PACIFIC
ENVIRONMENTAL
GROUP INC.

April 25, 1989
Project 330-40.01

Mr. Kyle Christie
ARCO Petroleum Products Company
P.O. Box 5811
San Mateo, CA 94403

Re: ARCO Station No. 0276
10600 MacArthur Boulevard
Oakland, California

Dear Mr. Christie:

Pacific Environmental Group, Inc. (PACIFIC) is pleased to submit this report which describes the work performed for the removal of one waste oil tank at the subject site. PACIFIC's tasks included soil sampling during the removal of the existing tank and during extensions of the excavation, and laboratory analysis of the samples and advising the contractor on the extent of excavation.

BACKGROUND

ARCO Station No. 0276 is an operating service station located at 10600 MacArthur Boulevard, Oakland, California (see Figure 1). A ~~280~~ 550-gallon tank located east of the station building was used to store waste oil (see Figure 2).

SUMMARY OF WORK

Crosby and Overton, Inc. was contracted by ARCO to perform the construction activities associated with removal and disposal of the existing waste oil tank and soils containing petroleum hydrocarbons. PACIFIC performed soil sampling and analysis. The objective of PACIFIC's sampling and analysis was to direct the contractor to remove unsaturated soil containing petroleum hydrocarbons.

An "Underground Tank Closure/Modification" was submitted to Alameda County Health Care Services Agency, Department of Environmental Health by Crosby & Overton on September 2, 1988 and accepted with modification on September 26, 1988. Tank removal was performed on September 29, 1988 and was witnessed by Mr. Robert Dawson of Oakland Fire Department Fire Prevention Bureau, and Ms. Mary Jo Meyers of Alameda County Department of Health Services. Additional soil was excavated on November 4, 1988 and on December 6, 1988.

REMOVAL OF EXISTING WASTE OIL TANK AND DEGRADED SOIL

On September 29, 1988 when the 280-gallon waste oil tank was removed, visible signs of oil staining were present on the side walls and soils underlying the tank. To obtain samples at two feet below the tank, a sampling zone specified by the County in the closure plan, the excavation was extended to approximately 7-feet deep. Even though the soils were still visibly contaminated and subject to removal, two samples were collected in this zone. Soil removed during the excavation was stockpiled on site for disposal as hazardous waste.

A PACIFIC sampling technician collected the two samples, one sample, SP-1, was taken from directly beneath the fill pipe and the other, SP-2, from a similar location at the opposite end of the tank (see Figure 2). To collect the samples, a backhoe bucket of native soil was scooped immediately following removal of the tank. Approximately three inches of soil was scraped from the surface of the soil in the backhoe bucket, then a clean brass ring was manually driven into the soil. The ends of the tube were covered with aluminum foil, capped with plastic end caps and placed in a sealed glass jar. The samples are labeled and logged onto chain-of-custody forms (enclosed). The samples were then immediately placed on ice for transport to International Technology Corporation in San Jose California, a state-certified laboratory.

The soil samples were analyzed for parameters specified within the "Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, June 2, 1988". Analysis included volatile organic compounds according to EPA Methods 624 and 8240, high

boiling hydrocarbons total oil and grease according to EPA Method 3550, and low boiling hydrocarbons by a technique taken from EPA Methods 8015, 8020, and 5030. These laboratory methods are described on the enclosed certified analytical report. Total oil and grease was detected in SP-1 and SP-2 at 5,600 ppm and 3,300 ppm, respectively. High boiling hydrocarbons (calculated as oil) were detected at 7,300 ppm and 4,800 ppm, respectively. A summary of all analytical results is presented on Tables 1 and 2.

On November 4, 1988, the waste oil tank excavation was extended to a depth of 10 feet. The PACIFIC sampling technician directed the contractor to excavate visibly contaminated soil, evident by the dark, oily appearance. When visibly contaminated soil is removed, petroleum hydrocarbon concentrations in the remaining soil are typically absent. The excavated soil was stockpiled on site for subsequent disposal as hazardous waste.

After the excavation was extended, PACIFIC obtained two soil samples (WO-A and WO-B) at the 10-foot depth, at locations directly below samples SP-1 and SP-2 using the sample collection method described above. These samples were analyzed for metals according to EPA Method 6010, semi-volatile organic compounds according to EPA Method 8270, volatile organic compounds according to EPA Method 624 and 8240, total oil and grease by EPA Method 3350, and low or high boiling point hydrocarbons. Total oil and grease was detected in WO-A and WO-B at 30 ppm and 220 ppm, respectively. High boiling hydrocarbons (calculated as oil) were detected at 30 ppm and 110 ppm, respectively. Chromium and zinc were detected in both samples, at concentrations ranging from 35 ppm to 53 ppm. Analyses detected no semi-volatile or volatile organic compounds.

To define the lateral extent of hydrocarbons in the soil, PACIFIC also collected four soil samples (WO-C, WO-D, WO-E, and WO-F) from the side walls, at a depth of 7 feet. The side wall samples were analyzed for oil and grease and high boiling hydrocarbons. Laboratory analyses detected total oil and grease in the north, east, south, and west side walls at 880 ppm, 10 ppm, 15,000 ppm, and 380 ppm, respectively. High boiling hydrocarbons (calculated as oil) were detected at 1,100 ppm, <10 ppm, 21,000 ppm, and 500 ppm, respectively.

On December 6, 1988, PACIFIC directed the contractor to laterally extend the waste oil tank excavation 6 1/2 feet on the south side and 1 foot on the north side. The southern portion of the pit was deepened to 12 feet to remove residual petroleum hydrocarbons beneath SP-2 and WO-B. Although analytical results showed that the west side wall contained petroleum hydrocarbons, additional soil excavation into this wall was not possible because of the wall's proximity to the station building. Water was encountered at 10 feet only slightly beneath where samples WO-A and WO-B had been collected. No floating product or sheen was visible on the water surface. Sidewall samples WO-D2 and WO-F2 were taken from the north and south side walls of the extended pit at an approximate depth of 8 feet. Analyzed for oil and grease and high boiling hydrocarbons, the samples did not contain detectable petroleum hydrocarbons.

Disposal of approximately 50 tons excavated soil as hazardous waste was handled by ARCO and their disposal contractor, Dillard Trucking. Soil was hauled to Chemical Waste Management's Kettleman Hills facility. Manifest are maintained by ARCO.

CONCLUSION

The excavation program achieved removal of petroleum hydrocarbons in soil, with the exception of the soil on the west side wall of the excavation. Oil and grease was detected in the west side wall soil sample at 380 ppm, and high boiling hydrocarbons (calculated as oil) were detected at 500 ppm. The excavation was not extended on the west side wall because further soil removal would have threatened the foundation of the station building.

Based on the finding of the investigation, an "Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report" was issued on October 14, 1988.

If you have any questions concerning the content of this report, please call.

Sincerely,

PACIFIC ENVIRONMENTAL GROUP, INC.

Robert K. Wenzlau
Senior Engineer

RKW/jj

enclosures

cc: Chris Winsor, ARCO
Lawrence Seto, Alameda County Department of Environmental Health
Don Dalke, Regional Water Quality Control Board

TABLE 1

Summary of Analytical Results
Low Boiling Hydrocarbons, High Boiling Hydrocarbons
Soil Samples From Waste Oil Tank Excavation
Results in Parts per Million - Dry Soil Basis

		Low Boiling Hydrocarbons	High Boiling Hydrocarbons			Oil & Grease	
Sample ID	Depth	Gasoline	Diesel	Oil	Stoddard		
(Beneath Tank Ends)							SP1, SP2 TAKEN
SP-1	7'	40.*	<300.	7,300.	160.	5,600.	SEPT 29, 1988
WO-A	10'	<5.	<10.	30.	ND	30.	
SP-2	7'	50.*	<300.	4,800.	110.	3,300.	WO-A, WO-B TAKEN
WO-B	10'	<5.	10.	110.	ND	220.	NOV. 4, 1988
(Side Walls)							
NORTH WO-C	7'	NT	60.	500.	ND	380.	WO-C, D, E, F TAKEN
EAST WO-D	7'	NT	140.	1,100.	ND	880.	NOV 4, 88
SOUTH WO-E	7'	NT	<10.	<10.	ND	10.	WO-D2 & WO-F2 TAKEN
WEST WO-F	7'	NT	2,500.	21,000.	ND	15,000.	
EAST WO-D2	7'	NT	<10.	<10.	ND	<20.	
WEST WO-F2	7'	NT	<10.	<10.	ND	<20.	

