UP GRADIANT INVESTIGATION REPORT

10/4/94

SHERWIN-WILLIAM'S COMPANY PLANT
1450 Sherwin Avenue
Emeryville, California

TMC ENVIRONMENTAL, INC.
MANAGEMENT AND CONSULTING

California Registered Environmental Assessors
California Certified Engineering Geologist
Oregon Registered Engineering Geologist
Oregon Registered UST Soil Cleanup Supervisors

UP GRADIENT INVESTIGATION REPORT

Sherwin-William's Company Plant
1450 Sherwin Avenue
Emeryville, California

October 4, 1994

Prepared For:

Harvey M. Rifkin, Trustee of the
Harvey M. Rifkin Living Trust
Dated March 11, 1987
Robert Rifkin, Harvey Rifkin, as
Trustee of the Estate of
Beatrice L. Rifkin, deceased,
Robert Kantor and Sandra Kantor

c/o Mr. Frank Satterwhite, Receiver
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1450 Sherwin Avenue, Emeryville, California

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UP GRADIENT INVESTIGATION REPORT

Sherwin-Williams Company Plant
1450 Sherwin Avenue, Emeryville California

TMC Environmental, Inc. Project Number 1150

INTRODUCTION

Mr. Frank Satterwhite, Receiver for the Rifkin property, authorized TMC Environmental, Inc. (TMC) to perform subsurface soil and water sampling on the Sherwin-Williams Company Plant. On July 6, 1994, TMC recovered soil and water samples from four temporary drill holes along the property boundary between the Sherwin-Williams Company Plant and the Rifkin property. The field investigation was conducted according to the procedures in the TMC Investigation Work Plan dated June 28, 1994. The drilling and sampling was authorized by the Sherwin-Williams Company in a site access agreement executed June 29, 1994. Levine Fricke personnel, consultant for Sherwin-Williams Company, witnessed the drilling and sampling. This report presents the results of field observations, field measurements, and laboratory analyses.

Sherwin-Williams Company is currently installing an arsenic containment system with the permission of the California Regional Water Quality Control Board. The Sherwin-Williams Company Plant is known to be contaminated with high concentrations of arsenic, petroleum fuels, and other volatile organic compounds. The containment system consists of a slurry wall and cap with hydraulic control. Sherwin-Williams Company's consultant, Levine Fricke determined during studies conducted in 1989, that the polluted ground water from the Sherwin-Williams Company Plant flows in the direction of the Rifkin property. Sherwin-Williams Company proposed in a "Conceptual Remedial Plan" dated January 18, 1994, to install an additional slurry wall and cap on the Rifkin property, to contain the arsenic polluted ground water that has migrated from the Sherwin-Williams Company Plant.

The objective of this field investigation is to determine the extent of soil and ground water contamination on the Sherwin-Williams Company Plant directly across the up-gradient boundary with the Rifkin property. The south boundary between the Sherwin-Williams Company Plant and the Rifkin property is significant because the ground water is known to flow from the Plant towards the Rifkin property across this boundary. Contaminated ground water on the plant flows northward towards the Rifkin property. As the water flows from higher elevations on the Plant to lower elevations on the Rifkin property, a slope or gradient exists on the ground water from south towards the north. The plant can be described as up gradient of the Rifkin property or the Rifkin property is down gradient of the Plant. Soil and water contamination on the Plant, at the up gradient boundary of the Rifkin property, has the potential to impact or has impacted the soil and water across the property boundary.

Significant concentrations of arsenic are known to exist on the Sherwin William Company Plant in the soil and ground water. This arsenic contamination of the ground water is known to be polluting the Rifkin property for a distance of 200 feet beyond the boundary with the Sherwin-Williams Company Plant. High concentrations of petroleum fuels and volatile organic compounds are also known to pollute the soil and ground water of the Sherwin-Williams Company Plant. Sherwin-Williams Company denies that other pollutants (petroleum fuels and volatile organic compounds) besides arsenic, originating from the Sherwin-Williams Company Plant, have contaminated the soil and ground water of the Rifkin property The field investigation was conducted to evaluate the concentration of petroleum fuels and volatile organic compounds that affect the soil and ground water on the Sherwin-Williams Company Plant directly up gradient from the boundary with the Rifkin property.

GENERAL SITE INFORMATION

The subject of this report is the Sherwin-Williams Company facility in Emeryville California, called the "Plant" in this report. The property is located at the following address:

Sherwin-Williams Company Plant
1450 Sherwin Avenue, City of Emeryville
County of Alameda, State of California

The Plant is at the corner of Horton Street and Sherwin Avenue, see plate 1, site vicinity map. Horton Street bounds the Plant on the east. Sherwin Avenue bounds the Plant on the south. Southern Pacific Railroad tracks bound the Plant on the west. The Rifkin property is adjacent to the Plant on the north. The study area consists of a narrow 25 foot wide by 200 foot long corridor along the south or up gradient margin of the Rifkin property.

SITE BACKGROUND

The Sherwin-Williams Company Plant in Emeryville has existed since 1920 as a paint manufacturing facility. The plant existed for over 60 years prior to the development of modern hazardous materials handling regulations and procedures. The portion of the Plant adjacent to the Rifkin property formerly contained buildings active in the formulation of paint products. These building have been identified as storage and mixing facilities for the arsenic used by the Plant. The additional chemical usage in these buildings is unknown. Sherwin-Williams has demolished the buildings adjacent to the Rifkin property.

PREVIOUS LEVINE FRICKE INVESTIGATION 1989-1993

According to a review of agency files, Sherwin-Williams Company voluntarily initiated the environmental investigation and cleanup of its Emeryville property in 1989, after it closed a portion of its paint manufacturing plant. The investigation and cleanup is conducted under the oversight of the Regional Water Quality Control Board (RWQCB).

Arsenic, lead, petroleum fuels, and volatile organic compounds have been reported polluting the soil and ground water of the Plant by Sherwin William Company's environmental consultant, Levine-Fricke. Background information on the Sherwin-Williams Company Plant is summarized by Levine Fricke in the April 4, 1990 report "Results of Second Phase Environmental Investigation, Sherwin-Williams Plant, Emeryville, California, Levine Fricke document LF-1563.02. Levine Fricke found that contamination of the Sherwin William Company Plant is caused by two sources: 1) releases associated with two former above ground tank farms used for the storage of petroleum oils and solvents located to the west and southwest of the Rifkin property, and 2) an arsenic source area located to the south and adjacent of the Rifkin property.

Investigation by Levine Fricke indicates the soil and ground water of the Sherwin-Williams Plant is contaminated with a complex mixture of petroleum oil and fuels, certain volatile organic compounds (VOCs), semi-volatile organic compounds, and some metals: notably arsenic, barium, cadmium, copper, lead, and zinc. The two former tank farm areas have been identified as the areas with the greatest concentrations of volatile and semi-volatile organic compounds. The oil tank storage area, up gradient of the Rifkin property, is also affected by volatile and semi-volatile organic compounds. The arsenic source area has not been adequately investigated for volatile or semi-volatile organic compounds by soil borings or monitoring wells.

The soil investigations by Levine Fricke indicate elevated concentrations of VOCs, including benzene, ethylbenzene, toluene, xylenes, tetrachloroethylene (PCE), trichloroethylene (TCE), 2-butanone, and long-chain hydrocarbons; elevated concentrations of semi-volatile organic compounds, including acenaphthene, naphthalene, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, bis(2-ethylhexyl)phthalate, and di-n-butylphthalate; and elevated concentrations of metals, chromium, copper, mercury, nickel, lead, selenium, thallium, vanadium, and zinc.

The primary VOC detected was the tentatively identified C5-C13 hydrocarbon. These hydrocarbons may be a portion of petroleum naphtha formerly used in oil-based paint manufactured at the Sherwin-William Plant. The primary semi-volatile that was detected was the tentatively identified longer chain C8-C35 hydrocarbon. These hydrocarbons are probably related to the raw materials used in oil-based paints formerly manufactured at the facility. The lab results indicate that VOCs are present outside the former solvent tank farm beneath the railroad tracks east and west of the tank farm area.

The shallow ground water investigation indicated elevated concentrations of VOCs, including acetone, benzene, ethylbenzene, methyl ethyl ketone,.toluene, total xylenes, and 2-hexanone; elevated concentrations of semi-volatile organic compounds, including 2-methylnaphthalene, naphthalene, 2-methylphenol, 4-methylphenol, 2,4-dimethylpehnol, acenapthalene, anthracene, benzo(a)-anthracene, chrysene, dibenzofuran, fluoranthene, fluorene, phenanthrenne, and pyrene; and elevated concentrations of metals, including arsenic, cadmium, nickel, selenium, and zinc. Elevated concentrations of tentatively identified compounds include straight chain hydrocarbons, alcohol's, ketones, esters, organic acids, alkyl benzene isomers, and molecular sulfur. These tentatively identified compounds are present at the down gradient margin of the Sherwin-Williams Plant. A review by Levine Fricke of the shallow zone results for total quantified and semi-

quantified volatile and semi-volatile organic compounds indicates that the leading edge of a total VOC plume extents to the north and west of the site.

The results of deeper B zone investigation indicate ground water contamination by propylether, 1,2-dichloroethane, vinyl acetate, methyl ethyl ketone, methyl isobutyl ketone, 2-hexanone, and arsenic.

Levine Fricke determined that the ground water flows in the direction of the Rifkin property during studies conducted in 1989. The June 8, 1990 Proposed Work Plan, Site Investigation/Treatability Study states on page 3 "Analysis of ground-water samples from wells located on the down gradient margin of the Site indicated that off-site migration of some compounds may have occurred". Evidence of off site migration of VOCs was available as early as 1989. The June 8, 1990 Proposed Work Plan, Site Investigation/ Treatability Study states on page 3 "This (contour mapping) indicated that the extent of the areas affected by concentrations of 0.010 ppm (VOCs) may extend to the northwest, beyond the limits of the site. Similar evidence was available for semi-volatile organic compounds. Complete characterization of the eastern extent of the ground water contamination plume was not performed by Levine Fricke. The Regional Water Quality Control Board (RWQCB) directed Sherwin-Williams to assess the possible groundwater pollution in the area northeast of the Plant in a letter dated May 29, 1992, File 2223.09(LF). The RWQCB required Sherwin-Williams Company to install two additional ground water monitoring wells to explore for ground water contamination in the vicinity of the Rifkin Property. These wells have not been installed by Sherwin-Williams Company.

