177-S-8.5'	11/16/93	3:50	X		South end, outside concrete backfill	X	X														
3177-E-11.5'	11/16/93	3:55	X		East end, outside concrete backfill	X	X														
RELINQUISHED BY: (Signature)					Date: 11/16/93		RECEIVED BY: (Signature) L & W Storage					Date: 11/16/93									
RELINQUISHED BY: (Signature) L & W Storage					Time: 5:30 PM							Time: 5:30 PM									
RELINQUISHED BY: (Signature)					Date: 11/17/93		RECEIVED BY: (Signature)					Date: 11/17/93									
RELINQUISHED BY: (Signature)					Time: 10:45							Time: 10:45 AM									
RELINQUISHED BY: (Signature)					Date: 11/17/93		RECEIVED BY: (Signature)					Date: 11/17/93									
RELINQUISHED BY: (Signature)					Time: 11:30 AM		Sveinur Solhu					Time: 11:30 AM									
RELINQUISHED BY: (Signature)					Date:		RECEIVED BY: (Signature)					Date:									
RELINQUISHED BY: (Signature)					Time:		RECEIVED BY: (Signature)					Time:									
RELINQUISHED BY: (Signature)					Date:		RECEIVED BY: (Signature)					Date:									
RELINQUISHED BY: (Signature)					Time:		RECEIVED BY: (Signature)					Time:									

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/17/93
Date Extracted: 11/17/93
Date Analyzed: 11/17/93
Date Reported: 11/19/93
Job #: 75241

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis
EPA Method 8020
mg/Kg

Table with 6 columns: Lab I.D., Client I.D., Benzene, MDL, Toluene, MDL. Rows 75241-1 to 75241-4.

Table with 6 columns: Lab I.D., Client I.D., Ethylbenzene, MDL, Xylenes, MDL. Rows 75241-1 to 75241-4.

QA/QC: Matrix Spike Recovery for Benzene: 96%
Matrix Spike Recovery for Toluene: 97%
Matrix Spike Recovery for Chlorobenzene: 112%

Matrix Spike Duplicate Recovery for Benzene: 91%
Matrix Spike Duplicate Recovery for Toluene: 92%
Matrix Spike Duplicate Recovery for Chlorobenzene: 108%

MDL: Method Detection Limit. Compound below this level would not be detected.

Signature of Jaime Chow
Jaime Chow
Laboratory Director

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CALIFORNIA STATE CERTIFIED LABORATORY

JC/dwc

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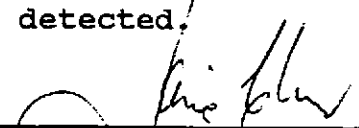
Date Received: 11/17/93
Date Extracted: 11/17/93
Date Analyzed: 11/17/93
Date Reported: 11/19/93
Job #: 75241

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel</u>	<u>MDL</u>
75241-1	3177B-W-10.5'	ND<1.0	1.0
75241-2	3177B-N-6'	1,200	5.0
75241-3	3177-S-8.5'	880	1.0
75241-4	3177-E-11.5'	360	5.0

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/dwc

CHAIN OF CUSTODY

 REG

 RUSH

24 hr.

SAMPLERS: (Signature)					ANALYSIS REQUESTED TOTAL PETROLEUM gas & HYDROCARBONS diesel BTEX VOC - EPA 8240 TOTAL OIL AND GREASE TETRAETHYL LEAD EPA - 8270 METALS REMARKS													
PROJECT NAME: (Print) Sunol Pump Station JOB NUMBER: 3177B																		
DESCRIPTION: Excavated soil (stockpile)																		
ADDRESS: 505 Paloma Way, Sunol, California																		
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	SAMPLE LOCATION													
3177B-Waste oil	11/10/93	2:00	X		Stockpile for waste oil tank	X	X	X	X			X	X					
3177B-Lub.oil	11/10/93	2:10	X		Stockpile for Lubercating oil tank				X									
3177B-Diesel tank	11/10/93	2:20	X		Stockpile for diesel tank	X	X											TPHd & BTEX only
RELINGQUISHED BY: (Signature)					Date: 11/10/93 Time: 3:40		RECIEVED BY: (Signature)					Date: 11/10/93 Time: 3:40pm						
RELINGQUISHED BY: (Signature)					Date: Time:		RECIEVED BY: (Signature)					Date: Time:						
RELINGQUISHED BY: (Signature)					Date: Time:		RECIEVED BY: (Signature)					Date: Time:						
RELINGQUISHED BY: (Signature)					Date: Time:		RECIEVED BY: (Signature)					Date: Time:						
RELINGQUISHED BY: (Signature)					Date: Time:		RECIEVED BY: (Signature)					Date: Time:						

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2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/11/93
Date Reported: 11/15/93
Job #: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis
EPA Method 8020
mg/Kg

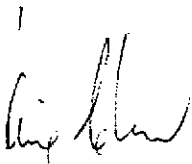
<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Benzene</u>	<u>MDL</u>	<u>Toluene</u>	<u>MDL</u>
75223-1	3177B-Waste oil	ND<0.005	0.005	ND<0.005	0.005
75223-3	3177B-Diesel tank	ND<0.005	0.005	ND<0.005	0.005

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Ethyl- benzene</u>	<u>MDL</u>	<u>Xylenes</u>	<u>MDL</u>
75223-1	3177B-Waste oil	ND<0.005	0.005	0.012	0.005
75223-3	3177B-Diesel tank	ND<0.005	0.005	ND<0.005	0.005

QA/QC: Matrix Spike Recovery for Benzene: 98%
Matrix Spike Recovery for Toluene: 97%
Matrix Spike Recovery for Chlorobenzene: 110%

Matrix Spike Duplicate Recovery for Benzene: 99%
Matrix Spike Duplicate Recovery for Toluene: 98%
Matrix Spike Duplicate Recovery for Chlorobenzene: 116%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

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Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

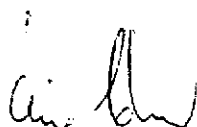
EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-1

Client I.D.: 3177B-Waste Oil

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<0.24	0.24
2-chlorophenol	ND<0.20	0.20
2-methyl phenol	ND<0.19	0.19
4-methyl phenol	ND<0.17	0.17
2-nitrophenol	ND<0.18	0.18
2,4-dimethylphenol	ND<0.12	0.12
2,4-dichlorophenol	ND<0.22	0.22
4-chloro-3-methylphenol	ND<0.18	0.18
2,4,5-trichlorophenol	ND<0.22	0.22
2,4,6-trichlorophenol	ND<0.15	0.15
2,4-dinitrophenol	ND<0.13	0.13
4-nitrophenol	ND<0.19	0.19
2-methyl-4,6-dinitrophenol	ND<0.15	0.15
Pentachlorophenol	ND<0.18	0.18
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<0.13	0.13
Bis(2-chloroethyl) ether	ND<0.26	0.26
1,3-dichlorobenzene	ND<0.20	0.20
1,4-dichlorobenzene	ND<0.19	0.19
1,2-dichlorobenzene	ND<0.20	0.20
Bis-(2-chloroisopropyl) ether	ND<0.19	0.19

ND = Not Detected



Jaime Chow
Laboratory Director

Page 1 of 3

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JC/dwc

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Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-1

Client I.D.: 3177B-Waste Oil

Stockpile

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<0.16	0.16
Hexachloroethane	ND<0.21	0.21
Nitrobenzene	ND<0.18	0.18
Isophorone	ND<0.16	0.16
Bis-(2-chloroethoxy)methane	ND<0.18	0.18
1,2,4-trichlorobenzene	ND<0.19	0.19
Napthalene	ND<0.22	0.22
Hexachlorobutadiene	ND<0.21	0.21
2-chloronaphthalene	ND<0.15	0.15
2-methyl naphthalene	ND<0.18	0.18
4-chloroaniline	ND<0.20	0.20
2-nitroaniline	ND<0.16	0.16
3-nitroaniline	ND<0.17	0.17
4-nitroaniline	ND<0.23	0.23
Hexachlorocyclopentadiene	ND<0.22	0.22
Dimethyl phthalate	ND<0.12	0.12
Acenaphthylene	ND<0.16	0.16
Acenaphthene	██████████	0.14
2,4-dinitrotoluene	ND<0.17	0.17
2,6-dinitrotoluene	ND<0.13	0.13
Diethyl phthalate	ND<0.12	0.12
4-chlorophenylphenylether	ND<0.15	0.15
Fluorene	██████████	0.15
N-nitrosodiphenylamine	ND<0.11	0.11
4-bromophenylphenylether	ND<0.12	0.12
Hexachlorobenzene	ND<0.13	0.13

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Analyzed: 11/11/93
Date Reported: 11/15/93
Job #: 75223

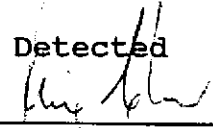
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75223-1
Client I.D.: 3177B-Waste oil

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Chloromethane	ND<8	8
Bromomethane	ND<3	3
Vinyl chloride	ND<6	6
Chloroethane	ND<6	6
Methylene chloride	ND<10	10
Dichlorodifluoromethane	ND<4	4
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<3	3
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<2	2
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<4	4
1,2-dichloroethane	ND<3	3
1,1,1-trichloroethane	ND<1	1
Carbon tetrachloride	ND<1	1
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<4	4
Benzene	ND<2	2
Dibromochloromethane	ND<5	5
1,1,2-trichloroethane	ND<4	4

ND = Not Detected



Jaime Chow
Laboratory Director

Page 1 of 2

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Job #: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75223-1
Client I.D.: 3177B-Waste oil

stockpile

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<8	8
Bromoform	ND<7	7
1,1,2,2-tetrachloroethane	ND<9	9
Tetrachloroethene	ND<2	2
Toluene	ND<6	6
Chlorobenzene	ND<1	1
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<7	7
1,2-Dichlorobenzene	ND<7	7
1,4-Dichlorobenzene	ND<7	7
Freon 113	ND<3	3
M + P Xylene	ND<4	4
o-Xylene	ND<3	3
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<22	22
Styrene	ND<3	3
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<14	14
Acrolein	ND<26	26

ND = Not Detected

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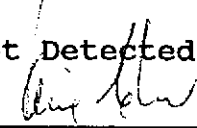
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75223-MB
Client I.D.: METHOD BLANK

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Chloromethane	ND<8	8
Bromomethane	ND<3	3
Vinyl chloride	ND<6	6
Chloroethane	ND<6	6
Methylene chloride	ND<10	10
Dichlorodifluoromethane	ND<4	4
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<3	3
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<2	2
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<4	4
1,2-dichloroethane	ND<3	3
1,1,1-trichloroethane	ND<1	1
Carbon tetrachloride	ND<1	1
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<4	4
Benzene	ND<2	2
Dibromochloromethane	ND<5	5
1,1,2-trichloroethane	ND<4	4

ND = Not Detected



Jaime Chow
Laboratory Director

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Job #: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75223-MB
Client I.D.: METHOD BLANK

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<8	8
Bromoform	ND<7	7
1,1,2,2-tetrachloroethane	ND<9	9
Tetrachloroethene	ND<2	2
Toluene	ND<6	6
Chlorobenzene	ND<1	1
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<7	7
1,2-Dichlorobenzene	ND<7	7
1,4-Dichlorobenzene	ND<7	7
Freon 113	ND<3	3
M + P Xylene	ND<4	4
o-Xylene	ND<3	3
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<22	22
Styrene	ND<3	3
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<14	14
Acrolein	ND<26	26

ND = Not Detected

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Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75223


Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-MB
Client I.D.: METHOD BLANK

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<0.24	0.24
2-chlorophenol	ND<0.20	0.20
2-methyl phenol	ND<0.19	0.19
4-methyl phenol	ND<0.17	0.17
2-nitrophenol	ND<0.18	0.18
2,4-dimethylphenol	ND<0.12	0.12
2,4-dichlorophenol	ND<0.22	0.22
4-chloro-3-methylphenol	ND<0.18	0.18
2,4,5-trichlorophenol	ND<0.22	0.22
2,4,6-trichlorophenol	ND<0.15	0.15
2,4-dinitrophenol	ND<0.13	0.13
4-nitrophenol	ND<0.19	0.19
2-methyl-4,6-dinitrophenol	ND<0.15	0.15
Pentachlorophenol	ND<0.18	0.18
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<0.13	0.13
Bis(2-chloroethyl)ether	ND<0.26	0.26
1,3-dichlorobenzene	ND<0.20	0.20
1,4-dichlorobenzene	ND<0.19	0.19
1,2-dichlorobenzene	ND<0.20	0.20
Bis-(2-chloroisopropyl)ether	ND<0.19	0.19

ND = Not Detected



Jaime Chow
Laboratory Director

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Date Received: 11/10/93
Date Extracted: 11/11/93
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Date Reported: 11/15/93
Job No.: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-MB
Client I.D.: METHOD BLANK

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<0.16	0.16
Hexachloroethane	ND<0.21	0.21
Nitrobenzene	ND<0.18	0.18
Isophorone	ND<0.16	0.16
Bis-(2-chloroethoxy)methane	ND<0.18	0.18
1,2,4-trichlorobenzene	ND<0.19	0.19
Napthalene	ND<0.22	0.22
Hexachlorobutadiene	ND<0.21	0.21
2-chloronapthalene	ND<0.15	0.15
2-methyl napthalene	ND<0.18	0.18
4-chloroaniline	ND<0.20	0.20
2-nitroaniline	ND<0.16	0.16
3-nitroaniline	ND<0.17	0.17
4-nitroaniline	ND<0.23	0.23
Hexachlorocyclopentadiene	ND<0.22	0.22
Dimethyl phthalate	ND<0.12	0.12
Acenaphthylene	ND<0.16	0.16
Acenaphthene	ND<0.14	0.14
2,4-dinitrotoluene	ND<0.17	0.17
2,6-dinitrotoluene	ND<0.13	0.13
Diethyl phthalate	ND<0.12	0.12
4-chlorophenylphenylether	ND<0.15	0.15
Fluorene	ND<0.15	0.15
N-nitrosodiphenylamine	ND<0.11	0.11
4-bromophenylphenylether	ND<0.12	0.12
Hexachlorobenzene	ND<0.13	0.13