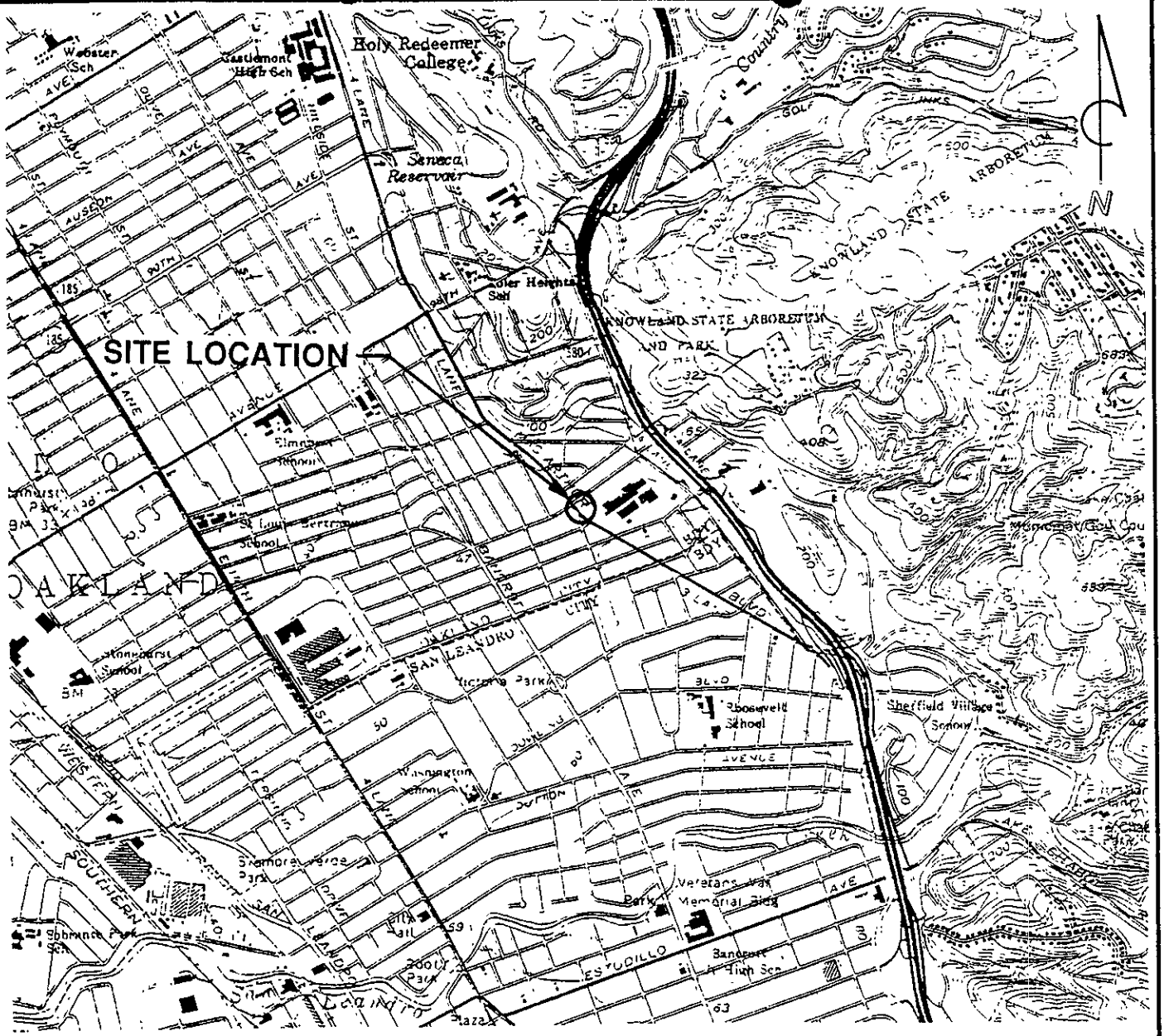
ND = Not Detected
NT = Not Tested
* = Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

TABLE 2

Summary of Analytical Results
Volatile Organic Compounds, Semi-volatile Organic Compounds, Metals
Soil Samples from Waste Oil Tank Excavation
Results in Parts per Million - Dry Soil Basis

Sample ID:	SP-1	SP-2	WO-A	WO-B
Volatile Organic Compounds	Toluene: 0.76 Other tested compounds: ND	Xylenes: 0.1 Other tested compounds: ND	ND	ND
Semi-volatile Organic Compounds	NT	NT	ND	ND
Metals				
Cadmium	NT	NT	ND	ND
Chromium	NT	NT	48.	53.
Lead	NT	NT	ND	ND
Zinc	NT	NT	35.	48.

NT = Not tested
ND = None detected. See attached Certified Analytical Report for detection limits.



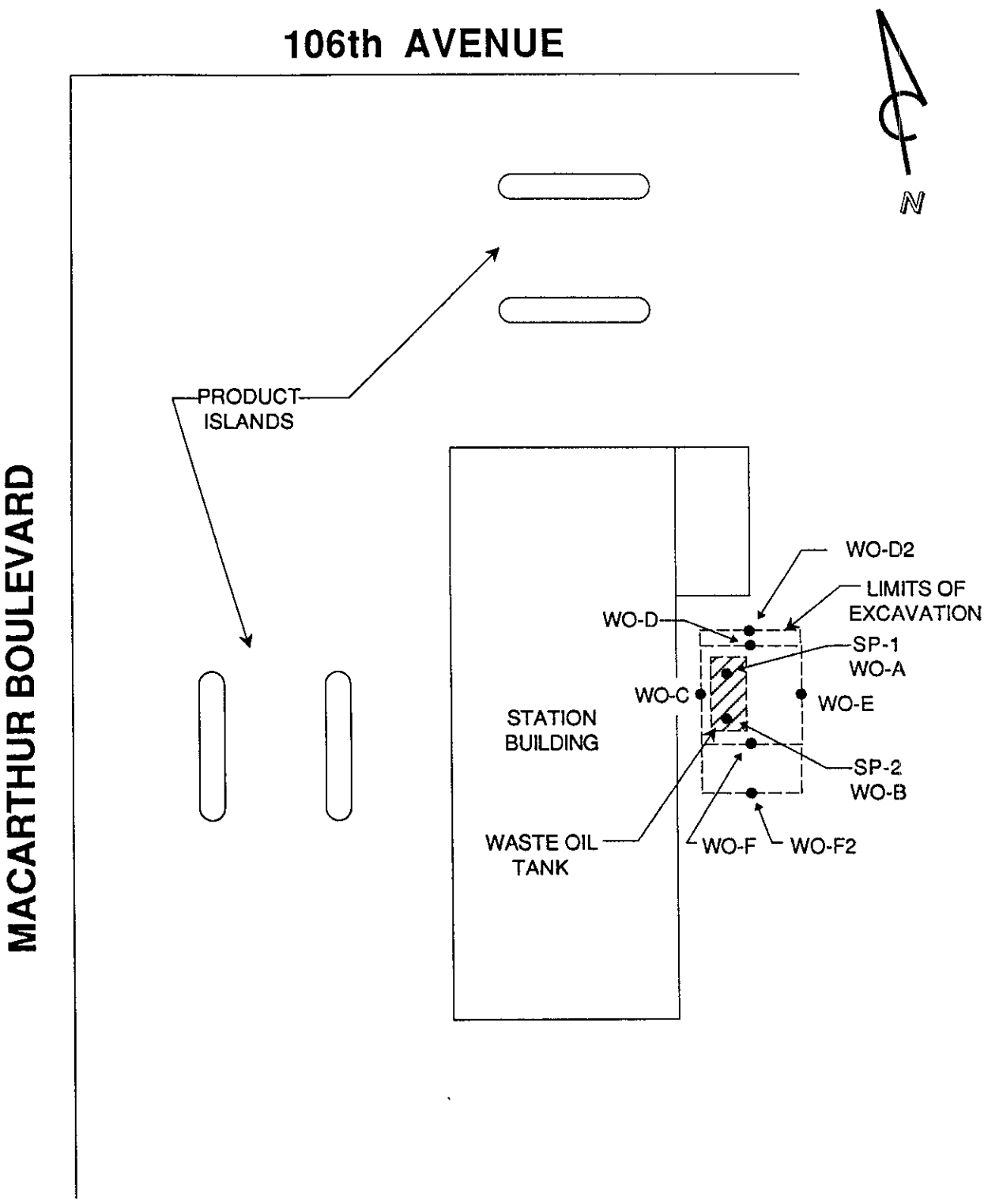
QUADRANGLE LOCATION

REFERENCE:
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: OAKLAND EAST, CALIFORNIA
DATED: 1959 REVISED: 1980
TITLED: SAN LEANDRO, CALIFORNIA
DATED: 1959 REVISED: 1980

SCALE

2000 0 2000 FEET

PACIFIC ENVIRONMENTAL GROUP, INC.	**ARCO STATION #0276** 10600 MacArthur Boulevard Oakland, California	FIGURE: **1**
	SITE LOCATION MAP	PROJECT: 330-40.01



NOT TO SCALE

PACIFIC ENVIRONMENTAL GROUP, INC.	**ARCO STATION #0276** 10600 MacArthur Boulevard Oakland, California **SITE MAP**	FIGURE: **2** PROJECT: 330-40.01

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

October 19, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-09-280-01 and S8-09-280-02
Number of Samples:	2
Sample Type:	Soil
Date Received:	9/29/88
Analyses Requested:	Volatile Organics, High Boiling Hydrocarbons, Oil & Grease, Low Boiling Hydrocarbons

The method of analysis for volatile organics is taken from E.P.A. Methods 624 and 8240. Water samples and low-level soil samples are analyzed directly using the purge and trap technique. Medium-level soil samples are extracted with methanol and a portion of the extract is analyzed using the purge and trap technique. Final detection is by gas chromatography/mass spectrometry.