The highest concentrations of arsenic are in the apparent arsenic source area adjacent to the Rifkin property. Significant concentrations of arsenic also occur in the ground water of the tank farm areas. Arsenic, volatile and semi-volatile compounds are also reported contaminating the deeper B-zone aquifer of the Sherwin-Williams Plant.

Levine Fricke is currently monitoring the site, under a plan approved by the RWQCB, and developing interim remedial measures to contain and cap the contaminants and eventually conduct the environmental cleanup. Levine Fricke has partially completed the installation of a slurry wall surrounding the Sherwin-Williams Company Plant site. Sherwin-Williams Company has not drilled or sampled soil and ground water along the up gradient boundary with the Rifkin property.

OCTOBER 1993 ERLER & KALINOWSKI, INC. INVESTIGATION

During the summer of 1993, Erler & Kalinowski, Inc. performed soil and groundwater sampling on the Rifkin property, for Chiron Corporation of Emeryville. The purpose of the site characterization was to evaluate the nature and potential magnitude of likely remediation activities which may need to be undertaken on the Rifkin property prior to redevelopment for Chiron's planned R&D/industrial use. The consultant reported that free petroleum product was observed at the groundwater table in boring 4525-7. This boring is at the southwest corner of the Rifkin property near the Sherwin William Plant. Chlorinated volatile organic compounds including 1,2-DCA were found in the shallow aquifer zone along the up gradient edge of the Rifkin property.

Erler & Kalinowski, Inc. also reviewed the Levine Fricke reports on file with the RWQCB for the Plant. The summary reports that elevated concentrations of arsenic and petroleum hydrocarbons have been detected in shallow groundwater, and in soils, on the Sherwin-Williams facility. Evaluation of chemical distribution maps and groundwater gradient maps from the Sherwin-Williams site indicates that these compounds are migrating onto the southwestern portion of the Rifkin site. These compounds appear to be migrating onto the Rifkin property from the direction of the Sherwin-Williams plant.

MAY 1994 LEVINE FRICKE SAMPLING

In April 1994, Levine-Fricke performed a soil and ground water investigation on the southern portion of the Rifkin property. Levine-Fricke presented the procedures and findings of the investigation in a "Field Investigation Report" dated May 19, 1994. The drilling and sampling was performed by Precision Drilling of South San Francisco under the supervision of Levine Fricke. Field personnel present during the sampling included, Mark Mass and Stewart King of Precision Drilling, Mark Youngkin and Tom Ghigliotto of TMC, and Kenton Gee of Levine Fricke. Pertinent to this report are the soil and water sampling results from boring SB-8 located on the Sherwin-Williams Company Plant adjacent to the up gradient boundary of the Rifkin property. During the drilling and sampling of SB-8, the field personnel reported very strong hydrocarbon vapors in the soil and water samples.

The results of the sampling and laboratory analyses indicate soil and ground water contamination along the up gradient boundary of the Rifkin property. The laboratory reported the boring, SB-8, located on the Sherwin-Williams property has substantial soil and ground water contamination. The laboratory, American Environmental Network of Pleasant Hill, California, diluted the samples due to the high concentrations of gasoline, toluene, and xylenes, resulting in excessively high detection limits on other chemicals possibly present in the samples. Excessive laboratory detection limits prevented the complete characterization of the contamination in boring SB-8. The soil and ground water contamination in boring SB-8 directly concerns the water quality on the Rifkin property. The groundwater flows from the Sherwin-Williams property towards the Rifkin property.

The following table summarizes and condenses the results of soil and water sampling in boring SB-8. See the original Levine Fricke report for more complete information.

Table 1 Sampling Results For Levine Fricke Boring SB-8

Sampling Address: 1450 Sherwin Avenue, Emeryville, California
Site Name: Sherwin-Williams Company Plant
Sample Collector Levine Fricke, Emeryville, California
Sample Collection Date: April 5, 1994
Type of Samples: Soil and Ground Water

Sample ID	Depth in Feet	Gasoline ppm	Diesel ppm	Arsenic ppm	Toluene ppm	Xylenes ppm	Ethyl Benzene ppm	Acetone ppm
Soil Samples								
SB-8-2.0, 4, 6.5	C at 2, 4 & 6.5	NA	NA	**8500**	NA	NA	NA	NA
SB-8-7.0	7.0	**3200**	7	NA	**880**	**360**	**62**	**1100**
SB-8-9.5	9.5	**8000**	**3**	NA	**1400**	**670**	**130**	ND<1000
SB-8-10.0	10.0	NA	NA	**1900**	NA	NA	NA	NA
Water Sample								
SB-8-GW		**280**	**0.4**	**430**	**210**	**20**	ND<10	ND<200

C - Composite sample from different depths; **ND** - not detected above laboratory reporting limit
NA - not analyzed; **ppm** - parts per million

The Health & Safety Plan dated June 1994, for the Sherwin-Williams Plant, furnished to TMC by Levine Fricke, indicates the following primary chemicals (the list is incomplete) occur in the soil and groundwater of the Plant, see table 2, Known Chemical Contaminants (summarized and condensed from appendix B of the Health & Safety Plan).

Table 2 Known Chemical Contaminants

Site Address: 1450 Sherwin Avenue, Emeryville, CA
Site Name: Sherwin-Williams Company Plant
Origin of Data: Levine Fricke Health & Safety Plan
Date of Data: June 1994

Name of Material	Maximum Soil Concentration, mg/kg	Maximum Water Concentration, mg/L
Arsenic	**52000**	**320**
Lead	**2300**	**0.2**
Acetone	ND	**280**
Benzene	ND	**0.110**
Ethylbenzene	**1500**	**6.3**
Methyl Ethyl Ketone, 2-Butanone	ND	**720**
Xylenes	**9900**	**210**
2-hexanone	ND	**24**
Toluene	**14000**	**310**
PCE (perchoroethelyene)	ND	**45**
Chlorobenzene	ND	**1**
Total Petroleum Hydrocarbons	**20000**	**1500**
Bis (2-ethyl hexyl) phthalate	**10.2**	ND
Isophorone	**8**	ND
Naphthalene	**11**	ND

mg/kg -milligram per kilogram; mg/L - milligram per liter, both equivalent to parts per million, ppm

JULY 1994 FIELD INVESTIGATION BY TMC

SOIL AND GRAB WATER SAMPLING

On July 6, 1994, TMC recovered soil and water samples from the Sherwin-Williams Company Plant. Four temporary borings penetrated the property adjacent to the Rifkin property boundary, as shown on plate 2, site map. Boring locations were chosen to avoid the recently installed slurry wall. Mr. Mike Spence, foreman for Power Engineering Contractors, scraped away a two foot thick soil pile, that was placed upon the drilling locations immediately prior to site access. The soil pile was scraped away to reveal the original concrete grade on July 4-5, 1994. Measurements below surface grade are reported from the concrete surface exposed in the scraped areas.

Two borings were located inside each of the two 10'x 40' scraped areas. Borings SW1 and SW2 were located about 25 feet from the Rifkin property while borings SW3 and SW4 were located 18 feet from the Rifkin property. The concrete surface was cored with

the drill rig to allow the advancement of hollow stem auger. Mr. Robin Barber, field geologist for Levine Fricke, witnessed the drilling and sampling procedures. Mr. Barber also recovered additional soil and water samples. High concentrations of volatile organic vapors encountered during the drilling of boring SW1 required the use of level C respiratory protective equipment. All subsequent borings were drilled and sampled using level C respiratory protection.

Soil Exploration Services of Martinez, California drilled the borings using a truck mounted hollow-stem auger drill rig. The soils encountered in the vadose zone and first water bearing zone consisted of thin layers of silt, sand, and gravelly sand, see the boring logs of attachment 2. Total depth of the borings was 15 feet. Field personnel followed the procedures in the TMC Investigation Work Plan dated June 28, 1994 during the drilling and sampling of borings. The drilling personnel used a California modified sampler to recover the soil samples. Three soil samples came from each boring at about 4½, 7½, 10½ and 12½ feet from surface grade. An organic vapor analyzer, OVA-FID, analyzed the field bag samples from each sample interval for hydrocarbon vapors.

Following the completion of soil sampling, TMC over drilled the boring to a depth of 15 feet below grade. Field personnel installed new, two-inch, PVC well casing into the open drill hole. Recovery of the ground water into the drill hole occurred quickly. A disposable bailer immediately recovered a water sample from the boring upon measurable free water in the well casing.

SOIL SAMPLING ANALYSIS RESULTS

The following table, Soil Sample Results for Total Petroleum Hydrocarbons, shows the petroleum fuel concentrations detected in soil samples recovered from borings SW1, SW2, SW3, and SW4. American Materials Engineering Research (AMER) laboratory of Sunnyvale, California analyzed the soil samples for total petroleum hydrocarbons (TPH) as gasoline (EPA method 8015 modified), TPH as diesel (EPA method 8015 modified), selected samples for TPH as Motor Oil (EPA method 8015 modified), and selected samples for total lead (EPA method 6000/7000).

