SP ENVIRONMENTAL SYSTEMS, INC.

9719 LINCOLN VILLAGE DR., SUITE 310 SACRAMENTO, CA 95827 (916) 369-8971 FAX (916) 369-8370

March 28, 1991

Mr. Dennis Byrne
Alameda County Health Care Services Agency
Department of Environmental Health - Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Subject: Soil & Groundwater Investigation
5th & Kirkham Streets Site
Oakland, California
SPEvS Job # 05032

Dear Mr. Byrne:

On behalf of Southern Pacific Transportation Company (SPTCo), SP Environmental Systems Inc. (SPEvS) has prepared the enclosed report describing the results of a Phase II soil and groundwater investigation conducted at the above referenced site. A workplan for the remediation of hydrocarbon impacted soil is currently being developed. This workplan will be submitted for your approval prior to starting remedial activities.

If there are any questions, do not hesitate to give me a call at 916-369-8971.

Sincerely,

Walter Floyd

Walter Floyd
Project Geologist

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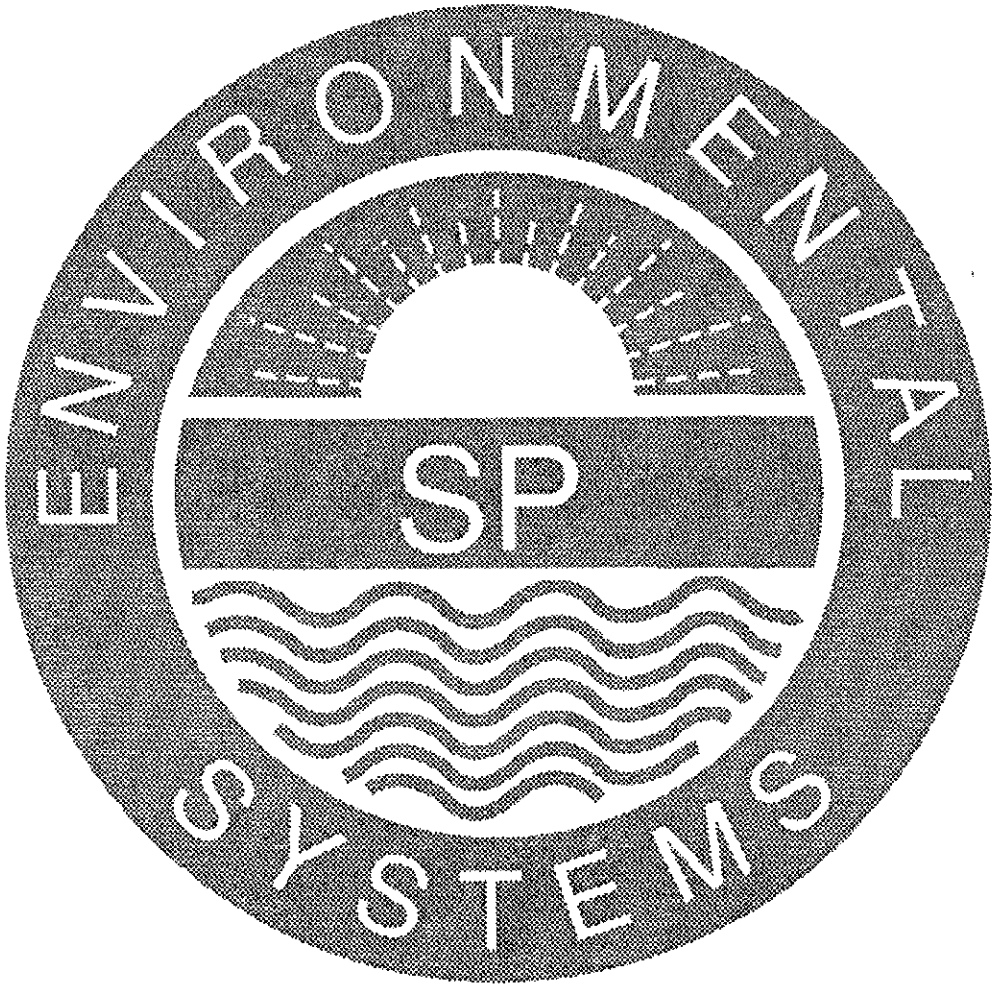

PHASE II ENVIRONMENTAL SITE ASSESSMENT
SOUTHERN PACIFIC TRANSPORTATION COMPANY
5TH AND KIRKHAM STREETS PROPERTY
OAKLAND, CALIFORNIA

SPEvS Project No. 05032

Prepared for:

Southern Pacific Transportation Co.

One Market Plaza
San Francisco, California 94105

Prepared by:

SP Environmental Systems, Inc.

9719 Lincoln Village Dr., Suite 310
Sacramento, California 95827

March 1, 1991

A report prepared for:

Southern Pacific Transportation Company
One Market Plaza
San Francisco, CA 94105

PHASE II ENVIRONMENTAL SITE ASSESSMENT
5TH AND KIRKHAM STREETS PROPERTY
OAKLAND, CALIFORNIA

Project No. 05032

Prepared by:

Walter Floyd
Project Geologist

R. W. Garey
Project Manager

QA/QC by:

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Project Manager

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9719 Lincoln Village Drive, Suite 310
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March 1, 1991

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1.0 INTRODUCTION

This report presents the results of an initial soil and groundwater investigation conducted by SP Environmental Systems Inc. (SPEvS) on behalf of Southern Pacific Transportation Company (SPTCo) for a site known as the 5th and Kirkham Streets property in Oakland, California (See Figure 1). The site contained four underground storage tanks (USTs) that were removed in February, 1990. A detailed report describing the tank removal operation and findings can be found in the SPEvS report dated March 1990.

A soil sample collected in native soil beneath Tank #1, a 10,000-gallon diesel storage tank located on parcel B, 330 Cypress Street, contained 700 parts per million (ppm) of total petroleum hydrocarbons as gasoline and diesel (TPH). Similar sampling beneath Tank #2, a 500-gallon waste oil tank also on parcel B, contained 1,500 ppm TPH.

Soil samples collected in native soil beneath Tanks #3 & #4 (1,500-gallon waste oil tanks) on parcel C contained less than 10 ppm TPH. Soil samples collected from tank fill material contained 1,100 ppm and 1,600 ppm TPH respectively.

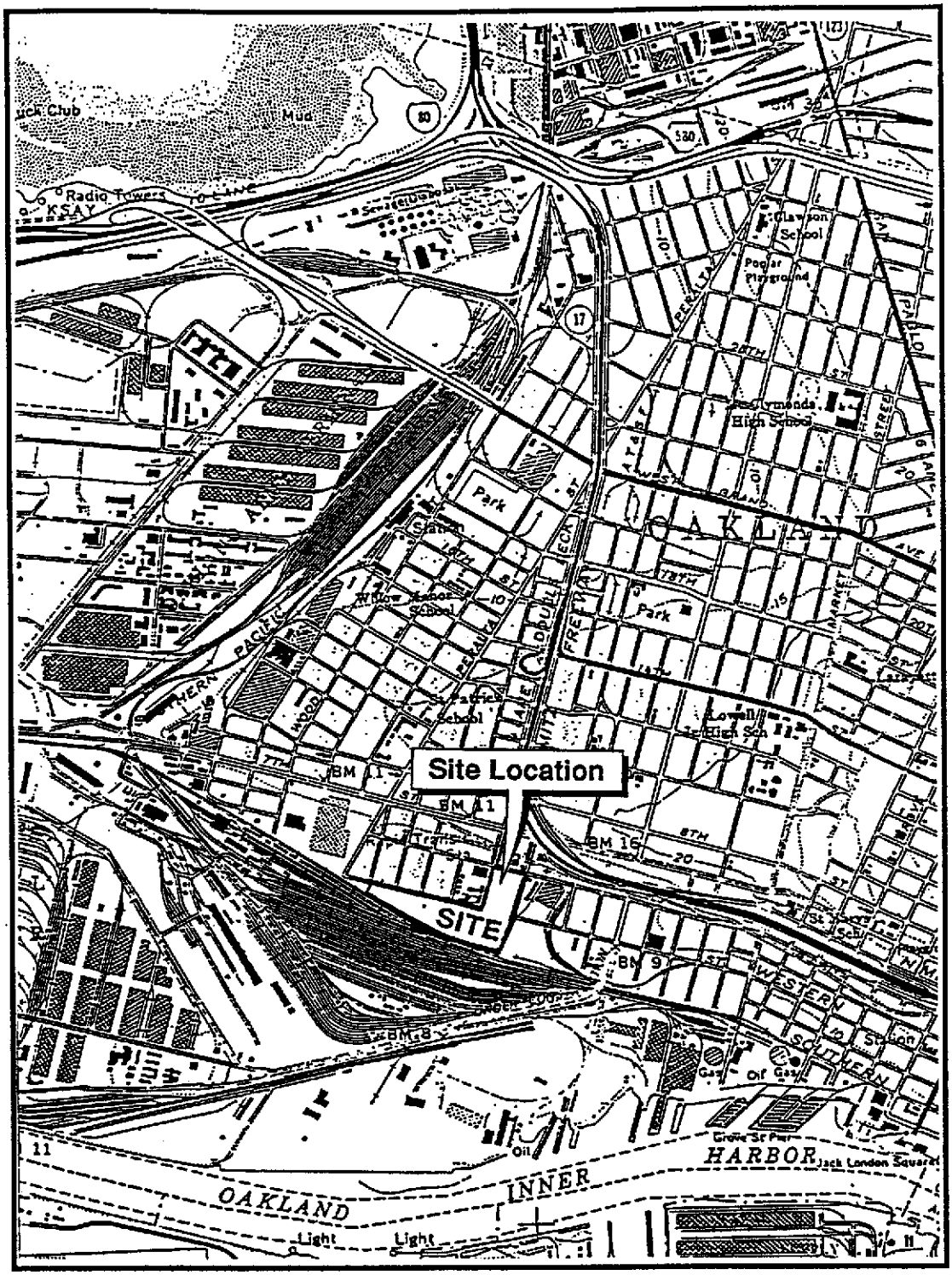
The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) guidelines for addressing fuel leaks requires that:

- If soil samples from beneath the tank pit contain grater than 100 ppm TPH, then a monitoring well will be required.

- Soil containing in excess of 1,000 ppm TPH must be excavated.

The objectives of this investigation were to comply with the SFBRWQCB guidelines by excavating hydrocarbon impacted soil from each of the tank pits.

Monitoring wells were installed adjacent to the tank pits to investigate the impact released hydrocarbons may have had on the shallow groundwater.



Reference:
USGS Topographic Map
Oakland, California

SP ENVIRONMENTAL SYSTEMS, INC.		SITE LOCATION MAP SOUTHERN PACIFIC TRANSPORTATION CO. 5TH & KIRKHAM STREETS PROPERTY OAKLAND, CALIFORNIA	FIGURE: 1
PROJECT NO: 05032	DATE: 02/08/91		
DRAWN BY: PD	CHECKED BY: WF		

2.0 HYDROGEOLOGY

2.1 Geology

The site is located on a flat plain adjacent to the San Francisco Bay (approximately 0.3 miles to the south, 0.75 miles to the west, and 1.0 miles to the north). See Figure 1.

Three distinct stratigraphic units were encountered at the site: a black, debris-laden silty sand (black sands), a brown to yellowish-brown clayey sand (yellowish sands), and a blackish-gray predominantly clay (estuarine) deposit (bay mud).

The top unit, the black sand, is interpreted as fill material. Old bottles, bricks, and ashes were found mixed with this unit. In places, the lower part of this unit appeared undisturbed and contained abundant plant remains. The thickness of this unit varied from 3 to 7 feet.

The yellowish sands underlie the black sands throughout most of the site. These sands are probably part of the Merritt Sands formation which consist of Pleistocene dune deposits. The Merritt Sands formation reportedly reaches a maximum thickness of 50 feet and overlies a peaty mud (Helley, 1979). On the site, the yellowish sands consist of well-sorted, fine to medium sized grains in a matrix of approximately 5-20% clay. The top of this unit contained fibrous plant material, probably remnants from a freshwater marsh.

Bay Mud was encountered in the boring of MW-6 at the extreme eastern part of the property (see Figure 2). This unit consists of highly organic silts and clays. Abundant plant material was found throughout the entire 5-foot thickness encountered in MW-6. The Bay Mud overlies the yellowish sands. Strong sulfide odors were encountered at the top of this unit, likely the result of anaerobic bacteria metabolizing buried plant material.