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

Fred Rouse

FR/gg

4 Pages Following - Tables of Results

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-01
Sample Identification: SP-1

Results

Total Petroleum Hydrocarbons	Parts per Million - dry soil basis: Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	40.*	10.	Gasoline
Benzene	None	0.1	--
Toluene	None	0.2	--
Ethyl benzene	0.2	0.2	--
Xylenes	1.7	0.6	--
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	7,300.	2,000.	Oil
High Boiling Hydrocarbons	160.	20.	Stoddard Solvent
Oil and Grease	5,600.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Sample Identification: SP-1

Lab Number: S8-09-280-01

Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	1.25
Bromomethane	ND	1.25
Vinyl Chloride	ND	1.25
Chloroethane	ND	1.25
Dichloromethane	ND	0.625
Acetone	ND	1.25
Carbon Disulfide	ND	0.625
1,1-Dichloroethene	ND	0.625
1,1-Dichloroethane	ND	0.625
1,2-Dichloroethene (Total)	ND	0.625
Chloroform	ND	0.625
1,2-Dichlorethane	ND	0.625
Methyl ethyl ketone (2-Butanone)	ND	1.25
1,1,1-Trichloroethane	ND	0.625
Carbon Tetrachloride	ND	0.625
Vinyl Acetate	ND	1.25
Bromodichloromethane	ND	0.625
1,2-Dicloropropane	ND	0.625
Trans-1,3-Dichloropropene	ND	0.625
Trichloroethene	ND	0.625
Chlorodibromomethane	ND	0.625
1,1,2-Trichloroethane	ND	0.625
Benzene	ND	0.625
cis-1,3-Dichloropropene	ND	0.625
2-Chloroethyl vinyl ether	ND	1.25
Tribromoethane (Bromoform)	ND	0.625
2-Hexanone	ND	1.25
4-Methyl-2-pentanone	ND	1.25
Tetrachloroethene	ND	0.625
1,1,2,2-Tetrachloroethane	ND	0.625
Toluene	0.76	0.625
Chlorobenzene	ND	0.625
Ethylbenzene	ND	0.625
Styrene	ND	0.625
Xylenes (Total)	ND	0.625

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-02
Sample Identification: SP-2

	Results		
	Parts per Million - dry soil basis		
Total Petroleum Hydrocarbons	Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	50.*	10.	Gasoline
Benzene	None	0.1	--
Toluene	None	0.2	--
Ethyl benzene	0.2	0.2	--
Xylenes	1.8	0.6	--
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	4,800.	2,000.	Oil
High Boiling Hydrocarbons	110.	20.	Stoddard Solvent
Oil and Grease	3,300.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Sample Identification: SP-2

Lab Number: S8-09-280-02

Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.05
Chloroethane	ND	0.05
Dichloromethane	ND	0.5
Acetone	ND	0.5
Carbon Disulfide	ND	0.025
1,1-Dichloroethene	ND	0.025
1,1-Dichloroethane	ND	0.025
1,2-Dichloroethene (Total)	ND	0.025
Chloroform	ND	0.025
1,2-Dichlorethane	ND	0.025
Methyl ethyl ketone (2-Butanone)	ND	0.05
1,1,1-Trichloroethane	ND	0.025
Carbon Tetrachloride	ND	0.025
Vinyl Acetate	ND	0.05
Bromodichloromethane	ND	0.025
1,2-Dicloropropane	ND	0.025
Trans-1,3-Dichloropropene	ND	0.025
Trichloroethene	ND	0.025
Chlorodibromomethane	ND	0.025
1,1,2-Trichloroethane	ND	0.025
Benzene	ND	0.025
cis-1,3-Dichloropropene	ND	0.025
2-Chloroethyl vinyl ether	ND	0.05
Tribromoethane (Bromoform)	ND	0.025
2-Hexanone	ND	0.05
4-Methyl-2-pentanone	ND	0.025
Tetrachloroethene	ND	0.025
1,1,2,2-Tetrachloroethane	ND	0.025
Toluene	ND	0.025
Chlorobenzene	ND	0.025
Ethylbenzene	ND	0.025
Styrene	ND	0.025
Xylenes (Total)	0.1	0.025

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

November 9, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-11-059-01 and S8-11-059-03
Number of Samples:	2
Sample Type:	Soil
Date Received:	11/4/88
Analyses Requested:	Metals

The samples were analyzed following E.P.A. Protocol, using methods from SW846 3rd Edition or methods for chemical analysis of water and wastes 600/4-79-020. The method employed is listed adjacent to the parameter in the table.

CHorn
Christine Horn

CH/gg

2 Pages Following - Tables of Results

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 9, 1988

Project: 330-41.01

Lab Number: S8-11-059-01

Sample Identification: WO-A1

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detected	Detection Limit
Cadmium	6010	None	0.25
Chromium	6010	48.	0.25
Lead	6010	None	1.5
Zinc	6010	35.	0.5

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 9, 1988

Project: 330-41.01

Lab Number: S8-11-059-03

Sample Identification: WO-B1

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detected	Detection Limit
Cadmium	6010	None	0.25
Chromium	6010	53.	0.25
Lead	6010	None	1.5
Zinc	6010	48.	0.5

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

November 15, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-11-059-01 thru S8-11-059-08
Number of Samples:	8
Sample Type:	Soil
Date Received:	11/4/88
Analyses Requested:	High Boiling Hydrocarbons, Low Boiling Hydrocarbons, Oil & Grease, Volatile and Semivolatile Organics

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

The method of analysis for volatile organics is taken from E.P.A. Methods 624 and 8240. Water samples and low-level soil samples are analyzed directly using the purge and trap technique. Medium-level soil samples are extracted with methanol and a portion of the extract is analyzed using the purge and trap technique. Final detection is by gas chromatography/mass spectrometry.

The analysis for semivolatile organics was performed by the IT/Cerritos Laboratory. The method of analysis is taken from E.P.A. Method 8270. Final detection is by gas chromatography/mass spectrometry. A summary of tentatively identified compounds is included as part of the semivolatile analysis.

Adeline I. Dreesmann

AID/gg

9 Pages Following - Tables of Results

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Lab Number: S8-11-059-01
Sample Identification: W0-A1

Results

Total Petroleum Hydrocarbons	Milligrams per Kilogram Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	None	5.	Gasoline
Benzene	None	0.05	—
Toluene	None	0.1	—
Ethyl benzene	None	0.1	—
Xylenes	None	0.3	—
High Boiling Hydrocarbons	None	10.	Diesel
High Boiling Hydrocarbons	30.	10.	Oil
Oil and Grease	30.	10.	—

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/9/88

ND = None Detected

Results
Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Chloromethane	ND	0.01
Bromomethane	ND	0.01
Vinyl Chloride	ND	0.01
Chloroethane	ND	0.01
Dichloromethane (Methylene Chloride)	ND	0.005
Acetone	ND	0.025
Carbon Disulfide	ND	0.005
1,1-Dichloroethene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethene (Total)	ND	0.005
Chloroform	ND	0.005
1,2-Dichlorethane	ND	0.005
Methyl ethyl ketone (2-Butanone)	ND	0.01
1,1,1-Trichloroethane	ND	0.005
Carbon Tetrachloride	ND	0.005
Vinyl Acetate	ND	0.01
Bromodichloromethane	ND	0.005
1,2-Dicloropropane	ND	0.005
Trans-1,3-Dichloropropene	ND	0.005
Trichloroethene	ND	0.005
Chlorodibromomethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Benzene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
2-Chloroethyl vinyl ether	ND	0.01
Bromoform	ND	0.005
2-Hexanone	ND	0.01
4-Methyl-2-pentanone	ND	0.01
Tetrachloroethene	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Toluene	ND	0.005
Chlorobenzene	ND	0.005
Ethylbenzene	ND	0.005
Styrene	ND	0.005
Xylenes (Total)	ND	0.005

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/10/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Phenol	ND	0.33
Bis(2-chloroethyl)ether	ND	0.33
2-Chlorophenol	ND	0.33
1,3-Dichlorobenzene	ND	0.33
1,4-Dichlorobenzene	ND	0.33
Benzyl alcohol	ND	0.33
1,2-Dichlorobenzene	ND	0.33
2-Methylphenol	ND	0.33
Bis(2-chloroisopropyl)ether	ND	0.33
4-Methylphenol	ND	0.33
N-Nitroso-di-n-propylamine	ND	0.33
Hexachloroethane	ND	0.33
Nitrobenzene	ND	0.33
Isophorone	ND	0.33
2-Nitrophenol	ND	0.33
2,4-Dimethylphenol	ND	0.33
Benzoic acid	ND	1.6
Bis(2-chloroethoxy)methane	ND	0.33
2,4-Dichlorophenol	ND	0.33
1,2,4-Trichlorobenzene	ND	0.33
Naphthalene	ND	0.33
4-Chloroaniline	ND	0.33
Hexachlorobutadiene	ND	0.33
4-Chloro-3-methylphenol	ND	0.33
2-Methylnapthalene	ND	0.33
Hexachlorocyclopentadiene	ND	0.33
2,4,6-Trichlorophenol	ND	0.33
2,4,5-Trichlorophenol	ND	1.6
2-Chloronaphthalene	ND	0.33
2-Nitroaniline	ND	1.6
Dimethylphthalate	ND	0.33
Acenaphthylene	ND	0.33
3-Nitroaniline	ND	1.6
Acenaphthene	ND	0.33
2,4-Dinitrophenol	ND	1.6
4-Nitrophenol	ND	1.6
Dibenzofuran	ND	0.33