Table 3 Soil Sample Results for Total Petroleum Hydrocarbons

Boring Label: SW1, SW2. SW3 & SW4
Site Address: 1450 Sherwin Avenue, Emeryville, California
Site Name: Sherwin-Williams Company Plant
Sample Collector: TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Boring-Sample I.D.	8015M/TPH **Gasoline**	8015M/TPH **Diesel**	8015M/TPH **Motor Oil**	Total **Lead**
	mg/kg	mg/kg	mg/kg	mg/kg
Boring SW1				
SW1-1	**2000**	**850**	NA	NA
SW1-2	**120**	**120**	**470**	**9.2**
SW1-3	**5000**	**1000**	NA	NA
SW1-4	**51**	**13**	**39**	**3.3**
Boring SW2				
SWA2-1	**670**	**230**	NA	NA
SW2-2	**5700**	**800**	**310**	**5.8**
SW2-3	**26**	**1.9**	NA	NA
SW2-4	**30**	**59**	ND<1	**5.0**
Boring SW3				
SW3-1	ND<2.5	**11**	NA	NA
SW3-2	ND<2.5	ND<1	**430**	**5.0**
SW3-3	ND<5	ND<1	NA	NA
SW3-4	ND<2.5	ND<1	NA	NA
Boring SW4				
SW4-1	ND<2.5	ND<1	NA	NA
SW4-2	ND<2.5	ND<1	**16**	**153**
SW4-3	ND<2.5	ND<1	NA	NA
SW4-4	**1.2**	**8**	NA	NA

ND: Non detectable above reporting limits. NA: Not analyzed.
mg/kg - milligram per kilogram, equivalent to parts per million, ppm
8015M/TPH - EPA Method 8015 Modified / Total Petroleum Hydrocarbons

The following table, Boring SW1 Soil Sample Results for Volatile Organic Compounds, shows the concentrations detected by the laboratory for volatile organic compounds (VOC) by EPA method 8240 from samples of soil recovered from boring SW1.

Table 4 Boring SW1 Soil Sample Results for Volatile Organic Compounds

Boring Label: SW1
Site Address: 1450 Sherwin Avenue, Emeryville, CA
Site Name: Sherwin-Williams Company Plant
Sample Collector TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Compound	Detection Limit (mg/kg)	SW1-1 (mg/kg)	SW1-2 (mg/kg)	SW1-3 (mg/kg)	SW1-4 (mg/kg)
Depth below grade in feet		4½ feet	7½ feet	10½ feet	14 feet
acetone	0.021	**56**	**82**	**86**	**9.5**
benzene	0.004	**0.28**	**0.074**	**0.25**	**0.013**
bromodichloromethane	0.004	**0.005**	ND	ND	ND
2-butanone	0.006	**32**	**17**	**32**	ND
2-chloro-ethyl-vinyl ether	0.009	ND	ND	**0.42**	ND
chloroform (CCC)	0.004	**0.007**	ND	ND	ND
1,2-dichloroethane	0.005	ND	ND	**0.94**	ND
trans-1,3-dichlorpropene	0.005	**0.17**	ND	ND	ND
ethylbenzene	0.002	**21**	**2.1**	**43**	**0.56**
2-hexano	0.009	**0.68**	**1.4**	**7.0**	**0.097**
4-methyl-2-pentanone	0.007	**31**	**17**	**21**	**2.2**
toluene	0.002	**190**	**14**	**400**	**3.6**
1,1,2-trichloroethane	0.007	ND	ND	**0.40**	**0.23**
trichloroethylene	0.004	**0.015**	ND	**0.60**	ND
o-xylene	0.002	**24**	**2.7**	**40**	**0.83**
p/m-xylene	0.002	**100**	**8.1**	**170**	**2.6**
Tentative Identification Compound					
hexane, 3-methyl	e	13		26	
cyclopentane, 1,3-dimethyl-, trans-	e	11			
cyclopentane, 1,2-dimethyl-	e	27		33	
heptane	e	49	2.9	120	
cyclohexane, methyl-	e	89	3.7	150	0.45
1,7-dimethyl-4-(1-methylethyl)cyclo	e	18			
cyclopentane, ethyl-	e	9.7			
cyclopentane, 1,2,4-trimethyl -,	e	13		23	
cyclopentane, 1,2,3-trimethyl -,	e	17		28	
hexane, 2,4-dimethyl -	e	13			
octane	e		5.8		
cyclohexane, ethyl-	e		3.2		
cyclohexane, 1,1,3-trimethyl-	e		1.7		
2-hexanone, 5-methyl-	e		3.2		
benzene, 1-ethyl-2-methyl-	e		4.5	41	1.3
benzene, 1,2,4-trimethyl-	e		1.6	69	2.6
benzene, 1,2,3-trimethyl-	e		5.6		
nonane	e			21	0.38
decane	e			24	
benzene, 1,3,5-trimethyl	e				0.73
benzene, 1,2,3-trimethyl	e				0.46
undecane	e				0.32

mg/kg - milligram per kilogram, equivalent to parts per million, ppm; e - estimated

The following table, Boring SW2 Soil Sample Results for Volatile Organic Compounds, shows the concentrations detected by the laboratory for volatile organic compounds (VOC) by EPA method 8240 from samples of soil recovered from boring SW2.

Table 5 Boring SW2 Soil Sample Results for Volatile Organic Compounds

Boring Label:	SW2
Site Address:	1450 Sherwin Avenue, Emeryville, California
Site Name:	Sherwin-Williams Company Plant
Sample Collector	TMC Environmental, Inc., San Pablo, California
Sample Collection Date:	July 6, 1994

Compound	Detection Limit (mg/kg)	SWA2-1 (mg/kg)	SW2-2 (mg/kg)	SW2-3 (mg/kg)	SW2-4 (mg/kg)
Depth below grade in feet		4½	7½	10½	14
acetone	0.021	**520**	**310**	**47**	**100**
benzene	0.004	ND	**0.82**	**0.30**	ND
chlorobenzene (SPCC)	0.003	**0.005**	ND	ND	ND
2-chlor-ethyl-vinyl ether	0.009	**0.047**	ND	ND	ND
chloroform (CCC)	0.004	ND	**0.80**	ND	**0.74**
1,2-dichloroethane	0.005	ND	ND	ND	**0.10**
ethylbenzene	0.002	**2.5**	**4.5**	**0.19**	**0.080**
2-hexano	0.009	**0.5**	ND	**11**	ND
4-methyl-2-pentanone	0.007	**0.16**	**72**	ND	**0.88**
toluene	0.004	**44**	**73**	**6.0**	**6.8**
trichloroethylene	0.004	**0.031**	**0.063**	ND	**0.62**
o-xylene	0.002	**5.3**	ND	**0.24**	**0.13**
p/m-xylene	0.002	**17**	ND	**0.98**	**0.39**
vinyl acetate	0.013	ND	**4.6**	ND	ND
Tentative Identification Compound					
acetic acid, butyl ester	e	3.5	10	0.72	
acetic acid, 2-methylpropyl ester	e			3.2	
cyclohexane, ethyl-	e	3.0	6.6		
cyclohexane, 1,1,3-trimethyl-	e	2.8	5.7		
cyclohexane, 1-ethyl-2-methyl-, trans	e	1.3			
cyclohexane, 1,2-dimethyl-, trans-	e		2.3		
cyclohexane, methyl	e			1.1	
4-methyl-2-pentyl acetate	e	3.4	5.2		
butanoic acid, 2-methylpropyl ester	e	1.5	3.6		
benzene, 1-ethyl-2-methyl-	e	1.1		0.39	
benzene, 1,2,4-trimethyl-	e	0.96		0.75	
benzene, 1,2,3-trimethyl-	e	2.6	4.4		
benzene, 1,3,5-trimethyl-	e		1.8		
benzene, 1-bromo-3-fluoro-					1.2
Octane	e		10		
1-propanol, 2-methyl-	e			0.39	
heptane	e			0.42	
2-heptanone	e			0.90	0.63
pentane, 3-methyl	e				1.0

mg/kg - milligram per kilogram, equivalent to parts per million, ppm; e - estimated

The following table, Boring SW3 Soil Sample Results for Volatile Organic Compounds, shows the concentrations detected by the laboratory for volatile organic compounds (VOC) by EPA method 8240 from samples of soil recovered from boring SW3.

Table 6 Boring SW3 Soil Sample Results for Volatile Organic Compounds

Boring Label: SW3
Site Address: 1450 Sherwin Avenue, Emeryville, California
Site Name: Sherwin-Williams Company Plant
Sample Collector TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Compound	Detection Limit (mg/kg)	SW3-1 (mg/kg)	SW3-2 (mg/kg)	SW3-3 (mg/kg)	SW3-4 (mg/kg)
Depth below grade in feet		4½	7½	10½	14
2-butanone	0.003	**0.10**	ND	**0.17**	**0.029**
2-chlor-ethyl-vinyl ether	0.009	**0.047**	ND	ND	ND
ethylbenzene	0.002	**0.005**	ND	ND	**0.003**
2-hexano	0.009	**0.5**	ND	**11**	ND
4-methyl-2-pentanone	0.007	ND	ND	**0.021**	**0.011**
toluene	0.004	**0.076**	**0.027**	**0.017**	**0.040**
o-xylene	0.002	**0.007**	ND	**ND**	**0.003**
p/m-xylene	0.002	**0.022**	ND	**0.038**	**0.007**
Tentative Identification Compound					
hexane	e	0.027	0.04	0.044	0.038
ethane, 1,1,2-trichloro-1,2,2-trifluoro-	e			0.12	

mg/kg - milligram per kilogram, equivalent to parts per million, ppm; e - estimated

The following table, Boring SW4 Soil Sample Results for Volatile Organic Compounds, shows the concentrations detected by the laboratory for volatile organic compounds (VOC) by EPA method 8240 from samples of soil recovered from boring SW3.

Table 7 Boring SW4 Soil Sample Results for Volatile Organic Compounds

Boring Label: SW4
Site Address: 1450 Sherwin Avenue, Emeryville, California
Site Name: Sherwin-Williams Company Plant
Sample Collector TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Compound	Detection Limit (mg/kg)	SW4-1 (mg/kg)	SW4-2 (mg/kg)	SW4-3 (mg/kg)	SW4-4 (mg/kg)
Depth below grade in feet		4½ feet	7½ feet	10½ feet	14 feet
acetone	0.003	**ND**	ND	**ND**	**7.0**
ethylbenzene	0.002	**ND**	ND	ND	**0.003**
2-hexano	0.009	**ND**	ND	**ND**	0.011
4-methyl-2-pentanone	0.007	ND	ND	**ND**	**0.52**
toluene	0.004	**ND**	**0.0047**	**0.010**	**29**
o-xylene	0.002	**ND**	ND	**ND**	**ND**
p/m-xylene	0.002	**0.003**	0.007	**ND**	**0.010**
Tentative Identification Compound					
hexane	e		0.036	0.031	0.033
hexane, 3-methyl-	e	0.034			

mg/kg - milligram per kilogram, equivalent to parts per million, ppm; e - estimated

Attachment 1 presents the laboratory certified analytical reports and chain-of-custody, analysis request forms.