ND = Not Detected

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Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA

Matrix: Soil

EPA Method 8270

Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-1

Client I.D.: 3177B-Waste Oil

stack pile

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	1.50	0.13
Anthracene	0.67	0.13
Di-n-butylphthalate	ND<0.22	0.22
Fluoranthene	6.70	0.22
Pyrene	4.00	0.14
Benzylbutylphthalate	ND<0.11	0.11
3,3'-dichlorobenzidine	ND<0.53	0.53
Benzo(a)anthracene	1.50	0.61
Bis-(2-ethylhexyl)phthalate	2.30	0.20
Chrysene	1.30	0.13
Di-n-octylphthalate	ND<0.40	0.40
Benzo(b)fluoranthene	ND<0.19	0.19
Benzo(k)fluoranthene	ND<0.11	0.11
Benzo(a)pyrene	ND<0.14	0.14
Indeno(1,2,3-cd)pyrene	ND<0.31	0.31
Dibenzo(a,h)anthracene	ND<0.39	0.39
Benzo(ghi)perylene	ND<0.39	0.39

ND = Not Detected

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San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75223-MB
Client I.D.: METHOD BLANK

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<0.13	0.13
Anthracene	ND<0.13	0.13
Di-n-butylphthalate	ND<0.22	0.22
Fluoranthene	ND<0.22	0.22
Pyrene	ND<0.14	0.14
Benzylbutylphthalate	ND<0.11	0.11
3,3'-dichlorobenzidine	ND<0.53	0.53
Benzo(a)anthracene	ND<0.61	0.61
Bis-(2-ethylhexyl)phthalate	ND<0.20	0.20
Chrysene	ND<0.13	0.13
Di-n-octylphthalate	ND<0.40	0.40
Benzo(b)fluoranthene	ND<0.19	0.19
Benzo(k)fluoranthene	ND<0.11	0.11
Benzo(a)pyrene	ND<0.14	0.14
Indeno(1,2,3-cd)pyrene	ND<0.31	0.31
Dibenzo(a,h)anthracene	ND<0.39	0.39
Benzo(ghi)perylene	ND<0.39	0.39

ND = Not Detected

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Project: #3177B/ Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

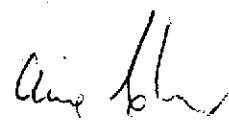
EPA Method 6010
Preparation Method 3050
mg/Kg

stockpile

Lab I.D.:	75223-1		% Spike Recovery
Client I.D.:	<u>3177B-Waste Oil</u>	<u>MDL</u>	
METAL			
Arsenic *	2.58	0.04	104
Barium	105	0.02	96
Beryllium	0.25	0.008	97
Cadmium	ND<0.08	0.08	104
Cobalt	7.50	0.08	91
Chromium	26.8	0.10	89
Copper	19.2	0.05	87
Molybdenum	ND<0.15	0.15	97
Nickel	37.0	0.30	90
Lead	6.00	0.40	91
Antimony	1.25	0.40	69
Selenium	ND<0.85	0.85	96
Thallium	ND<1.10	1.10	99
Vanadium	23.5	0.08	93
Zinc	48.0	0.05	87
Mercury **	0.04	0.015	101
Silver ***	ND<0.04	0.04	87

- * Arsenic by Hydride, Flame AA Method 7061
- ** Mercury by Cold Vapor, Flame AA Method 7471
- *** Preparation Method 3005

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director
OUTSTANDING QUALITY AND SERVICE
CALIFORNIA STATE CERTIFIED LABORATORY

JC/dwc

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Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

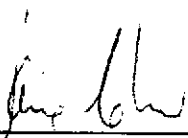
Total Oil & Grease Analysis
EPA Method 5520D
mg/Kg

stack pile

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Total Oil & Grease</u>	<u>MDL</u>
75223-1	3177B-Waste oil	2,300	50
75223-2	3177B-Lub. oil	ND<50	50

QA/QC: Matrix Spike Recovery: 95%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chōw
Laboratory Director

JC/dwc

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Job #: 75223

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

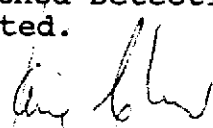
stack pile

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel</u>	<u>MDL</u>
75223-1	3177B-Waste oil	780	1.0
75223-3	3177B-Diesel tank	50	1.0

QA/QC: Matrix Spike Recovery for Diesel: 118%
Matrix Spike Duplicate Recovery for Diesel: 105%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chó
Laboratory Director

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Job #: 75223

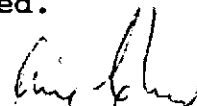
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

stock pile
Total Petroleum Hydrocarbon Analysis
EPA Method 5030
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Gasoline Range</u>	<u>MDL</u>
75223-1	3177B-Waste oil	180	1.0

QA/QC: Matrix Spike Recovery for Gasoline: 98%
Matrix Spike Duplicate Recovery for Gasoline: 100%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/dwc

CHAIN OF CUSTODY

REG RUSH 24 hr.

SAMPLERS: (Signature)					ANALYSIS REQUESTED TOTAL PETROLEUM Gas & HYDROCARBONS (diesel) BTEX VOC - EPA 8240 TOTAL OIL AND GREASE TETRAETHYL LEAD EPA - 8270 METALS									
PROJECT NAME: (Print) Sunol Pump Station		JOB NUMBER: 3177B												
DESCRIPTION: Tank Removal														
ADDRESS: 505 Paloma Way, Sunol, California														
CROSS REFERENCE NUMBER	DATE	TIME	SOIL	WATER	SAMPLE LOCATION	X	X	X	X		X	X		REMARKS
3177B-W-CF	11/10/93	12:45	X		waste oil tank (center floor at 8 feet)	X	X	X	X		X	X		
3177B-L-CF	11/10/93	12:50	X		lubercating oil tank (center floor at 8 feet)				X					
3177B-PL	11/10/93	1:10	X		product line at 3 feet	X	X	X	X		X	X		
RELINGQUISHED BY: (Signature)			Date: 11/10/93		RECIEVED BY: (Signature)			Date: 11/10/93						
RELINGQUISHED BY: (Signature)			Time: 3:40		RECIEVED BY: (Signature)			Time: 3:40 pm						
RELINGQUISHED BY: (Signature)			Date:		RECIEVED BY: (Signature)			Date:						
RELINGQUISHED BY: (Signature)			Time:		RECIEVED BY: (Signature)			Time:						
RELINGQUISHED BY: (Signature)			Date:		RECIEVED BY: (Signature)			Date:						
RELINGQUISHED BY: (Signature)			Time:		RECIEVED BY: (Signature)			Time:						
RELINGQUISHED BY: (Signature)			Date:		RECIEVED BY: (Signature)			Date:						
RELINGQUISHED BY: (Signature)			Time:		RECIEVED BY: (Signature)			Time:						

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CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services, Inc.
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/11/93
Date Reported: 11/15/93
Job #: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis
EPA Method 8020
mg/Kg

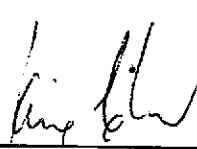
<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Benzene</u>	<u>MDL</u>	<u>Toluene</u>	<u>MDL</u>
75224-1	3177B-W-CF	ND<0.005	0.005	ND<0.005	0.005
75224-3	3177B-PL	ND<0.005	0.005	ND<0.005	0.005

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Ethyl- benzene</u>	<u>MDL</u>	<u>Xylenes</u>	<u>MDL</u>
75223-1	3177B-W-CF	ND<0.005	0.005	ND<0.005	0.005
75223-3	3177B-PL	ND<0.005	0.005	ND<0.005	0.005

QA/QC: Matrix Spike Recovery for Benzene: 98%
Matrix Spike Recovery for Toluene: 97%
Matrix Spike Recovery for Chlorobenzene: 110%

Matrix Spike Duplicate Recovery for Benzene: 99%
Matrix Spike Duplicate Recovery for Toluene: 98%
Matrix Spike Duplicate Recovery for Chlorobenzene: 116%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

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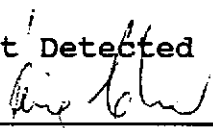
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75224-1
Client I.D.: 3177B-W-CF

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Chloromethane	ND<8	8
Bromomethane	ND<3	3
Vinyl chloride	ND<6	6
Chloroethane	ND<6	6
Methylene chloride	ND<10	10
Dichlorodifluoromethane	ND<4	4
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<3	3
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<2	2
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<4	4
1,2-dichloroethane	ND<3	3
1,1,1-trichloroethane	ND<1	1
Carbon tetrachloride	ND<1	1
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<4	4
Benzene	ND<2	2
Dibromochloromethane	ND<5	5
1,1,2-trichloroethane	ND<4	4

ND = Not Detected


Jaime Chow
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Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
 $\mu\text{g}/\text{Kg}$

Lab I.D.: 75224-1
Client I.D.: 3177B-W-CF

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<8	8
Bromoform	ND<7	7
1,1,2,2-tetrachloroethane	ND<9	9
Tetrachloroethene	ND<2	2
Toluene	ND<6	6
Chlorobenzene	ND<1	1
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<7	7
1,2-Dichlorobenzene	ND<7	7
1,4-Dichlorobenzene	ND<7	7
Freon 113	ND<3	3
M + P Xylene	ND<4	4
o-Xylene	ND<3	3
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<22	22
Styrene	ND<3	3
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<14	14
Acrolein	ND<26	26

ND = Not Detected

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Job #: 75224

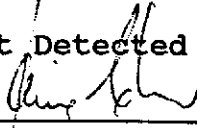
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75224-3
Client I.D.: 3177B-PL

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Chloromethane	ND<8	8
Bromomethane	ND<3	3
Vinyl chloride	ND<6	6
Chloroethane	ND<6	6
Methylene chloride	ND<10	10
Dichlorodifluoromethane	ND<4	4
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<3	3
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<2	2
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<4	4
1,2-dichloroethane	ND<3	3
1,1,1-trichloroethane	ND<1	1
Carbon tetrachloride	ND<1	1
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<4	4
Benzene	ND<2	2
Dibromochloromethane	ND<5	5
1,1,2-trichloroethane	ND<4	4

ND = Not Detected


Jaime Chow
Laboratory Director

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Job #: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
 $\mu\text{g}/\text{Kg}$

Lab I.D.: 75224-3
Client I.D.: 3177B-PL

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<8	8
Bromoform	ND<7	7
1,1,2,2-tetrachloroethane	ND<9	9
Tetrachloroethene	ND<2	2
Toluene	ND<6	6
Chlorobenzene	ND<1	1
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<7	7
1,2-Dichlorobenzene	ND<7	7
1,4-Dichlorobenzene	ND<7	7
Freon 113	ND<3	3
M + P Xylene	ND<4	4
o-Xylene	ND<3	3
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<22	22
Styrene	ND<3	3
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<14	14
Acrolein	ND<26	26

ND = Not Detected

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Job #: 75224


Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75224-MB
Client I.D.: METHOD BLANK

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Chloromethane	ND<8	8
Bromomethane	ND<3	3
Vinyl chloride	ND<6	6
Chloroethane	ND<6	6
Methylene chloride	ND<10	10
Dichlorodifluoromethane	ND<4	4
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<3	3
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<2	2
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<4	4
1,2-dichloroethane	ND<3	3
1,1,1-trichloroethane	ND<1	1
Carbon tetrachloride	ND<1	1
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<4	4
Benzene	ND<2	2
Dibromochloromethane	ND<5	5
1,1,2-trichloroethane	ND<4	4

ND = Not Detected



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Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA METHOD 8240
PURGEABLE ORGANICS
µg/Kg

Lab I.D.: 75224-MB

Client I.D.: METHOD BLANK

<u>Compound</u>	<u>Concentration</u>	<u>Limit of Detection</u>
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<8	8
Bromoform	ND<7	7
1,1,2,2-tetrachloroethane	ND<9	9
Tetrachloroethene	ND<2	2
Toluene	ND<6	6
Chlorobenzene	ND<1	1
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<7	7
1,2-Dichlorobenzene	ND<7	7
1,4-Dichlorobenzene	ND<7	7
Freon 113	ND<3	3
M + P Xylene	ND<4	4
o-Xylene	ND<3	3
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<22	22
Styrene	ND<3	3
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<14	14
Acrolein	ND<26	26

ND = Not Detected

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Job #: 75224

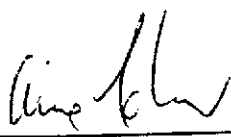
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Total Oil & Grease Analysis
EPA Method 5520D
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Total Oil & Grease</u>	<u>MDL</u>
75224-1	3177B-W-CF	ND<50	50
75224-2	3177B-L-CF	3200	50
75224-3	3177B-PL	ND<50	50

QA/QC: Matrix Spike Recovery: 95%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/dwc

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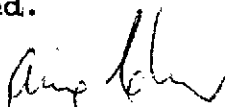
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel</u>	<u>MDL</u>
75224-1	3177B-W-CF	ND<1.0	1.0
75224-3	3177B-PL	1.1	1.0

QA/QC: Matrix Spike Recovery for Diesel: 118%
Matrix Spike Duplicate Recovery for Diesel: 105%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

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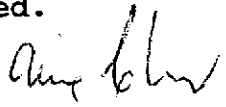
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

Total Petroleum Hydrocarbon Analysis
EPA Method 5030
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Gasoline</u>	<u>MDL</u>
75224-1	3177B-W-CF	ND<1.0	1.0
75224-3	3177B-PL	ND<1.0	1.0

QA/QC: Matrix Spike Recovery for Gasoline: 98%
Matrix Spike Duplicate Recovery for Gasoline: 100%

MDL: Method Detection Limit. Compound below this level would not be detected.