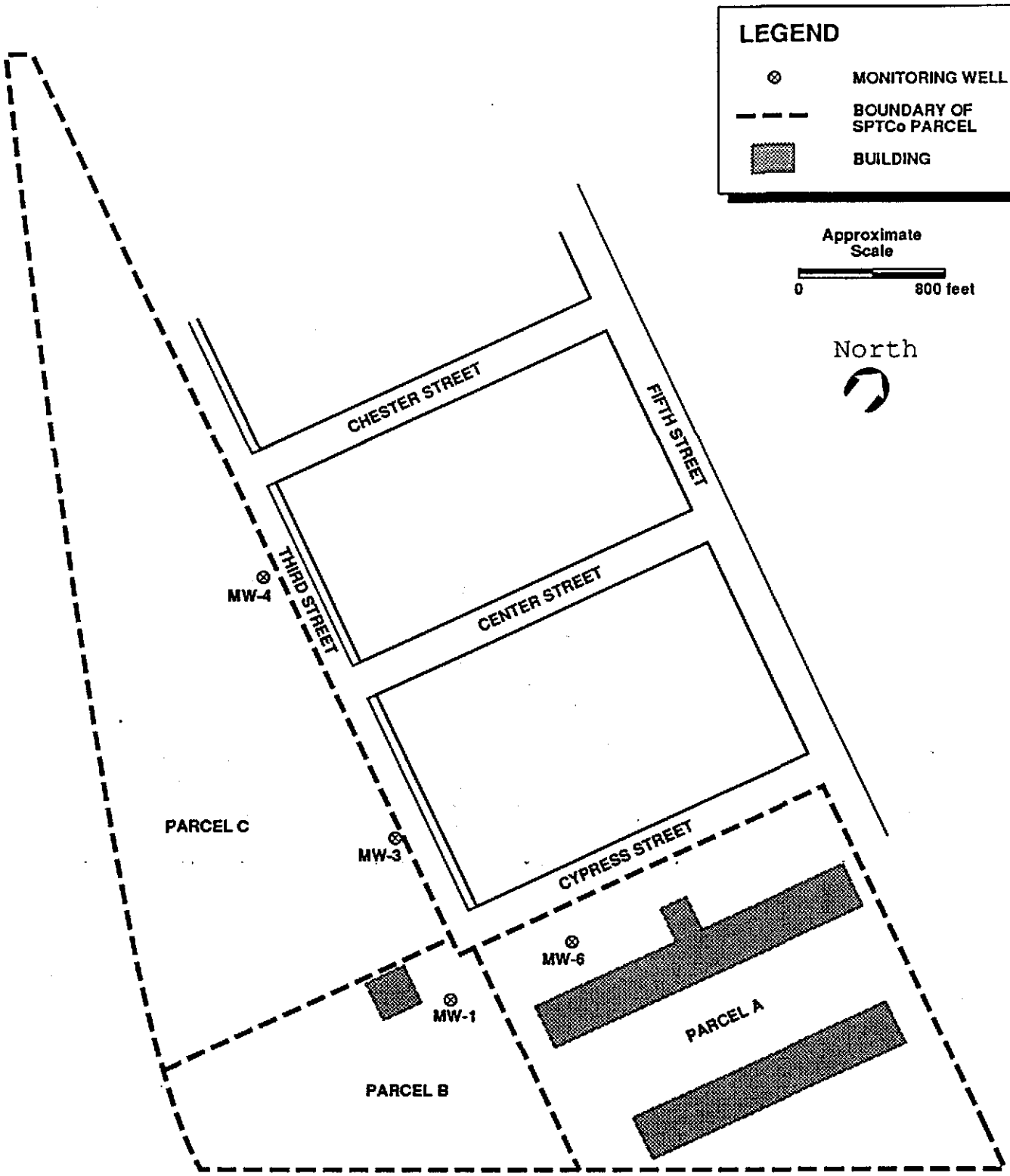
2.2 Hydrology

The hydraulic gradient was measured by SPEvS staff on October 25, 1990, using wells MW-1, MW-4, and MW-6. The groundwater gradient direction was measured to be almost due north, Figure 3A. The gradient was measured again on November 28, 1990, to include data from MW-3, and was revealed to be toward the northwest, Figure 3B.

The well casing elevations were measured by a licensed surveyor relative to a USGS Data Benchmark, "Sec. 25 Sta. H", located on Seventh Street.

Generally, groundwater was encountered between 6 to 12 feet below ground surface (BGS). A subsequent potentiometric rise would bring the static water level to a depth of 4-6 feet BGS.

The hydraulic gradient was calculated by SPEvS staff to be 0.0024. This indicates a drop of 24 centimeters per 100 meters, a relatively shallow gradient. An estimated value of the hydraulic conductivity between 5×10^{-4} to 1×10^{-3} cm/sec. (values typical of poorly graded sands [Freeze & Cherry, 1979]) and an estimated effective porosity of 0.2 correspond to a groundwater velocity between 6.3 to 12.5 feet per year.



SP ENVIRONMENTAL SYSTEMS, INC.		LOCATION OF MONITORING WELLS SOUTHERN PACIFIC TRANSPORTATION CO. 5TH & KIRKHAM PROPERTY OAKLAND, CALIFORNIA	FIGURE 2
PROJECT NO: 05032	DATE: 02/04/91		SCALE as shown
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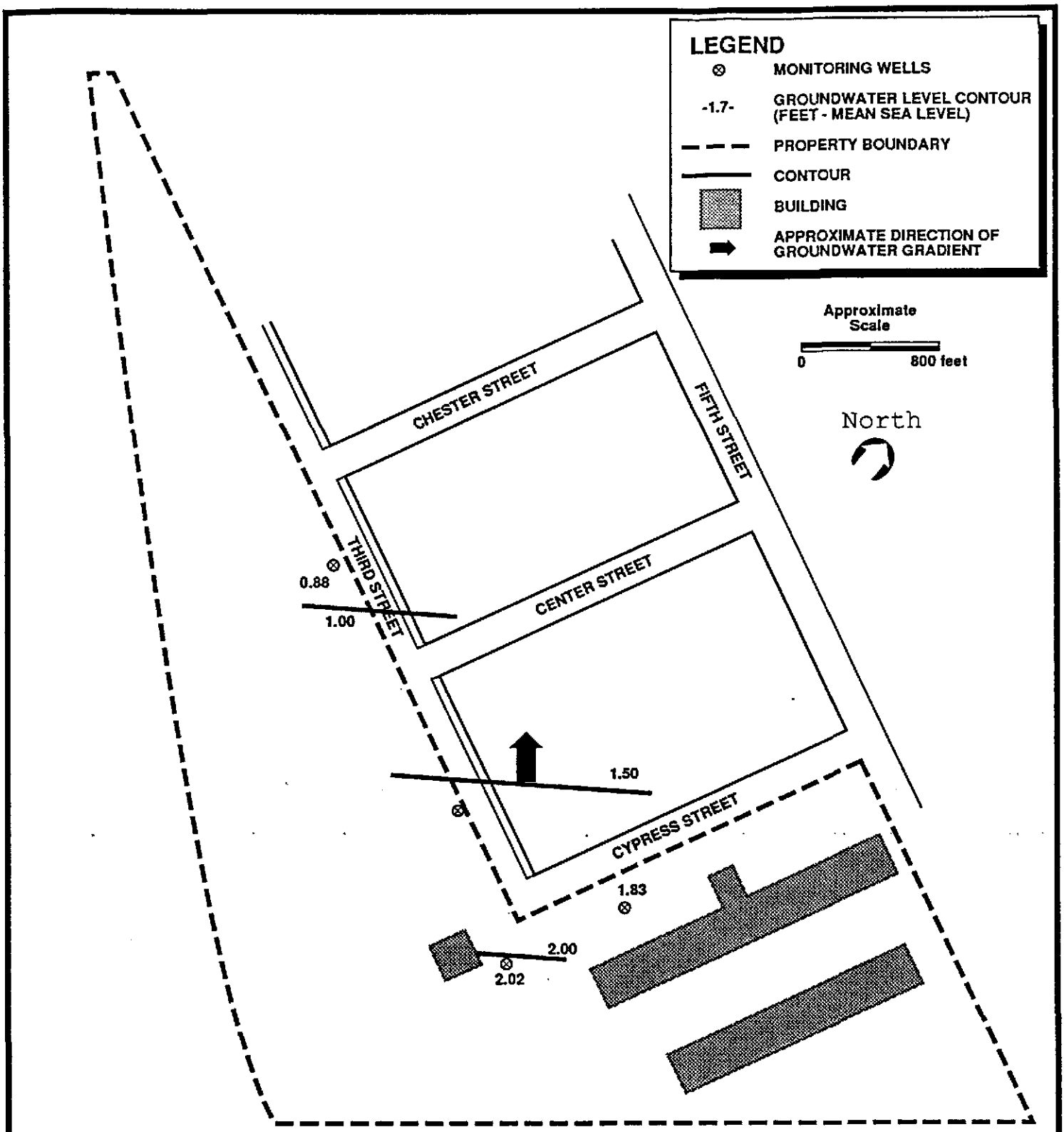
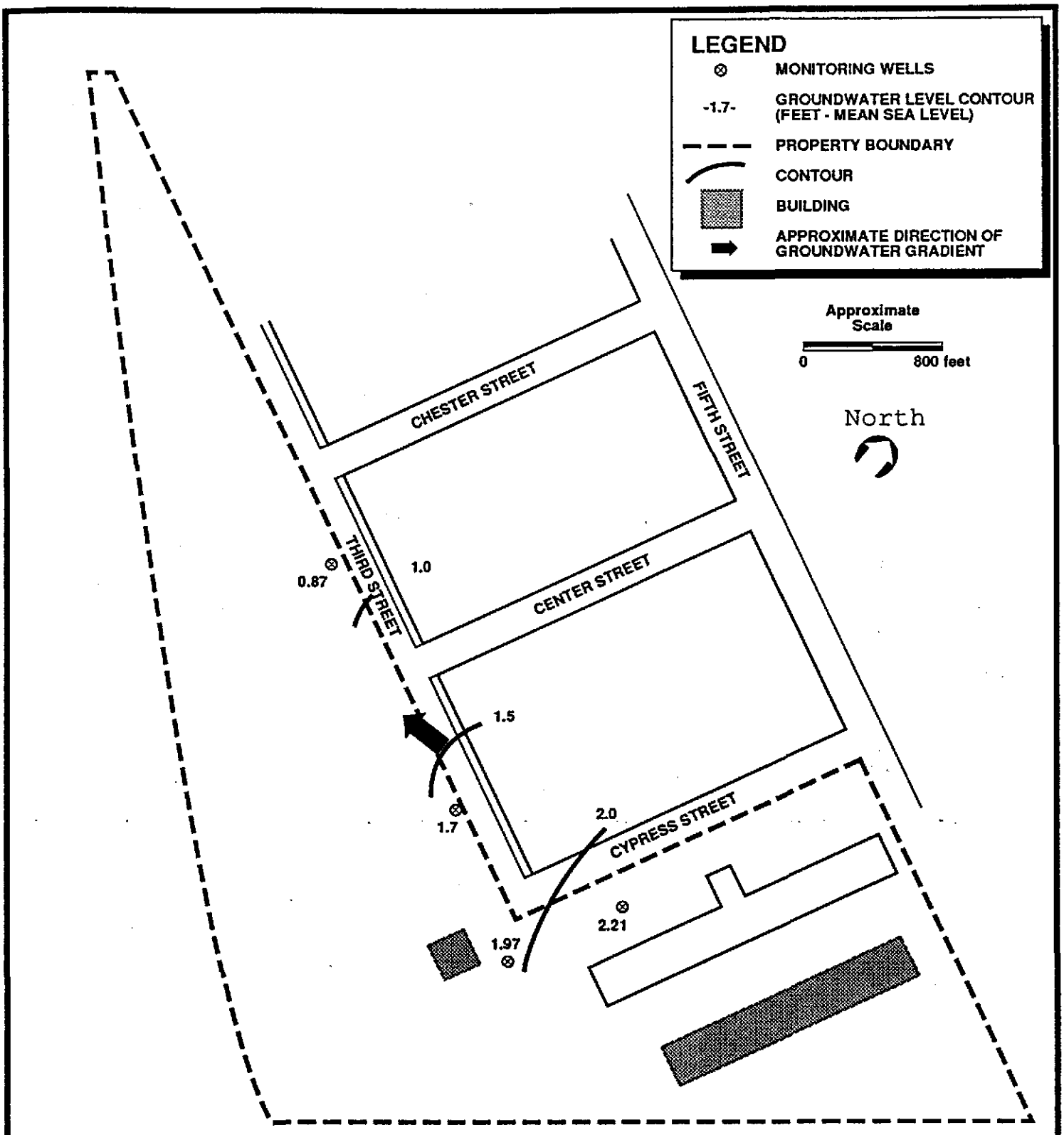


SP ENVIRONMENTAL SYSTEMS, INC.		HYDRAULIC GRADIENT SOUTHERN PACIFIC TRANSPORTATION CO. OCTOBER 25, 1990 5TH & KIRKHAM STREETS OAKLAND, CALIFORNIA	FIGURE 3A
PROJECT NO: 05032	DATE: 11/05/90		SCALE as shown
DRAWN BY: PD	CHECKED BY: WF		



SP ENVIRONMENTAL SYSTEMS, INC.		HYDRAULIC GRADIENT SOUTHERN PACIFIC TRANSPORTATION CO. NOVEMBER 28, 1990 5TH & KIRKHAM STREETS OAKLAND, CALIFORNIA	FIGURE 3B
PROJECT NO: 05032	DATE: 11/05/90		SCALE as shown
DRAWN BY: PD	CHECKED BY: WF		

05032 Fig 3B/Disc 1/Phase II 12-90

3.0 SOIL EXCAVATION

During October 15-18, 1990, the staff of Dobbas Construction, under supervision of SPEvS personnel, began excavation of soil containing TPH identified during the removal of the four USTs from the property. Excavated soil was transferred and stockpiled on Parcel B and covered with plastic sheeting (Figure 4).