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/10/88

ND = None Detected

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
2,4-Dinitrotoluene	ND	0.33
2,6-Dinitrotoluene	ND	0.33
Diethylphthalate	ND	0.33
4-Chlorophenylphenyl ether	ND	0.33
Fluorene	ND	0.33
4-Nitroaniline	ND	1.6
4,6-Dinitro-o-cresol	ND	1.6
N-Nitrosodiphenylamine	ND	0.33
4-Bromophenyl-phenyl ether	ND	0.33
Hexachlorobenzene	ND	0.33
Pentachlorophenol	ND	1.6
Phenanthrene	ND	0.33
Anthracene	ND	0.33
Di-n-butylphthalate	ND	0.33
Fluoranthene	ND	0.33
Pyrene	ND	0.33
Butylbenzylphthalate	ND	0.33
3,3'-Dichlorobenzidine	ND	0.66
Benzo(a)anthracene	ND	0.33
Bis(2-ethylhexyl)phthalate	ND	0.33
Chrysene	ND	0.33
Di-n-octylphthalate	ND	0.33
Benzo(b)fluoranthene	ND	0.33
Benzo(k)fluoranthene	ND	0.33
Benzo(a)pyrene	ND	0.33
Indeno-(1,2,3-c,d,)pyrene	ND	0.33
Dibenzo(a,h)anthracene	ND	0.33
Benzo(g,h,i)perylene	ND	0.33
N-Nitrosodimethylamine	ND	0.33
1,2-Diphenylhydrazine	ND	0.33
Benzidine	ND	0.33

Summary of Tentatively
Identified Compounds by Method 8270

Compound	Approximate Concentration (Milligrams per Kilogram)
Hydrocarbons	1.3

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Lab Number: S8-11-059-03
Sample Identification: W0-B1

Results

Total Petroleum Hydrocarbons	Milligrams per Kilograms Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	None	5.	Gasoline
Benzene	None	0.05	—
Toluene	None	0.1	—
Ethyl benzene	None	0.1	—
Xylenes	None	0.3	—
High Boiling Hydrocarbons	10.	10.	Diesel
High Boiling Hydrocarbons	110.	60.	Oil
Oil and Grease	220.	10.	—

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/9/88

ND = None Detected

Results
Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Chloromethane	ND	0.01
Bromomethane	ND	0.01
Vinyl Chloride	ND	0.01
Chloroethane	ND	0.01
Dichloromethane (Methylene Chloride)	ND	0.005
Acetone	ND	0.025
Carbon Disulfide	ND	0.005
1,1-Dichloroethene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethene (Total)	ND	0.005
Chloroform	ND	0.005
1,2-Dichlorethane	ND	0.005
Methyl ethyl ketone (2-Butanone)	ND	0.01
1,1,1-Trichloroethane	ND	0.005
Carbon Tetrachloride	ND	0.005
Vinyl Acetate	ND	0.01
Bromodichloromethane	ND	0.005
1,2-Dicloropropane	ND	0.005
Trans-1,3-Dichloropropene	ND	0.005
Trichloroethene	ND	0.005
Chlorodibromomethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Benzene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
2-Chloroethyl vinyl ether	ND	0.01
Bromoform	ND	0.005
2-Hexanone	ND	0.01
4-Methyl-2-pentanone	ND	0.01
Tetrachloroethene	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Toluene	ND	0.005
Chlorobenzene	ND	0.005
Ethylbenzene	ND	0.005
Styrene	ND	0.005
Xylenes (Total)	ND	0.005

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/10/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Phenol	ND	0.33
Bis(2-chloroethyl)ether	ND	0.33
2-Chlorophenol	ND	0.33
1,3-Dichlorobenzene	ND	0.33
1,4-Dichlorobenzene	ND	0.33
Benzyl alcohol	ND	0.33
1,2-Dichlorobenzene	ND	0.33
2-Methylphenol	ND	0.33
Bis(2-chloroisopropyl)ether	ND	0.33
4-Methylphenol	ND	0.33
N-Nitroso-di-n-propylamine	ND	0.33
Hexachloroethane	ND	0.33
Nitrobenzene	ND	0.33
Isophorone	ND	0.33
2-Nitrophenol	ND	0.33
2,4-Dimethylphenol	ND	0.33
Benzoic acid	ND	1.6
Bis(2-chloroethoxy)methane	ND	0.33
2,4-Dichlorophenol	ND	0.33
1,2,4-Trichlorobenzene	ND	0.33
Naphthalene	ND	0.33
4-Chloroaniline	ND	0.33
Hexachlorobutadiene	ND	0.33
4-Chloro-3-methylphenol	ND	0.33
2-Methylnapthalene	ND	0.33
Hexachlorocyclopentadiene	ND	0.33
2,4,6-Trichlorophenol	ND	0.33
2,4,5-Trichlorophenol	ND	1.6
2-Chloronaphthalene	ND	0.33
2-Nitroaniline	ND	1.6
Dimethylphthalate	ND	0.33
Acenaphthylene	ND	0.33
3-Nitroaniline	ND	1.6
Acenaphthene	ND	0.33
2,4-Dinitrophenol	ND	1.6
4-Nitrophenol	ND	1.6
Dibenzofuran	ND	0.33

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/10/88

ND = None Detected

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
2,4-Dinitrotoluene	ND	0.33
2,6-Dinitrotoluene	ND	0.33
Diethylphthalate	ND	0.33
4-Chlorophenylphenyl ether	ND	0.33
Fluorene	ND	0.33
4-Nitroaniline	ND	1.6
4,6-Dinitro-o-cresol	ND	1.6
N-Nitrosodiphenylamine	ND	0.33
4-Bromophenyl-phenyl ether	ND	0.33
Hexachlorobenzene	ND	0.33
Pentachlorophenol	ND	1.6
Phenanthrene	ND	0.33
Anthracene	ND	0.33
Di-n-butylphthalate	ND	0.33
Fluoranthene	ND	0.33
Pyrene	ND	0.33
Butylbenzylphthalate	ND	0.33
3,3'-Dichlorobenzidine	ND	0.66
Benzo(a)anthracene	ND	0.33
Bis(2-ethylhexyl)phthalate	ND	0.33
Chrysene	ND	0.33
Di-n-octylphthalate	ND	0.33
Benzo(b)fluoranthene	ND	0.33
Benzo(k)fluoranthene	ND	0.33
Benzo(a)pyrene	ND	0.33
Indeno-(1,2,3-c,d,)pyrene	ND	0.33
Dibenzo(a,h)anthracene	ND	0.33
Benzo(g,h,i)perylene	ND	0.33
N-Nitrosodimethylamine	ND	0.33
1,2-Diphenylhydrazine	ND	0.33
Benzidine	ND	0.33

Summary of Tentatively
Identified Compounds by Method 8270

Compound	Approximate Concentration (Milligrams per Kilogram)
Hydrocarbons	0.9

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Results

Lab Number	Sample Identification	High Boiling Hydrocarbons (calculated as diesel)	High Boiling Hydrocarbons (calculated as oil)	Oil & Grease
		Milligrams per Kilogram		
S8-11-059-05	WO-C	60.	500.	380.
Detection Limit		30.	200.	10.
S8-11-059-06	WO-D	140.	1,100.	880.
Detection Limit		30.	200.	10.
S8-11-059-07	WO-E	None	None	10.
Detection Limit		10.	10.	10.
S8-11-059-08	WO-F	2,500.	21,000.	15,000.
Detection Limit		700.	3,000.	10.

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

December 9, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-12-053-01 & S8-12-053-02
Number of Samples:	2
Sample Type:	Soil
Date Received:	12/6/88
Analyses Requested:	High Boiling Hydrocarbons, Oil & Grease

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

ND = None Detected

Results

		Parts per Million - dry soil basis		
Lab Number	Sample Identification	High Boiling Hydrocarbons (calculated as diesel)	High Boiling Hydrocarbons (calculated as oil)	Oil & Grease
S8-12-053-01	WD-D2	ND	ND	ND
S8-12-053-02	WD-F2	ND	ND	ND
Detection Limits		10.	10.	20.

Fred Rouse

FR/mlh

SAMPLING/ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Project No.: 330-40.01 Requested By: E. G. P.O. No.: _____

REQUEST		LABORATORY REQUIREMENTS					CHAIN OF CUSTODY				
SAMPLE TYPE:		CONTAINERS					SAMPLER'S SIGNATURE		CONTRACT LABORATORY		
SAMPLE I.D.	PARAMETERS	SIZE/TYPE	QUANTITY	PRES.	LAB	DUE DATE	SAMPLER	SAMPLE DATE	REC'D BY	COMMENTS	DATE REC'D
SP-1	8240, WASTE OIL, OIL & GREASE, GAS/BTX	BRASS RING, 2"	1	~~ICE~~ NTD	IT	2 WKS	SEB	9.29.88	MD	COOL, OK	9/29
SP-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

SIGNATURES:

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: _____

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY: _____

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: Sandra E. Bruns 9.29.88 1163

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY LAB: ITSRV 9/29/88 1635

PACIFIC ENVIRONMENTAL GROUP, INC.