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Laboratory Director

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Project: #3177B/ Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 6010
Preparation Method 3050
mg/Kg

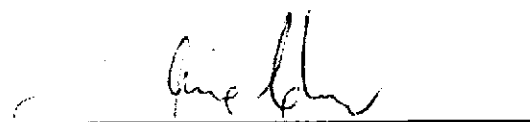
Lab I.D.: 75224-1
Client I.D.: ~~3177B-W-GE~~

MDL
% Spike Recovery

		MDL	% Spike Recovery
METAL			
Arsenic *	3.71	0.04	104
Barium	88.8	0.02	96
Beryllium	0.25	0.008	97
Cadmium	ND<0.08	0.08	104
Cobalt	7.50	0.08	91
Chromium	29.2	0.10	89
Copper	33.8	0.05	87
Molybdenum	ND<0.15	0.15	97
Nickel	42.0	0.30	90
Lead	6.75	0.40	91
Antimony	1.50	0.40	69
Selenium	ND<0.85	0.85	96
Thallium	ND<1.10	1.10	99
Vanadium	20.0	0.08	93
Zinc	44.5	0.05	87
Mercury **	0.03	0.015	101
Silver ***	ND<0.04	0.04	87

- * Arsenic by Hydride, Flame AA Method 7061
- ** Mercury by Cold Vapor, Flame AA Method 7471
- *** Preparation Method 3005

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director **OUTSTANDING QUALITY AND SERVICE**
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Date Reported: 11/15/93
Job #: 75224

Project: #3177B/ Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 6010
Preparation Method 3050
mg/Kg

Lab I.D.: 75224-3
Client I.D.: 3177B-PL

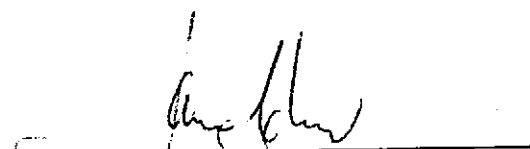
MDL

% Spike
Recovery

		MDL	% Spike Recovery
METAL			
Arsenic *	4.00	0.04	104
Barium	85.0	0.02	96
Beryllium	0.25	0.008	97
Cadmium	ND<0.08	0.08	104
Cobalt	8.00	0.08	91
Chromium	32.5	0.10	89
Copper	19.8	0.05	87
Molybdenum	ND<0.15	0.15	97
Nickel	47.8	0.30	90
Lead	5.50	0.40	91
Antimony	1.25	0.40	69
Selenium	ND<0.85	0.85	96
Thallium	ND<1.10	1.10	99
Vanadium	21.8	0.08	93
Zinc	38.0	0.05	87
Mercury **	0.03	0.015	101
Silver ***	ND<0.04	0.04	87

- * Arsenic by Hydride, Flame AA Method 7061
- ** Mercury by Cold Vapor, Flame AA Method 7471
- *** Preparation Method 3005

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director **OUTSTANDING QUALITY AND SERVICE**
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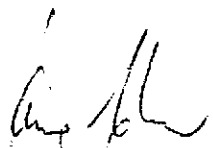
Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-1
Client I.D.: 3177B-W-CF

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<0.24	0.24
2-chlorophenol	ND<0.20	0.20
2-methyl phenol	ND<0.19	0.19
4-methyl phenol	ND<0.17	0.17
2-nitrophenol	ND<0.18	0.18
2,4-dimethylphenol	ND<0.12	0.12
2,4-dichlorophenol	ND<0.22	0.22
4-chloro-3-methylphenol	ND<0.18	0.18
2,4,5-trichlorophenol	ND<0.22	0.22
2,4,6-trichlorophenol	ND<0.15	0.15
2,4-dinitrophenol	ND<0.13	0.13
4-nitrophenol	ND<0.19	0.19
2-methyl-4,6-dinitrophenol	ND<0.15	0.15
Pentachlorophenol	ND<0.18	0.18
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<0.13	0.13
Bis(2-chloroethyl)ether	ND<0.26	0.26
1,3-dichlorobenzene	ND<0.20	0.20
1,4-dichlorobenzene	ND<0.19	0.19
1,2-dichlorobenzene	ND<0.20	0.20
Bis-(2-chloroisopropyl)ether	ND<0.19	0.19

ND = Not Detected


Jaime Chow
Laboratory Director

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Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-1
Client I.D.: ~~3177B-W-CF~~

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<0.16	0.16
Hexachloroethane	ND<0.21	0.21
Nitrobenzene	ND<0.18	0.18
Isophorone	ND<0.16	0.16
Bis-(2-chloroethoxy)methane	ND<0.18	0.18
1,2,4-trichlorobenzene	ND<0.19	0.19
Napthalene	ND<0.22	0.22
Hexachlorobutadiene	ND<0.21	0.21
2-chloronaphthalene	ND<0.15	0.15
2-methyl naphthalene	ND<0.18	0.18
4-chloroaniline	ND<0.20	0.20
2-nitroaniline	ND<0.16	0.16
3-nitroaniline	ND<0.17	0.17
4-nitroaniline	ND<0.23	0.23
Hexachlorocyclopentadiene	ND<0.22	0.22
Dimethyl phthalate	ND<0.12	0.12
Acenaphthylene	ND<0.16	0.16
Acenaphthene	ND<0.14	0.14
2,4-dinitrotoluene	ND<0.17	0.17
2,6-dinitrotoluene	ND<0.13	0.13
Diethyl phthalate	ND<0.12	0.12
4-chlorophenylphenylether	ND<0.15	0.15
Fluorene	ND<0.15	0.15
N-nitrosodiphenylamine	ND<0.11	0.11
4-bromophenylphenylether	ND<0.12	0.12
Hexachlorobenzene	ND<0.13	0.13

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-1

Client I.D.: 3177B-W-CF

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	0.20	0.13
Anthracene	ND<0.13	0.13
Di-n-butylphthalate	ND<0.22	0.22
Fluoranthene	0.70	0.22
Pyrene	0.48	0.14
Benzylbutylphthalate	ND<0.11	0.11
3,3'-dichlorobenzidine	ND<0.53	0.53
Benzo(a)anthracene	ND<0.61	0.61
Bis-(2-ethylhexyl)phthalate	ND<0.20	0.20
Chrysene	0.22	0.13
Di-n-octylphthalate	ND<0.40	0.40
Benzo(b)fluoranthene	ND<0.19	0.19
Benzo(k)fluoranthene	ND<0.11	0.11
Benzo(a)pyrene	ND<0.14	0.14
Indeno(1,2,3-cd)pyrene	ND<0.31	0.31
Dibenzo(a,h)anthracene	ND<0.39	0.39
Benzo(ghi)perylene	ND<0.39	0.39

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-3
Client I.D.: 3177B-PL

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<0.24	0.24
2-chlorophenol	ND<0.20	0.20
2-methyl phenol	ND<0.19	0.19
4-methyl phenol	ND<0.17	0.17
2-nitrophenol	ND<0.18	0.18
2,4-dimethylphenol	ND<0.12	0.12
2,4-dichlorophenol	ND<0.22	0.22
4-chloro-3-methylphenol	ND<0.18	0.18
2,4,5-trichlorophenol	ND<0.22	0.22
2,4,6-trichlorophenol	ND<0.15	0.15
2,4-dinitrophenol	ND<0.13	0.13
4-nitrophenol	ND<0.19	0.19
2-methyl-4,6-dinitrophenol	ND<0.15	0.15
Pentachlorophenol	ND<0.18	0.18
<u>BASE/NEUTRAL COMPOUNDS</u>		
N-nitrosodimethylamine	ND<0.13	0.13
Bis(2-chloroethyl) ether	ND<0.26	0.26
1,3-dichlorobenzene	ND<0.20	0.20
1,4-dichlorobenzene	ND<0.19	0.19
1,2-dichlorobenzene	ND<0.20	0.20
Bis-(2-chloroisopropyl) ether	ND<0.19	0.19

ND = Not Detected

Jaime Chó
Laboratory Director

Page 1 of 3

JC/dwc

OUTSTANDING QUALITY AND SERVICE
CALIFORNIA STATE CERTIFIED LABORATORY

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-3

Client I.D.: 3177B-PL

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<0.16	0.16
Hexachloroethane	ND<0.21	0.21
Nitrobenzene	ND<0.18	0.18
Isophorone	ND<0.16	0.16
Bis-(2-chloroethoxy)methane	ND<0.18	0.18
1,2,4-trichlorobenzene	ND<0.19	0.19
Napthalene	ND<0.22	0.22
Hexachlorobutadiene	ND<0.21	0.21
2-chloronapthalene	ND<0.15	0.15
2-methyl napthalene	ND<0.18	0.18
4-chloroaniline	ND<0.20	0.20
2-nitroaniline	ND<0.16	0.16
3-nitroaniline	ND<0.17	0.17
4-nitroaniline	ND<0.23	0.23
Hexachlorocyclopentadiene	ND<0.22	0.22
Dimethyl phthalate	ND<0.12	0.12
Acenaphthylene	ND<0.16	0.16
Acenaphthene	ND<0.14	0.14
2,4-dinitrotoluene	ND<0.17	0.17
2,6-dinitrotoluene	ND<0.13	0.13
Diethyl phthalate	ND<0.12	0.12
4-chlorophenylphenylether	ND<0.15	0.15
Fluorene	ND<0.15	0.15
N-nitrosodiphenylamine	ND<0.11	0.11
4-bromophenylphenylether	ND<0.12	0.12
Hexachlorobenzene	ND<0.13	0.13

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

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Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-3
Client I.D.: 3177B-PL

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<0.13	0.13
Anthracene	ND<0.13	0.13
Di-n-butylphthalate	ND<0.22	0.22
Fluoranthene	ND<0.22	0.22
Pyrene	ND<0.14	0.14
Benzylbutylphthalate	ND<0.11	0.11
3,3'-dichlorobenzidine	ND<0.53	0.53
Benzo(a)anthracene	ND<0.61	0.61
Bis-(2-ethylhexyl)phthalate	ND<0.20	0.20
Chrysene	ND<0.13	0.13
Di-n-octylphthalate	ND<0.40	0.40
Benzo(b)fluoranthene	ND<0.19	0.19
Benzo(k)fluoranthene	ND<0.11	0.11
Benzo(a)pyrene	ND<0.14	0.14
Indeno(1,2,3-cd)pyrene	ND<0.31	0.31
Dibenzo(a,h)anthracene	ND<0.39	0.39
Benzo(ghi)perylene	ND<0.39	0.39

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

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CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: George Wilson
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San Francisco, CA 94124

Date Received: 11/10/93
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Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

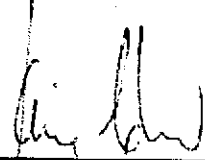
EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-MB
Client I.D.: METHOD BLANK

<u>ACID COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenol	ND<0.24	0.24
2-chlorophenol	ND<0.20	0.20
2-methyl phenol	ND<0.19	0.19
4-methyl phenol	ND<0.17	0.17
2-nitrophenol	ND<0.18	0.18
2,4-dimethylphenol	ND<0.12	0.12
2,4-dichlorophenol	ND<0.22	0.22
4-chloro-3-methylphenol	ND<0.18	0.18
2,4,5-trichlorophenol	ND<0.22	0.22
2,4,6-trichlorophenol	ND<0.15	0.15
2,4-dinitrophenol	ND<0.13	0.13
4-nitrophenol	ND<0.19	0.19
2-methyl-4,6-dinitrophenol	ND<0.15	0.15
Pentachlorophenol	ND<0.18	0.18

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodimethylamine	ND<0.13	0.13
Bis(2-chloroethyl) ether	ND<0.26	0.26
1,3-dichlorobenzene	ND<0.20	0.20
1,4-dichlorobenzene	ND<0.19	0.19
1,2-dichlorobenzene	ND<0.20	0.20
Bis-(2-chloroisopropyl) ether	ND<0.19	0.19

ND = Not Detected



Jaime Chow
Laboratory Director

Precision Analytical Laboratory, Inc.