The impacted soil was excavated with a 225-Excavator until 0.0 ppm readings on the portable, hand-held photoionization detector (PID) were obtained and the remaining soils appeared unaffected by petroleum product. At this point, a confirmation sample was collected for analysis of total petroleum hydrocarbons as gasoline (TPH-G) using EPA Method 8015, total petroleum hydrocarbons as diesel (TPH-D) using EPA Method 8015, and oil and grease (O&G) using EPA Method 413.1. A summary of the analytical results of confirmation samples are presented in Table 1. All of the excavation pits were backfilled with clean imported soil and compacted.

Approximately 7 cubic yards (cy) of soil were removed from Tank Pit #1 which had contained one 500-gallon waste oil UST. Confirmation samples from the south and west walls were composited into one sample, and soils from the north and east walls were composited into another sample. These samples were collected from approximately 4 feet BGS.

Approximately 500 cy of soil were removed from Tank Pit #2, which contained a 10,000-gallon diesel fuel tank. Five confirmation soil samples were collected from the walls of the tank pit at a depth of approximately 5 feet BGS. The excavation of soil toward the east was obstructed by the presence of several underground utility lines (Figure 5). Excavation toward the north was partially obstructed by the presence of an above-ground utility pole that risked being undermined with further excavation.

Approximately 75 cy of soil were removed from Tank Pit #3, the former location of a 1,500-gallon waste oil tank. Four soil samples were collected from the walls of the tank pit at a depth of approximately 4 to 5 feet BGS.

TABLE 1
RESULTS OF TANK PIT SAMPLING
5TH & KIRKHAM STREETS PROPERTY
OAKLAND, CALIFORNIA
OCTOBER 15-18, 1990
SPEvS PROJECT NO. 05032

Tank Pit	Sample No.	TPH-G (mg/kg)	TPH-D (mg/kg)	O & G (mg/kg)
1	South & West	<10	<10	56
1	North & East	<10	18	<50
2	North A&B North C West A&B East A&B South A&B	<10 <10 <10 <10 <10	<10 <10 <10 170 <10	<50 92 <50 <50 <50
3	North East South West	<10 <10 <10 <10	<10 <10 <10 <10	<50 <50 <50 <50
4	North & West South & East	<10 <10	<10 <10	<50 <50

mg/kg - milligram/kilogram

05032tbl

Approximately 17 cy of soil were removed from the former Tank Pit #4. Two soil samples (a composite of the north and west walls and a composite of the south and east walls), were collected from a depth of approximately 4 to 5 feet BGS.

Five soil samples were collected from the approximately 600 cy of soil excavated from the USTs. These samples were acquired by digging into the stockpile approximately 20 inches and filling a brass tube. The data collected from the stockpiled soil is presented in Table 2.

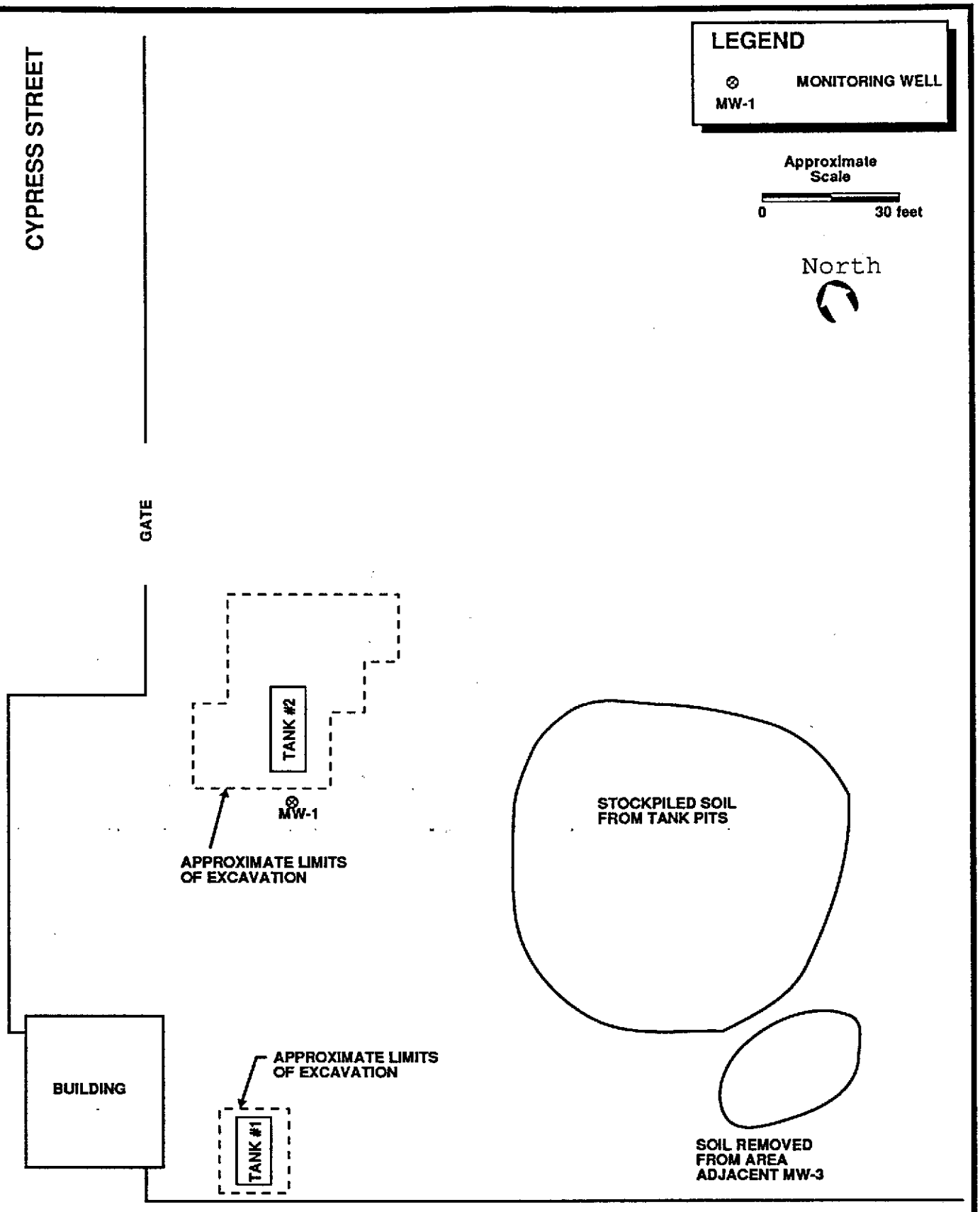
Samples colected for laboratory analysis were immediately covered with Teflon sheeting, covered with plastic caps, and sealed with duct tape. Samples were stored in a cooled ice chest until delivery to Enseco Laboratory, a state-certified hazardous waste laboratory in Sacramento, California. A chain-of-custody form was filled out and accompanied all samples sent to the laboratory.

TABLE 2

RESULTS OF SOIL STOCKPILE SAMPLING
5TH & KIRKHAM STREETS PROPERTY
OAKLAND, CALIFORNIA
OCTOBER 18, 1990
SPEvS PROJECT NO. 05032

Sample Number	TPH-G (mg/kg)	TPH-D (mg/kg)	O & G (mg/kg)
SP-1	<10	<10	190
SP-2	<10	<10	84
SP-3	<50	270	180
SP-4	<10	49	110
SP-5	<10	13	120

mg/kg - milligram/kilogram



SP ENVIRONMENTAL SYSTEMS, INC.		LOCATION OF STOCKPILES SOUTHERN PACIFIC TRANSPORTATION CO. 3RD & CYPRESS STREETS OAKLAND, CALIFORNIA	FIGURE 4
PROJECT NO: 05032	DATE: 11/05/90		SCALE as shown
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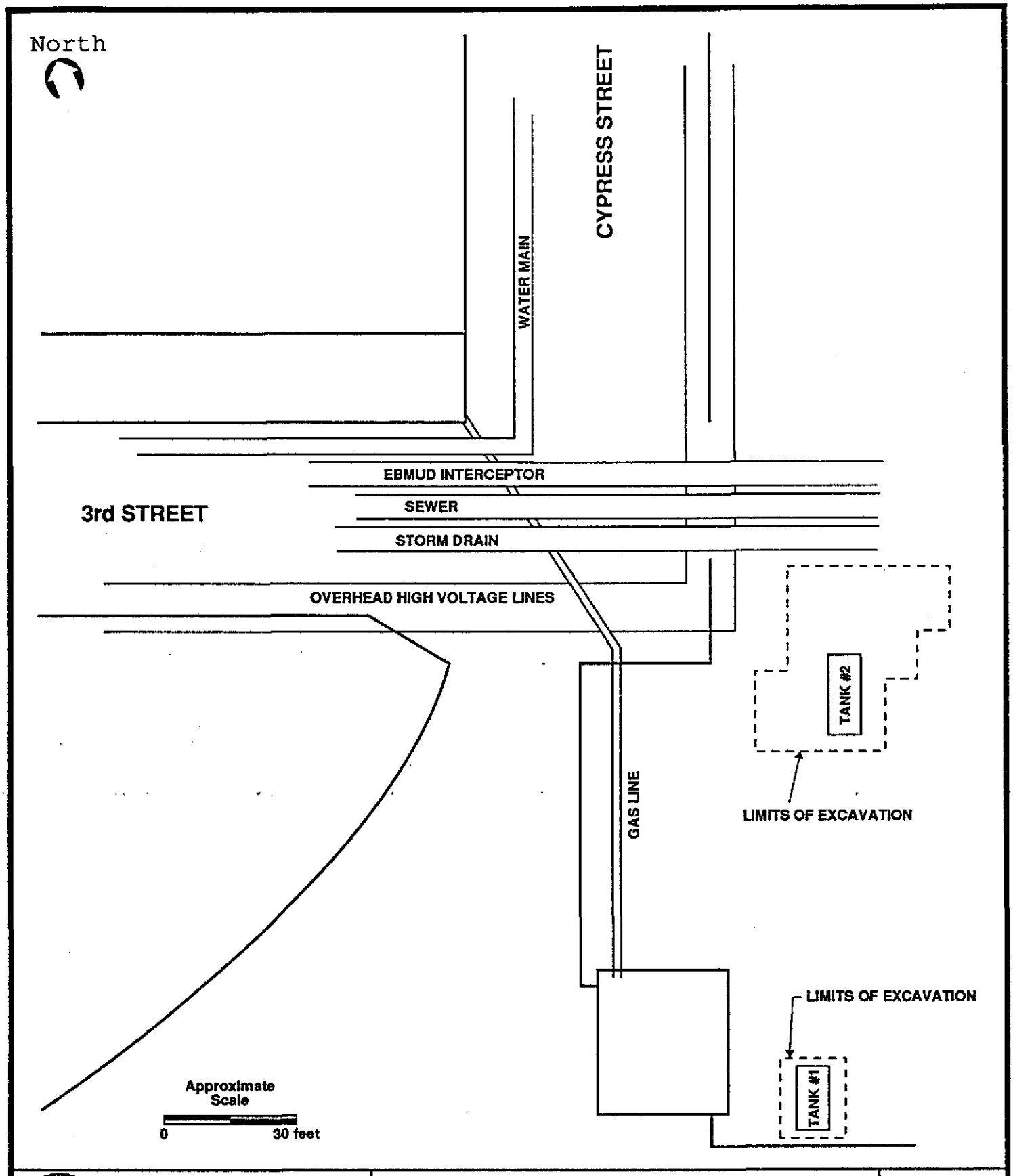
05032 Fig 4/Disc 1/Phase II 12-90



SP ENVIRONMENTAL SYSTEMS, INC.

LOCATION OF UTILITY LINES SOUTHERN PACIFIC TRANSPORTATION CO. 3RD & CYPRESS STREETS OAKLAND, CALIFORNIA

FIGURE 5

SCALE as shown

PROJECT NO: 05032	DATE: 11/05/90
DRAWN BY: PD	CHECKED BY: WF

4.0 MONITORING WELLS

4.1 Installation

On October 23 & 24, 1990, the staff of HEW Drilling Company, and Walter Floyd (project geologist for SPEvS), installed three groundwater monitoring wells in accordance with the previously submitted and approved work plan dated September 27, 1990. A fourth well was installed on November 1, 1990. The purpose of the wells was to establish the hydraulic gradient and monitor the groundwater within the area of the previously removed USTs. Locations of the monitoring wells are depicted in Figure 2.