WATER SAMPLING ANALYSIS RESULTS

At the conclusion of drilling, new two-inch slotted PVC well casing was installed in each boring. The casing extended into the top of the water bearing zone. Water rapidly recharged the drill holes rising to a standing level of about 8½' below grade. TMC and Levine Fricke recovered grab water samples from each boring with new disposable bailers. Sample recovery began immediately upon detecting measurable water in the well casing.

Water samples from borings SW1 and SW2 had strong chemical vapors (>10000 ppmv) as measured with an organic vapor analyzer, OVA-FID. Water samples from borings SW3 and SW4 had low levels of chemical vapors (<100 ppmv).

American Materials Engineering Research (AMER) laboratory of Sunnyvale, California analyzed the water samples for total petroleum hydrocarbons (TPH) as gasoline (EPA method 8015 modified), TPH as diesel (EPA method 8015 modified), and TPH as Motor Oil (EPA method 8015 modified). The following table, Water Sample Analysis Results For Total Petroleum Hydrocarbons, shows the concentrations detected by the laboratory from samples of water recovered in borings SW1, SW2, SW3, and SW4.

Table 8 Water Sample Analysis Results for Total Petroleum Hydrocarbons

Boring Labels: SW1, SW2, SW3, and SW4
Site Address: 1450 Sherwin Avenue, Emeryville, CA
Site Name: Sherwin-Williams Company Plant
Sample Collector TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Boring-Sample I.D.	8015M/TPH Gasoline	8015M/TPH Diesel	8015M/TPH Motor Oil
Detection Limit	*50 ug/l*	*50 ug/l*	*50 ug/l*
SW1	**850000**	**240000**	ND
SW2	**860000**	**9000**	ND
SW3	**4300**	**180**	ND
SW4	**1700**	**880**	ND

ug/l - micrograms per liter, equivalent to parts per billion, ppb
ND: Non detectable above reporting limits

The following table, Water Sample Analysis Results For Volatile Organic Compounds, shows the concentrations detected by the laboratory for volatile organic compounds (VOC) by EPA method 8240 from samples of water recovered from borings SW1, SW2, SW3, and SW4.

Table 9 Water Sample Analysis Results for Volatile Organic Compounds

Boring Labels: SW1, SW2, SW3 and SW4
Site Address: 1450 Sherwin Avenue, Emeryville, CA
Site Name: Sherwin-Williams Company Plant
Sample Collector TMC Environmental, Inc., San Pablo, California
Sample Collection Date: July 6, 1994

Compound	Detection Limit (ug/l)	SW1 (ug/l)	SW2 (ug/l)	SW3 (ug/l)	SW4 (ug/l)
acetone	4.2	**830000**	**1500000**	**460**	**2700**
benzene	0.8	**530**	**360**	**6.7**	**19**
2-butanone	1.1	**510000**	ND	ND	**3700**
ethylbenzene	0.4	**3100**	**2500**	**34**	**33**
2-hexano	1.8	**5400**	**130000**	**2.0**	ND
4-methyl-2-pentanone	1.4	**110000**	**140000**	**75**	**520**
tetrachloroethylene	1.7	ND	ND	**1.2**	ND
toluene	0.4	**160000**	**71000**	**490**	**230**
trichloroethylene	0.8	**15**	**10**	**5.7**	**2.7**
o-xylene	0.3	**3100**	**3100**	**21**	**6.7**
p/m-xylene	0.4	**11000**	**11000**	**97**	**50**
Tentative Identification Compound					
acetic acid, methyl ester	e	2300			
ethyl acetate	e	1900	5500		
acetic acid, 1-methylethyl ester	e	3000	4700		
cyclohexane, methyl-	e	2900	1300		
acetic acid, 2-methylpropyl ester	e	14000	32000	0.022	
acetic acid, butyl ester	e	2600	7600		
2-heptanone	e	7100		0.013	8.2
cyclohexane, methyl-	e	2900	1300	0.01	
2-hexanol	e		3600		
4-methyl-2-pentyl-acetate	e		2000		
propanoic acid, 2-methyl-, 2-methyl	e		2000		
1-propanol, 2-methyl	e		4300		28

ug/l - micrograms per liter, equivalent to parts per billion, ppb; e - estimated
ND - not detected above reporting limit

SUMMARY OF FIELD AND LABORATORY CHEMICAL DATA

This section is a summary of selected laboratory analyses results, field observations, and field measurements for each boring.

SUMMARY OF BORING SW1

Boring SW1 was the closest drill hole to the center of the Sherwin-Williams Company Plant and the former above ground storage tank farms. This boring is within the identified source area of arsenic contamination. Boring SW1 encountered soils with strong discoloration and high concentrations of chemical vapors. Chemical vapor concentrations

in boring SW1 exceeded 10,000 ppmv, as measured with the OVA-FID field analyzer. Laboratory analysis indicates high concentrations of gasoline up to 5000 ppm, diesel up to 1000 ppm, and motor oil up to 470 ppm in shallow soils. Shallow soils also contained significant concentrations of acetone up to 86 ppm, 2-butanone (MEK) up to 32 ppm, ethylbenzene up to 43 ppm, 4-methyl-2-pentanone up to 31 ppm, and xylenes up to 210 ppm. Laboratory analysis indicated the following additional volatile organic compounds occur in the shallow soils: benzene; bromodichloromethane; 2-chloro-ethyl-vinyl ether; chloroform; 1,2-dichloroethane, trans-1,3-dichlorpropene; 2-hexanone; toluene; 1,1,2-trichloroethane; and trichloroethylene.

The laboratory also reported the following tentatively identified compounds in the soil samples from boring SW1: hexane, 3-methyl; cyclopentane, 1,3-dimethyl-, trans-; cyclopentane, 1,2-dimethyl-; heptane; cyclohexane, methyl-; 1,7-dimethyl-4-(1-methylethyl)cyclo; cyclopentane, ethyl-; cyclopentane, 1,2,4-trimethyl -; cyclopentane, 1,2,3-trimethyl -; hexane, 2,4-dimethyl -; octane; cyclohexane, ethyl-; cyclohexane, 1,1,3-trimethyl-; 2-hexanone, 5-methyl-; benzene, 1-ethyl-2-methyl-; benzene, 1,2,4-trimethyl-; benzene, 1,2,3-trimethyl-; nonane; decane; benzene, 1,3,5-trimethyl; benzene, 1,2,3-trimethyl; undecane.

The water sample from boring SW1 had a strong chemical odor (>10,000 ppmv). Laboratory analysis of the water from boring SW1 indicated 850 ppm gasoline and 240 ppm diesel. The laboratory reported the following volatile organic compounds: acetone; benzene; 2-butanone (MEK); ethylbenzene; 2-hexano; 4-methyl-2-pentanone; toluene; trichloroethylene; o-xylene; p/m-xylene. The laboratory reported the following tentatively identified volatile organic compounds in the water sample from boring SW1: acetic acid, methyl ester; ethyl acetate; acetic acid, 1-methylethyl ester; cyclohexane, methyl-; acetic acid, 2-methylpropyl ester; acetic acid, butyl ester; 2-heptanone; cyclohexane, methyl-.

SUMMARY OF BORING SW2

Boring SW2 was about 35 feet east of boring SW-1. This boring is within the identified source area of arsenic contamination. Boring SW2 was located close to the location of previous Levine Fricke boring SB-8. Borings SW2 encountered soils with strong discoloration and high concentrations of chemical vapors. As reported by Levine Fricke, laboratory analysis of shallow soil from boring SB-8 indicated concentrations of arsenic up to 8500 ppm, gasoline up to 8000 ppm, toluene up to 1400 ppm, and acetone up to 1100 ppm. Laboratory analysis of ground water from boring SB-8 indicated concentrations of arsenic up to 430 ppm, gasoline up to 280 ppm, and toluene up to 210 ppm.

Soil vapor concentrations in boring SW2 reached a maximum value of 9,500 ppmv, as measured with the OVA-FID field analyzer. Laboratory analysis indicates high concentrations of gasoline up to 5700 ppm, diesel up to 800 ppm, and motor oil up to 310 ppm, in shallow soils. Significant concentrations of acetone up to 520 ppm, 4-methyl-2-pentanone up to 72 ppm, toluene up to 73 ppm, and xylenes up to 22 ppm. Laboratory analysis indicated the following volatile organic compounds occur in the shallow soils: acetone; benzene; chlorobenzene; 2-chloro-ethyl-vinyl ether; chloroform; 1,2-

dichloroethane; ethylbenzene; 2-hexanone; 4-methyl-2-pentanone; toluene; trichloroethylene; o-xylene; p/m-xylene; and vinyl acetate.

The laboratory also reported the following tentatively identified volatile organic compounds in boring SW2: acetic acid, butyl ester; acetic acid, 2-methylpropyl ester; cyclohexane, ethyl-; cyclohexane, 1,1,3-trimethyl-; cyclohexane, 1-ethyl-2-methyl-; cyclohexane, 1,2-dimethyl-, trans-; cyclohexane, methyl; 4-methyl-2-pentyl acetate; butanoic acid, 2-methylpropyl ester; benzene, 1-ethyl-2-methyl-; benzene, 1,2,4-trimethyl-; benzene, 1,2,3-trimethyl-; benzene, 1,3,5-trimethyl-; benzene, 1-bromo-3-fluoro-; Octane; 1-propanol, 2-methyl-; heptane; 2-heptanone; pentane, 3-methyl.

The water sample from boring SW2 had a strong chemical odor. Laboratory analysis of the water from boring SW1 indicated 850 ppm gasoline and 240 ppm diesel. The laboratory reported the following volatile organic compounds: acetone; benzene; ethylbenzene; 2-hexano; 4-methyl-2-pentanone; toluene; trichloroethylene; o-xylene; p/m-xylene. The laboratory reported the following tentatively identified volatile organic compounds in the water sample from boring SW1: ethyl acetate; acetic acid, 1-methylethyl ester; cyclohexane, methyl-; acetic acid, 2-methylpropyl ester; acetic acid, butyl ester; cyclohexane, methyl-; 2-hexanol; 4-methyl-2-pentyl-acetate; propanoic acid, 2-methyl-, 2-methyl; 1-propanol, 2-methyl.