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Date Received: 11/10/93
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Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA
Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-MB
Client I.D.: METHOD BLANK

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
N-nitrosodi-n-propylamine	ND<0.16	0.16
Hexachloroethane	ND<0.21	0.21
Nitrobenzene	ND<0.18	0.18
Isophorone	ND<0.16	0.16
Bis-(2-chloroethoxy)methane	ND<0.18	0.18
1,2,4-trichlorobenzene	ND<0.19	0.19
Napthalene	ND<0.22	0.22
Hexachlorobutadiene	ND<0.21	0.21
2-chloronaphthalene	ND<0.15	0.15
2-methyl naphthalene	ND<0.18	0.18
4-chloroaniline	ND<0.20	0.20
2-nitroaniline	ND<0.16	0.16
3-nitroaniline	ND<0.17	0.17
4-nitroaniline	ND<0.23	0.23
Hexachlorocyclopentadiene	ND<0.22	0.22
Dimethyl phthalate	ND<0.12	0.12
Acenaphthylene	ND<0.16	0.16
Acenaphthene	ND<0.14	0.14
2,4-dinitrotoluene	ND<0.17	0.17
2,6-dinitrotoluene	ND<0.13	0.13
Diethyl phthalate	ND<0.12	0.12
4-chlorophenylphenylether	ND<0.15	0.15
Fluorene	ND<0.15	0.15
N-nitrosodiphenylamine	ND<0.11	0.11
4-bromophenylphenylether	ND<0.12	0.12
Hexachlorobenzene	ND<0.13	0.13

ND = Not Detected

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: George Wilson
L&W Environmental Services
2111 Jennings Street
San Francisco, CA 94124

Date Received: 11/10/93
Date Extracted: 11/11/93
Date Analyzed: 11/12/93
Date Reported: 11/15/93
Job No.: 75224

Project: #3177B/Sunol Pump Station
505 Paloma Way, Sunol, CA

Matrix: Soil

EPA Method 8270
Acid & Base/Neutral Extractables (Low Level)
mg/Kg

Lab I.D.: 75224-MB

Client I.D.: METHOD BLANK

<u>BASE/NEUTRAL COMPOUNDS</u>	<u>CONCENTRATION</u>	<u>LIMIT OF DETECTION</u>
Phenanthrene	ND<0.13	0.13
Anthracene	ND<0.13	0.13
Di-n-butylphthalate	ND<0.22	0.22
Fluoranthene	ND<0.22	0.22
Pyrene	ND<0.14	0.14
Benzylbutylphthalate	ND<0.11	0.11
3,3'-dichlorobenzidine	ND<0.53	0.53
Benzo(a)anthracene	ND<0.61	0.61
Bis-(2-ethylhexyl)phthalate	ND<0.20	0.20
Chrysene	ND<0.13	0.13
Di-n-octylphthalate	ND<0.40	0.40
Benzo(b)fluoranthene	ND<0.19	0.19
Benzo(k)fluoranthene	ND<0.11	0.11
Benzo(a)pyrene	ND<0.14	0.14
Indeno(1,2,3-cd)pyrene	ND<0.31	0.31
Dibenzo(a,h)anthracene	ND<0.39	0.39
Benzo(ghi)perylene	ND<0.39	0.39

ND = Not Detected

Appendix B
Tank Disposal and Rinsate Manifests

IN CASE OF EMERGENCY OR SPILL CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802 WITHIN CALIFORNIA CALL 1-800-953-3550
 GENERATOR
 TRANSPORTER
 FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA1000027309833110	Manifest Document No. 1 of 1	2. Page 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address CITY AND COUNTY OF SAN FRANCISCO 505 PALOMA WY SUNCH CA 94586			A. State Manifest Document Number 93132258			
4. Generator's Phone (510) 9632989			B. State Generator's ID			
5. Transporter 1 Company Name ERICKSON INC.		6. US EPA ID Number CA10009466392		C. State Transporter's ID 40296		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 510-2351393		
9. Designated Facility Name and Site Address Erickson, Inc. 255 Parr Blvd. Richmond, Ca. 94801		10. US EPA ID Number CAE0009466392		E. State Transporter's ID		
				F. Transporter's Phone		
				G. State Facility's ID		
				H. Facility's Phone (510) 235-1393		
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No. Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number	
a. Waste Empty Storage Tank NON-PCRA Hazardous Waste Solid.		0101 TP	10000	P	State 512 EPA/Other NONE	
b.					State EPA/Other	
c.					State EPA/Other	
d.					State EPA/Other	
J. Additional Descriptions for Materials Listed Above Qty. 1 Empty Storage Tank(s) 12538 . Tank(s) have been inerted with 15 lbs. Dry Ice Per 1000 Gallon Capacity.			K. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information Keep away from sources of ignition. Always wear hardhats when working around U.S.S.T.'s 24 Hr. Contact Name: KA ZY ZHANG Phone 415-695-7334						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state and international laws. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name GEORGE CHAN		Signature on behalf of owner <i>[Signature]</i>		Month Day Year 11/16/93		
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name JOHN DOUGLASS		Signature <i>[Signature]</i>		Month Day Year 11/16/93		
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name		Signature		Month Day Year		

DO NOT WRITE BELOW THIS LINE.

Blue: GENERATOR SENDS THIS COPY TO STCC WITHIN 30 DAYS.
 To: P.O. Box 400, Sacramento, CA 95812-0400

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. **CA1400100217301939734** Manifest Document No. **1 of 1**
 2. Page 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
415 CITY & COUNTY - S.F. WATER DEPT
872 5939 P.O. BOX 730
 4. Generator's Phone () - **MILLBRAE CALIF 94030**

A. State Manifest Document Number
92739734

B. State Generator's ID

5. Transporter 1 Company Name
WASTE OIL RECOVERY 6. US EPA ID Number
CA110006126515

C. State Transporter's ID
403283
 D. Transporter's Phone
510 533 0750

7. Transporter 2 Company Name
 8. US EPA ID Number

E. State Transporter's ID
 F. Transporter's Phone

9. Designated Facility Name and Site Address
DEMENNO - KERDOON
2000 N ALAMEDA
COMPTON CALIFORNIA 10. US EPA ID Number
CA10810013352

G. State Facility's ID
 H. Facility's Phone
310 537 7100

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	15. Waste Number
	No.	Type			
PETROLEUM OIL T.O.S. (WASTE OILS)					State 221 EPA/Other N/A
COMBUSTIBLE LIQUID NA 1270	0011	TT00030	9		State N/A EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

16. Additional Descriptions for Materials Listed Above
(11) RINSEATE of WASTE OILS, WASTE LUBE

K. Handling Codes for Wastes Listed Above
 a. **01**
 b.
 c.
 d.

15. Special Handling Instructions and Additional Information
ERG # 27
PROTECTIVE GEAR
24 HOUR W.O.P.S. 510 533 0750
SITE LOCATION:
090 - S.F. WATER DEPT.
5555 CALAVERAS RD
SUNOL CALIF 94586

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state and international laws.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **ON BEHALF OF S.F. WATER DEPT** Signature *[Signature]* Month **11** Day **09** Year **93**

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name **A FAUON** Signature *[Signature]* Month **11** Day **09** Year **93**

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

GENERATOR

DO NOT WRITE BELOW THIS LINE.

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 800-852-7550
 TRANSPORTER
 FACILITY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. <u>CA110000217309833110</u>		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address <u>CITY AND COUNTY OF SAN FRANCISCO 505 PALMA WY SUNOL CA.</u>				A. State Manifest Document Number <u>93137203</u>			
4. Generator's Phone <u>(510) 662-2989 94586</u>				B. State Generator's ID			
5. Transporter 1 Company Name <u>EDMUND ENGINEERING, INC.</u>				C. State Transporter's ID <u>403164</u>			
6. US EPA ID Number				D. Transporter's Phone <u>(510) 783-2881</u>			
7. Transporter 2 Company Name				E. State Transporter's ID			
8. US EPA ID Number				F. Transporter's Phone			
9. Designated Facility Name and Site Address <u>BRICKSON, ION. 135 TARP BLVD. SUNOL CA 94501</u>				10. US EPA ID Number			
10. US EPA ID Number				G. State Facility's ID <u>CA1009466393</u>			
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers		13. Total Quantity	
				No. Type		14. Unit Wt/Val	
a. <u>WASTE EMPTY TANK NON-RCRA HAZARDOUS WASTE SOLID.</u>				<u>0103 - 1 3008100 =</u>		I. Waste Number	
						State <u>512</u>	
						EPA/Other <u>NONE</u>	
						State	
						EPA/Other	
						State	
						EPA/Other	
						State	
						EPA/Other	
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above			
QUANTITY <u>3</u> EMPTY STORAGE TANK(S) <u>12539</u> <u>12540</u> HAVE BEEN INERTED WITH 15 LBS. DRY ICE PER 1000 GAL. CAPACITY				a. <u>1</u> b. <u>2</u> c. <u>3</u> d. <u>4</u>			
15. Special Handling Instructions and Additional Information							
KEEP AWAY FROM SOURCES OF IGNITION, ALWAYS WEAR HARDHATS AND GLASSES WHEN WORKING AROUND UNDERGROUND STORAGE TANKS. 24 HR. CONTACT NAME: <u>Ronald KRZYZANOWSKI</u> AND PHONE: <u>415-695-7334</u>							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable federal, state and international laws.							
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name <u>ON BEHALF OF OWNER</u>				Signature <u>ON BEHALF OF OWNER</u>		Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature <u>[Signature]</u>		Month Day Year <u>11 10 93</u>	
Printed/Typed Name <u>LOUISIE MEAS</u>				Signature <u>[Signature]</u>		Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Month Day Year	
Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.							
Printed/Typed Name				Signature		Month Day Year	

DO NOT WRITE BELOW THIS LINE.

Blue: GENERATOR SENDS THIS COPY TO DTC WITHIN 90 DAYS.
 Top: P.O. Box 400 Sacramento, CA 95833

Appendix C
Tank Removal Permits and ACH Inspection Forms

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL & LTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 510/271-4320

11/18/93

9-27-93

JJJ

* Note changes in application, Exhibit B, and H+S plan

UNDERGROUND TANK CLOSURE PLAN
* * * Complete according to attached instructions * * *

1. Business Name City and County of San Francisco--- Sunol Pump Station
Business Owner City and County of San Francisco
2. Site Address 5555 Calaveras Road
City Sunol Zip 94586 Phone 415-872-5939
3. Mailing Address P.O. Box 730
City Millbrae Zip 94030 Phone 510-862-2989
4. Land Owner City and County of San Francisco
Address P.O. Box 730 City, State Millbrae, CA Zip 94030
5. Generator name under which tank will be manifested _____
City and County of san Francisco Water Department (SFWD)
EPA I.D. No. under which tank will be manifested CAL000027309

6. Contractor L. & W. Environmental Services, Inc.
Address 2111 Jennings Street
City San Francisco, CA 94124 Phone (415) 822-4555
License Type* general engineering ID# 507442
contractors

*Effective January 1, 1992, Business and Professional Code Section 7058.7 requires prime contractors to also hold Hazardous Waste Certification issued by the State Contractors License Board. Indicate that the certificate has been received, in addition, to holding the appropriate contractors license type.

7. Consultant Camp Dresser and McKee, Inc. (CDM)
Address 100 Pringle Avenue, #100
City Walnut Creek, CA Phone 510-933-2900

8. Contact Person for Investigation
Name George Wilson Title Vice President
Phone (415) 822-4555

9. Number of tanks being closed under this plan 3
Length of piping being removed under this plan 150.57'
Total number of tanks at facility 3

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled **
as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name Waste Oil Recovery EPA I.D. No. CAD000626515
Hauler License No. 843 License Exp. Date 7/94
Address 6401 Leona Street
City Oakland State CA Zip 94605

b) Product/Residual Sludge/Rinsate Disposal Site

Name Deminno Kerdoon EPA I.D. No. CAT080013352
Address 2000 North Alameda
City Compton State CA Zip 90222

c) Tank and Piping Transporter

Name Erickson Trucking EPA I.D. No. CAD009466362
Hauler License No. 0019 License Exp. Date 5/94
Address 255 Oarr Boulevard
City Richmond state CA Zip 94806

d) Tank and Piping Disposal Site

Name Erickson, Inc. EPA I.D. No. CAD009466362
Address 255 Parr Boulevard
City Richmond State CA Zip 94806

11. Experienced Sample Collector

Name Sergio Salas or Eddie Reyes
Company L & W Environmental Services, Inc.
Address 2111 Jennings Street
City San Francisco State CA Zip 94124 Phone 415-822-4555

12. Laboratory

Name Precision Analytical Laboratory
Address 4136 Lakeside Drive
City Richmond State CA Zip 94806
State Certification No. 211

13. Have tanks or pipes leaked in the past? Yes [] No [X]

If yes, describe. _____

14. Describe methods to be used for rendering tank inert
Tanks emptied and purged with CO₂. Minimum of 15 lbs. dry ice per 100
gallon tank size. Two 'ABC' ten pound fire extinguishers will be
available on site for emergency purposes.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
10000	Diesel	soil	under both ends and middle of tank at the soil backfill interface into 2' of native soil.
400	waste oil	soil	under tank at the soil backfill interface into 2' of native soil
400	lubercating oil	soil	under tank at the soil backfill interface into 2' of native soil

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated)	Sampling Plan
100 yards	Three grab samples taken, one each at each end of tank and middle of tank at 2' below tank for 10000 gallon tank. one sample taken for each 400 gallon tank at 2' below tank. One composite sample taken for each stockpile. Total of 8 samples to be collected. Water samples taken if groundwater is encountered.

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
Diesel, waste oil, lubricating oil soil samples	SW-846	TPH as gasoline GCFID EPA (5030)	1.0 ppm
		TPH as Diesel GCFID EPA (3550)	1.0 ppm
water samples if encountered		BTX & E EPA 8020 or 8240	.005 ppm
		TOG Standard Method 17 edition 5520 D & F Cl HC EPA 8240 or 8010	50 ppm
		TPH as Gasoline GCFID EPA 5030	50 ppb
		TPH as Diesel GCFID EPA (3510)	50 ppb
		BTX & E EPA 602 or 624	.3 ppb
		TOG 17 edition 5520 C & F Cl HC EPA 601 or 624	5000 ppb

17. Submit Site Health and Safety Plan (See Instructions)

INSTRUCTIONS

General Instructions

- * Three (3) copies of this plan plus attachments and deposit must be submitted to this Department.
- * Any cutting into tanks requires local fire department approval.
- * One complete copy of your approved plan must be at the construction site at all times; a copy of your approved plan must also be sent to the landowner.

Item Specific Instructions

2. SITE ADDRESS
Address at which closure is taking place.
5. EPA I.D. NO. under which the tanks will be manifested
EPA I.D. numbers may be obtained from the State Department of Health Services, 916/324-1781.
6. CONTRACTOR
Prime contractor for the project.
10. STATE REGISTERED HAZARDOUS WASTE TRANSPORTERS/FACILITIES
 - a) All residual liquids and sludges are to be removed from tanks before tanks are inerted.
 - c) Tanks must be hauled as hazardous waste.
 - d) This is the place where tanks will be taken for cleaning.
15. TANK HISTORY AND SAMPLING INFORMATION
Use History - This information is essential and must be accurate. Include tank installation date, products stored in the tank, and the date when the tank was last used.