The original proposal called for the installation of six monitoring wells: one well close to each of the tank pits, and wells both upgradient and downgradient. Groundwater gradient direction was initially assumed to be west to southwest toward the San Francisco Bay. Since the gradient direction was actually toward the north, some of the proposed monitoring well locations were no longer suitable for obtaining the objectives. For this reason, not all of the proposed wells were installed.

Each well was numbered to correspond with its associated tank pit and in accordance with its proposed location. Since not all of the wells were installed, gaps in the numbering of the wells resulted. MW-2 and MW-5 do not exist.

Monitoring wells were first drilled and sampled using 8-inch-outside-diameter hollow-stem augers. At an appropriate depth, the augers were removed, and the hole was redrilled with 10-inch-diameter augers. A wooden plug was placed on the lead auger, to keep unstable formation sands out of the hollow-stem auger, and was knocked out after the casing was installed.

Specific monitoring well construction details are presented in Appendix 1. Each well casing consisted of 4-inch-diameter, schedule 40 PVC. The screened section of the well consisted of 0.020-inch machine cut slots and generally

extended 15 feet below and 2 feet above the first encountered water table. The sand pack, consisting of a #3 Monterey sand, extended from the bottom of the boring to one foot above the well screen. A 1 foot to 1.5 foot thick bentonite seal was placed above the sand pack. The remaining annulus was filled with a grout/bentonite mixture. The well was finished with a flush-mounted traffic box. The well casing was capped with a water tight, locking well plug.

4.2 Soil Sampling

Soil samples were collected every five feet, starting at 4 feet BGS, for logging purposes and for possible laboratory analysis. Soil samples were collected within brass cylinders (2 inch x 6 inch), using a California modified split-spoon sampler with 6-inch-long by 2-inch-wide brass liners inserted inside the sampler to assist sample retention. The sampler was driven into the soil with a machine-driven 140-pound hammer.

Soils were logged by an SPEvS geologist using the Unified Soil Classification System (USCS). The relative degree of saturation and the blows required for each 6-inch advancement of the sampler was recorded.

Samples selected for laboratory analysis were immediately covered with Teflon sheeting, covered with plastic caps, and sealed with duct tape. Samples were stored in a cooled ice chest until delivery to Enseco Laboratory, a state-certified hazardous waste laboratory in Sacramento, California. A chain-of-custody form was filled out and accompanied all samples sent to the laboratory.

Soil samples collected from the monitoring well installations were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) using EPA Method 8015, total petroleum hydrocarbons as diesel (TPH-D) using EPA Method 8015, oil and grease (O&G) using EPA Method 413.1, and volatile organic compounds (VOCs) using EPA Method 8240. Results of all analyses performed on subsurface soil samples indicate concentrations below method detection limits. The analytical reports, as received from the laboratory, are presented in Appendix 2, and summarized in the tables presented in Appendix 4.

4.3 Well Development

The wells were developed on November 6, 1990, by the staff of HEW Drilling Company, using the swab and bail procedure. The wells were developed by running a surge block up and down the well. A bailer was then used to remove the sediment. This process was repeated until the amount of fines entering the well had been satisfactorily reduced.

At least 55 gallons of groundwater were removed from each well except MW-6 in which approximately 100 gallons were removed. These quantities correspond to a removal of approximately 5 to 6 well volumes from each well. The groundwater removed during well development was stored in 55-gallon DOT drums.

4.4 Groundwater Sampling

Immediately after each well was developed, a water sample was collected by lowering a previously unused, disposable bailer into the well. The sample was immediately transferred to appropriate containers: 2 one-liter amber glass bottles and 4 forty-milliliter volatile organic analysis (VOA) vials. All sample bottles were equipped with Teflon-lined screw caps. Sample containers were stored in an ice chest with frozen blue ice until delivered to Enseco Laboratory. A chain of custody was maintained and accompanied the samples sent to the laboratory.

5.0 RESULTS

Groundwater samples from the four monitoring wells were analyzed for TPH-G, TPH-D, O&G, and VOCs. These constituents were not detected in wells MW-1, MW-4, and MW-6. A groundwater sample collected from MW-3 contained 0.26 ppm of TPH-D and the following VOCs: 1,2 Dichloroethene (DCE) at 340 parts per billion (ppb), 1,1 Dichloroethane (DCA) at 290 ppb, and vinyl chloride at 150 ppb.

Soil samples collected from the stockpile containing soil excavated from the tank pits contained diesel and oil & grease concentration above method detection limits. The average concentration of five samples collected from this stockpile was 66 ppm for diesel and 137 ppm for oil and grease.

A soil sample collected from the south west wall of tank pit 1 on Parcel B was analyzed as containing 56 ppm of oil and grease. A sample collected from the northeast wall contained 18 ppm of diesel.

A soil sample collected from a portion of the northern wall of tank pit 2 on parcel B was analyzed as containing 92 ppm of oil and grease. A utility pole obstructed further excavation from this wall. A soil sample collected from the eastern wall of this tank pit contained 170 ppm of diesel. Further excavation from this wall was obstructed by the close proximity of underground utility lines.

Soil samples collected from the walls of tank pits 3 & 4 contained concentrations below method detection limits for all analyses performed on the samples.

APPENDIX A
BORING LOGS

Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Boring Location ADJACENT TANK PIT #1			**Boring/Well Name** MW-1
Drilling Company HEW DRILLING			**Project Name** 5TH & KIRKHAM
Drilling Method HOLLOW STEM AUGER	**Rig Type** CME 75		**Project Number** 05032
Hole Diameter 10 **In.**	**Driller** JEFF	**Date** 10/23/90	**Logged By** W. FLOYD
Ground Elevation	**Water Elevation**		**Total Depth** 22'

Well Construction Specifics

Screen Placement	from	5	ft.	to	22	ft.	Slot Size	0.020	inches	Diameter	4	inches	Completion Type:
Blank Casing	from	0	ft.	to	5	ft.	Schedule	40		Diameter	4	inches	Above Ground ___
Filter Pack	from	4	ft.	to	22	ft.	Size	#3		Type	SAND		At Grade X
Bentonite Pellets	from	3	ft.	to	4	ft.	Type	VOLCLAY		Size	3/8	inches	Hydrated X yes ___ no
Cement/Bentonite	from	0	ft.	to	3	ft.	Type	PORTLAND		Percent Bentonite	3		

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
			1	BENTONITE/ CEMENT GROUT				3" ASPHALT CAP	
			2					1' OF SUBGRADE	
			3					SILTY SAND: DARK GREY TO BLACK, CONTAINS ASHES, BOTTLES, BRICKS, SHOES, ETC....., NO ODORS, SOFT.	
			4			SM			
MW-1 5'	100%	2 1 1	5	BENTONITE PELLETS					
			6						
			7			SP		SAND: YELLOWISH BROWN, NO ODORS, PLANT REMAINS, MEDIUM TO FINE GRAINED, MEDIUM DENSE POORLY GRADED.	
MW-1 8.5'	100%	4 8 10	8	FILTER PACK					
			9						
			10					SATURATED AT 10', NO ODORS	
			11	SCREENED PVC					
			12						
			13						
			14						
MW-1 15'	100%	4 7 8	15						

Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Well Number MW-1 | **Project Number** 05032 | **Project Name** 5TH & KIRKHAM

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
MW-1 20'	100%	7 12 13	17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35			SP		SAME	

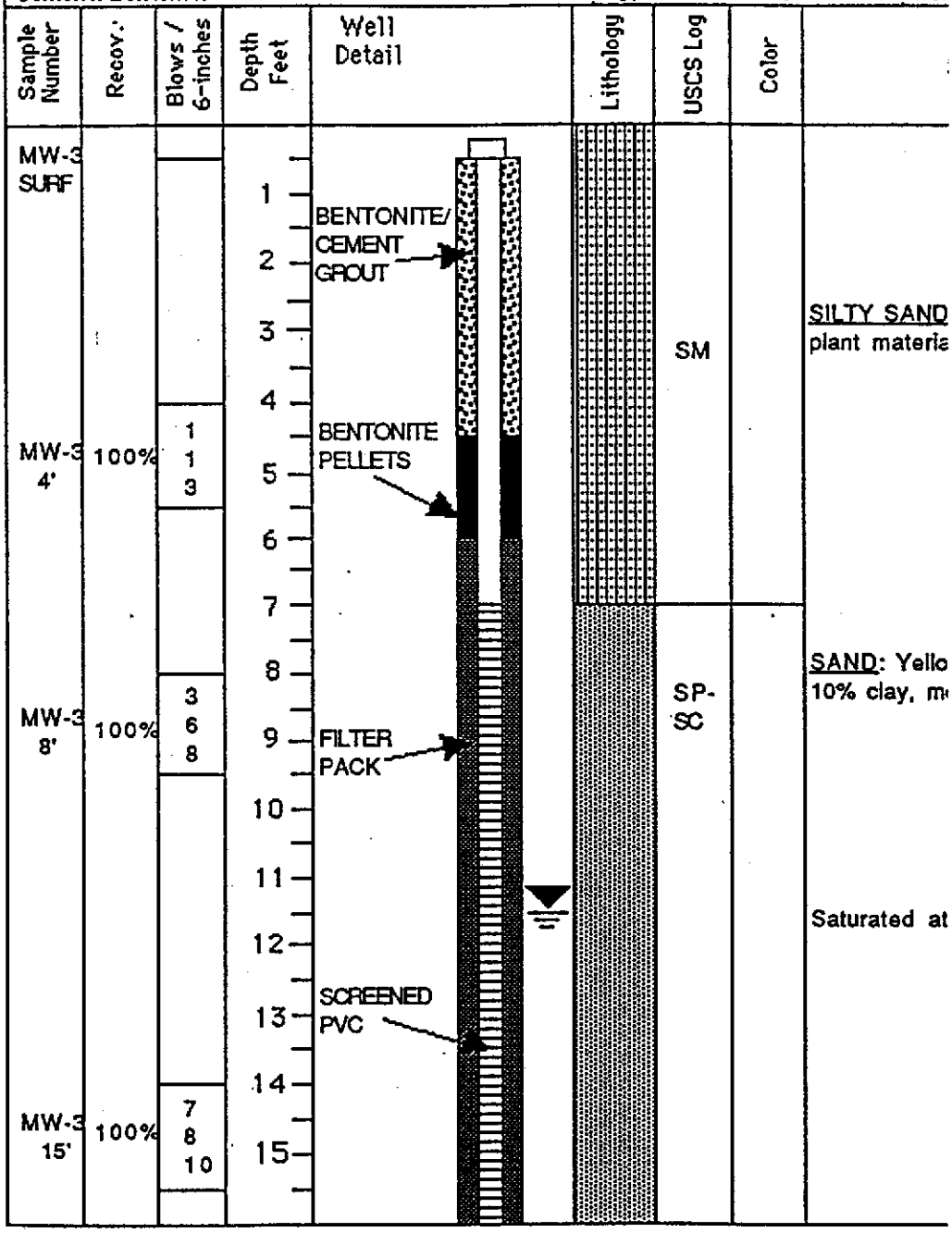
SP ENVIRONM

Well Construction Log

Boring Location	ADJACENT TANK PIT #3			**Boring/**
Drilling Company	HEW DRILLING			**Project**
Drilling Method	HOLLOW STEM AUGER	**Rig Type**	CME 55	**Project**
Hole Diameter	**In.**	**Driller** ANIBAL	**Date** 11/1/90	**Logged B**
Ground Elevation		**Water Elevation**		**Total De**

Well Construction Specifics

Screen Placement	from	7	ft.	to	22	ft.	Slot Size	0.020	inches	Dia
Blank Casing	from	0	ft.	to	7	ft.	Schedule	40		Dia
Filter Pack	from	6	ft.	to	22	ft.	Size	#3		Typ
Bentonite Pellets	from	4.5	ft.	to	6	ft.	Type	VOLCLAY		Siz
Cement/Bentonite	from	0	ft.	to	4.5	ft.	Type	PORTLAND		Per



Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Well Number MW-3 | **Project Number** 05032 | **Project Name** 5TH & KIRKHAM

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
MW-3 20'	100%	4 8 9	17–35			SP-SC		SAME	

SP ENVIRONMENTAL SYSTEMS, INC.