SAMPLING/ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Project No.: 330-40.01 Requested By: JBA P.O. No.: 10268

REQUEST		LABORATORY REQUIREMENTS					CHAIN OF CUSTODY				
SAMPLE TYPE: SOIL		CONTAINERS					SAMPLER'S SIGNATURE Darien Reagan		CONTRACT LABORATORY		
SAMPLE I.D.	PARAMETERS	SIZE/TYPE	QUANTITY	PRES.	LAB	DUE DATE	SAMPLER	SAMPLE DATE	REC'D BY	COMMENTS	DATE REC'D
WO-A1, 2	TPH 8240 5030 metals 8270	2" Brass Ring	2	NP	IT	11/8/88	DR	11-4-88		BK	11/4/88
WO-B1, 2	↓	↓	2	↓	↓	↓	↓	↓	↓	↓	↓
WO-C	HBH, 5030	↓	1	↓	↓	↓	↓	↓	↓	↓	↓
WO-D	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
WO-E	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
WO-F	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

SIGNATURES:

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: _____

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY: _____

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: Darien Reagan 11-4-88 4:35 dr

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY LAB: ITSCV 11/4/88 1635

PACIFIC ENVIRONMENTAL GROUP, INC.

INTERNATIONAL TECHNOLOGY CORPORATION
SANTA CLARA VALLEY LAB
2600 Junction Ave.
San Jose, CA 95131
(408) 943-1510
FAX (408) 943-9332

REQUEST FOR ANALYSIS

ORIGINAL

SCV WORK ORDER NO. 58-12-053

PROJECT NAME
PROJECT NUMBER 330-40.01
PROJECT MANAGER JBA (P.E.G.)
BILL TO

PURCHASE ORDER NO. 10363

CLIENT AUTHORIZATION

DATE SAMPLES RECEIVED 12/6/88
LAB DESTINATION Santa Clara Valley
LABORATORY CONTACT
SEND LAB REPORT TO

DATE REPORT REQUIRED 12/7/88
DATE VERBAL RESULTS REQUIRED
PROJECT CONTACT John Adams
PROJECT CONTACT PHONE NO. 984-6536

SAMPLE FRACTION NO.	SAMPLE IDENTIFICATION	SAMPLE TYPE	DATE COLLECTED	SAMPLE VOLUME	PRESER-VATIVE	REQUIRED TESTING PROGRAM	CONDITION UPON RECEIPT
	WO-D2	SOIL	12/6/88	2" BRASS RING	NP	24-Hour (HBH, O&G)	ok Cool
	WO-F2	↓	↓	↓	↓	↓	↓
			Relinquished by John B. Adams			12/6/88 1450	
	Sampled by and						

SPECIAL INSTRUCTIONS: HARD COPY By 12/7 @ 4:00pm.

TURNAROUND TIME REQUIRED: Normal _____ Rush X (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping and disposal.)

Return to Client _____ Disposal by Lab _____

FOR LAB USE ONLY

Received By Josephine DeCarli Date/Time 12/6/88 14:50

PACIFIC
ENVIRONMENTAL
GROUP INC.

2/7/89
ALAMEDA COUNTY
DEPT. OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS

Date 2-3-89

Project 330-40.01

To: Alameda Co. Environmental Health Dept.
Havardous Material Division
80 Swan, Rm 200
Oakland, CA 94621
Attn: Mary Joe Meiers

We have enclosed

Copies	Description
1	Certified Analytical Reports, Chain of Custody
	documents and site maps for waste oil excavation
	at: ARCO station #276
	10600 MacArther Blvd.
	Oakland, CA

For your
- x Use
- ____ Approval
- x Information

Comments: If you have any questions don't hesitate to call.

Owen C. Ratchye

1601 Civic Center Drive, Suite 202, Santa Clara, California 95050, (408) 984-6536

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

December 9, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-12-053-01 & S8-12-053-02
Number of Samples:	2
Sample Type:	Soil
Date Received:	12/6/88
Analyses Requested:	High Boiling Hydrocarbons, Oil & Grease

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

ND = None Detected

Results

		Parts per Million - dry soil basis		
Lab Number	Sample Identification	High Boiling Hydrocarbons (calculated as diesel)	High Boiling Hydrocarbons (calculated as oil)	Oil & Grease
S8-12-053-01	WD-D2	ND	ND	ND
S8-12-053-02	WD-F2	ND	ND	ND
Detection Limits		10.	10.	20.

Fred Rouse

FR/mlh

TECHNOLOGY CORPORATION
SANTA CLARA VALLEY LAB
San Jose, CA 95131
(408) 943-1540
FAX (408) 943-9332

REQUEST FOR ANALYSIS

ORIGINAL

SCV WORK ORDER NO. 2012-652

PROJECT NAME
PROJECT NUMBER #0330-40.01
PROJECT MANAGER JBL (P.E.G.)
BILL TO

PURCHASE ORDER NO. 10363

CLIENT AUTHORIZATION

DATE SAMPLES RECEIVED 12/6/88
LAB DESTINATION Santa Clara Valley
LABORATORY CONTACT
SEND LAB REPORT TO

DATE REPORT REQUIRED 12/7/88
DATE VERBAL RESULTS REQUIRED
PROJECT CONTACT John Adams
PROJECT CONTACT PHONE NO. 984-6536

SAMPLE FRACTION NO.	SAMPLE IDENTIFICATION	SAMPLE TYPE	DATE COLLECTED	SAMPLE VOLUME	PRESERVATIVE	REQUIRED TESTING PROGRAM	CONDITION UPON RECEIPT
	W0-D2	Soil	12/6/88	2" Brass Ring	NP	24-Hour (HBH, O+G)	ok Cool
	W0-F2	↓	↓	↓	↓	↓	↓
			Relogged by John B. Adams			12/6/88 1450	
	Sampled by and						

SPECIAL INSTRUCTIONS: HARD COPY By 12/7 @ 4:00 p.m.

TURNAROUND TIME REQUIRED: Normal _____ Rush X (Subject to rush surcharge)

POSSIBLE HAZARD IDENTIFICATION: (Please indicate if sample(s) are hazardous materials and/or suspected to contain high levels of hazardous substances.)

Nonhazard _____ Flammable _____ Skin Irritant _____ Highly Toxic _____ Other _____ (Please Specify)

SAMPLE DISPOSAL: (Please indicate disposition of sample following analysis. Lab will charge for packing, shipping and disposal.)

Return to Client _____ Disposal by Lab _____

FOR LAB USE ONLY

Received By Josephine DeCarli Date/Time 12/6/88 14:50

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

October 19, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-09-280-01 and S8-09-280-02
Number of Samples:	2
Sample Type:	Soil
Date Received:	9/29/88
Analyses Requested:	Volatile Organics, High Boiling Hydrocarbons, Oil & Grease, Low Boiling Hydrocarbons

The method of analysis for volatile organics is taken from E.P.A. Methods 624 and 8240. Water samples and low-level soil samples are analyzed directly using the purge and trap technique. Medium-level soil samples are extracted with methanol and a portion of the extract is analyzed using the purge and trap technique. Final detection is by gas chromatography/mass spectrometry.

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

Fred Rouse

FR/gg

4 Pages Following - Tables of Results

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-01
Sample Identification: SP-1

Results

Total Petroleum Hydrocarbons	Parts per Million - dry soil basis		
	Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	40.*	10.	Gasoline
Benzene	None	0.1	--
Toluene	None	0.2	--
Ethyl benzene	0.2	0.2	--
Xylenes	1.7	0.6	--
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	7,300.	2,000.	Oil
High Boiling Hydrocarbons	160.	20.	Stoddard Solvent
Oil and Grease	5,600.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Sample Identification: SP-1

Lab Number: S8-09-280-01

Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	1.25
Bromomethane	ND	1.25
Vinyl Chloride	ND	1.25
Chloroethane	ND	1.25
Dichloromethane	ND	0.625
Acetone	ND	1.25
Carbon Disulfide	ND	0.625
1,1-Dichloroethene	ND	0.625
1,1-Dichloroethane	ND	0.625
1,2-Dichloroethene (Total)	ND	0.625
Chloroform	ND	0.625
1,2-Dichlorethane	ND	0.625
Methyl ethyl ketone (2-Butanone)	ND	1.25
1,1,1-Trichloroethane	ND	0.625
Carbon Tetrachloride	ND	0.625
Vinyl Acetate	ND	1.25
Bromodichloromethane	ND	0.625
1,2-Dicloropropane	ND	0.625
Trans-1,3-Dichloropropene	ND	0.625
Trichloroethene	ND	0.625
Chlorodibromomethane	ND	0.625
1,1,2-Trichloroethane	ND	0.625
Benzene	ND	0.625
cis-1,3-Dichloropropene	ND	0.625
2-Chloroethyl vinyl ether	ND	1.25
Tribromoethane (Bromoform)	ND	0.625
2-Hexanone	ND	1.25
4-Methyl-2-pentanone	ND	1.25
Tetrachloroethene	ND	0.625
1,1,2,2-Tetrachloroethane	ND	0.625
Toluene	0.76	0.625
Chlorobenzene	ND	0.625
Ethylbenzene	ND	0.625
Styrene	ND	0.625
Xylenes (Total)	ND	0.625

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-02
Sample Identification: SP-2

	Results		
	Parts per Million - dry soil basis		
Total Petroleum Hydrocarbons	Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	50.*	10.	Gasoline
Benzene	None	0.1	—
Toluene	None	0.2	—
Ethyl benzene	0.2	0.2	—
Xylenes	1.8	0.6	—
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	4,800.	2,000.	Oil
High Boiling Hydrocarbons	110.	20.	Stoddard Solvent
Oil and Grease	3,300.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: SP-2