Material to be sampled - e.g. water, oil, sludge, soil, etc.

Location and depth of samples - e.g. beneath the tank a maximum of two feet below the native soil/backfill interface, side wall at the high water mark, etc.

16. CHEMICAL METHODS AND ASSOCIATED DETECTION LIMITS
see attached Table 2.

17. SITE HEALTH AND SAFETY PLAN

A site specific Health and Safety plan must be submitted. We advocate the site health and safety plan include the following items, at a minimum:

- a) The name and responsibilities of the site health and safety officer;
- b) An outline of briefings to be held before work each day to appraise employees of site health and safety hazards;
- c) Identification of health and safety hazards of each work task. Include potential fire, explosion, physical, and chemical hazards;
- d) For each hazard, identify the action levels (contaminant concentrations in air) or physical conditions which will trigger changes in work habits to ensure workers are not exposed to unsafe chemical levels or physical conditions;
- e) Description of the work habit changes triggered by the above action levels or physical conditions;
- f) Frequency and types of air and personnel monitoring - along with the environmental sampling techniques and instrumentation - to be used to detect the above action levels. Include instrumentation maintenance and calibration methods and frequencies;
- g) Confined space entry procedures (if applicable);
- h) Decontamination procedures;
- i) Measures to be taken to secure the site, excavation and stockpiled soil during and after work hours (e.g. barricades, caution tape, fencing, trench plates, plastic sheeting, security guards, etc.);
- j) Spill containment/emergency/contingency plan. Be sure to include emergency phone numbers, the location of the phone nearest the site, and directions to the hospital nearest the site;
- k) Documentation that all site workers have received the appropriate OSHA approved trainings and participate in appropriate medical surveillance per 29 CFR 1910.120; and
- l) Page for employees to sign indicating they have read and will comply with the site health and safety plan.

The safety plan must be distributed to all employees and contractors working in hazardous waste operations on site. A complete copy of the site health and safety plan along with any standard operating procedures shall be on site and accessible at all times.

NOTE: These requirements are excerpts from 29 CFR Part 1910.120(b)(4), Hazardous Waste Operations and Emergency Response; Final Rule, March 6, 1989. Safety plans of certain underground tank sites may need to meet the complete requirements of this Rule.

19. PLOT PLAN

The plan should consist of a scaled view of the facility at which the tank(s) are located and should include the following information:

- a) Scale;
- b) North Arrow;
- c) Property Lines;
- d) Location of all Structures;
- e) Location of all relevant existing equipment including tanks and piping to be removed and dispensers;
- f) Streets;
- g) Underground conduits, sewers, water lines, utilities;
- h) Existing wells (drinking, monitoring, etc.);
- i) Depth to ground water; and
- j) All existing tanks and piping in addition to the ones being pulled.

20. DEPOSIT

A deposit, payable to Alameda County for the amount indicated on the Alameda County Underground Storage Tank Fee Schedule, must accompany the plans.

21. Blank Unauthorized Leak/Contamination Site Report forms may be obtained in limited quantities from our office and from the San Francisco Bay Regional Water Quality Control Board (415/464-1255). Larger quantities may be obtained directly from the State Water Resources Control Board at (916) 739-2421.

22. TANK CLOSURE REPORT

The tank closure report should contain the following information:

- a) General description of the closure activities;
- b) Description of tank, fittings and piping conditions. Indicate tank size and former contents; note any corrosion, pitting, holes, etc.;

- c) Description of the excavation itself. Include the tank and excavation depth, a log of the stratigraphic units encountered within the excavation, a description of root holes or other potential contaminant pathways, the depth to any observed ground water, descriptions and locations of stained or odor-bearing soil, and descriptions of any observed free product or sheen;
- d) Description of sampling methods;
- e) Description of any remedial measures conducted at the time of tank removal;
- f) To-scale figures showing the excavation size and depth, nearby buildings, sample locations and depths, and tank and piping locations. Include a copy of the plot plan prepared for the Tank Closure Plan under item 19;
- g) Chain of custody records;
- h) Copies of signed laboratory reports;
- i) Copies of "TSDF to Generator" Manifests for all hazardous wastes hauled offsite (sludge, rinsate, tanks and piping, contaminated soil, etc.); and
- j) Tabulation of the volume and final destination of all non-manifested contaminated soil hauled offsite.

TABLE #2
RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR
UNDERGROUND TANK LEAKS

<u>HYDROCARBON LEAK</u>	<u>SOIL ANALYSIS</u>	<u>WATER ANALYSIS</u>
Unknown Fuel	TPH G GCFID(5030) TPH D GCFID(3550) BTX&E 8020 or 8240 TPH AND BTX&E 8260	TPH G GCFID(5030) TPH D GCFID(3510) BTX&E 602, 624 or 8260
Leaded Gas	TPH G GCFID(5030) BTX&E 8020 OR 8240 TPH AND BTX&E 8260 TOTAL LEAD AA -----Optional----- TEL DHS-LUFT EDB DHS-AB1803	TPH G GCFID(5030) BTX&E 602 or 624 TOTAL LEAD AA TEL DHS-LUFT EDB DHS-AB1803
Unleaded Gas	TPH G GCFID(5030) BTX&E 8020 or 8240 TPH AND BTX&E 8260	TPH G GCFID(5030) BTX&E 602, 624 or 8260
Diesel, Jet Fuel and Kerosene	TPH D GCFID(3550) BTX&E 8020 or 8240 TPH AND BTX&E 8260	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Fuel/Heating Oil	TPH D GCFID(3550) BTX&E 8020 or 8240 TPH AND BTX&E 8260	TPH D GCFID(3510) BTX&E 602, 624 or 8260
Chlorinated Solvents	CL HC 8010 or 8240 BTX&E 8020 or 8240 CL HC AND BTX&E 8260	CL HC 601 or 624 BTX&E 602 or 624 CL HC AND BTX&E 8260
Non-chlorinated Solvents	TPH D GCFID(3550) BTX&E 8020 or 8240 TPH AND BTX&E 8260	TPH D GCFID(3510) BTX&E 602 or 624 TPH and BTX&E 8260
Waste and Used Oil or Unknown (All analyses must be completed and submitted)	TPH G GCFID(5030) TPH D GCFID(3550) TPH AND BTX&E 8260 O & G 5520 D & F BTX&E 8020 or 8240 CL HC 8010 or 8240	TPH G GCFID(5030) TPH D GCFID(3510) O & G 5520 C & F BTX&E 602, 624 or 8260 CL HC 601 or 624

ICAP or AA TO DETECT METALS: Cd, Cr, Pb, Zn, Ni
METHOD 8270 FOR SOIL OR WATER TO DETECT:
PCB*
PCP*
PNA
CREOSOTE
PCB
PCP
PNA
CREOSOTE

* If found, analyze for dibenzofurans (PCBs) or dioxins (PCP)

Reference: Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites, 10 August 1990

EXPLANATION FOR TABLE #2: MINIMUM VERIFICATION ANALYSIS

1. OTHER METHODOLOGIES are continually being developed and as methods are accepted by EPA or DHS, they also can be used.
2. For DRINKING WATER SOURCES, EPA recommends that the 500 series for volatile organics be used in preference to the 600 series because the detection limits are lower and the QA/QC is better.
3. APPROPRIATE STANDARDS for the materials stored in the tank are to be used for all analyses on Table #2. For instance, seasonally, there may be five different jet fuel mixtures to be considered.
4. To AVOID FALSE POSITIVE detection of benzene, benzene-free solvents are to be used.
5. TOTAL PETROLEUM HYDROCARBONS (TPH) as gasoline (G) and diesel (D) ranges (volatile and extractible, respectively) are to be analyzed and characterized by GC/FID with a fused capillary column and prepared by EPA method 5030 (purge and trap) for volatile hydrocarbons, or extracted by sonication using 3550 methodology for extractable hydrocarbons. Fused capillary columns are preferred to packed columns; a packed column may be used as a "first cut" with "dirty" samples or once the hydrocarbons have been characterized and proper QA/QC is followed.
6. TETRAETHYL LEAD (TEL) analysis may be required if total lead is detected unless the determination is made that the total lead concentration is geogenic (naturally occurring).
7. CHLORINATED HYDROCARBONS (CL HC) AND BENZENE, TOLUENE, XYLENE AND ETHYLBENZENE (BTX&E) are analyzed in soil by EPA methods 8010 and 8020 respectively, (or 8240) and in water, 601 and 602, respectively (or 624).
8. OIL AND GREASE (O & G) may be used when heavy, straight chain hydrocarbons may be present. Infrared analysis by method 418.1 may also be acceptable for O & G if proper standards are used. Standard Methods" 17th Edition, 1989, has changed the 503 series to 5520.
9. PRACTICAL QUANTITATION REPORTING LIMITS are influenced by matrix problems and laboratory QA/QC procedures. Following are the Practical Quantitation Reporting Limits:

	<u>SOIL PPM</u>	<u>WATER PPB</u>
TPH G	1.0	50.0
TPH D	1.0	50.0
BTX&E	0.005	0.5
O & G	50.0	5,000.0

Based upon a Regional Board survey of Department of Health Services Certified Laboratories, the Practical Quantitation Reporting Limits are attainable by a majority of laboratories with the exception of diesel fuel in soils. The Diesel Practical Quantitation Reporting Limits, shown by the survey, are:

ROUTINE

< 10 ppm (42%)
< 5 ppm (19%)
< 1 ppm (35%)

MODIFIED PROTOCOL

< 10 ppm (10%)
< 5 ppm (21%)
< 1 ppm (60%)

When the Practical Quantitation Reporting Limits are not achievable, an explanation of the problem is to be submitted on the laboratory data sheets.

10. LABORATORY DATA SHEETS are to be signed and submitted and include the laboratory's assessment of the condition of the samples on receipt including temperature, suitable container type, air bubbles present/absent in VOA bottles, proper preservation, etc. The sheets are to include the dates sampled, submitted, prepared for analysis, and analyzed.
11. IF PEAKS ARE FOUND, when running samples, that do not conform to the standard, laboratories are to report the peaks, including any unknown complex mixtures that elute at times varying from the standards. Recognizing that these mixtures may be contrary to the standard, they may not be readily identified; however, they are to be reported. At the discretion of the LIA or Regional Board the following information is to be contained in the laboratory report:

The relative retention time for the unknown peak(s) relative to the reference peak in the standard, copies of the chromatogram(s), the type of column used, initial temperature, temperature program is C/minute, and the final temperature.

12. REPORTING LIMITS FOR TPH are: gasoline standard \leq 20 carbon atoms, diesel and jet fuel (kerosene) standard \leq 50 carbon atoms. It is not necessary to continue the chromatography beyond the limit, standard, or EPA/DHS method protocol (whichever time is greater).

EPILOGUE

ADDITIVES: Major oil companies are being encouraged or required by the federal government to reformulate gasoline as cleaner burning fuels to reduce air emissions. MTBE (Methyl-tertiary butyl ether), ETHANOL (ethyl alcohol), and other chemicals may be added to reformulate gasolines to increase the oxygen content in the fuel and thereby decrease undesirable emissions (about four percent with MTBE). MTBE and ethanol are, for practical purposes, soluble in water. The removal from the water column will be difficult. Other compounds are being added by the oil companies for various purposes. The refinements for detection and analysis for all of these additives are still being worked out. If you have any questions about the methodology, please call your Regional Board representative.

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Inspection Form

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

white -env.health
yellow -facility
pink -files

II, III

Site ID # _____ Site Name SFWD - Sunol pump Today's Date 11/16/93

Site Address 505 Paloma Way

City Sunol Zip 94586 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

* Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

on site to observe removal of 10000 gallon diesel UST. Anthony Roche (ACFD) ^{test performed} checked LEL/O2 content, and approved UST removal upon my arrival. After breaking away the concrete which had "entombed" the tank from approximately its workline down, the tank was lifted from the excavation. Water/product was observed collecting in the concrete "trough" formed by the UST invert at the west end of the pit, effectively contained within it. The tank was loaded onto a truck operated by Erickson and transported off-site.

Camp Dresser - McKee (CDM) performed a pre-closure assessment at this site; a DRAFT report was issued to The City of SF during August 1993. Several borings were advanced adjacent to this UST and the other two removed previously. Only boring BT-4 drilled between the diesel tank and the other two exhibited detectable contamination @ 15' BG (TPH-D-90 ppm; TOC-40 ppm). Ground water was reached ~ 19-19 1/2' BG during this investigation.