Well Construction Log

Boring Location ADJACENT TO TANK PIT #4			**Boring/Well Name** MW-4
Drilling Company HEW DRILLING			**Project Name** 5TH & KIRKHAM
Drilling Method HOLLOW STEM AUGER	**Rig Type** CME 75		**Project Number** 05032
Hole Diameter 10 In.	**Driller** JEFF	**Date** 10/24/90	**Logged By** W. FLOYD
Ground Elevation	**Water Elevation**		**Total Depth** 22'

Well Construction Specifics

Screen Placement	from	7	ft.	to	22	ft.	Slot Size 0.020 inches		Diameter 4 inches		Completion Type:	
Blank Casing	from	0	ft.	to	7	ft.	Schedule 40		Diameter 4 inches		Above Ground ___	
Filter Pack	from	6	ft.	to	22	ft.	Size #3		Type SAND		At Grade X	
Bentonite Pellets	from	5	ft.	to	6	ft.	Type VOLCLAY		Size 3/8 inches		Hydrated X yes ___ no	
Cement/Bentonite	from	0	ft.	to	5	ft.	Type PORTLAND		Percent Bentonite 3			

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
			1	BENTONITE/ CEMENT GROUT		AF		4" CONCRETE CAP 1.5 ' OF SILTY GRAVEL SUBGRADE	
			2			SM		SILTY SAND; DARK GREY, NO ODORS, LOOSE, MOIST.	
MW4 4'	100%	1 1 3	3 4 5						0
			6	BENTONITE PELLETS		SP-SC		SAND; BROWN, MEDIUM GRAINED, PLANT REMAINS, NO ODOR, POORLY GRADED, 10% CLAY.	
			7 8 9						
MW4 8'	30%	6 8 10	10	SCREENED PVC				YELLOWISH BROWN, MEDIUM DENSE, SOME ROOT HAIRS.	
			11						
			12	FILTER PACK					
		8 7 6	13 14 15						

Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Well Number MW-4 | **Project Number** 05032 | **Project Name** 5TH & KIRKHAM

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
MW-4 20'	100%	8 8 12	17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35			SP-SC		SAME	

Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Boring Location	Eastern side of property			**Boring/Well Name**	MW-6
Drilling Company	HEW Drilling			**Project Name**	5TH & KIRKHAM
Drilling Method	Hollow Stem Auger	**Rig Type**	CME 75	**Project Number**	05032
Hole Diameter	10" In.	**Driller**	Jeff	**Date** 10/23/90	**Logged By** W. FLOYD
Ground Elevation		**Water Elevation**		**Total Depth**	29'

Well Construction Specifics

Screen Placement	from	9	ft.	to	29	ft.	Slot Size 0.020	inches	Diameter 4	inches	Completion Type:
Blank Casing	from	0	ft.	to	9	ft.	Schedule 40		Diameter 4	inches	Above Ground ___
Filter Pack	from	8	ft.	to	29	ft.	Size #3		Type SAND		At Grade X
Bentonite Pellets	from	6.5	ft.	to	8	ft.	Type VOLCLAY		Size 3/8 inches		Hydrated X yes ___ no
Cement/Bentonite	from	0	ft.	to	6.5	ft.	Type PORTLAND		Percent Bentonite 3		

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
			1			AF		4" ASPHALT CAP 1.5' OF SILTY GRAVEL SUBGRADE	
			2	BENTONITE/ CEMENT GROUT		SM		SILTY SAND; DARK GREY, NO ODORS, LOOSE	
MW-6 5'	100%	6 3 3	3 4 5						
			6	BENTONITE PELLETS					
			7			CH		BAY MUD; DARK GREY, STRONG SULFIDE ODOR, VERY SOFT, HIGHLY PLASTIC, FIBROUS PLANT REMAINS	
MW-6 10'	100%	0 0 0	8 9 10	FILTER PACK					
			11 12						
			13	SCREENED PVC		SP-SC		SAND; MEDIUM TO FINE GRAINED, DARK GREY, LOOSE, SOME PLANT REMAINS, POORLY GRADED, SATURATED.	
MW-6 15'	100%	1 2 1	14 15						

Well Construction Log

SP ENVIRONMENTAL SYSTEMS, INC.

Well Number MW-6 | **Project Number** 05032 | **Project Name** 5TH & KIRKHAM

Sample Number	Recov.	Blows / 6-inches	Depth Feet	Well Detail	Lithology	USCS Log	Color	Sample Description	FID/PID (ppm)
			17						
			18			SP-SC		COLOR CHANGE AT 20' TO YELLOWISH BROWN.	
			19						
MW-6 20'	100%	2 2 2	20						
			21						
			22						
			23						
			24			SC		DENSER	
MW-6 25'	100%	16 21	25						
			26						
			27						
			28						
			29						
MW-6 30'	100%	18 26	30						
			31						
			32						
			33						
			34						
			35						

APPENDIX B

ANALYTICAL REPORTS AND CHAIN-OF-CUSTODIES

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP3-E
Lab ID: 055431-0001-SA
Matrix: SOIL Sampled: 26 OCT 90 Received: 26 OCT 90
Authorized: 26 OCT 90 Prepared: 29 OCT 90 Analyzed: 30 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP3-W
Lab ID: 055431-0002-SA
Matrix: SOIL Sampled: 26 OCT 90 Received: 26 OCT 90
Authorized: 26 OCT 90 Prepared: 29 OCT 90 Analyzed: 30 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP3-N
Lab ID: 055431-0003-SA
Matrix: SOIL Sampled: 26 OCT 90 Received: 26 OCT 90
Authorized: 26 OCT 90 Prepared: 29 OCT 90 Analyzed: 30 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

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Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP3-S
Lab ID: 055431-0004-SA
Matrix: SOIL Sampled: 26 OCT 90 Received: 26 OCT 90
Authorized: 26 OCT 90 Prepared: 29 OCT 90 Analyzed: 30 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Oil & Grease, Gravimetric

Method 413.1 Modified for Soil

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg

Received: 26 OCT 90
Authorized: 26 OCT 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed
055431-0001-SA	TP3-E	ND	50	29 OCT 90	29 OCT 90
055431-0002-SA	TP3-W	ND	50	29 OCT 90	29 OCT 90
055431-0003-SA	TP3-N	ND	50	29 OCT 90	29 OCT 90
055431-0004-SA	TP3-S	ND	50	29 OCT 90	29 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Dan Orovich

Approved By: Linda Ellithorpe

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg

Received: 26 OCT 90
Authorized: 26 OCT 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed
055431-0001-SA	TP3-E	ND	10	NA	29 OCT 90
055431-0002-SA	TP3-W	ND	10	NA	29 OCT 90
055431-0003-SA	TP3-N	ND	10	NA	29 OCT 90
055431-0004-SA	TP3-S	ND	10	NA	29 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson

Approved By: Kris Rogers

The cover letter is an integral part of this report.
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CHAIN-OF-CUSTODY RECORD

No. 10710

ental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

RUHAM	PROJECT LOCATION: OAKLAND
PROJECT CONTACT: WALT FLOYD	PROJECT TELEPHONE NO.: 916-369-8971
ESENTATIVE	PROJECT MANAGER/SUPERVISOR: W. GAREY

	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	TPH-G	TPH-D	O&G (413.1)	8240	8270			REMARKS
1	TP3-E	10/26 AM	2:30		X	SOIL	1	X	X	X					
2	TP3-W	10/26	2:33		X		1	X	X	X					
3	TP-3-N	10/26	2:36		X		1	X	X	X					
4	TP-3-S	10/26	2:39		X		1	X	X	X					
5	MS1	10/26	3:00		X	SOIL	1				X	X			
6															
7															
8															
9															
10															

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1		Walter T. Floyd	Robert Bonaly	10/26/90	7:00
2					
3					
4					

REMARKS: 5 day TURN around.
TAT per PA approval.
Rec'd in good order. RJB 10-26-90

SAMPLER'S NAME

SAMPLER'S SIGNATURE

SFE

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-2 North A & B
Lab ID: 055323-0010-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: NA Analyzed: 23 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	5.6	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-2 West A & B
Lab ID: 055323-0011-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: NA Analyzed: 23 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-2 East A & B
Lab ID: 055323-0012-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: NA Analyzed: 23 OCT 90

Parameter	Result	Units	Reporting Limit	
Benzene	ND	ug/kg	600	G
Ethylbenzene	ND	ug/kg	600	G
Toluene	1900	ug/kg	300	G
Xylenes (total)	ND	ug/kg	1200	G
Gasoline	ND	ug/kg	10000	

Note G : Reporting Limit raised due to matrix interference.

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

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Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-2 South A & B
Lab ID: 055323-0013-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: NA Analyzed: 23 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	15	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-2 North C
Lab ID: 055323-0001-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: 22 OCT 90 Analyzed: 31 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown hydrocarbon	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-2 North A & B
Lab ID: 055323-0010-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: 22 OCT 90 Analyzed: 31 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown hydrocarbon	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-2 West A & B
Lab ID: 055323-0011-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: 22 OCT 90 Analyzed: 31 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown hydrocarbon	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-2 East A & B
Lab ID: 055323-0012-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: 22 OCT 90 Analyzed: 31 OCT 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/kg	10	R
Stoddard Solvent	ND	mg/kg	50	
Aviation Fuel (JP4)	ND	mg/kg	50	
Diesel Fuel	ND	mg/kg	10	
Unknown hydrocarbon	170	mg/kg	10	1

Note R : Raised reporting limit(s) due to high analyte level(s).

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-7 to C-14. Quantitation was based on an Unleaded Gasoline reference. This pattern is similar to unleaded gasoline, but does not exactly match our reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-2 North C
Lab ID: 055323-0001-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: NA Analyzed: 23 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-2 South A & B
Lab ID: 055323-0013-SA
Matrix: SOIL Sampled: 18 OCT 90 Received: 19 OCT 90
Authorized: 20 OCT 90 Prepared: 22 OCT 90 Analyzed: 31 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown hydrocarbon	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

Oil & Grease, Gravimetric

Method 413.1 Modified for Soil

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg
Received: 19 OCT 90
Authorized: 20 OCT 90

Lab ID	Client ID		Result	Reporting Limit	Date Prepared	Date Analyzed
055323-0001-SA	TP-2	North C	92	50	22 OCT 90	27 OCT 90
055323-0010-SA	TP-2	North A & B	ND	50	22 OCT 90	27 OCT 90
055323-0011-SA	TP-2	West A & B	ND	50	22 OCT 90	27 OCT 90
055323-0012-SA	TP-2	East A & B	ND	50	22 OCT 90	27 OCT 90
055323-0013-SA	TP-2	South A & B	ND	50	22 OCT 90	27 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Salome Rosos
Approved By: Linda Ellithorpe

The cover letter is an integral part of this report.
Rev 230787

SP - EvS

CHAIN-OF-CUSTODY RECORD

No. 10707

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME	PROJECT LOCATION
5th & Kirkham	OAKLAND, CA

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
05032	WALTER FLOYD	916-369-8971

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
	WEBB GARLEY

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH-G, BTEX	TPH-D	TOG - (413.1)	REMARKS
1	TP-2 North C	10/18	230		X	Soil	1	✓	✓	✓	
2	TP-2 North A	10/18	245	X							COMPOSIT NORTH A & B
3	TP-2 North B	10/18	245			Soil	2	✓	✓	✓	
4	TP-2 - WEST A	10/18	240	X							
5	TP-2 WEST B	10/18	230			Soil	2	✓	✓	✓	COMPOSIT WEST A & B
6	TP-2 EAST A	10/18	300	X		Soil					
7	TP-2 EAST B	10/18	300				2	✓	✓	✓	COMPOSIT EAST A & B
8	TP-2 SOUTH A	10/18	235	X		Soil					
9	TP-2 SOUTH B	10/18	235				2	✓	✓	✓	COMPOSIT SOUTH A & B
10											

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1		Walter Floyd	William R. Pierce	10/19	1000
2					
3					
4					

REMARKS: Samples received in good condition upon

Standard TAT

SAMPLER'S NAME: WALTER FLOYD

SAMPLER'S SIGNATURE: Walter Floyd

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-1 East,North
Lab ID: 055281-0010-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: NA Analyzed: 19 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-4 North,West
Lab ID: 055281-0011-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: NA Analyzed: 19 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method 5030/GC/PID/FID

Client Name: SP Environmental
Client ID: TP-4 East,South
Lab ID: 055281-0012-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: NA Analyzed: 19 OCT 90

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	15
Gasoline	ND	ug/kg	10000

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Tom MacClanahan

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-1 South,West
Lab ID: 055281-0009-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: 19 OCT 90 Analyzed: 26 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-1 East,North
Lab ID: 055281-0010-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: 19 OCT 90 Analyzed: 26 OCT 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/kg	10	
Stoddard Solvent	ND	mg/kg	10	
Aviation Fuel (JP4)	ND	mg/kg	10	
Diesel Fuel	ND	mg/kg	10	
Unknown Hydrocarbons	18	mg/kg	10	1

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-8 to C-14. Quantitation was based on a Kerosene reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: TP-4 North,West
Lab ID: 055281-0011-SA
Matrix: SOIL Sampled: 16 OCT 90 Received: 13 OCT 90
Authorized: 18 OCT 90 Prepared: 19 OCT 90 Analyzed: 26 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Oil & Grease, Gravimetric

Method 413.1 Modified for Soil

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg
Received: 13 OCT 90
Authorized: 18 OCT 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed
055281-0009-SA	TP-1 South,West	56	50	19 OCT 90	23 OCT 90
055281-0010-SA	TP-1 East,North	ND	50	19 OCT 90	23 OCT 90
055281-0011-SA	TP-4 North,West	ND	50	19 OCT 90	23 OCT 90
055281-0012-SA	TP-4 East,South	ND	50	19 OCT 90	23 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Karen Mason
Approved By: Linda Ellithorpe

The cover letter is an integral part of this report.
Rev 230787

COAST • TO • COAST ANALYTICAL SERVICES

141 Suburban Road • San Luis Obispo, CA 93401 • (805) 543-2553 FAX (805) 543-2685
751 S. Kellogg, Suite A • Goleta, CA 93117 • (805) 964-7838 FAX (805) 964-4386
1885 North Kelly Road • Napa, CA 94558 • (707) 257-7211 FAX (707) 226-1001
9333 Tech Center Dr., Ste. 800 • Sacramento, CA 95826 • (916) 368-1333 FAX (916) 362-2484
2400 Cumberland Dr. • Valparaiso, Indiana 46383 • (219) 464-2389 FAX (219) 462-2953

Chain of Custody

• PLEASE PRINT IN PEN

Client SP ENVIRONMENTAL SYSTEMS	Contact WALT FLOYD	Phone # ( ) 916-369-8971	FAX # ( )
Address 9719 Lincoln Village Dr #310	City Sacramento	State CA	Zip 95827
Project Name/Number 05032		Project MGR WEBB GAREY	
Bill (If different than above)			
Sampler WALT FLOYD	Due Date ROUTINE / Circle for RUSH	Copies To:	Auth. Init.