Lab Number: S8-09-280-02

Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.05
Chloroethane	ND	0.05
Dichloromethane	ND	0.5
Acetone	ND	0.5
Carbon Disulfide	ND	0.025
1,1-Dichloroethene	ND	0.025
1,1-Dichloroethane	ND	0.025
1,2-Dichloroethene (Total)	ND	0.025
Chloroform	ND	0.025
1,2-Dichlorethane	ND	0.025
Methyl ethyl ketone (2-Butanone)	ND	0.05
1,1,1-Trichloroethane	ND	0.025
Carbon Tetrachloride	ND	0.025
Vinyl Acetate	ND	0.05
Bromodichloromethane	ND	0.025
1,2-Dicloropropane	ND	0.025
Trans-1,3-Dichloropropene	ND	0.025
Trichloroethene	ND	0.025
Chlorodibromomethane	ND	0.025
1,1,2-Trichloroethane	ND	0.025
Benzene	ND	0.025
cis-1,3-Dichloropropene	ND	0.025
2-Chloroethyl vinyl ether	ND	0.05
Tribromoethane (Bromoform)	ND	0.025
2-Hexanone	ND	0.05
4-Methyl-2-pentanone	ND	0.025
Tetrachloroethene	ND	0.025
1,1,2,2-Tetrachloroethane	ND	0.025
Toluene	ND	0.025
Chlorobenzene	ND	0.025
Ethylbenzene	ND	0.025
Styrene	ND	0.025
Xylenes (Total)	0.1	0.025

SAMPLING/ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

roject No.: 330-40.01 Requested By: E. G. P.O. No.: _____

REQUEST		LABORATORY REQUIREMENTS					CHAIN OF CUSTODY				
SAMPLE TYPE:		CONTAINERS					SAMPLER'S SIGNATURE		CONTRACT LABORATORY		
SAMPLE I.D.	PARAMETERS	SIZE/TYPE	QUANTITY	PRES.	LAB	DUE DATE	SAMPLER	SAMPLE DATE	REC'D BY	COMMENTS	DATE REC'D
SP-1	8240, WASTE OIL, OIL & GREASE, GAS/BTX	BRASS RING, 2"	1	ND ~~HCl~~	IT	2 WKS	SEB	9.29.88	MD	COOL, OK	9/29
SP-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

SIGNATURES:

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: _____

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY: _____

RELEASED BY: _____ RELEASED BY: _____ RELEASED BY: Sandra E. Bruno 9.29.88 1635

RECEIVED BY: _____ RECEIVED BY: _____ RECEIVED BY LAB: ITSCV 9/29/88 1635

PACIFIC ENVIRONMENTAL GROUP, INC.

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

November 15, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-11-059-01 thru S8-11-059-08
Number of Samples:	8
Sample Type:	Soil
Date Received:	11/4/88
Analyses Requested:	High Boiling Hydrocarbons, Low Boiling Hydrocarbons, Oil & Grease, Volatile and Semivolatile Organics

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

The method of analysis for volatile organics is taken from E.P.A. Methods 624 and 8240. Water samples and low-level soil samples are analyzed directly using the purge and trap technique. Medium-level soil samples are extracted with methanol and a portion of the extract is analyzed using the purge and trap technique. Final detection is by gas chromatography/mass spectrometry.

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988
Page 2

The analysis for semivolatile organics was performed by the IT/Cerritos Laboratory. The method of analysis is taken from E.P.A. Method 8270. Final detection is by gas chromatography/mass spectrometry. A summary of tentatively identified compounds is included as part of the semivolatile analysis.

Adeline I. Dreesmann

AID/gg

9 Pages Following - Tables of Results

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Lab Number: S8-11-059-01
Sample Identification: W0-A1

	Results		
	Milligrams per Kilogram		
Total Petroleum Hydrocarbons	Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	None	5.	Gasoline
Benzene	None	0.05	—
Toluene	None	0.1	—
Ethyl benzene	None	0.1	—
Xylenes	None	0.3	—
High Boiling Hydrocarbons	None	10.	Diesel
High Boiling Hydrocarbons	30.	10.	Oil
Oil and Grease	30.	10.	—

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/9/88

ND = None Detected

Results
Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Chloromethane	ND	0.01
Bromomethane	ND	0.01
Vinyl Chloride	ND	0.01
Chloroethane	ND	0.01
Dichloromethane (Methylene Chloride)	ND	0.005
Acetone	ND	0.025
Carbon Disulfide	ND	0.005
1,1-Dichloroethene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethene (Total)	ND	0.005
Chloroform	ND	0.005
1,2-Dichlorethane	ND	0.005
Methyl ethyl ketone (2-Butanone)	ND	0.01
1,1,1-Trichloroethane	ND	0.005
Carbon Tetrachloride	ND	0.005
Vinyl Acetate	ND	0.01
Bromodichloromethane	ND	0.005
1,2-Dicloropropane	ND	0.005
Trans-1,3-Dichloropropene	ND	0.005
Trichloroethene	ND	0.005
Chlorodibromomethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Benzene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
2-Chloroethyl vinyl ether	ND	0.01
Bromoform	ND	0.005
2-Hexanone	ND	0.01
4-Methyl-2-pentanone	ND	0.01
Tetrachloroethene	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Toluene	ND	0.005
Chlorobenzene	ND	0.005
Ethylbenzene	ND	0.005
Styrene	ND	0.005
Xylenes (Total)	ND	0.005

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/10/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Phenol	ND	0.33
Bis(2-chloroethyl)ether	ND	0.33
2-Chlorophenol	ND	0.33
1,3-Dichlorobenzene	ND	0.33
1,4-Dichlorobenzene	ND	0.33
Benzyl alcohol	ND	0.33
1,2-Dichlorobenzene	ND	0.33
2-Methylphenol	ND	0.33
Bis(2-chloroisopropyl)ether	ND	0.33
4-Methylphenol	ND	0.33
N-Nitroso-di-n-propylamine	ND	0.33
Hexachloroethane	ND	0.33
Nitrobenzene	ND	0.33
Isophorone	ND	0.33
2-Nitrophenol	ND	0.33
2,4-Dimethylphenol	ND	0.33
Benzoic acid	ND	1.6
Bis(2-chloroethoxy)methane	ND	0.33
2,4-Dichlorophenol	ND	0.33
1,2,4-Trichlorobenzene	ND	0.33
Naphthalene	ND	0.33
4-Chloroaniline	ND	0.33
Hexachlorobutadiene	ND	0.33
4-Chloro-3-methylphenol	ND	0.33
2-Methylnapthalene	ND	0.33
Hexachlorocyclopentadiene	ND	0.33
2,4,6-Trichlorophenol	ND	0.33
2,4,5-Trichlorophenol	ND	1.6
2-Chloronaphthalene	ND	0.33
2-Nitroaniline	ND	1.6
Dimethylphthalate	ND	0.33
Acenaphthylene	ND	0.33
3-Nitroaniline	ND	1.6
Acenaphthene	ND	0.33
2,4-Dinitrophenol	ND	1.6
4-Nitrophenol	ND	1.6
Dibenzofuran	ND	0.33

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-A2

Lab Number: S8-11-059-02

Date Analysis Completed: 11/10/88

ND = None Detected

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
2,4-Dinitrotoluene	ND	0.33
2,6-Dinitrotoluene	ND	0.33
Diethylphthalate	ND	0.33
4-Chlorophenylphenyl ether	ND	0.33
Fluorene	ND	0.33
4-Nitroaniline	ND	1.6
4,6-Dinitro-o-cresol	ND	1.6
N-Nitrosodiphenylamine	ND	0.33
4-Bromophenyl-phenyl ether	ND	0.33
Hexachlorobenzene	ND	0.33
Pentachlorophenol	ND	1.6
Phenanthrene	ND	0.33
Anthracene	ND	0.33
Di-n-butylphthalate	ND	0.33
Fluoranthene	ND	0.33
Pyrene	ND	0.33
Butylbenzylphthalate	ND	0.33
3,3'-Dichlorobenzidine	ND	0.66
Benzo(a)anthracene	ND	0.33
Bis(2-ethylhexyl)phthalate	ND	0.33
Chrysene	ND	0.33
Di-n-octylphthalate	ND	0.33
Benzo(b)fluoranthene	ND	0.33
Benzo(k)fluoranthene	ND	0.33
Benzo(a)pyrene	ND	0.33
Indeno-(1,2,3-c,d,)pyrene	ND	0.33
Dibenzo(a,h)anthracene	ND	0.33
Benzo(g,h,i)perylene	ND	0.33
N-Nitrosodimethylamine	ND	0.33
1,2-Diphenylhydrazine	ND	0.33
Benzidine	ND	0.33

Summary of Tentatively
Identified Compounds by Method 8270

Compound	Approximate Concentration (Milligrams per Kilogram)
Hydrocarbons	1.3

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Lab Number: S8-11-059-03
Sample Identification: W0-B1

Results

Total Petroleum Hydrocarbons	Milligrams per Kilograms Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	None	5.	Gasoline
Benzene	None	0.05	—
Toluene	None	0.1	—
Ethyl benzene	None	0.1	—
Xylenes	None	0.3	—
High Boiling Hydrocarbons	10.	10.	Diesel
High Boiling Hydrocarbons	110.	60.	Oil
Oil and Grease	220.	10.	—