SUMMARY OF BORING SW3

Boring SW3 encountered soils without noticeable staining or chemical vapors. Field screening of the soil samples with an OVA-FID indicated only background levels. Laboratory sample analysis results indicated low levels of soil contamination. Laboratory analysis indicated no concentration of gasoline, diesel up to 11 ppm, and motor oil up to 430 ppm in shallow soils. Laboratory analysis indicated low concentrations of the following volatile organic compounds occur in the shallow soils: 2-butanone; 2-chloro-ethyl-vinyl ether; ethylbenzene; 2-hexanone; 4-methyl-2-pentanone; toluene; o-xylene; and p/m-xylene.

The laboratory also reported the following tentatively identified volatile organic compounds in boring SW3: hexane and ethane, 1,1,2-trichloro-1,2,2-trifluoro-.

The water sample from boring SW3 had no chemical odor. Laboratory analysis of the water from boring SW3 indicated 4.3 ppm gasoline and 0.18 ppm diesel. The laboratory reported the following volatile organic compounds: acetone; benzene; ethylbenzene; 2-hexano; 4-methyl-2-pentanone; toluene; tetrachloroethylene; trichloroethylene; o-xylene; p/m-xylene. The laboratory reported the following tentatively identified volatile organic compounds in the water sample from boring SW1: acetic acid, 2-methylpropyl ester; 2-heptanone and cyclohexane, methyl-.

SUMMARY OF BORING SW4

Boring SW4 was the closest drill hole to Horton Street. Boring SW4 encountered soils without noticeable staining and low levels of chemical vapors. Field screening of the soil samples with an OVA-FID indicated only background vapor levels. Laboratory analysis

results indicated only low concentrations of soil contamination. Laboratory analysis indicated gasoline up to 1.2 ppm, diesel up to 8 ppm, and motor oil up to 16 ppm in shallow soils. Total lead was detected at 153 ppm. Laboratory analysis indicated low concentrations of the following volatile organic compounds occur in the shallow soils: acetone; ethylbenzene; 2-hexanone; 4-methyl-2-pentanone; toluene; o-xylene; and p/m-xylene.

The laboratory also reported the following tentatively identified volatile organic compounds in boring SW4: hexane and hexane, 3-methyl-.

The grab water sample from boring SW4 had low levels of chemical vapors (<100 ppmv). Laboratory analysis of the water from boring SW4 indicated 1.7 ppm gasoline and 0.88 ppm diesel. The laboratory reported the following volatile organic compounds in the ground water: acetone; benzene; 2-butanone (MEK); ethylbenzene; 4-methyl-2-pentanone; toluene; trichloroethylene; o-xylene; p/m-xylene. The laboratory reported the following tentatively identified volatile organic compounds in the water sample from boring SW1: 2-heptanone and 1-propanol,2-methyl-.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions result from new data collected on the Sherwin-Williams Company Plant during this field investigation and the Levine Fricke field investigation of boring SB-8:

1. Field investigation indicates significant concentrations of arsenic, petroleum fuels and volatile organic compounds occur in the shallow soil and ground water of the Sherwin-Williams Company Plant. The soil and water contamination is at the up gradient boundary with the Rifkin property. The new field and laboratory data indicate the shallow soil around borings SW1 and SW2 is a source area of pollution for petroleum fuel and volatile organic contaminants. Information from other areas on the Sherwin-Williams Company Plant suggests that semi-volatile organic compounds also occur in this pollution source area.
2. Levine Fricke reports omit reference to petroleum fuels in discussions of the soil and ground water pollution present on the Sherwin-Williams Plant. Emphasis in the technical reports has been on volatile & semi-volatile compounds and metals. Erler & Kalinowski concluded in their 1993 report that the free petroleum fuel observed at the southwest corner of the Rifkin property indicates hydrocarbons are migrating in and on the surface of the groundwater table. Sherwin-Williams Company reported a release of total petroleum hydrocarbon material in the former oil tank area. The June 4, 1994 Levine Fricke Health and Safety Plan reports total petroleum hydrocarbon pollution up to 20000 ppm in soil and 1500 ppm in water on the Plant. Results of this study indicate significant petroleum fuel, gasoline and diesel, pollution exists in the up gradient source area of the Sherwin-Williams Plant.
3. The petroleum fuels and volatile organic compounds detected on the Sherwin-Williams Company Plant coincide with the source area of arsenic contamination

as identified by Levine Fricke. Arsenic was detected in the Levine Fricke boring SB-8 at 8500 ppm in shallow soils. The arsenic, petroleum fuel, and volatile organic compounds occur together within the shallow soil and ground water of the Sherwin-Williams Company Plant adjacent to the Rifkin property. Arsenic has been associated with volatile organic compound and semi-volatile organic compound contamination in other parts of the Sherwin-Williams Plant, for example in the area of the above ground solvent storage tank facility (Levine Fricke report "Results of Second Phase Environmental Investigation, Sherwin-Williams Plant, Emeryville, California, dated April 4, 1990, report 1563.02).

4. The majority of shallow soil and ground water contamination observed on the Sherwin-Williams Company Plant, increases in chemical concentration towards the center of the Plant facility (from boring SW4 near Horton Street, westward towards boring SW1). In ground water, gasoline, diesel, and the chemicals acetone, benzene, 2-butanone (MEK), ethylbenzene, 2-hexanone, 4-methyl-e-pentanone, toluene, trichloroethylene, xylenes, and tentatively identified hydrocarbons increase in concentration towards the former above ground storage tank facilities. The collection of chemicals detected in the soil and ground water including volatile organic compounds and tentatively identified hydrocarbons, matches the description of the characteristic Plant pollution as described in the Levine Fricke report "Results of Second Phase Environmental Investigation, Sherwin-Williams Plant, Emeryville, California, dated April 4, 1990, report 1563.02.
5. The arsenic contaminated soil and ground water on the Rifkin property also includes petroleum fuel and volatile organic compound contamination, that this study suggests originated from the Sherwin-Williams Company Plant. The down gradient extent of petroleum fuel and volatile organic compound contamination polluting the soil and ground water of the Rifkin property may be estimated using the known extent of arsenic contamination. It is likely that contamination by semi-volatile organic compounds, originating from the Sherwin-Williams Plant, is present on the Rifkin Property. No samples in the arsenic affected area have been analyzed for semi-volatile organic compounds.
6. Field investigations by three independent consultants; Levine Fricke, Erler & Kalinowski and TMC, indicate the significant pollution on the Sherwin-Williams Company Plant has likely impacted the soil and water of the Rifkin property. Levine Fricke notified the Sherwin-Williams Company of likely down gradient contamination of off site properties in the Levine Fricke field investigation report dated 1989. Hydraulic studies by Levine Fricke in 1989 indicate the ground water pollution likely migrated a substantial distance during the five years since discovery of likely off site impact. Sherwin-Williams Company was directed by the Regional Water Quality Control Board in a letter dated May 29, 1992 to assess the ground water pollution northeast of the Plant by installing two new wells in the vicinity of the Rifkin property. These wells have not been installed.
7. A review of Levine Fricke investigation results indicates the deeper B aquifer is likely impacted by pollution from the Sherwin-Williams Plant. Inadequate B

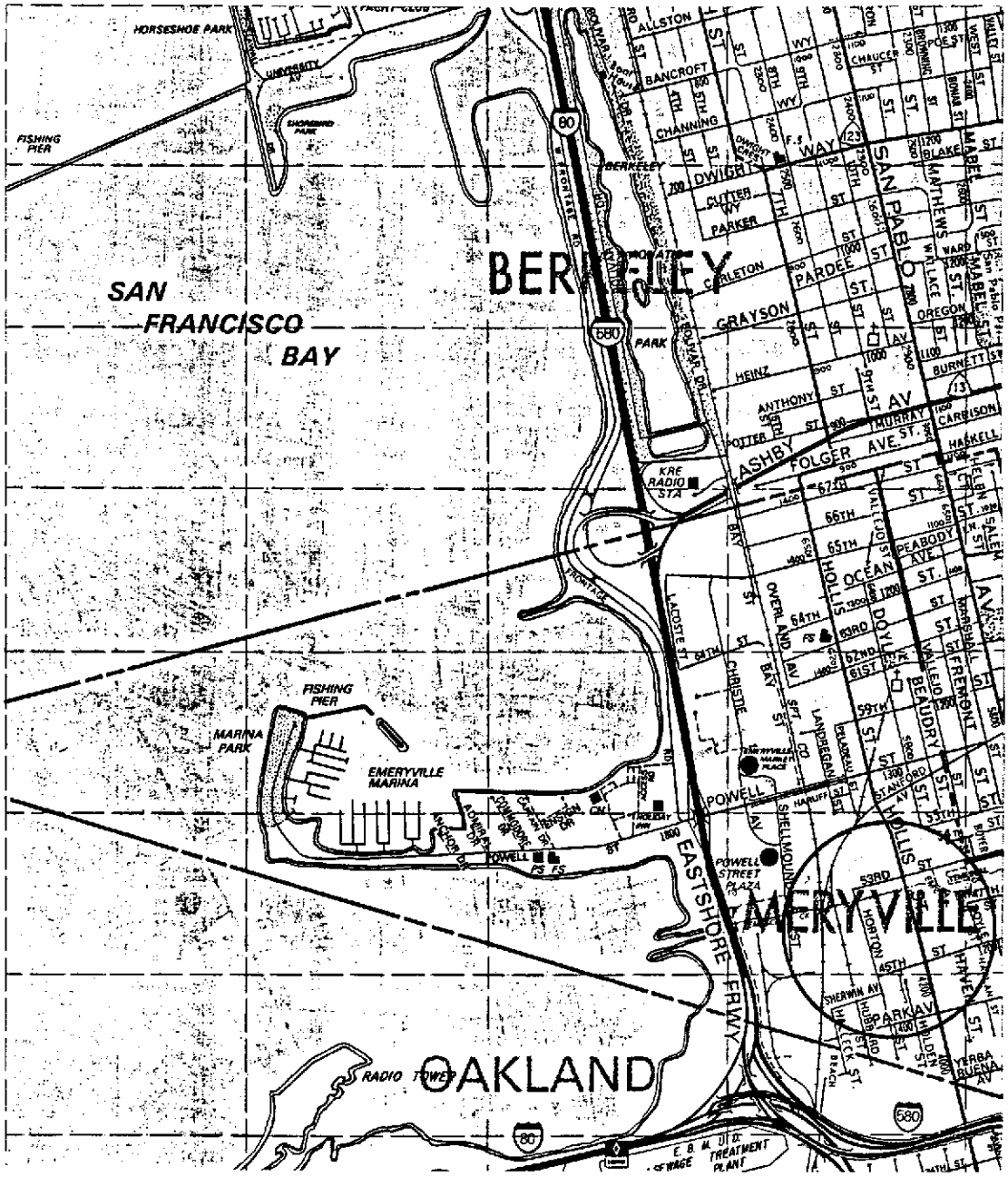
aquifer investigation has been performed within the up gradient source area of contamination on the Sherwin-Williams Plant. Additional studies are required to assess the extent and degree of contamination. No A or B level ground water monitoring wells have been installed by Sherwin-Williams Company in the source area around borings SB-8, SW1 and SW2 to assess the degree of ground water degradation.