	Sample Description	Date/Time Coll'd	*Matrix	# of Containers	Pres.	Filt. y/n	Analysis	Remarks	Lab ID #
	TP-1 South (COMPOSIT)	10/16 2:30	SOIL	2			TPH-G, BTXE, TPH-D, TPH-418.1		
⊕	TP-1 WEST (COMPOSIT)							⊕ One container labeled as TP-1 West at 2:30 received.	
*	TP-1 EAST (COMPOSIT)	10/16 2:30		2					
**	TP-1 WEST (COMPOSIT)							** Sample TP-1 North received but not listed on COC.	
*	TP-4 North (COMPOSIT)	10/16 4:00		2					
*	TP-4 WEST (COMPOSIT)								
*	TP-4 EAST (COMPOSIT)	10/16 11:00		2					
*	TP-4 South (COMPOSIT)							* Sampling time on COC does not match Containers	

Relinquished By	Date/Time	Received By	Relinquished By	Date/Time	Received By
Walt Floyd	10/17 9:25			10/17/90 1315	

FOR LAB USE ONLY

Shipping Method	Shipping #	Received By	Date/Time	Condition (See Remarks) Cold	Sealed	Intact

REMARKS

* Matrix:
DW - Drinking Water
WW - Wastewater
GW - Groundwater
SW - Surface Water
IM - Impinger
FI - Filter
FP - Free Product
A/G - Air/Gas
SL - Sludge/Soil/Solid
OT - Other

Enseco
A CORNING Company

Oil & Grease, Gravimetric

Method 413.1 Modified for Soil

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg

Received: 24 OCT 90
Authorized: 24 OCT 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed
055371-0001-SA	SP-1	190	50	25 OCT 90	27 OCT 90
055371-0002-SA	SP-2	84	50	25 OCT 90	27 OCT 90
055371-0003-SA	SP-3	180	50	25 OCT 90	27 OCT 90
055371-0004-SA	SP-4	110	50	25 OCT 90	27 OCT 90
055371-0005-SA	SP-5	120	50	25 OCT 90	27 OCT 90
055371-0006-SA	MW-1-5'	ND	50	25 OCT 90	27 OCT 90
055371-0007-SA	MW-1-8.5'	ND	50	25 OCT 90	27 OCT 90
055371-0008-SA	MW-6-5'	ND	50	25 OCT 90	27 OCT 90
055371-0009-SA	MW-6-10'	ND	50	25 OCT 90	27 OCT 90

ND = Not detected
NA = Not applicable

Reported By: Salome Rosos

Approved By: Linda Ellithorpe

The cover letter is an integral part of this report.
Rev 230787

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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: SP-1
Lab ID: 055371-0001-SA
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 24 OCT 90
Prepared: NA

Received: 24 OCT 90
Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	92	%	--

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve

Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: SP-2
Lab ID: 055371-0002-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	10
Bromomethane	ND	ug/kg	10
Vinyl chloride	ND	ug/kg	10
Chloroethane	ND	ug/kg	10
Methylene chloride	ND	ug/kg	5.0
Acetone	ND	ug/kg	10
Carbon disulfide	ND	ug/kg	5.0
1,1-Dichloroethene	ND	ug/kg	5.0
1,1-Dichloroethane	ND	ug/kg	5.0
1,2-Dichloroethene (total)	ND	ug/kg	5.0
Chloroform	ND	ug/kg	5.0
1,2-Dichloroethane	ND	ug/kg	5.0
2-Butanone (MEK)	ND	ug/kg	10
1,1,1-Trichloroethane	ND	ug/kg	5.0
Carbon tetrachloride	ND	ug/kg	5.0
Vinyl acetate	ND	ug/kg	10
Bromodichloromethane	ND	ug/kg	5.0
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0
1,2-Dichloropropane	ND	ug/kg	5.0
cis-1,3-Dichloropropene	ND	ug/kg	5.0
Trichloroethene	ND	ug/kg	5.0
Dibromochloromethane	ND	ug/kg	5.0
1,1,2-Trichloroethane	ND	ug/kg	5.0
Benzene	ND	ug/kg	5.0
trans-1,3-Dichloropropene	ND	ug/kg	5.0
Bromoform	ND	ug/kg	5.0
2-Hexanone	ND	ug/kg	10
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10
Tetrachloroethene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Chlorobenzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Styrene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	100	%	--
Toluene-d8	102	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: SP-2
Lab ID: 055371-0002-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	97	%	--

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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TCL Volatile Organics

Method 8240

Client Name: SP Environmental
Client ID: SP-3
Lab ID: 055371-0003-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 25 OCT 90

Parameter	Result	Wet wt. Units	Reporting Limit	
Chloromethane	ND	ug/kg	2000	j
Bromomethane	ND	ug/kg	2000	
Vinyl chloride	ND	ug/kg	2000	
Chloroethane	ND	ug/kg	2000	
Methylene chloride	ND	ug/kg	1000	
Acetone	ND	ug/kg	2000	
Carbon disulfide	ND	ug/kg	1000	
1,1-Dichloroethene	ND	ug/kg	1000	
1,1-Dichloroethane	ND	ug/kg	1000	
1,2-Dichloroethene (total)	ND	ug/kg	1000	
Chloroform	ND	ug/kg	1000	
1,2-Dichloroethane	ND	ug/kg	1000	
2-Butanone (MEK)	ND	ug/kg	2000	
1,1,1-Trichloroethane	ND	ug/kg	1000	
Carbon tetrachloride	ND	ug/kg	1000	
Vinyl acetate	ND	ug/kg	2000	
Bromodichloromethane	ND	ug/kg	1000	
1,2-Dichloropropane	ND	ug/kg	1000	
cis-1,3-Dichloropropene	ND	ug/kg	1000	
Trichloroethene	ND	ug/kg	1000	
Dibromochloromethane	ND	ug/kg	1000	
1,1,2-Trichloroethane	ND	ug/kg	1000	
Benzene	ND	ug/kg	1000	
trans-1,3-Dichloropropene	ND	ug/kg	1000	
Bromoform	ND	ug/kg	1000	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	2000	
2-Hexanone	ND	ug/kg	2000	
1,1,2,2-Tetrachloroethane	ND	ug/kg	1000	
Tetrachloroethene	ND	ug/kg	1000	
Toluene	ND	ug/kg	1000	
Chlorobenzene	ND	ug/kg	1000	
Ethylbenzene	ND	ug/kg	1000	
Styrene	ND	ug/kg	1000	
Xylenes (total)	9600	ug/kg	1000	

Surrogate	Recovery		
1,2-Dichloroethane-d4	102	%	--
Toluene-d8	99	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Sam Lee Approved By: Karin Yee

The cover letter is an integral part of this report.
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TCL Volatile Organics (CONT.)

Method 8240

Client Name: SP Environmental
Client ID: SP-3
Lab ID: 055371-0003-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	101	%	--

Note j : All Reporting Limits for this sample raised due to matrix interferences.

ND = Not detected
NA = Not applicable

Reported By: Sam Lee Approved By: Karin Yee

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TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: SP-4
Lab ID: 055371-0004-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/kg	10	
Bromomethane	ND	ug/kg	10	
Vinyl chloride	ND	ug/kg	10	
Chloroethane	ND	ug/kg	10	
Methylene chloride	ND	ug/kg	5.0	
Acetone	ND	ug/kg	10	
Carbon disulfide	ND	ug/kg	5.0	
1,1-Dichloroethene	ND	ug/kg	5.0	
1,1-Dichloroethane	ND	ug/kg	5.0	
1,2-Dichloroethene (total)	ND	ug/kg	5.0	
Chloroform	ND	ug/kg	5.0	
1,2-Dichloroethane	ND	ug/kg	5.0	
2-Butanone (MEK)	ND	ug/kg	10	
1,1,1-Trichloroethane	ND	ug/kg	5.0	
Carbon tetrachloride	ND	ug/kg	5.0	
Vinyl acetate	ND	ug/kg	10	
Bromodichloromethane	ND	ug/kg	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	
1,2-Dichloropropane	ND	ug/kg	5.0	
cis-1,3-Dichloropropene	ND	ug/kg	5.0	
Trichloroethene	ND	ug/kg	5.0	
Dibromochloromethane	ND	ug/kg	5.0	
1,1,2-Trichloroethane	ND	ug/kg	5.0	
Benzene	ND	ug/kg	5.0	
trans-1,3-Dichloropropene	ND	ug/kg	5.0	
Bromoform	ND	ug/kg	5.0	
2-Hexanone	ND	ug/kg	10	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10	
Tetrachloroethene	ND	ug/kg	5.0	
Toluene	9.6	ug/kg	5.0	b
Chlorobenzene	ND	ug/kg	5.0	
Ethylbenzene	6.6	ug/kg	5.0	
Styrene	ND	ug/kg	5.0	
Xylenes (total)	160	ug/kg	5.0	

Surrogate	Recovery		
1,2-Dichloroethane-d4	102	%	--
Toluene-d8	106	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: SP-4
Lab ID: 055371-0004-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	102	%	--

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: SP-5
Lab ID: 055371-0005-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/kg	10	
Bromomethane	ND	ug/kg	10	
Vinyl chloride	ND	ug/kg	10	
Chloroethane	ND	ug/kg	10	
Methylene chloride	6.5	ug/kg	5.0	b
Acetone	ND	ug/kg	10	
Carbon disulfide	ND	ug/kg	5.0	
1,1-Dichloroethene	ND	ug/kg	5.0	
1,1-Dichloroethane	ND	ug/kg	5.0	
1,2-Dichloroethene (total)	ND	ug/kg	5.0	
Chloroform	ND	ug/kg	5.0	
1,2-Dichloroethane	ND	ug/kg	5.0	
2-Butanone (MEK)	ND	ug/kg	10	
1,1,1-Trichloroethane	ND	ug/kg	5.0	
Carbon tetrachloride	ND	ug/kg	5.0	
Vinyl acetate	ND	ug/kg	10	
Bromodichloromethane	ND	ug/kg	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	
1,2-Dichloropropane	ND	ug/kg	5.0	
cis-1,3-Dichloropropene	ND	ug/kg	5.0	
Trichloroethene	ND	ug/kg	5.0	
Dibromochloromethane	ND	ug/kg	5.0	
1,1,2-Trichloroethane	ND	ug/kg	5.0	
Benzene	ND	ug/kg	5.0	
trans-1,3-Dichloropropene	ND	ug/kg	5.0	
Bromoform	ND	ug/kg	5.0	
2-Hexanone	ND	ug/kg	10	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10	
Tetrachloroethene	ND	ug/kg	5.0	
Toluene	ND	ug/kg	5.0	
Chlorobenzene	ND	ug/kg	5.0	
Ethylbenzene	ND	ug/kg	5.0	
Styrene	ND	ug/kg	5.0	
Xylenes (total)	ND	ug/kg	5.0	

Surrogate	Recovery		
1,2-Dichloroethane-d4	100	%	--
Toluene-d8	104	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Brad Silverbush Approved By: Karin Yee

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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: SP-5
Lab ID: 055371-0005-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	95	%	--

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: Brad Silverbush Approved By: Karin Yee

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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: SP-1
Lab ID: 055371-0001-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: SP-2
Lab ID: 055371-0002-SA
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 24 OCT 90
Prepared: 25 OCT 90

Received: 24 OCT 90
Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers

Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: SP-3
Lab ID: 055371-0003-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/kg	50	R
Stoddard Solvent	ND	mg/kg	50	
Aviation Fuel (JP4)	ND	mg/kg	50	
Diesel Fuel	ND	mg/kg	50	
Unknown Hydrocarbons	270	mg/kg	10	1

Note R : Raised reporting limit(s) due to high analyte level(s).