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/9/88

ND = None Detected

Results
Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Chloromethane	ND	0.01
Bromomethane	ND	0.01
Vinyl Chloride	ND	0.01
Chloroethane	ND	0.01
Dichloromethane (Methylene Chloride)	ND	0.005
Acetone	ND	0.025
Carbon Disulfide	ND	0.005
1,1-Dichloroethene	ND	0.005
1,1-Dichloroethane	ND	0.005
1,2-Dichloroethene (Total)	ND	0.005
Chloroform	ND	0.005
1,2-Dichlorethane	ND	0.005
Methyl ethyl ketone (2-Butanone)	ND	0.01
1,1,1-Trichloroethane	ND	0.005
Carbon Tetrachloride	ND	0.005
Vinyl Acetate	ND	0.01
Bromodichloromethane	ND	0.005
1,2-Dicloropropane	ND	0.005
Trans-1,3-Dichloropropene	ND	0.005
Trichloroethene	ND	0.005
Chlorodibromomethane	ND	0.005
1,1,2-Trichloroethane	ND	0.005
Benzene	ND	0.005
cis-1,3-Dichloropropene	ND	0.005
2-Chloroethyl vinyl ether	ND	0.01
Bromoform	ND	0.005
2-Hexanone	ND	0.01
4-Methyl-2-pentanone	ND	0.01
Tetrachloroethene	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.005
Toluene	ND	0.005
Chlorobenzene	ND	0.005
Ethylbenzene	ND	0.005
Styrene	ND	0.005
Xylenes (Total)	ND	0.005

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/10/88

ND = None Detected

Results
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
Phenol	ND	0.33
Bis(2-chloroethyl)ether	ND	0.33
2-Chlorophenol	ND	0.33
1,3-Dichlorobenzene	ND	0.33
1,4-Dichlorobenzene	ND	0.33
Benzyl alcohol	ND	0.33
1,2-Dichlorobenzene	ND	0.33
2-Methylphenol	ND	0.33
Bis(2-chloroisopropyl)ether	ND	0.33
4-Methylphenol	ND	0.33
N-Nitroso-di-n-propylamine	ND	0.33
Hexachloroethane	ND	0.33
Nitrobenzene	ND	0.33
Isophorone	ND	0.33
2-Nitrophenol	ND	0.33
2,4-Dimethylphenol	ND	0.33
Benzoic acid	ND	1.6
Bis(2-chloroethoxy)methane	ND	0.33
2,4-Dichlorophenol	ND	0.33
1,2,4-Trichlorobenzene	ND	0.33
Naphthalene	ND	0.33
4-Chloroaniline	ND	0.33
Hexachlorobutadiene	ND	0.33
4-Chloro-3-methylphenol	ND	0.33
2-Methylnapthalene	ND	0.33
Hexachlorocyclopentadiene	ND	0.33
2,4,6-Trichlorophenol	ND	0.33
2,4,5-Trichlorophenol	ND	1.6
2-Chloronaphthalene	ND	0.33
2-Nitroaniline	ND	1.6
Dimethylphthalate	ND	0.33
Acenaphthylene	ND	0.33
3-Nitroaniline	ND	1.6
Acenaphthene	ND	0.33
2,4-Dinitrophenol	ND	1.6
4-Nitrophenol	ND	1.6
Dibenzofuran	ND	0.33

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: W0-B2

Lab Number: S8-11-059-04

Date Analysis Completed: 11/10/88

ND = None Detected

Results (continued)
Semi-Volatile Organic Compounds
(Milligrams per Kilogram)

Compound	Detected	Detection Limit
2,4-Dinitrotoluene	ND	0.33
2,6-Dinitrotoluene	ND	0.33
Diethylphthalate	ND	0.33
4-Chlorophenylphenyl ether	ND	0.33
Fluorene	ND	0.33
4-Nitroaniline	ND	1.6
4,6-Dinitro-o-cresol	ND	1.6
N-Nitrosodiphenylamine	ND	0.33
4-Bromophenyl-phenyl ether	ND	0.33
Hexachlorobenzene	ND	0.33
Pentachlorophenol	ND	1.6
Phenanthrene	ND	0.33
Anthracene	ND	0.33
Di-n-butylphthalate	ND	0.33
Fluoranthene	ND	0.33
Pyrene	ND	0.33
Butylbenzylphthalate	ND	0.33
3,3'-Dichlorobenzidine	ND	0.66
Benzo(a)anthracene	ND	0.33
Bis(2-ethylhexyl)phthalate	ND	0.33
Chrysene	ND	0.33
Di-n-octylphthalate	ND	0.33
Benzo(b)fluoranthene	ND	0.33
Benzo(k)fluoranthene	ND	0.33
Benzo(a)pyrene	ND	0.33
Indeno-(1,2,3-c,d,)pyrene	ND	0.33
Dibenzo(a,h)anthracene	ND	0.33
Benzo(g,h,i)perylene	ND	0.33
N-Nitrosodimethylamine	ND	0.33
1,2-Diphenylhydrazine	ND	0.33
Benzidine	ND	0.33

Summary of Tentatively
Identified Compounds by Method 8270

Compound	Approximate Concentration (Milligrams per Kilogram)
Hydrocarbons	0.9

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 15, 1988

Project: 330-40.01

Results

Lab Number	Sample Identification	High Boiling Hydrocarbons (calculated as diesel)	High Boiling Hydrocarbons (calculated as oil)	Oil & Grease
		Milligrams per Kilogram		
S8-11-059-05	WO-C	60.	500.	380.
Detection Limit		30.	200.	10.
S8-11-059-06	WO-D	140.	1,100.	880.
Detection Limit		30.	200.	10.
S8-11-059-07	WO-E	None	None	10.
Detection Limit		10.	10.	10.
S8-11-059-08	WO-F	2,500.	21,000.	15,000.
Detection Limit		700.	3,000.	10.

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

November 9, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-11-059-01 and S8-11-059-03
Number of Samples:	2
Sample Type:	Soil
Date Received:	11/4/88
Analyses Requested:	Metals

The samples were analyzed following E.P.A. Protocol, using methods from SW846 3rd Edition or methods for chemical analysis of water and wastes 600/4-79-020. The method employed is listed adjacent to the parameter in the table.

CHorn
Christine Horn

CH/gg

2 Pages Following - Tables of Results

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 9, 1988

Project: 330-41.01

Lab Number: S8-11-059-01

Sample Identification: WO-A1

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detected	Detection Limit
Cadmium	6010	None	0.25
Chromium	6010	48.	0.25
Lead	6010	None	1.5
Zinc	6010	35.	0.5

IT/Santa Clara Valley Lab to
Pacific Environmental Group, Inc.
ATTN: John Adams

November 9, 1988

Project: 330-41.01

Lab Number: S8-11-059-03

Sample Identification: WO-B1

Results - Milligrams per Kilogram

Parameter	E.P.A. Method	Detected	Detection Limit
Cadmium	6010	None	0.25
Chromium	6010	53.	0.25
Lead	6010	None	1.5
Zinc	6010	48.	0.5

SAMPLING/ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Project No.: 330-40.01 Requested By: JBH P.O. No.: 10268

REQUEST		LABORATORY REQUIREMENTS					CHAIN OF CUSTODY				
SAMPLE TYPE: SOIL		CONTAINERS					SAMPLER'S SIGNATURE Darien Lawyer		CONTRACT LABORATORY		
SAMPLE I.D.	PARAMETERS	SIZE/TYPE	QUANTITY	PRES.	LAB	DUE DATE	SAMPLER	SAMPLE DATE	REC'D BY	COMMENTS	DATE REC'D
WO-A1, 2	TPH 8240 5030 metals 8270	2" Brass Ring	2	NP	IT	11/8/88	DR	11-4-88	[illegible]	OK	11/7/88
WO-B1, 2	↓	↓	2	↓	↓	↓	↓	↓	↓	↓	
WO-C	HBH, 5030	↓	1	↓	↓	↓	↓	↓	↓	↓	
WO-D	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
WO-E	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
WO-F	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	

SIGNATURES:

RELEASED BY: _____	RELEASED BY: _____	RELEASED BY: _____
RECEIVED BY: _____	RECEIVED BY: _____	RECEIVED BY: _____
RELEASED BY: _____	RELEASED BY: _____	RELEASED BY: Darien Lawyer 11-4-88 4:55 pm
RECEIVED BY: _____	RECEIVED BY: _____	RECEIVED BY LAB: [signature] ITSC.V 11/4/88 [illegible]

PACIFIC ENVIRONMENTAL GROUP, INC.

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Drive
Suite 202
Santa Clara, CA 95050

October 19, 1988

ATTN: John Adams

Following are the results of analyses on the samples described below.

Project:	330-40.01
Lab Numbers:	S8-09-280-01 and S8-09-280-02
Number of Samples:	2
Sample Type:	Soil
Date Received:	9/29/88
Analyses Requested:	Volatile Organics, High Boiling Hydrocarbons, Oil & Grease, Low Boiling Hydrocarbons

The method of analysis for volatile organics is taken from E.P.A. Methods 624 and 8240. Water samples and low-level soil samples are analyzed directly using the purge and trap technique. Medium-level soil samples are extracted with methanol and a portion of the extract is analyzed using the purge and trap technique. Final detection is by gas chromatography/mass spectrometry.