II.A BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stats. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OffSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(g)
- 17. Certification 25534(i)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

- General
- 1. Permit Application 25284 (H&S)
 - 2. Pipeline Leak Detection 25292 (H&S)
 - 3. Records Maintenance 2712
 - 4. Release Report 2651
 - 5. Closure Plans 2670

- Monitoring for Existing Tanks
- 6. Method
 - 1) Monthly Test
 - 2) Daily Vadose Semi-annual groundwater One time soils
 - 3) Daily Vadose One time soils Annual tank test
 - 4) Monthly Gndwater One time soils
 - 5) Daily inventory Annual tank testing Cont pipe leak det Vadose/gndwater mon.
 - 6) Daily inventory Annual tank testing Cont pipe leak det
 - 7) Weekly Tank Gauge Annual tank testing
 - 8) Annual Tank Testing Daily inventory
 - 9) Other _____

- 7. Precs Tank Test 2643
Date: _____
- 8. Inventory Rec. 2644
- 9. Soil Testing . 2646
- 10. Ground Water. 2647

- New Tanks
- 11. Monitor Plan 2632
 - 12. Access. Secure 2634
 - 13. Plans Submit 2711
Date: _____
 - 14. As Built 2635
Date: _____

Rev 6/88

Contact: Jeff Willett
 Title: CDM, Proj Mgr
 Signature: Jeff Willett

Inspector: S. S. [Signature]
 Signature: [Signature]

II, III

ALAMEDA COUNTY FIRE DEPARTMENT

APPLICATION # 93100688

FIRE DEPARTMENT/PLANS APPLICATION

FIRE MARSHAL'S OFFICE
1426 164th Avenue
San Leandro, CA 94578
510-670-5853 • FAX 510-276-5915

APPLICATION TYPE: TANK REMOVAL DATE REC'D: 10/6/93 BY: BUFF CUMM
CATEGORY: _____

► PROJECT INFORMATION

PROJECT ADDRESS: 505 D. J. Way CROSS STREET: Calaveras
CITY: SUNOL ZIP: 94586 JOB PHONE: 415 822-4555 / 415 872-5939
APN #: _____ SDR #: _____ PM/TRACT MAP #: _____

DESCRIPTION OF WORK/ACTIVITY:
TANK REMOVAL BUILDING PERMIT #: _____

► APPLICANT

NAME: JENNIFER JENNING PHONE # (H): _____ (W): 415 822-4555
ADDRESS: 2111 JENNINGS ST. SF CA ZIP: 94124

► OWNER

NAME: City of San Francisco PHONE # (H): _____ (W): 510-862-2989
ADDRESS: P.O. Box 770 Millbrae ZIP: 94030

► CONTRACTOR

NAME: Environmental Services PHONE # (H): _____ (W): 415 872-4555
ADDRESS: 2111 JENNINGS ST. SF CA ZIP: 94124

CONTRACTOR'S LICENSE TYPE & NUMBER: GENERAL ENGINEERING Contractors License # 507442

► = APPLICANT TO FILL IN THESE SECTIONS

APPLICANT'S SIGNATURE: [Signature] DATE: 10/6/93

FOR OFFICE ONLY

FEES

Fees are due and payable by check or money order, made out to Alameda County Fire Department, upon submittal of plans and application. If additional fees are required, such shall be paid prior to issuance of a Certificate of Occupancy, project final, or a Fire Permit.

BASE FEE REQUIRED: \$ 200 REC'D BY: [Signature] DATE: 11/16/93
CONSULTANT'S FEE: \$ _____ REC'D BY: _____ DATE: _____
ADDITIONAL FEES: \$ _____ REC'D BY: _____ DATE: _____

APPROVALS

FIRE PERMIT #: _____ ISSUED DATE: 10/6/93 EXPIRATION DATE: 10/6/93
PERMIT ISSUED BY: [Signature] DATE: _____ FEE: 200
APPLICATION/PLANS APPROVAL: _____ BY: _____ DATE: _____

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

Hazardous Materials Inspection Form

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

II, III

Site ID # _____ Site Name SFWD-Sumol pump Today's Date 11/16/93

Site Address 505 Paloma Way

City Sanol Zip 94586 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

Sidewalk samples were collected from both ends and aside each flank of the UST. Samples collected from the backhoe bucket derived from the west, north, south & east ~~smells of diesel~~. Stained highly-chlorous soil was encountered on the south, between the diesel and lube/waste oil UST pits.

A full diesel suite will be performed (TPH-D/BTEX).

Note: Please provide a copy of the cited CDM pre-closure report once in final form.

II.A BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stds. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B ACUTELY HAZ. MATLS

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OffSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(g)
- 17. Certification 25534(f)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

General

- 1. Permit Application 25284 (H&S)
- 2. Pipeline Leak Detection 25292 (H&S)
- 3. Records Maintenance 2712
- 4. Release Report 2651
- 5. Closure Plans 2670

Monitoring for Existing Tanks

- 6. Method
 - 1) Monthly Test
 - 2) Daily Vadose
Semi-annual groundwater
One time soils
 - 3) Daily Vadose
One time soils
Annual tank test
 - 4) Monthly Groundwater
One time soils
 - 5) Daily inventory
Annual tank testing
Cont pipe leak det
Vadose/groundwater mon.
 - 6) Daily inventory
Annual tank testing
Cont pipe leak det
 - 7) Weekly Tank Gauge
Annual tank testing
 - 8) Annual Tank Testing
Daily inventory
 - 9) Other _____

New Tanks

- 7. Precs Tank Test 2643
Date: _____
- 8. Inventory Rec. 2644
- 9. Soil Testing 2646
- 10. Ground Water. 2647
- 11. Monitor Plan 2632
- 12. Access. Secure 2634
- 13. Plans Submit 2711
Date: _____
- 14. As Built 2635
Date: _____

Rev 8/88

Contact: Jeff Willett

Title: CDM project manager

Signature: Jeff Willett

Inspector: S. FEERY

Signature: [Signature]

II, III

white -env.health
yellow -facility
pink -files

ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

80 Swan Way, #200
Oakland, CA 94621
(415) 271-4320

Hazardous Materials Inspection Form

II, III

Site ID # _____ Site Name SFWD-Pumping plant Today's Date 11/10/93

Site Address 505 Paloma Way

City Sunnyvale Zip 94586 Phone _____

MAX AMT stored > 500 lbs, 55 gal., 200 cft.?

Inspection Categories:

- I. Haz. Mat/Waste GENERATOR/TRANSPORTER
- II. Business Plans, Acute Hazardous Materials
- III. Underground Tanks

• Calif. Administration Code (CAC) or the Health & Safety Code (HS&C)

Comments:

On-site to observe (attempted) closure of 3 USTs. I was met on site by Geoff Chan and George Wilson (E+W Env.), Jeff Willett (CDM) and Ron Krzyzanowski of SFDPW, Bureau of Env. Reg. - Walnut.

The lube and waste oil USTs were removed without difficulty; both appeared intact with tar wrapping significantly in place. A single sample was collected from each tank pit. Analyze for the following target compounds:
waste oil - HVO, BTEX, SVOC (8270), TPH-D/-G, TOC, metals
lube oil - TOC

The 10,000 diesel tank was encased in concrete along its lower half. This concrete will be broken up to free the tank next week. Sampling will likely occur along the flanks and ends, at the edges of the concrete, as opposed below the tank. Evidence of over-spillage was observed along the top and sides of this tank.

II.A BUSINESS PLANS (Title 19)

- 1. Immediate Reporting 2703
- 2. Bus. Plan Stds. 25503(b)
- 3. RR Cars > 30 days 25503.7
- 4. Inventory Information 25504(a)
- 5. Inventory Complete 2730
- 6. Emergency Response 25504(b)
- 7. Training 25504(c)
- 8. Deficiency 25505(a)
- 9. Modification 25505(b)

II.B ACUTELY HAZ. MAT'L

- 10. Registration Form Filed 25533(a)
- 11. Form Complete 25533(b)
- 12. RMPP Contents 25534(c)
- 13. Implement Sch. Req'd? (Y/N)
- 14. OnSite Conseq. Assess. 25524(c)
- 15. Probable Risk Assessment 25534(d)
- 16. Persons Responsible 25534(a)
- 17. Certification 25534(f)
- 18. Exemption Request? (Y/N) 25536(b)
- 19. Trade Secret Requested? 25538

III. UNDERGROUND TANKS (Title 23)

- General**
- 1. Permit Application 25284 (H&S)
 - 2. Pipeline Leak Detection 25292 (H&S)
 - 3. Records Maintenance 2712
 - 4. Release Report 2651
 - 5. Closure Plans 2670

- Monitoring for Existing Tanks**
- 6. Method
 - 1) Monthly Test
 - 2) Daily Vadose
Semi-annual groundwater
One time soils
 - 3) Daily Vadose
One time soils
Annual tank test
 - 4) Monthly Groundwater
One time soils
 - 5) Daily Inventory
Annual tank testing
Cont pipe leak det
Vadose/groundwater mon.
 - 6) Daily Inventory
Annual tank testing
Cont pipe leak det
 - 7) Weekly Tank Gauge
Annual tank testing
 - 8) Annual Tank Testing
Daily Inventory
 - 9) Other _____

- 7. Precs Tank Test 2643
Date: _____
- 8. Inventory Rec. 2644
- 9. Soil Testing 2646
- 10. Ground Water 2647

- New Tanks**
- 11. Monitor Plan 2632
 - 12. Access. Secure 2634
 - 13. Plans Submit 2711
Date: _____
 - 14. As Built 2635
Date: _____

Rev 8/88

Contact: Ron Krzyzanowski
Title: Env. Prof. Coordinator
Signature: Jeff Willett

Inspector: S. Seely
Signature: Jan

II, III

Appendix D
Report of Soil Boring Assessment, August 1993

City and County of
San Francisco

**Report of Soil Boring Assessment
At Sunol Pump Station
Alameda County, California**

August 1993

Prepared For:

City and County of San Francisco
Department of Public Works
Bureau of Construction Management

Prepared By:

Camp Dresser & McKee Inc.
100 Pringle Avenue, Suite 300
Walnut Creek, California 94556

Prepared Under:

Department Work Order 157,070
Contract Service Order CDM 40

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Introduction

This report presents the results of a drilling and assessment program conducted at the Sunol Pumping Plant located in the city of Sunol, California. The assessment work was conducted on June 25, 1993 and consisted of the drilling of six soil borings to a depth of 20 feet where ground water was encountered.

The subject work was undertaken at the request of the City of San Francisco to evaluate whether three underground storage tanks (USTs) on site have leaked tank constituents into soils or groundwater. The information gathered from this investigation will be used to direct mitigation of any petroleum impacted soil encountered during the USTs removal. The subject USTs are scheduled to be removed from the ground in mid year 1993.

Site Location and Physiographics

The subject site is located approximately 1 mile north of the 680 freeway and one half mile south of the city of Sunol on the southern side of the Sunol Valley (see Figure 1). The site is bounded on the south by Alameda Creek which flows in a channel approximately 15 feet lower in elevation than the site grade. Locate 200 feet east of the site is the historic Water Temple built on the Sunol Aqueduct.

The Sunol Pump Station consists of a single building housing diesel operated pumps to pump water along the Sunol Aqueduct. The site is fenced and most of the area surrounding the pump house building is paved with asphalt. The Sunol Aqueduct transects the site at a depth of approximately 33 feet directly beneath the investigation area (see Figure 2). The pump house currently utilizes three underground storage tanks to supply fuel for the diesel pumps and to store lube and waste oil.

The site generally is surrounded by light agricultural and fallow land. The Alameda Creek, bordering the south of the site, forms a densely vegetated bank of shrubs and trees. Surface elevation at the site is approximately 230 feet above Mean Sea Level and the site appears to form a local topographic high with surface elevations dropping off on the north, east and west.

Geology/Hydrogeology

The subject site is located in the northwestern extent of the Sunol Groundwater Basin and is bounded between the Calaveras and Sinbad Faults where water bearing valley fill materials, consisting of recent alluvium and the Livermore gravels, reach thicknesses in excess of 500 feet. The sediments of the valley floor are composed largely of sand and gravel with discontinuous layers of clay. Boring logs from groundwater wells in the site area show evidence of highly permeable sand and gravel beds in the near surface that were deposited from the ancestral channels of the Alameda Creek. Groundwater in the Basin flows northwest towards the Basin's only outlet located approximately 1 mile west of the site at the entrance to Niles Canyon (CDWR, 1975).

Field Investigation

On June 25, 1993, six soil borings were drilled at the Sunol Pump Plant to evaluate the soil conditions around the three underground storage tanks (see Figure 2). Prior to drilling, the site was checked for subsurface pipes and utilities by JR Associates of San Jose. Soil borings were drilled to a depth of 20 feet where groundwater was encountered. Soil samples were collected in the six soil borings at 5-foot intervals, however, due to the cobbled nature of the site soils, samples were not recovered from all sampling locations (see soil boring logs, Appendix A). The soil samples were evaluated in the field for hydrocarbon constituents and retained for laboratory analysis.

In three of the soil borings where groundwater was encountered (BH-1, BH-4 and BH-6), a sample of groundwater was collected through the auger with a bailer to visually inspect for hydrocarbon constituents. For a detailed description of the field procedures see Appendix A.