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-7 to C-17. Quantitation was based on an unleaded gasoline reference. This pattern is similar to gasoline, but does not exactly match our reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: SP-4
Lab ID: 055371-0004-SA
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 24 OCT 90
Prepared: 25 OCT 90

Received: 24 OCT 90
Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/kg	10	
Stoddard Solvent	ND	mg/kg	10	
Aviation Fuel (JP4)	ND	mg/kg	10	
Diesel Fuel	ND	mg/kg	10	
Unknown Hydrocarbons	49	mg/kg	10	1

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-7 to C-23. Quantitation was based on an Aviation Fuel (JP-4) reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers

Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: SP-5
Lab ID: 055371-0005-SA
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 24 OCT 90
Prepared: 25 OCT 90

Received: 24 OCT 90
Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/kg	10	
Stoddard Solvent	ND	mg/kg	10	
Aviation Fuel (JP4)	ND	mg/kg	10	
Diesel Fuel	ND	mg/kg	10	
Unknown Hydrocarbons	13	mg/kg	10	1

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-7 to C-18. Quantitation was based on an Aviation Fuel (JP-4) reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers

Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: MW-6-5'
Lab ID: 055371-0008-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

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Total Petroleum Hydrocarbons

Method GC/FID

Client Name: SP Environmental
Client ID: MW-6-10'
Lab ID: 055371-0009-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: 25 OCT 90 Analyzed: 27 OCT 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/kg	10
Stoddard Solvent	ND	mg/kg	10
Aviation Fuel (JP4)	ND	mg/kg	10
Diesel Fuel	ND	mg/kg	10
Unknown Hydrocarbons	ND	mg/kg	10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Marcia Reed

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METALS

(Soil/Solid - Total)

Client Name: SP Environmental
Client ID: MW-1-5'
Lab ID: 055371-0006-DU
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 23 OCT 90
Prepared: See Below

Received: 24 OCT 90
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Lead	ND	mg/kg	5.0	Method 6010	31 OCT 90	01 NOV 90

ND = Not detected
NA = Not applicable

Reported By: Grace Chang

Approved By: Mei Lai

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Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Matrix: SOIL
Units: mg/kg

Received: 24 OCT 90
Authorized: 24 OCT 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed	
055371-0001-SA	SP-1	ND	10	NA	25 OCT 90	
055371-0002-SA	SP-2	ND	10	NA	25 OCT 90	
055371-0003-SA	SP-3	ND	50	NA	25 OCT 90	G
055371-0004-SA	SP-4	ND	10	NA	25 OCT 90	
055371-0005-SA	SP-5	ND	10	NA	25 OCT 90	
055371-0006-SA	MW-1-5'	ND	10	NA	25 OCT 90	
055371-0007-SA	MW-1-8.5'	ND	10	NA	25 OCT 90	
055371-0008-SA	MW-6-5'	ND	10	NA	25 OCT 90	
055371-0009-SA	MW-6-10'	ND	10	NA	25 OCT 90	

Note G : Reporting Limit raised due to matrix interference.

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson

Approved By: Kris Rogers

The cover letter is an integral part of this report.
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TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: MW-6-5'
Lab ID: 055371-0008-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/kg	10	
Bromomethane	ND	ug/kg	10	
Vinyl chloride	ND	ug/kg	10	
Chloroethane	ND	ug/kg	10	
Methylene chloride	ND	ug/kg	5.0	
Acetone	18	ug/kg	10	b
Carbon disulfide	ND	ug/kg	5.0	
1,1-Dichloroethene	ND	ug/kg	5.0	
1,1-Dichloroethane	ND	ug/kg	5.0	
1,2-Dichloroethene (total)	ND	ug/kg	5.0	
Chloroform	ND	ug/kg	5.0	
1,2-Dichloroethane	ND	ug/kg	5.0	
2-Butanone (MEK)	ND	ug/kg	10	
1,1,1-Trichloroethane	ND	ug/kg	5.0	
Carbon tetrachloride	ND	ug/kg	5.0	
Vinyl acetate	ND	ug/kg	10	
Bromodichloromethane	ND	ug/kg	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	
1,2-Dichloropropane	ND	ug/kg	5.0	
cis-1,3-Dichloropropene	ND	ug/kg	5.0	
Trichloroethene	ND	ug/kg	5.0	
Dibromochloromethane	ND	ug/kg	5.0	
1,1,2-Trichloroethane	ND	ug/kg	5.0	
Benzene	ND	ug/kg	5.0	
trans-1,3-Dichloropropene	ND	ug/kg	5.0	
Bromoform	ND	ug/kg	5.0	
2-Hexanone	ND	ug/kg	10	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10	
Tetrachloroethene	ND	ug/kg	5.0	
Toluene	ND	ug/kg	5.0	
Chlorobenzene	ND	ug/kg	5.0	
Ethylbenzene	ND	ug/kg	5.0	
Styrene	ND	ug/kg	5.0	
Xylenes (total)	ND	ug/kg	5.0	

Surrogate	Recovery		
1,2-Dichloroethane-d4	98	%	--
Toluene-d8	100	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Sam Lee Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: MW-6-5'
Lab ID: 055371-0008-SA
Matrix: SOIL
Authorized: 24 OCT 90

Sampled: 23 OCT 90
Prepared: NA

Received: 24 OCT 90
Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	100	%	--

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: Sam Lee

Approved By: Karin Yee

The cover letter is an integral part of this report.

Enseco
A CORNING Company

TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: MW-6-10'
Lab ID: 055371-0009-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/kg	10	
Bromomethane	ND	ug/kg	10	
Vinyl chloride	ND	ug/kg	10	
Chloroethane	ND	ug/kg	10	
Methylene chloride	ND	ug/kg	5.0	
Acetone	12	ug/kg	10	b
Carbon disulfide	ND	ug/kg	5.0	
1,1-Dichloroethene	ND	ug/kg	5.0	
1,1-Dichloroethane	ND	ug/kg	5.0	
1,2-Dichloroethene (total)	ND	ug/kg	5.0	
Chloroform	ND	ug/kg	5.0	
1,2-Dichloroethane	ND	ug/kg	5.0	
2-Butanone (MEK)	ND	ug/kg	10	
1,1,1-Trichloroethane	ND	ug/kg	5.0	
Carbon tetrachloride	ND	ug/kg	5.0	
Vinyl acetate	ND	ug/kg	10	
Bromodichloromethane	ND	ug/kg	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	
1,2-Dichloropropane	ND	ug/kg	5.0	
cis-1,3-Dichloropropene	ND	ug/kg	5.0	
Trichloroethene	ND	ug/kg	5.0	
Dibromochloromethane	ND	ug/kg	5.0	
1,1,2-Trichloroethane	ND	ug/kg	5.0	
Benzene	ND	ug/kg	5.0	
trans-1,3-Dichloropropene	ND	ug/kg	5.0	
Bromoform	ND	ug/kg	5.0	
2-Hexanone	ND	ug/kg	10	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10	
Tetrachloroethene	ND	ug/kg	5.0	
Toluene	ND	ug/kg	5.0	
Chlorobenzene	ND	ug/kg	5.0	
Ethylbenzene	ND	ug/kg	5.0	
Styrene	ND	ug/kg	5.0	
Xylenes (total)	ND	ug/kg	5.0	

Surrogate	Recovery		
1,2-Dichloroethane-d4	101	%	--
Toluene-d8	104	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Brad Silverbush Approved By: Karin Yee

The cover letter is an integral part of this report.
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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: MW-6-10'
Lab ID: 055371-0009-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	97	%	--

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: Brad Silverbush Approved By: Karin Yee

The cover letter is an integral part of this report.
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Enseco
A CORNING Company

TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: MW-1-5'
Lab ID: 055371-0006-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	10
Bromomethane	ND	ug/kg	10
Vinyl chloride	ND	ug/kg	10
Chloroethane	ND	ug/kg	10
Methylene chloride	ND	ug/kg	5.0
Acetone	ND	ug/kg	10
Carbon disulfide	ND	ug/kg	5.0
1,1-Dichloroethene	ND	ug/kg	5.0
1,1-Dichloroethane	ND	ug/kg	5.0
1,2-Dichloroethene (total)	ND	ug/kg	5.0
Chloroform	ND	ug/kg	5.0
1,2-Dichloroethane	ND	ug/kg	5.0
2-Butanone (MEK)	ND	ug/kg	10
1,1,1-Trichloroethane	ND	ug/kg	5.0
Carbon tetrachloride	ND	ug/kg	5.0
Vinyl acetate	ND	ug/kg	10
Bromodichloromethane	ND	ug/kg	5.0
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0
1,2-Dichloropropane	ND	ug/kg	5.0
cis-1,3-Dichloropropene	ND	ug/kg	5.0
Trichloroethene	ND	ug/kg	5.0
Dibromochloromethane	ND	ug/kg	5.0
1,1,2-Trichloroethane	ND	ug/kg	5.0
Benzene	ND	ug/kg	5.0
trans-1,3-Dichloropropene	ND	ug/kg	5.0
Bromoform	ND	ug/kg	5.0
2-Hexanone	ND	ug/kg	10
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10
Tetrachloroethene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Chlorobenzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Styrene	ND	ug/kg	5.0
Xylenes (total)	ND	ug/kg	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	99	%	--
Toluene-d8	102	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: MW-1-5'
Lab ID: 055371-0006-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	97	%	--

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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Enseco
A CORNING Company

TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: MW-1-8.5'
Lab ID: 055371-0007-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/kg	10	
Bromomethane	ND	ug/kg	10	
Vinyl chloride	ND	ug/kg	10	
Chloroethane	ND	ug/kg	10	
Methylene chloride	ND	ug/kg	5.0	
Acetone	11	ug/kg	10	b
Carbon disulfide	ND	ug/kg	5.0	
1,1-Dichloroethene	ND	ug/kg	5.0	
1,1-Dichloroethane	ND	ug/kg	5.0	
1,2-Dichloroethene (total)	ND	ug/kg	5.0	
Chloroform	ND	ug/kg	5.0	
1,2-Dichloroethane	ND	ug/kg	5.0	
2-Butanone (MEK)	ND	ug/kg	10	
1,1,1-Trichloroethane	ND	ug/kg	5.0	
Carbon tetrachloride	ND	ug/kg	5.0	
Vinyl acetate	ND	ug/kg	10	
Bromodichloromethane	ND	ug/kg	5.0	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0	
1,2-Dichloropropane	ND	ug/kg	5.0	
cis-1,3-Dichloropropene	ND	ug/kg	5.0	
Trichloroethene	ND	ug/kg	5.0	
Dibromochloromethane	ND	ug/kg	5.0	
1,1,2-Trichloroethane	ND	ug/kg	5.0	
Benzene	ND	ug/kg	5.0	
trans-1,3-Dichloropropene	ND	ug/kg	5.0	
Bromoform	ND	ug/kg	5.0	
2-Hexanone	ND	ug/kg	10	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10	
Tetrachloroethene	ND	ug/kg	5.0	
Toluene	ND	ug/kg	5.0	
Chlorobenzene	ND	ug/kg	5.0	
Ethylbenzene	ND	ug/kg	5.0	
Styrene	ND	ug/kg	5.0	
Xylenes (total)	ND	ug/kg	5.0	

Surrogate	Recovery		
1,2-Dichloroethane-d4	97	%	--
Toluene-d8	101	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Sam Lee Approved By: Karin Yee

The cover letter is an integral part of this report.
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TCL Volatile Organics (CONT.)