The following recommendations result from new data collected on the Sherwin-Williams Company Plant during this field investigation and the Levine Fricke field investigation of boring SB-8:

1. TMC recommends the installation of two ground water monitoring wells along the southern boundary with the Sherwin-Williams Plant. The wells would provide direct evidence of up gradient impact of petroleum fuel, semi-volatile organic compound, and volatile organic compound contamination of the ground water.
2. Collect soil samples in the proposed wells. Analyze the samples for petroleum fuels, semi-volatile organic compounds, and volatile organic compounds. The purpose of the sampling is to determine the impact of shallow soil contamination from the Sherwin-Williams Company Plant operations on the Rifkin property.
3. TMC recommends the further investigation of ground water contamination of both the A and B zone aquifers within the arsenic source area on the Sherwin-Williams Plant. If further study indicates significant degradation of the deeper B aquifer at the up gradient boundary of the Rifkin property, then further deeper B aquifer monitoring wells should be installed on the Rifkin property to assess the impact of Plant pollution.

LIMITATIONS

The procedures and opinions in this work plan agree with professional practice as provided in guidelines of the California Regional Water Quality Control Board. The lab test results rely on limited data collected at the sampling location only. Budget and access constraints restrict the amount of testing allowed. The lab test results do not apply to the general site as a whole. Therefore, TMC Environmental Inc. cannot have complete knowledge of the underlying conditions at the conclusion of the work specified in the work plan. Work plans and reports contain information provided to TMC by the client, adjacent property owners, and government agencies. TMC does not warranty the accuracy of reported information. We provide the information in the resulting report to our client so a more informed decision about site conditions can be made. The professional opinion and judgment in the report is subject to revisions in light of new information. We do not state or imply any guarantees or warranties that the subject property is or is not free of environmental impairment.



Base map from Thomas Guides Alameda County

TMC
Environmental, Inc.

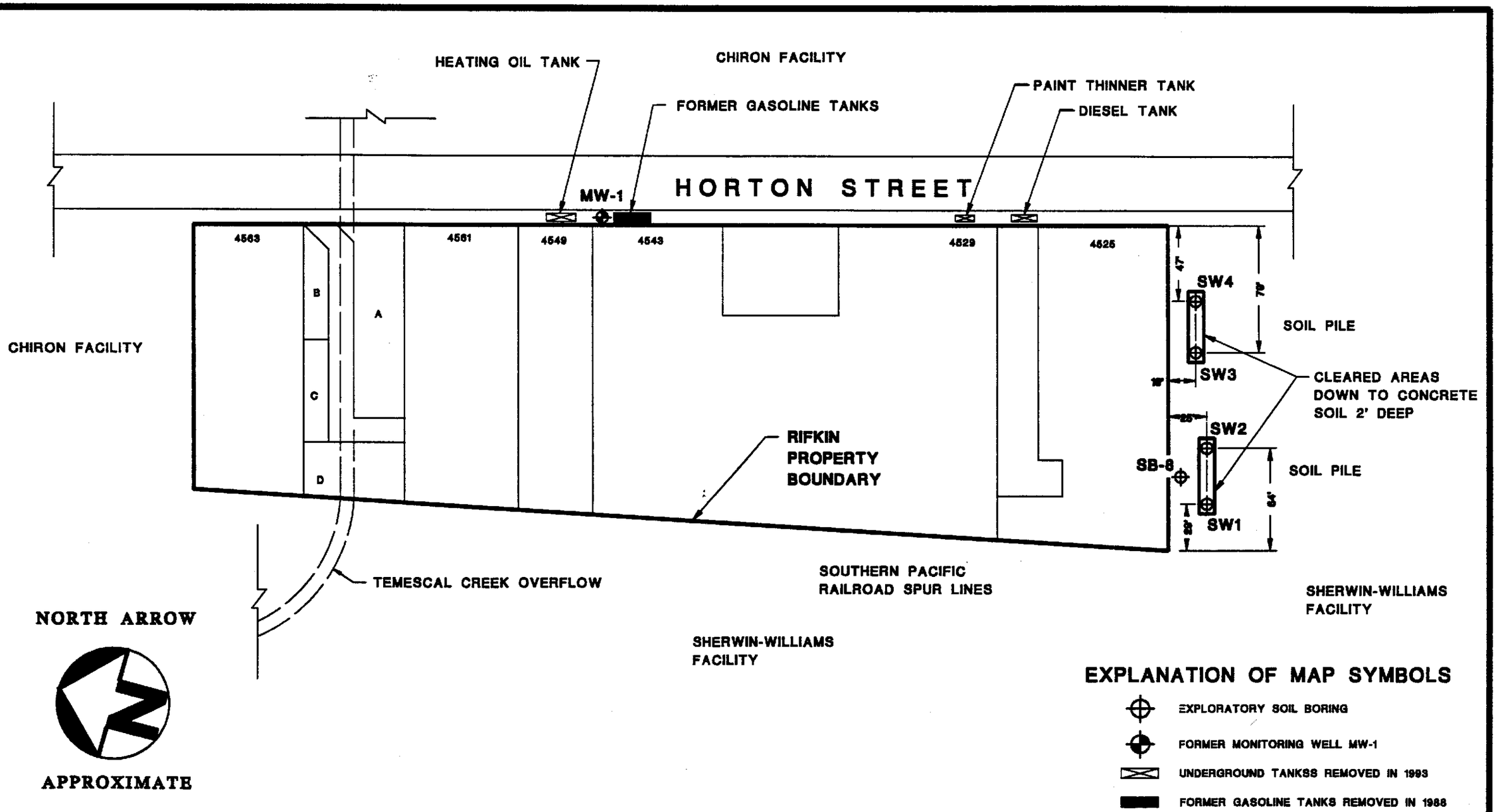
SITE VICINITY MAP

Rifkin Property
Emeryville, California

Project No. 1-150 August 1994

PLATE

1



SCALE IN FEET

0 60 120

APPROXIMATE

TMC
Environmental, Inc.

TMC ENVIRONMENTAL, INC.

13908 SAN PABLO AVENUE, SUITE 101
SAN PABLO, CALIFORNIA 94806
510-232-8366 FAX 510-232-5133

SITE MAP

RIFKIN PROPERTY
EMERYVILLE, CALIFORNIA

DATE OF DRAWING: AUGUST, 1994 JOB NO. 1150

PLATE

2

ATTACHMENT 1

ANALYTICAL LABORATORY REPORTS
CHAIN-OF-CUSTODY FORMS

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-1 (E4070725)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		**56**	0.021
benzene		**0.28**	0.004
bromomethane		ND	0.007
bromodichloromethane		**0.005**	0.004
bromoform (SPCC)		ND	0.006
2-butanone		**32**	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		**0.007**	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		**0.17**	0.005
ethylbenzene		**21**	0.002
2-hexano		**0.68**	0.009
4-methyl-2-pentanone		**31**	0.007

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-1 (E4070725)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**190**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		**0.015**	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**24**	0.002
p/m-xylene		**100**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane, 3-methyl		**13**	e
cyclopentane, 1,3-dimethyl-, trans-		**11**	e
cyclopentane, 1,2-dimethyl-, cis-		**27**	e
heptane		**49**	e
cyclohexane, methyl-		**89**	e
1,7-dimethyl-4-(1-methylethyl)cyclo		**18**	e
cyclopentane, ethyl-		**9.7**	e
cyclopentane, 1,2,4-trimethyl -,		**13**	e
cyclopentane, 1,2,3-trimethyl -,		**17**	e
hexane, 2,4-dimethyl -		**13**	e

Reviewed By:

Lei Chen, Laboratory Manager

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AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-2 (E4070726)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		82	0.021
benzene		0.074	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		17	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		2.1	0.002
2-hexano		1.4	0.009
4-methyl-2-pentanone		17	0.007

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EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-2 (E4070726)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**14**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**2.7**	0.002
p/m-xylene		**8.1**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
heptane		**2.9**	e
cyclohexane, methyl-		**3.7**	e
octane		**5.8**	e
cyclohexane, ethyl-		**3.2**	e
cyclohexane, 1,1,3 - trimethyl-		**1.7**	e
2-hexanone, 5-methyl-		**3.2**	e
benzene, 1-ethyl-2-methyl-		**4.5**	e
benzene, 1,2,4-trimethyl-		**1.6**	e
benzene, 1,2,3-trimethyl-		**5.6**	e

Reviewed By:

Lei Chen, Laboratory Manager

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EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-3 (E4070727)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		**86**	0.021
benzene		**0.25**	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		**32**	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		**0.42**	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		**0.94**	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		**43**	0.002
2-hexano		**7.0**	0.009
4-methyl-2-pentanone		**21**	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-3 (E4070727)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**400**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		**0.40**	0.007
trichloroethylene		**0.60**	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**40**	0.002
p/m-xylene		**170**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane, 3-methyl-		**26**	e
cyclopentane, 1,2-dimethyl-		**33**	e
heptane		**120**	e
cyclohexane, methyl-		**150**	e
cyclopentane, 1,2,4 trimethyl-		**23**	e
cyclopentane, 1,2,3 trimethyl-		**28**	e
nanone		**21**	e
benzene, 1-ethyl-2-methyl-		**41**	e
benzene, 1,2,4 trimethyl-		**69**	e
decane		**24**	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-4 (E4070728)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		**9.5**	0.021
benzene		**0.013**	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		**0.56**	0.002
2-hexano		**0.097**	0.009
4-methyl-2-pentanone		**2.2**	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-4 (E4070728)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**3.6**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		**0.23**	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**0.83**	0.002
p/m-xylene		**2.6**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
cyclohexane, methyl-		**0.45**	e
nonane		**0.38**	e
benzene, 1-ethyl-2methyl-		**1.3**	e
benzene, 1,3,5-trimethyl-		**0.73**	e
benzene, 1,2,3-trimethyl-		**0.46**	e
1,2,4-trimethylbenzene		**2.6**	e
decane		**0.79**	e
undecane		**0.32**	e

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SWA2-1 (E4070731)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		**520**	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		**0.005**	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		**0.047**	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		**2.5**	0.002
2-hexano		**0.5**	0.009
4-methyl-2-pentanone		**0.16**	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SWA2-1 (E4070731)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		44	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		0.031	0.004
trichlorofluoromethane		ND	0.008
o-xylene		5.3	0.002
p/m-xylene		17	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetic acid, butyl ester		3.5	e
cyclohexane, ethyl-		3.0	e
cyclohexane, 1,1,3-trimethyl-		2.8	e
cyclohexane, 1-ethyl-2-methyl-, tra		1.3	e
4-methyl-2-pentyl acetate		3.4	e
butanoic acid, 2-methylpropyl ester		1.5	e
benzene, 1-ethyl-2-methyl-		1.1	e
benzene, 1,2,4-trimethyl-		0.96	e
benzene, 1,2,3-trimethyl-		2.6	e

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-2 (E4070732)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		310	0.021
benzene		0.82	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		0.80	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		4.5	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		72	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-2 (E4070732)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		73	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		0.063	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		ND	0.002
vinyl acetate		4.6	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
cyclohexane, 1,2-dimethyl-, trans-		2.3	e
octane		10	e
acetic acid, butyl ester		10	e
cyclohexane, ethyl-		6.6	e
cyclohexane, 1,1,3-trimethyl-		5.7	e
4-methyl-2-penthyl acetate		5.2	e
benzene, propyl-		1.6	e
butanoic acid, 2-methylpropyl ester		3.6	e
benzene, 1,3,5-trimethyl-		1.8	e
benzene, 1,2,3-trimethyl-		4.4	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-3 (E4070733)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		47	0.021
benzene		0.30	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		0.19	0.002
2-hexano		11	0.009
4-methyl-2-pentanone		ND	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-3 (E4070733)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**6.0**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**0.24**	0.002
p/m-xylene		**0.98**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
1-propanol, 2-methyl-		**0.39**	e
heptane		**0.42**	e
cyclohexane, methyl-		**1.1**	e
acetic acid, 2-methylpropyl ester		**3.2**	e
acetic acid, butyl ester		**0.72**	e
2-heptanone		**0.90**	e
benzene,1-ethyl-2methyl-		**0.39**	e
1,2,4-trimethylbenzene		**0.75**	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-4 (E4070734)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		**100**	0.210
benzene		ND	0.040
bromomethane		ND	0.065
bromodichloromethane		ND	0.035
bromoform (SPCC)		ND	0.060
2-butanone		ND	0.055
carbon disulfide		ND	0.060
carbon tetrachloride		ND	0.075
chlorobenzene (SPCC)		ND	0.030
chlorodibromomethane		ND	0.080
chloroethane		ND	0.040
2-chloro-ethyl-vinyl ether		ND	0.085
chloroform (CCC)		**0.74**	0.040
chloromethane		ND	0.065
1,2-dichlorobenzene		ND	0.030
1,3-dichlorobenzene		ND	0.025
1,4-dichlorobenzene		ND	0.025
dichlorodifluoromethane		ND	0.080
1,1 -dichloroethane (SPCC)		ND	0.065
1,2-dichloroethane		**0.10**	0.045
1,1 -dichloroethene (CCC)		ND	0.035
1,2-dichloropropane		ND	0.110
cis-1,3-dichloropropene		ND	0.040
trans-1,3-dichlorpropene		ND	0.050
ethylbenzene		**0.080**	0.020
2-hexano		ND	0.090
4-methyl-2-pentanone		**0.88**	0.070

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-4 (E4070734)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.335
styrene		ND	0.040
1,1,2,2-tetrachloroethane		ND	0.040
tetrachloroethylene		ND	0.085
toluene		**6.8**	0.020
trans- 1,2-dichloroethlene		ND	0.055
1,1,1-trichloroethane		ND	0.040
1,1,2-trichloroethane		ND	0.065
trichloroethylene		**0.62**	0.040
trichlorofluoromethane		ND	0.075
o-xylene		**0.13**	0.015
p/m-xylene		**0.39**	0.020
vinyl acetate		ND	0.130
vinyl chloride		ND	0.070

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
pentane, 3-methyl-		**1.0**	e
2-heptanone		**0.63**	e
benzene, 1-bromo-3-fluoro-		**1.2**	e

Reviewed By:

Lei Chen, Laboratory Manager

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AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-1 (E4070736)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		**0.10**	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		**0.005**	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		ND	0.007

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San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-1 (E4070736)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.076**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**0.007**	0.002
p/m-xylene		**0.022**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.027**	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-2 (E4070737)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		ND	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		ND	0.007

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Client: TMC Environmental, Inc.
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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-2 (E4070737)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.027**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		ND	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.04**	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-3 (E4070738)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		**0.17**	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		ND	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		**0.021**	0.007

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Client: TMC Environmental, Inc.
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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-3 (E4070738)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.017**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		**0.038**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
ethane, 1,1,2-trichloro-1,2,2-trifl		**0.12**	e
hexane		**0.044**	e

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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-4 (E4070740)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		**0.029**	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		**0.003**	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		**0.011**	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-4 (E4070740)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.040**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		**0.003**	0.002
p/m-xylene		**0.007**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.038**	e

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EPA METHODS 624/8240 ANALYSIS REPORT
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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-1 (E4070741)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		ND	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		ND	0.007

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Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-1 (E4070741)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		ND	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		**0.003**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane, 3-methyl		**0.034**	e

Reviewed By:

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EPA METHODS 624/8240 ANALYSIS REPORT
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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-2 (E4070742)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		ND	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		ND	0.007

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Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-2 (E4070742)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.004**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		**0.007**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.036**	e

Reviewed By:

Lei Chen, Laboratory Manager

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EPA METHODS 624/8240 ANALYSIS REPORT
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Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-3 (E4070743)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		ND	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		ND	0.002
2-hexano		ND	0.009
4-methyl-2-pentanone		ND	0.007

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San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-3 (E4070743)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		**0.010**	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		ND	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.031**	e

Reviewed By:

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-4 (E4070744)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
acetone		7.0	0.021
benzene		ND	0.004
bromomethane		ND	0.007
bromodichloromethane		ND	0.004
bromoform (SPCC)		ND	0.006
2-butanone		ND	0.006
carbon disulfide		ND	0.006
carbon tetrachloride		ND	0.008
chlorobenzene (SPCC)		ND	0.003
chlorodibromomethane		ND	0.008
chloroethane		ND	0.004
2-chloro-ethyl-vinyl ether		ND	0.009
chloroform (CCC)		ND	0.004
chloromethane		ND	0.007
1,2-dichlorobenzene		ND	0.003
1,3-dichlorobenzene		ND	0.003
1,4-dichlorobenzene		ND	0.003
dichlorodifluoromethane		ND	0.008
1,1 -dichloroethane (SPCC)		ND	0.007
1,2-dichloroethane		ND	0.005
1,1 -dichloroethene (CCC)		ND	0.004
1,2-dichloropropane		ND	0.011
cis-1,3-dichloropropene		ND	0.004
trans-1,3-dichlorpropene		ND	0.005
ethylbenzene		0.003	0.002
2-hexano		0.011	0.009
4-methyl-2-pentanone		0.52	0.007

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-4 (E4070744)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: SOIL
AMER Report #: E303

COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
methylene dichloride		ND	0.034
styrene		ND	0.004
1,1,2,2-tetrachloroethane		ND	0.004
tetrachloroethylene		ND	0.009
toluene		29	0.002
trans- 1,2-dichloroethlene		ND	0.006
1,1,1-trichloroethane		ND	0.004
1,1,2-trichloroethane		ND	0.007
trichloroethylene		ND	0.004
trichlorofluoromethane		ND	0.008
o-xylene		ND	0.002
p/m-xylene		**0.010**	0.002
vinyl acetate		ND	0.013
vinyl chloride		ND	0.007

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (mg/kg)	DETECTION LIMIT (mg/kg)
hexane		**0.033**	e

Reviewed By:

Lei Chen, Laboratory Manager

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: WATER

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
EQB-1	E4070729	**140**	1
SW1-H2O	E4070730	**850000**	200
SW2-H2O	E4070735	**860000**	200
SW3-H2O	E4070739	**4300**	10
SW4-H2O	E4070745	**1700**	10
Units		ug/l	
Detection Limits (DL)		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manage

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: WATER

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-DIESEL	DF
SW1-H2O	E4070730	**240000**	20
SW2-H2O	E4070735	**9000**	10
SW3-H2O	E4070739	**180**	10
SW4-H2O	E4070745	**880**	10
Units		ug/l	
Detection Limits (DL)		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

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AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: WATER