GW analyzed →

Analytical Procedure

A total of 22 soil samples were collected from the six soil borings for laboratory analysis. The laboratory analytical program consisted of the following:

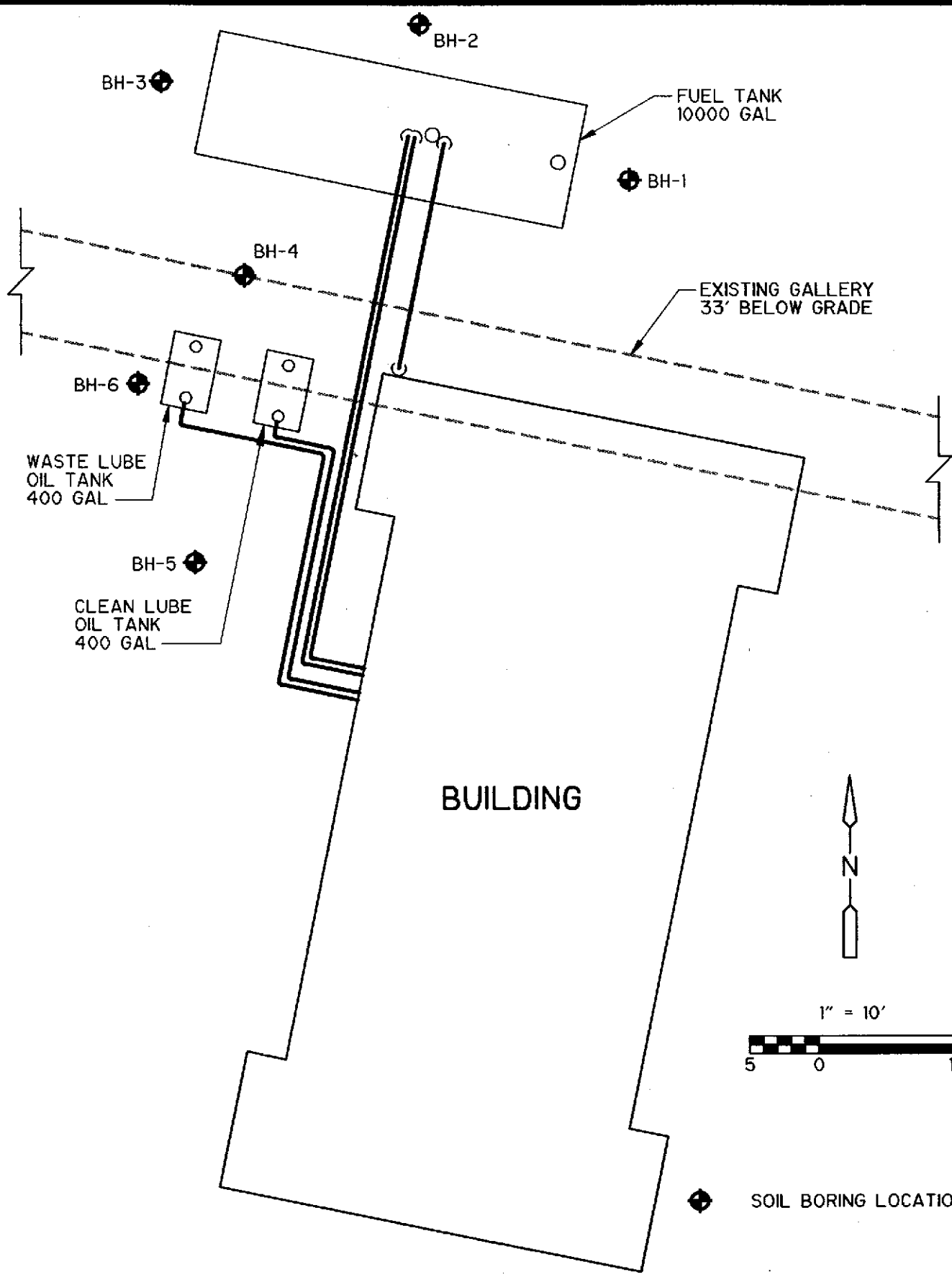
- Twenty soil samples from the four soil borings (BH-1, -2, -3, -4) surrounding the diesel UST were analyzed for diesel.
- Eleven soil samples from three soil borings (BH-4, -5, -6) surrounding the waste oil and bulk oil USTs were analyzed for heavy oil.
- One soil sample (BH-4, 15 feet) was analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) and volatile organic compounds after evidence of heavy oil contamination was found in this sample.
- One soil sample (BH-5, 23 feet) was analyzed for BTEX to evaluate whether these compounds were present in soils below the groundwater table and down gradient of the USTs.

The results of the soil samples analysis are summarized in Table 1 and presented in Appendix B.

Findings and Analysis

Soils and Groundwater

Soils encountered on the site were composed almost entirely of silty gravel with cobbles to a depth of 20 feet. The soils appear to be fill material and may have been placed during the installation of the aqueduct system which transects the site directly beneath the tank area. Observation of the site



SUNOL PUMPING STATION

SOIL BORING LOCATIONS

06/28/93
 C:\CAD\5000-10

TABLE 1

SUMMARY OF ANALYTICAL DATA
BORING BH-1 THROUGH BH-6
SUNOL PUMP STATION

Boring Sample & Depth	Test Constituents			Volatile Halocarbons EPA 8020
	Diesel EPA 8015	Oil and Grease EPA 418.1	Volatile Aromatics EPA 8010	
BH-1 5 10 15 20	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
BH-2 5 10 15 20	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
BH-3 5 10 15 20	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
	ND	-	-	-
BH-4 5 10 15	ND	ND	ND	ND
	ND	ND	ND	ND
	90	410	ND	ND
BH-5 10 15 20 23	-	ND	-	-
	-	ND	-	-
	-	ND	-	-
	ND	ND	ND	ND
BH-6 5 10 15	-	ND	-	-
	-	ND	-	-
	-	60	-	-

suggest that the topographic high on which the pump plant is situated may be entirely comprised of fill soil.

Groundwater was encountered on-site at an approximate depth of 20 feet below grade. In two of the soil borings (BH-1 and BH-4) free flowing sands (a slurry mixture of soil and water) were encountered below the groundwater table in what appeared to be highly permeable sandy gravels.

Chemical

All soil borings appeared to be free of hydrocarbon constituents in the field with the exception of soil boring BH-4 drilled in the middle of the tank area (see Figure 2). Soil encountered at a depth of 15 feet exhibited diesel odor and a groundwater sample collected from this boring for observation exhibited a ~~minor hydrocarbon sheen and odor.~~

Analytical results of the 15-foot soil sample from boring BH-4 exhibited 410 mg/kg of oil and 90 mg/kg of diesel. The same soil sample was non-detect for volatile organic halocarbons and aromatics (EPA test method 8010 and 8020, respectively). Although not detected in the field, oil constituents were also detected in the 15-foot soil sample collected from boring BH-6. This sample exhibited 60 mg/kg of oil constituents. All other soil samples were non-detect for the analyzed compounds.

Groundwater samples collected from soil borings BH-1 and BH-6 did not exhibit evidence of field measurable hydrocarbons constituents.

Conclusions

Based upon the results of this soil boring assessment, the tank system located at the Sunol Pump Station has had what appears to be a minor release of hydrocarbon constituents that have impacted groundwater in the boring BH-4 area. During removal of the USTs, it is likely that hydrocarbon impacted soils will be encountered in the immediate vicinity of the USTs.

Diesel constituents detected in soil boring BH-4 migrated a minimum lateral distance of ten feet from the nearest underground tank or line and up to twenty feet deep upon reaching groundwater. The horizontal extent of hydrocarbons detected in the soil between the diesel tank and the pump building (BH-4 area) is unknown but could cover an area as large as 100 to 200 square feet.

Recommendations

In order to ensure the integrity of the pump house structure, CDM recommends that the diesel storage tank excavation be immediately backfilled following tank removal and sampling. Additionally, because of the close proximity of the pump house building to the identified hydrocarbon constituents in soil, it may not be possible to remove all hydrocarbon impacted

?
How do they know GW has been impacted w/o analysis?
-SHEEN-

soil through direct excavation. Remedial alternatives to direct excavation will be evaluated, if necessary, upon removal of the USTs.

References

California Department of Water Resources; June, 1974, Bulletin 118-2

United States Geological Survey (USGS), Topographic Map, La Costa Valley Quadrangle, 7.5 Minute, Photo Revised 1980.

APPENDIX A
SOIL BORINGS AND FIELD PROCEDURES

Appendix A Field Procedures

Drilling of Soil Borings and Soil Sampling

Soil borings were drilled using a CME 75 truck-mounted drill rig equipped with 8-inch diameter hollow stem augers. Soil borings were drilled to a depth of 20 feet to the water table. Soil samples were collected from the soil borings at five-foot intervals, screened with a Photo Ionization Detector (PID), and retained for laboratory analysis. Soil samples were collected with a modified California sampler or a split spoon sampler fitted with 2-inch diameter, 6-inch long brass sleeves. Upon collection, soil samples were capped with teflon lined caps, labeled and immediately placed on ice pending transport to a California state-certified laboratory, following EPA chain-of-custody protocol.

When groundwater was encountered in the drilling process the drilling operation was stopped and the groundwater allowed to stabilize for a period of at least 10 minutes. Following stabilization, the water was sounded to accurately determine depth. A sample of groundwater was collected through the center of the hollow stem auger following stabilization and visually inspected in the field for free product. Water samples collected in this manner were not retained for laboratory analysis.

Soils generated during the drilling procedure were contained on-site in DOT approved 55-gallon drums or similar approved manner. All soil borings were be backfilled with a concrete bentonite grout to prevent the migration of any fluid through the borehole.

To minimize the risk of cross contamination, all soil sampling equipment was cleaned between sampling intervals and between soil borings. The cleaning procedure involved an initial wash of the sample barrels and brass sleeves with water and trisodium phosphate followed by a double rinse involving tap water and distilled water. Soil borings were steam cleaned between soil boring locations utilizing a portable steam cleaner.

BORING NO. XXXXXXXXXX


CAMP DRESSER & McKEE INC.

CDM

*environmental engineers, scientists
planners & management consultants*

PROJECT NO. 8500-110-GS-MGT
 INSTALLATION SUNOL PUMP STATION
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS
 DRILLING CONTRACTOR BAYLAND
 LOGGED BY B.M. SWANN

DRILLING METHOD 8" HOLLOW STEM AUGER
 COMPLETION DATE JUNE 24, 1993
 TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL (FILL) 1/4" gravels and cobbles	GM			
5	S-1	moist			no odor	
10	S-2	numerous gravels and cobbles moist			no odor	
15	S-3				no odor	
20	S-4	water at 19.5' cobbles and gravels; flowing sand in hole. wet				
25		Boring terminated at 23 feet Water sample collected after 10 minutes; no sheen or visual contamination.				
30						
35						

Codes:

Dashed contacts are interpretive.
Sloped contacts indicate gradational boundary.

BORING NO. [REDACTED]

CAMP DRESSER & MCKEE INC.

CDM

environmental engineers, scientists
planners & management consultants

PROJECT NO. 8500-110-GS-MGT
 INSTALLATION SUNOL PUMP STATION
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS
 DRILLING CONTRACTOR BAYLAND
 LOGGED BY B.M. SWANN

DRILLING METHOD 8" HOLLOW STEM AUGER
 COMPLETION DATE JUNE 24, 1993
 TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL [FILL] with cobbles	GM		no odor or visual contamination in borehole	
5	S-1	moist				
10	S-2	gravels and cobbles moist				
15	S-3	very dense cobbles and gravels				
20	S-4	SILTY TO CLAYEY GRAVELS [FILL?] silt to clay matrix; cobbles and gravels.	GM GC			
		Boring terminated at 20.5 feet No water encountered				

Codes: _____ Dashed contacts are interpretive.
 Sloped contacts indicate gradational boundary.

BORING NO.


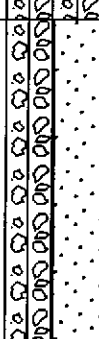
CAMP DRESSER & McKEE INC.

CDM

environmental engineers, scientists
planners & management consultants

PROJECT NO. B500-110-GS-MGT
 INSTALLATION SUNOL PUMP PLANT
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS
 DRILLING CONTRACTOR BAYLAND
 LOGGED BY B.M. SWANN

DRILLING METHOD 8" HOLLOW STEM AUGER
 COMPLETION DATE JUNE 24, 1993
 TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL (FILL) gravels and cobbles moist	GM		no odor or visual contamination in borehole	
5	S-1					
10	S-2					
15	S-3	SILTY GRAVEL TO GRAVELLY SAND well graded gravelly sand [FILL?] clast 2+ inches	GM SW			
20	S-4	 Boring terminated at 20 feet				
25						
30						
35						

Codes: Dashed contacts are interpretive.
Sloped contacts indicate gradational boundary.

BORING NO. [REDACTED]

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CDM

environmental engineers, scientists
planners & management consultants

PROJECT NO. 8500-110-GS-MGT
 INSTALLATION SUNOL PUMP PLANT
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS
 DRILLING CONTRACTOR BAYLAND
 LOGGED BY B.M. SWANN

DRILLING METHOD 8" HOLLOW STEM AUGER
 COMPLETION DATE JUNE 24, 1993
 TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL [FILL] large cobbles; very difficult drilling. moist	GM			
5	S-1					
10	S-2	silty gravels				
15	S-3	gravels and cobbles			hydrocarbon odor at 15'	
20	no sample	water at 19'			lost sample; no recovery.	
		Boring terminated at 20 feet Water sample collected after 10 minutes, [REDACTED]				

Codes:

Dashed contacts are interpretive.
Sloped contacts indicate gradational boundary.

BORING NO. [REDACTED]


CAMP DRESSER & MCKEE INC.

CDM

environmental engineers, scientists
planners & management consultants

PROJECT NO. 8500-110-GS-MGT
 INSTALLATION SUNOL PUMP PLANT
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS
 DRILLING CONTRACTOR BAYLAND
 LOGGED BY B.M. SWANN

DRILLING METHOD 8" HOLLOW STEM AUGER
 COMPLETION DATE JUNE 24, 1993
 TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL (FILL) gravels and cobbles; silt to sand matrix.	GM		no odor or visual contamination in borehole	
5	no sample	moist			poor sample recovery	
10	S-1	gravels and cobbles moist				
15	S-2	gravels and cobbles				
20	S-3					
		water encountered at 21'				
	S-4					
25		Boring terminated at 23 feet				
30						
35						

Codes: _____ Dashed contacts are interpretive.
 Sloped contacts indicate gradational boundary.


BORING NO. BH-6

CAMP DRESSER & MCKEE INC.

CDM

environmental engineers, scientists
planners & management consultants

PROJECT NO. 8500-110-GS-MGT DRILLING METHOD 8" HOLLOW STEM AUGER
 INSTALLATION SUNOL PUMP STATION COMPLETION DATE JUNE 24, 1993
 CLIENT SAN FRANCISCO DEPT. OF PUBLIC WORKS TOP OF WELL CASING ELEVATION _____ DATUM Ft. MSL
 DRILLING CONTRACTOR BAYLAND GROUND SURFACE ELEVATION _____ DATUM Ft. MSL
 LOGGED BY B.M. SWANN COORDINATES _____

DEPTH feet	SAMPLE NUMBER	LITHOLOGY DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	ELEV. feet
		ASPHALT & GRAVEL BASE				
		SILTY GRAVEL (FILL) gravels and cobbles	GM		no odor or hydrocarbon contamination in borehole	
5	S-1					
10	S-2	gravels and cobbles				
15	S-3					
20	no sample	water encountered at 19'			no sample recovery	
		Boring terminated at 20 feet water sample collected in Bailer; no odor or visual contamination.				