8240

Client Name: SP Environmental
Client ID: MW-1-8.5'
Lab ID: 055371-0007-SA
Matrix: SOIL Sampled: 23 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Surrogate	Recovery		
4-Bromofluorobenzene	96	%	--

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: Sam Lee Approved By: Karin Yee

The cover letter is an integral part of this report.
Rev 230787

Enseco
A CORNING Company

TCL Volatile Organics

8240

Client Name: SP Environmental
Client ID: SP-1
Lab ID: 055371-0001-SA
Matrix: SOIL Sampled: 24 OCT 90 Received: 24 OCT 90
Authorized: 24 OCT 90 Prepared: NA Analyzed: 25 OCT 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/kg	10
Bromomethane	ND	ug/kg	10
Vinyl chloride	ND	ug/kg	10
Chloroethane	ND	ug/kg	10
Methylene chloride	ND	ug/kg	5.0
Acetone	ND	ug/kg	10
Carbon disulfide	ND	ug/kg	5.0
1,1-Dichloroethene	ND	ug/kg	5.0
1,1-Dichloroethane	ND	ug/kg	5.0
1,2-Dichloroethene (total)	ND	ug/kg	5.0
Chloroform	ND	ug/kg	5.0
1,2-Dichloroethane	ND	ug/kg	5.0
2-Butanone (MEK)	ND	ug/kg	10
1,1,1-Trichloroethane	ND	ug/kg	5.0
Carbon tetrachloride	ND	ug/kg	5.0
Vinyl acetate	ND	ug/kg	10
Bromodichloromethane	ND	ug/kg	5.0
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.0
1,2-Dichloropropane	ND	ug/kg	5.0
cis-1,3-Dichloropropene	ND	ug/kg	5.0
Trichloroethene	ND	ug/kg	5.0
Dibromochloromethane	ND	ug/kg	5.0
1,1,2-Trichloroethane	ND	ug/kg	5.0
Benzene	ND	ug/kg	5.0
trans-1,3-Dichloropropene	ND	ug/kg	5.0
Bromoform	ND	ug/kg	5.0
2-Hexanone	ND	ug/kg	10
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	10
Tetrachloroethene	ND	ug/kg	5.0
Toluene	ND	ug/kg	5.0
Chlorobenzene	ND	ug/kg	5.0
Ethylbenzene	ND	ug/kg	5.0
Styrene	ND	ug/kg	5.0
Xylenes (total)	6.5	ug/kg	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	99	%	--
Toluene-d8	108	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: John Gildersleeve Approved By: Karin Yee

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SP - EvS

CHAIN-OF-CUSTODY RECORD

No. 10708

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME	PROJECT LOCATION
5th & Kirkham	OAKLAND

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
	W. FLOYD	916-369-8971

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
	W. GARCIA

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH-G	TPH-D	O&G (413.1)	VOC (8240)				REMARKS
1	SP-1	10/24/96	930		X		1	X	X	X	X				
2	SP-2	10/24	937		X		1								
3	SP-3	10/24	940		X		1								
4	SP-4	10/24	945		X		1								
5	SP-5	10/24	947		X		1								
6															
7															
8															
9															
10															

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-5	Walter F Floyd	S Tella	10/24	1430
2	1-5	S Tella	M A Dyas	10/24/96	1320
3					
4					

REMARKS: 1 WK Turnaround

SAMPLER'S NAME: WALTER FLOYD

SAMPLER'S SIGNATURE: Walter F Floyd

SP - EvS

CHAIN-OF-CUSTODY RECORD

No. 10531

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME	PROJECT LOCATION
5th & Kirkham	OAKLAND

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
05032	WALT FLOYD	369-8971

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
	W. GAREY

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH-G	TPH-D	O&G (413.1)	VOC (8240)	PB			REMARKS
1	MW-1-5'	10/23	1130		X	SOIL	1	X	X	X	X	X			
2	MW-1-8.5'	10/23	1145		X	SOIL	1	X	X	X	X				
3	MW-6-5'	10/23	1000		X	SOIL	1	X	X	X	X				
4	MW-6-10'	10/23	1010		X	SOIL	1	X	X	X	X				
5															
6															
7															
8															
9															
10															

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-4	Walter Floyd	S Todd	10/24	0930
2	1-4	S Todd	McDyan	10/24/90	1320
3					
4					

REMARKS: 1 WEEK TURNAROUND

SAMPLER'S NAME: WALTER FLOYD

SAMPLER'S SIGNATURE: Walter Floyd

TRANSFER 3

Enseco
A Corning Company

TCL Volatile Organics

Method 624

Client Name: SP Environmental
Client ID: MW-1
Lab ID: 055595-0001-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (total)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	88	%	--
Toluene-d8	95	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Coming Company

TCL Volatile Organics (CONT.)

Method 624

Client Name: SP Environmental
Client ID: MW-1
Lab ID: 055595-0001-SA
Matrix: AQUEOUS
Authorized: 06 NOV 90

Sampled: 06 NOV 90
Prepared: NA

Received: 06 NOV 90
Analyzed: 07 NOV 90

Surrogate	Recovery		
4-Bromofluorobenzene	112	%	--

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett

Approved By: Steve Rogers

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

TCL Volatile Organics

Method 624

Client Name: SP Environmental
Client ID: MW-6
Lab ID: 055595-0002-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (total)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	96	%	--
Toluene-d8	100	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
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Enseco
A Coming Company

TCL Volatile Organics (CONT.)

Method 624

Client Name: SP Environmental
Client ID: MW-6
Lab ID: 055595-0002-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Surrogate	Recovery		
4-Bromofluorobenzene	114	%	--

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

TCL Volatile Organics

Method 624

Client Name: SP Environmental
Client ID: MW-3
Lab ID: 055595-0003-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit	
Chloromethane	ND	ug/L	50	u
Bromomethane	ND	ug/L	50	
Vinyl chloride	**150**	ug/L	50	
Chloroethane	ND	ug/L	50	
Methylene chloride	28	ug/L	25	Bb
Acetone	ND	ug/L	50	
Carbon disulfide	ND	ug/L	25	
1,1-Dichloroethene	ND	ug/L	25	
1,1-Dichloroethane	**290**	ug/L	25	
1,2-Dichloroethene (total)	**340**	ug/L	25	
Chloroform	ND	ug/L	25	
1,2-Dichloroethane	ND	ug/L	25	
2-Butanone (MEK)	ND	ug/L	50	
1,1,1-Trichloroethane	ND	ug/L	25	
Carbon tetrachloride	ND	ug/L	25	
Vinyl acetate	ND	ug/L	50	
Bromodichloromethane	ND	ug/L	25	
1,2-Dichloropropane	ND	ug/L	25	
cis-1,3-Dichloropropene	ND	ug/L	25	
Trichloroethene	ND	ug/L	25	
Dibromochloromethane	ND	ug/L	25	
1,1,2-Trichloroethane	ND	ug/L	25	
Benzene	ND	ug/L	25	
trans-1,3-Dichloropropene	ND	ug/L	25	
Bromoform	ND	ug/L	25	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50	
2-Hexanone	ND	ug/L	50	
1,1,2,2-Tetrachloroethane	ND	ug/L	25	
Tetrachloroethene	ND	ug/L	25	
Toluene	ND	ug/L	25	
Chlorobenzene	ND	ug/L	25	
Ethylbenzene	ND	ug/L	25	
Styrene	ND	ug/L	25	
Xylenes (total)	ND	ug/L	25	

Surrogate	Recovery		
1,2-Dichloroethane-d4	88	%	--
Toluene-d8	101	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

TCL Volatile Organics (CONT.)

Method 624

Client Name: SP Environmental
Client ID: MW-3
Lab ID: 055595-0003-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Surrogate	Recovery		
4-Bromofluorobenzene	110	%	--

Note u : All Reporting Limits raised due to high level of analyte present in sample.

Note B : Compound is also detected in the blank.

Note b : Analytical results should not be considered reliable for this common lab contaminant unless the sample result exceeds 5 times the reporting limit or 10 times the blank result.

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

Enseco
A Corning Company

TCL Volatile Organics

Method 624

Client Name: SP Environmental
Client ID: MW-4
Lab ID: 055595-0004-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 08 NOV 90

Parameter	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (total)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone (MEK)	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10
2-Hexanone	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Tetrachloroethene	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Surrogate	Recovery		
1,2-Dichloroethane-d4	113	%	--
Toluene-d8	101	%	--

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
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Enseco
A Corning Company

TCL Volatile Organics (CONT.)

Method 624

Client Name: SP Environmental
Client ID: MW-4
Lab ID: 055595-0004-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 08 NOV 90

Surrogate	Recovery		
4-Bromofluorobenzene	109	%	--

ND = Not detected
NA = Not applicable

Reported By: Doug Burnett Approved By: Steve Rogers

The cover letter is an integral part of this report.
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Enseco
A Corning Company

Oil & Grease, Gravimetric

Method 413.1

Client Name: SP Environmental
Matrix: AQUEOUS
Units: mg/L

Received: 06 NOV 90
Authorized: 06 NOV 90

Lab ID	Client ID	Result	Reporting Limit	Date Prepared	Date Analyzed
055595-0001-SA	MW-1	ND	5.0	07 NOV 90	08 NOV 90
055595-0002-SA	MW-6	ND	5.0	07 NOV 90	08 NOV 90
055595-0003-SA	MW-3	ND	5.0	07 NOV 90	08 NOV 90
055595-0004-SA	MW-4	ND	5.0	07 NOV 90	08 NOV 90

ND = Not detected
NA = Not applicable

Reported By: Salome Rosos

Approved By: Patrick Rainey

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Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Client ID: MW-1
Lab ID: 055595-0001-SA
Matrix: AQUEOUS
Authorized: 06 NOV 90
Sampled: 06 NOV 90
Prepared: NA
Received: 06 NOV 90
Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Gasoline	ND	ug/L	500

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson
Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Client ID: MW-6
Lab ID: 055595-0002-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Gasoline	ND	ug/L	500

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Client ID: MW-3
Lab ID: 055595-0003-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Gasoline	ND	ug/L	500

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Marcia Reed

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Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline)

Purge and Trap Method TPH-GC/FID

Client Name: SP Environmental
Client ID: MW-4
Lab ID: 055595-0004-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: NA Analyzed: 07 NOV 90

Parameter	Result	Units	Reporting Limit
Gasoline	ND	ug/L	500

ND = Not detected
NA = Not applicable

Reported By: Jon Edmondson Approved By: Marcia Reed

The cover letter is an integral part of this report.
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Enseco
A Corning Company

Total Petroleum Hydrocarbons

Method 3510/GC/FID

Client Name: SP Environmental
Client ID: MW-1
Lab ID: 055595-0001-SA
Matrix: AQUEOUS
Authorized: 06 NOV 90
Sampled: 06 NOV 90
Prepared: 07 NOV 90
Received: 06 NOV 90
Analyzed: 08 NOV 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/L	0.10
Stoddard Solvent	ND	mg/L	0.10
Aviation Fuel (JP4)	ND	mg/L	0.10
Diesel Fuel	ND	mg/L	0.10
Unknown hydrocarbon	ND	mg/L	0.10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers
Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Cuming Company

Total Petroleum Hydrocarbons

Method 3510/GC/FID

Client Name: SP Environmental
Client ID: MW-6
Lab ID: 055595-0002-SA
Matrix: AQUEOUS
Authorized: 06 NOV 90

Sampled: 06 NOV 90
Prepared: 07 NOV 90

Received: 06 NOV 90
Analyzed: 08 NOV 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/L	0.10
Stoddard Solvent	ND	mg/L	0.10
Aviation Fuel (JP4)	ND	mg/L	0.10
Diesel Fuel	ND	mg/L	0.10
Unknown hydrocarbon	ND	mg/L	0.10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

Total Petroleum Hydrocarbons

Method 3510/GC/FID

Client Name: SP Environmental
Client ID: MW-3
Lab ID: 055595-0003-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: 07 NOV 90 Analyzed: 08 NOV 90

Parameter	Result	Units	Reporting Limit	
Kerosene	ND	mg/L	0.10	
Stoddard Solvent	ND	mg/L	0.10	
Aviation Fuel (JP4)	ND	mg/L	0.10	
Diesel Fuel	ND	mg/L	0.10	
Unknown hydrocarbon	0.26	mg/L	0.10	1

Note 1 : This sample contains an unknown hydrocarbon pattern in the approximate range of C-8 to C-18. Quantitation was based on a Diesel reference.

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Lisa Stafford

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Enseco
A Corning Company

Total Petroleum Hydrocarbons

Method 3510/GC/FID

Client Name: SP Environmental
Client ID: MW-4
Lab ID: 055595-0004-SA
Matrix: AQUEOUS Sampled: 06 NOV 90 Received: 06 NOV 90
Authorized: 06 NOV 90 Prepared: 07 NOV 90 Analyzed: 08 NOV 90

Parameter	Result	Units	Reporting Limit
Kerosene	ND	mg/L	0.10
Stoddard Solvent	ND	mg/L	0.10
Aviation Fuel (JP4)	ND	mg/L	0.10
Diesel Fuel	ND	mg/L	0.10
Unknown hydrocarbon	ND	mg/L	0.10

ND = Not detected
NA = Not applicable

Reported By: Kris Rogers Approved By: Lisa Stafford

The cover letter is an integral part of this report.
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SP - EvS

CHAIN-OF-CUSTODY RECORD

No. 10712

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME	PROJECT LOCATION
5th & Kirkham	OAKLAND, CA

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
5532	WALTER FLOYD	916-369-8971

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
	W. GALEY

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH-D / VOC (8240) / O&G / TOX-D	REMARKS
1	MW-1	11/6/90	1100		✓	WATER	6	X X X X	
2	MW-6	11/6	300		✓		6	X X X X	
3	MW-3	11/6	1210		✓		6	X X X X	
4	MW-4	11/6	1345		✓		6	X X X X	
5									
6									
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1		Walter Floyd	M A Dyan	11/6/90	1650
2					
3					
4					

REMARKS

4 day

Samples rec'd in good condition. MS

SAMPLER'S NAME

SAMPLER'S SIGNATURE

LAB COPY