The method of analysis for high boiling hydrocarbons in soil involves extracting the sample with acetone. The mixture is partitioned with hexane and the resulting extract is examined by gas chromatography using a flame ionization detector.

The method of analysis for oil and grease in soil is taken from EPA Method 3550 and Standard Methods Section 503E. The sample is extracted with repeated portions of 50:50 methylene chloride:acetone using a horn-type sonicator. The extract is dried with sodium sulfate and treated with silica gel to remove polar compounds. Following evaporation, oil and grease is determined gravimetrically.

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

Fred Rouse

FR/gg

4 Pages Following - Tables of Results

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-01
Sample Identification: SP-1

Results

Total Petroleum Hydrocarbons	Parts per Million - dry soil basis: Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	40.*	10.	Gasoline
Benzene	None	0.1	--
Toluene	None	0.2	--
Ethyl benzene	0.2	0.2	--
Xylenes	1.7	0.6	--
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	7,300.	2,000.	Oil
High Boiling Hydrocarbons	160.	20.	Stoddard Solvent
Oil and Grease	5,600.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: SP-1

Lab Number: S8-09-280-01

Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	1.25
Bromomethane	ND	1.25
Vinyl Chloride	ND	1.25
Chloroethane	ND	1.25
Dichloromethane	ND	0.625
Acetone	ND	1.25
Carbon Disulfide	ND	0.625
1,1-Dichloroethene	ND	0.625
1,1-Dichloroethane	ND	0.625
1,2-Dichloroethene (Total)	ND	0.625
Chloroform	ND	0.625
1,2-Dichlorethane	ND	0.625
Methyl ethyl ketone (2-Butanone)	ND	1.25
1,1,1-Trichloroethane	ND	0.625
Carbon Tetrachloride	ND	0.625
Vinyl Acetate	ND	1.25
Bromodichloromethane	ND	0.625
1,2-Dicloropropane	ND	0.625
Trans-1,3-Dichloropropene	ND	0.625
Trichloroethene	ND	0.625
Chlorodibromomethane	ND	0.625
1,1,2-Trichloroethane	ND	0.625
Benzene	ND	0.625
cis-1,3-Dichloropropene	ND	0.625
2-Chloroethyl vinyl ether	ND	1.25
Tribromoethane (Bromoform)	ND	0.625
2-Hexanone	ND	1.25
4-Methyl-2-pentanone	ND	1.25
Tetrachloroethene	ND	0.625
1,1,2,2-Tetrachloroethane	ND	0.625
Toluene	0.76	0.625
Chlorobenzene	ND	0.625
Ethylbenzene	ND	0.625
Styrene	ND	0.625
Xylenes (Total)	ND	0.625

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

October 19, 1988

Project: 330-40.01

Lab Number: S8-09-280-02
Sample Identification: SP-2

Total Petroleum Hydrocarbons	Results (Parts per Million - dry soil basis) Detected	Detection Limit	Calculated as
Low Boiling Hydrocarbons	50.*	10.	Gasoline
Benzene	None	0.1	--
Toluene	None	0.2	--
Ethyl benzene	0.2	0.2	--
Xylenes	1.8	0.6	--
High Boiling Hydrocarbons	None	300.	Diesel
High Boiling Hydrocarbons	4,800.	2,000.	Oil
High Boiling Hydrocarbons	110.	20.	Stoddard Solvent
Oil and Grease	3,300.	10.	--

*Chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.

IT/Santa Clara Valley to
Pacific Environmental Group, Inc.
ATTN: John Adams

Project: 330-40.01

Sample Identification: SP-2

Lab Number: S8-09-280-02

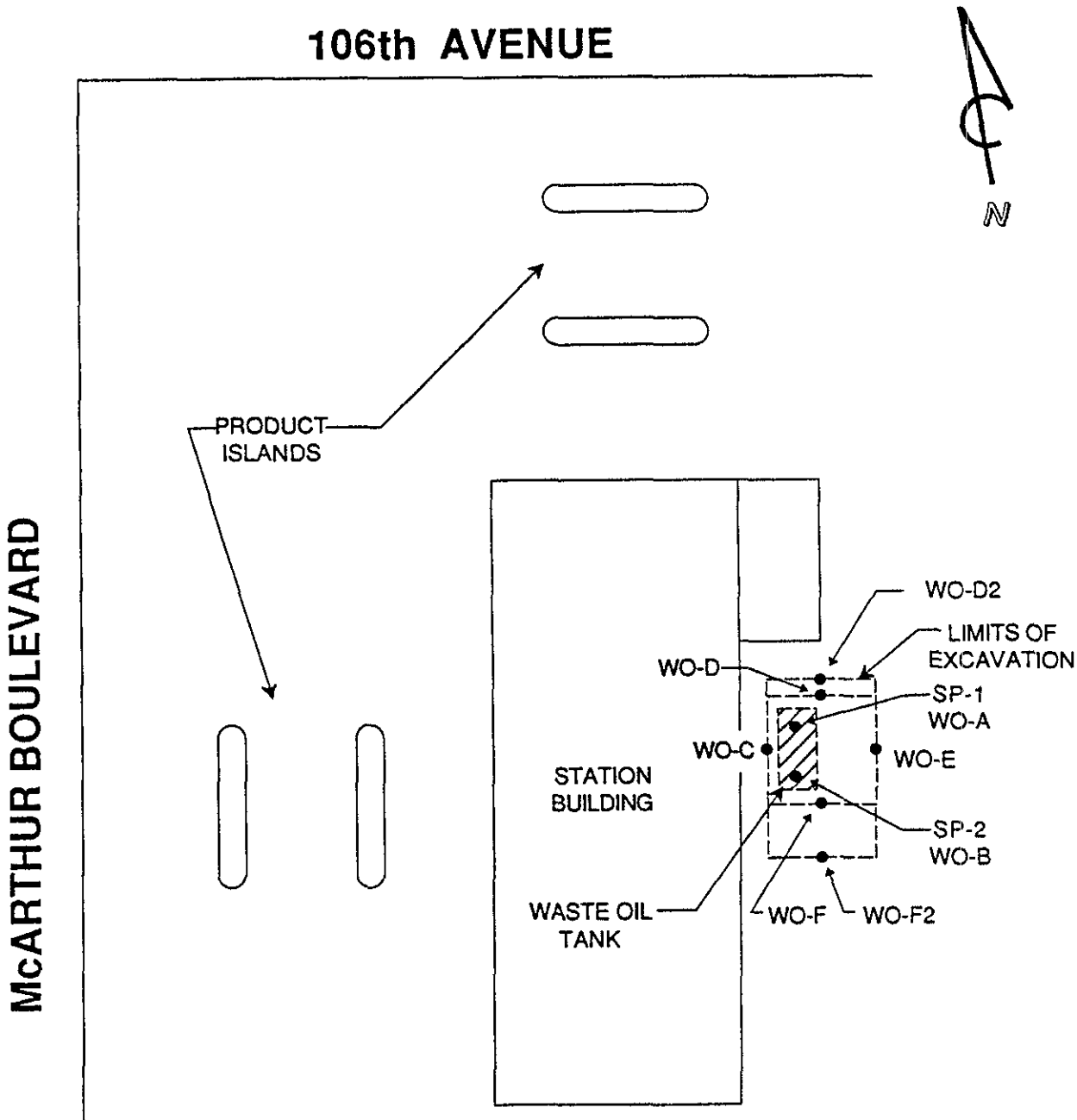
Sample Date: 9/29/88

Date Analysis Completed: 10/12/88

ND = None Detected

Results
Volatile Organic Compounds
Milligrams per Kilogram

Compound	Detected	Detection Limit
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.05
Chloroethane	ND	0.05
Dichloromethane	ND	0.5
Acetone	ND	0.5
Carbon Disulfide	ND	0.025
1,1-Dichloroethene	ND	0.025
1,1-Dichloroethane	ND	0.025
1,2-Dichloroethene (Total)	ND	0.025
Chloroform	ND	0.025
1,2-Dichlorethane	ND	0.025
Methyl ethyl ketone (2-Butanone)	ND	0.05
1,1,1-Trichloroethane	ND	0.025
Carbon Tetrachloride	ND	0.025
Vinyl Acetate	ND	0.05
Bromodichloromethane	ND	0.025
1,2-Dicloropropane	ND	0.025
Trans-1,3-Dichloropropene	ND	0.025
Trichloroethene	ND	0.025
Chlorodibromomethane	ND	0.025
1,1,2-Trichloroethane	ND	0.025
Benzene	ND	0.025
cis-1,3-Dichloropropene	ND	0.025
2-Chloroethyl vinyl ether	ND	0.05
Tribromoethane (Bromoform)	ND	0.025
2-Hexanone	ND	0.05
4-Methyl-2-pentanone	ND	0.025
Tetrachloroethene	ND	0.025
1,1,2,2-Tetrachloroethane	ND	0.025
Toluene	ND	0.025
Chlorobenzene	ND	0.025
Ethylbenzene	ND	0.025
Styrene	ND	0.025
Xylenes (Total)	0.1	0.025



NOT TO SCALE

PACIFIC ENVIRONMENTAL GROUP, INC.	**ARCO STATION #276** 10600 McArthur Boulevard Oakland, California **SITE MAP**	FIGURE: 1 PROJECT: 330-40.01