Codes: _____ Dashed contacts are interpretive.
Sloped contacts indicate gradational boundary.

APPENDIX B
LABORATORY ANALYTICAL RESULTS

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251



CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 06/28/93
Date Extracted: 06/30/93
Date Analyzed: 07/01/93
Date Reported: 07/02/93
Job #: 74817

Attn: Ben Swann
Camp Dresser & McKee, Inc.
One Walnut Creeek Center
100 Pringle Avenue, Suite 300
Walnut Creek, CA 94596

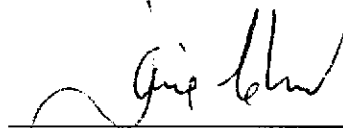
Project: #8500110GSMGT
Matrix: Soil

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel Range</u>	<u>MDL</u>
74817-1	BH-1 5'	ND<1.0	1.0
74817-2	BH-1 10'	ND<1.0	1.0
74817-3	BH-1 15'	ND<1.0	1.0
74817-4	BH-1 20'	ND<1.0	1.0
74817-5	BH-2 5'	ND<1.0	1.0
74817-6	BH-2 10'	ND<1.0	1.0
74817-7	BH-2 15'	ND<1.0	1.0
74817-8	BH-2 20'	ND<1.0	1.0

QA/QC: Matrix Spike Recovery for Diesel: 85%
Matrix Spike Duplicate Recovery for Diesel: 92%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/vc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ben Swann
Camp Dresser & McKee
One Walnut Creek Center
100 Pringle Avenue, Suite 300
Walnut Creek, CA 94596

Date Received: 06/28/93
Date Analyzed: 07/08/93
Date Reported: 07/22/93
Job #: 74818

Project: #8500110GSMGT
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis
EPA Method 8020
mg/Kg

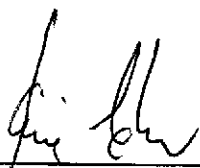
<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Benzene</u>	<u>MDL</u>	<u>Toluene</u>	<u>MDL</u>
74818-7	BH-4 15'	ND<0.005	0.005	0.008	0.005

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Ethyl- benzene</u>	<u>MDL</u>	<u>Xylenes</u>	<u>MDL</u>
74818-7	BH-4 15'	ND<0.005	0.005	ND<0.005	0.005

QA/QC: Matrix Spike Recovery for Benzene: 93%
Matrix Spike Recovery for Toluene: 91%
Matrix Spike Recovery for o-Xylene: 92%

Matrix Spike Duplicate Recovery for Benzene: 94%
Matrix Spike Duplicate Recovery for Toluene: 93%
Matrix Spike Duplicate Recovery for o-Xylene: 94%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

JC/vc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ben Swann
Camp Dresser & McKee, Inc.
100 Pringle Ave, Suite 300
Walnut Creek, CA 94596

Date Received: 06/28/93
Date Analyzed: 07/10/93
Date Reported: 07/22/93
Job #: 74818

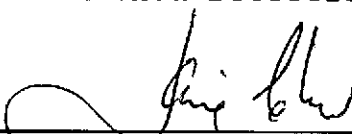
Project: #8500110GSMGT
Matrix: Soil

PURGEABLE HALOCARBONS
EPA Method 8010
mg/Kg

Lab I.D.: 74818-1
Client I.D.: BH-4 15'

	<u>Result</u>	<u>MDL</u>
Bromomethane & Chloroethane	ND<0.023	0.023
Vinyl Chloride & Chloromethane	ND<0.251	0.251
Freon 113	ND<0.012	0.012
1,1-Dichloroethene	ND<0.011	0.011
Methylene Chloride	ND<0.104	0.104
Trans-1,2-Dichloroethene	ND<0.068	0.068
1,1-Dichloroethane	ND<0.021	0.021
Cis-1,2-Dichloroethene	ND<0.008	0.008
Chloroform	ND<0.003	0.003
1,1,1-Trichloroethane	ND<0.009	0.009
Carbon Tetrachloride	ND<0.011	0.011
1,2-Dichloroethane	ND<0.004	0.004
Trichloroethene	ND<0.005	0.005
1,2-Dichloropropene	ND<0.003	0.003
2-Chloro-vinyl ether	ND<0.008	0.008
Bromodichloromethane	ND<0.003	0.003
T-1,3-Dichloropropene	ND<0.003	0.003
Cis-1,3-Dichloropropene	ND<0.010	0.010
1,1,2-Trichloroethane	ND<0.006	0.006
Tetrachloroethene	ND<0.006	0.006
Dibromochloromethane	ND<0.005	0.005
Chlorobenzene	ND<0.007	0.007
Bromoform	ND<0.003	0.003
1,1,2,2-Tetrachloroethane	ND<0.005	0.005
1,3-Dichlorobenzene	ND<0.003	0.003
1,4-Dichlorobenzene	ND<0.005	0.005
1,2-Dichlorobenzene	ND<0.004	0.004

MDL: Method Detection Limit


Jaime Chow
Laboratory Director

OUTSTANDING QUALITY AND SERVICE
CALIFORNIA STATE CERTIFIED LABORATORY

JC/vc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (510) 222-3002

FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 06/28/93
Date Extracted: 06/30/93
Date Analyzed: 07/01/93
Date Reported: 07/02/93
Job #: 74818

Attn: Ben Swann
Camp Dresser & McKee, Inc.
One Walnut Creeek Center
100 Pringle Avenue, Suite 300
Walnut Creek, CA 94596

Project: #8500110GSMGT
Matrix: Soil

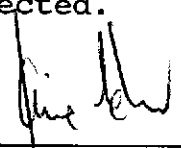
Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/Kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Diesel Range</u>	<u>MDL</u>
74818-1	BH-3 5'	ND<1.0	1.0
74818-2	BH-3 10'	ND<1.0	1.0
74818-3	BH-3 15'	ND<1.0	1.0
74818-4	BH-3 20'	ND<1.0	1.0
74818-5	BH-4 5'	ND<1.0	1.0
74818-6	BH-4 10'	ND<1.0	1.0
74818-7	BH-4 15'	90 *	1.0
74818-11	BH-5 23'	ND<1.0	1.0

* TPH in the diesel range

QA/QC: Matrix Spike Recovery for Diesel: 85%
Matrix Spike Duplicate Recovery for Diesel: 92%

MDL: Method Detection Limit. Compound below this level would not be detected.



Jaime Chow
Laboratory Director

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Job #: 74818

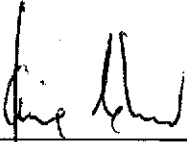
Project: #8500110GSMGT
Matrix: Soil

Total Oil and Grease Analysis
Standard Methods, 17th Edition, 5520D
mg/kg

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Total Oil and Grease</u>	<u>MDL</u>
74818-5	BH-4 5'	ND<50	50
74818-6	BH-4 10'	ND<50	50
74818-7	BH-4 15'	410	50
74818-8	BH-5 10'	ND<50	50
74818-9	BH-5 15'	ND<50	50
74818-10	BH-5 20'	ND<50	50
74818-11	BH-5 23'	ND<50	50
74818-12	BH-6 5'	ND<50	50
74818-13	BH-6 10'	ND<50	50
74818-14	BH-6 15'	60	50

QA/QC: Matrix Spike Recovery: 91%

MDL: Method Detection Limit. Compound below this level would not be detected.



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Date Received: 06/28/93
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Date Analyzed: 06/30/93
Date Reported: 07/02/93
Job #: 74818

Project: #8500110GSMGT
Matrix: Soil

Aromatic Volatile Hydrocarbon Analysis
EPA Method 8020
mg/Kg

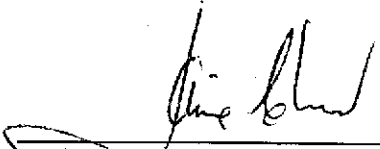
<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Benzene</u>	<u>MDL</u>	<u>Toluene</u>	<u>MDL</u>
74818-11	BH-5 23'	ND<0.005	0.005	ND<0.005	0.005

<u>Lab I.D.</u>	<u>Client I.D.</u>	<u>Ethyl- benzene</u>	<u>MDL</u>	<u>Xylenes</u>	<u>MDL</u>
74818-11	BH-5 23'	ND<0.005	0.005	ND<0.005	0.005

QA/QC: Matrix Spike Recovery for Benzene: 96%
Matrix Spike Recovery for Toluene: 96%
Matrix Spike Recovery for o-Xylene: 94%

Matrix Spike Duplicate Recovery for Benzene: 97%
Matrix Spike Duplicate Recovery for Toluene: 98%
Matrix Spike Duplicate Recovery for o-Xylene: 96%

MDL: Method Detection Limit. Compound below this level would not be detected.


Jaime Chow
Laboratory Director

JC/vc

PROJECT NO. 8500110GSMAT	SAMPLERS (Signature) <i>B.M. Swan</i>	ANALYSIS REQUESTED <i>TPH - Gas or Diesel</i> BTX - (8020) Halogenated (8010) Oil & Grease PCB - (8080) Metals (CAM-17) 8240
PROJECT NAME AND ADDRESS: CDM 100 Peingle AVE, WALWORTH CR. SUITE 300 94596		

CROSS REFERENCE NUMBER	DATE	TIME	Soil	Water	STATION LOCATION	TPH - Gas or Diesel	BTX - (8020)	Halogenated (8010)	Oil & Grease	PCB - (8080)	Metals (CAM-17)	8240	REMARKS
BH-1 5'	6-25-93		/		Sound Pump	/							
↓ 10'			/			/							
↓ 15'			/			/							
↓ 20'			/			/							
BH-2 5'			/			/							
↓ 10'			/			/							
↓ 15'			/			/							
↓ 20'			/			/							

RELINQUISHED BY: (Signature) <i>Beijan M. Swan</i>	DATE 6-28-93	RECEIVED BY: (Signature) <i>Kulwinder Sidhu</i>	DATE 6-28-93
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE

Turnaround Time: * 24 hrs _____ * 2/3 days _____ * 4/5 / Normal / * Surchage Applies

Special Instructions: _____

Possible Sample Hazards: _____

CHAIN OF CUSTODY

PROJECT NO.	SAMPLERS (Signature) <i>S.M. Lujan</i>					ANALYSIS REQUESTED <i>TPH - Gas or Diesel</i> BTX - (8020) Halogenated (8010) Oil & Grease PCB - (8080) Metals (CAM-17) 8240							
PROJECT NAME AND ADDRESS: <i>CDM 100 Pringle Ave Walnut</i>													
<i>Suite 300 CA 94596</i>													
CROSS REFERENCE NUMBER	DATE	TIME	Soil	Water	STATION LOCATION	TPH - Gas or Diesel	BTX - (8020)	Halogenated (8010)	Oil & Grease	PCB - (8080)	Metals (CAM-17)	8240	REMARKS
BH-3 5'	6-25-93		/		Soil Pump	/							
↓ 10'			/			/							
↓ 15'			/			/							
↓ 20'			/			/							
BH-4 5'			/			/		/					
↓ 10'			/			/		/					
↓ 15'			/			/		/					
BH-5 10'			/			/		/					
↓ 15'			/			/		/					
↓ 20'			/			/		/					
RELINQUISHED BY: (Signature) <i>Sebastian M. Lujan</i>			DATE <i>6-28-93</i>			RECEIVED BY: (Signature) <i>Kulwinder Sidhu</i>			DATE <i>6-28-93</i>			TIME <i>9:32 AM</i>	
RELINQUISHED BY: (Signature)			DATE			RECEIVED BY: (Signature)			DATE			TIME	
RELINQUISHED BY: (Signature)			DATE			RECEIVED BY: (Signature)			DATE			TIME	
RELINQUISHED BY: (Signature)			DATE			RECEIVED BY: (Signature)			DATE			TIME	

Turnaround Time: * 24 hrs _____ * 2/3 days _____ * 4/5 / Normal / * Surcharge Applies

Special Instructions: _____

Possible Sample Hazards: _____



CHAIN OF CUSTODY

PROJECT NO.		SAMPLERS (Signature) <i>B.M. Swann</i>			ANALYSIS REQUESTED <div style="display: flex; justify-content: space-between; font-size: small;"> TPH - Gas or Diesel BTX - (8020) Halogenated (8010) Oil & Grease PCB - (8080) Metals (CAM-17) 8240 </div>							
PROJECT NAME AND ADDRESS: <i>CDM 100 Pringle Ave. Walnut Cr. Suite 300 94596</i>												
CROSS REFERENCE NUMBER	DATE	TIME	Soil	Water	STATION LOCATION						REMARKS	
<i>BIT-5 23'</i>	<i>6-25-93</i>		/		<i>Sound Pump</i>	/						
<i>BIT-6 5'</i>	↓		/		↓							
↓ 10'	↓		/		↓							
↓ 15'	↓		/		↓							
RELINQUISHED BY: (Signature) <i>Stephen W. Swann</i>			DATE <i>6-28-93</i>		RECEIVED BY: (Signature) <i>Kalvin L. Fisher</i>			DATE <i>6-28-93</i>		TIME <i>9:20 AM</i>		
RELINQUISHED BY: (Signature)			DATE		RECEIVED BY: (Signature)			DATE		TIME		
RELINQUISHED BY: (Signature)			DATE		RECEIVED BY: (Signature)			DATE		TIME		
RELINQUISHED BY: (Signature)			DATE		RECEIVED BY: (Signature)			DATE		TIME		

Turnaround Time: * 24 hrs _____ * 2/3 days _____ * 4/5 / Normal / * Surcharge Applies

Special Instructions: _____

Possible Sample Hazards: _____