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-MOTOR OIL	DF
SW1-H2O	E4070730	ND	1
SW2-H2O	E4070735	ND	1
SW3-H2O	E4070739	ND	1
SW4-H2O	E4070745	ND	1
Units		ug/l	
Detection Limits (DL)		50ug/l	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

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AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
SW1-1	E4070725	**2000**	1000
SW1-2	E4070726	**120**	50
SW1-3	E4070727	**5000**	1000
SW1-4	E4070728	**51**	5
SWA2-1	E4070731	**670**	1000
SW2-2	E4070732	**5700**	1000
SW2-3	E4070733	**26**	10
SW2-4	E4070734	**30**	50
Units		mg/kg	
Detection Limits (DL)		1mg/kg	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-GASOLINE	DF
SW3-1	E4070736	ND	2.5
SW3-2	E4070737	ND	2.5
SW3-3	E4070738	ND	5
SW3-4	E4070740	ND	2.5
SW4-1	E4070741	ND	2.5
SW4-2	E4070742	ND	2.5
SW4-3	E4070743	ND	2.5
SW4-4	E4070744	**1.2**	5
Units		mg/kg	
Detection Limits (DL)		1mg/kg	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E303

AMER I.D. Number: E4070725-MSP
TMC Environmental, Inc. Project: # 1-15094
Ext/Prep. Method: EPA 5030, DHS TPH
Date: 07/19/94
Analyst: RL/JL

Analytical Method: EPA M. 8015/8020
Analysis date: 07/19/94
Analyst: RL/LC
Matrix: Water
Unit: ug/l

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
TPH-Gasoline	0.00	500.00	477.00	95	479.00	96	96	70	130	0	30
TPH-Diesel	0.00	1000.00	747	75	740	74	74	70	130	1	30

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spike Result
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-DIESEL	DF
SW1-1	E4070725	**850**	10
SW1-2	E4070726	**120**	1
SW1-3	E0470727	**1000**	10
SW1-4	E4070728	**13**	1
SWA2-1	E4070731	**230**	1
SW2-2	E0470732	**800**	20
SW2-3	E4070733	**1.9**	1
SW2-4	E0470734	**59**	1
Units		mg/kg	
Detection Limits (DL)		1.0mg/kg	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

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AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-DIESEL	DF
SW3-1	E4070736	**11**	1
SW3-2	E4070737	ND	1
SW3-3	E0470738	ND	1
SW3-4	E4070740	ND	1
SW4-1	E4070741	ND	1
SW4-2	E0470742	ND	1
SW4-3	E4070743	ND	1
SW4-4	E0470744	**8**	1
Units		mg/kg	
Detection Limits (DL)		1.0mg/kg	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E303

AMER I.D. Number: E4070728-MSP
TMC ENVIRONMENTAL, Inc. Project: # 1-15094
Ext/Prep. Method: EPA 5030, DHS TPH
Date: 07/18/94
Analyst: RL/LC

Analytical Method: EPA M. 8015/8020 (Motor Oil)
Analysis date: 07/18/94
Analyst: LC
Matrix: soil
Unit: mg/kg

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
TPH - Motor Oil	0.00	500.00	500.00	100	600.00	120	110	70	130	18	30

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spike Result
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 8015M

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Client I.D.	AMER I.D.	8015M/ TPH-MOTOR OIL	DF
SW1-2	E4070726	**470**	1
SW1-4	E4070728	**39**	1
SW2-2	E0470732	**310**	20
SW2-4	E0470734	ND	1
SW3-2	E0470737	**430**	1
SW4-2	E0470742	**16**	1
Units		mg/kg	
Detection Limits (DL)		1.0mg/kg	

ND Not Detected. All analytes recorded as ND were found to be under the limit of detection.

Reviewed By

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

ANALYSIS REPORT
(ELAP Certificate No. 1909)
EPA METHOD 6000/7000

CLIENT:
TMC Environmental, Inc.
13908 San Pablo Avenue, Suite 101
San Pablo, CA 94806
MATRIX: SOIL

DATE SAMPLED: 07-06-94
DATE RECEIVED: 07-07-94
DATE REPORTED: 07-21-94
AMER ID: E303

PROJECT MANAGER: Mark Youngkin / Tom Ghigliotto
PROJECT: 4525-4563 Horton St., # 1-15094

Metal Analysis: Total Lead (Pb)
Sample Matrix: SOIL
Dilution Factor: 10

Client I.D.	AMER I.D.	Metal Concentration	Detection Limit	Units
SW1-2	E4070726	**9.2**	1.0	mg/kg
SW1-4	E4070728	**3.3**	1.0	mg/kg
SW2-2	E4070732	**5.8**	1.0	mg/kg
SW2-4	E4070734	**5.0**	1.0	mg/kg
SW3-2	E4070737	**5.0**	1.0	mg/kg
SW4-2	E4070742	**153**	1.0	mg/kg

ND = Not Detected. Analyte reported as ND was not present above the stated limit of detection.

Reported by:

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

EPA M. 8015/8020 TEST QA/QC TABLE

AMER WORKORDER: E303

AMER I.D. Number: E4070741-MSP
TMC, INC. Project: 4525-4563 Horton Street, # 1-15094
Ext/Prep. Method: EPA 5030, DHS TPH
Date: 07/12/94
Analyst: RL/LC

Analytical Method: EPA M. 8015/8020
Analysis date: 07/12/94
Analyst: LC
Matrix: Soil
Unit: mg/kg

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
TPH -g	0.00	500	380	76	384	77	76	60	130	1	30
TPH - d	0.00	100.000	110	110	115	116	113	60	130	5	30

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spike Result
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: EQB-1 (E4070729)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetone		ND	4.2
benzene		ND	0.8
bromomethane		ND	1.3
bromodichloromethane		ND	0.7
bromoform (SPCC)		ND	1.2
2-butanone		ND	1.1
carbon disulfide		ND	1.2
carbon tetrachloride		ND	1.5
chlorobenzene (SPCC)		ND	0.6
chlorodibromomethane		ND	1.6
chloroethane		ND	0.8
2-chloro-ethyl-vinyl ether		ND	1.7
chloroform (CCC)		ND	0.8
chloromethane		ND	1.3
1,2-dichlorobenzene		ND	0.6
1,3-dichlorobenzene		ND	0.5
1,4-dichlorobenzene		ND	0.5
dichlorodifluoromethane		ND	1.6
1,1 -dichloroethane (SPCC)		ND	1.3
1,2-dichloroethane		ND	0.9
1,1 -dichloroethene (CCC)		ND	0.7
1,2-dichloropropane		ND	2.2
cis-1,3-dichloropropene		ND	0.8
trans-1,3-dichlorpropene		ND	1.0
ethylbenzene		ND	0.4
2-hexano		ND	1.8
4-methyl-2-pentanone		ND	1.4

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EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: EQB-1 (E4070729)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
methylene dichloride		ND	6.7
styrene		ND	0.8
1,1,2,2-tetrachloroethane		ND	0.8
tetrachloroethylene		ND	1.7
toluene		ND	0.4
trans- 1,2-dichloroethlene		ND	1.1
1,1,1-trichloroethane		ND	0.8
1,1,2-trichloroethane		ND	1.3
trichloroethylene		ND	0.8
trichlorofluoromethane		ND	1.5
o-xylene		ND	0.3
p/m-xylene		ND	0.4
vinyl acetate		ND	2.6
vinyl chloride		ND	1.4

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)

Reviewed By:

Lei Chen, Laboratory Manager

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-H20 (E4070730)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetone		**830000**	4.2
benzene		**530**	0.8
bromomethane		ND	1.3
bromodichloromethane		ND	0.7
bromoform (SPCC)		ND	1.2
2-butanone		**510000**	1.1
carbon disulfide		ND	1.2
carbon tetrachloride		ND	1.5
chlorobenzene (SPCC)		ND	0.6
chlorodibromomethane		ND	1.6
chloroethane		ND	0.8
2-chloro-ethyl-vinyl ether		ND	1.7
chloroform (CCC)		ND	0.8
chloromethane		ND	1.3
1,2-dichlorobenzene		ND	0.6
1,3-dichlorobenzene		ND	0.5
1,4-dichlorobenzene		ND	0.5
dichlorodifluoromethane		ND	1.6
1,1 -dichloroethane (SPCC)		ND	1.3
1,2-dichloroethane		ND	0.9
1,1 -dichloroethene (CCC)		ND	0.7
1,2-dichloropropane		ND	2.2
cis-1,3-dichloropropene		ND	0.8
trans-1,3-dichlorpropene		ND	1.0
ethyibenzene		**3100**	0.4
2-hexano		**5400**	1.8
4-methyl-2-pentanone		**110000**	1.4

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW1-H20 (E4070730)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
methylene dichloride		ND	6.7
styrene		ND	0.8
1,1,2,2-tetrachloroethane		ND	0.8
tetrachloroethylene		ND	1.7
toluene		160000	0.4
trans- 1,2-dichloroethlene		ND	1.1
1,1,1-trichloroethane		ND	0.8
1,1,2-trichloroethane		ND	1.3
trichloroethylene		15	0.8
trichlorofluoromethane		ND	1.5
o-xylene		3100	0.3
p/m-xylene		11000	0.4
vinyl acetate		ND	2.6
vinyl chloride		ND	1.4

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetic acid, methyl ester		2300	e
ethyl acetate		1900	e
acetic acid, 1-methylethyl ester		3000	e
cyclohexane, methyl-		2900	e
acetic acid, 2-methylpropyl ester		14000	e
acetic acid, butyl ester		2600	e
2-heptanone		7100	e
cyclohexane, methyl-		2900	e

Reviewed By:

Lei Chen, Laboratory Manager

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-H20 (E4070735)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-20-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetone		**1500000**	4.2
benzene		**360**	0.8
bromomethane		ND	1.3
bromodichloromethane		ND	0.7
bromoform (SPCC)		ND	1.2
2-butanone		ND	1.1
carbon disulfide		ND	1.2
carbon tetrachloride		ND	1.5
chlorobenzene (SPCC)		ND	0.6
chlorodibromomethane		ND	1.6
chloroethane		ND	0.8
2-chloro-ethyl-vinyl ether		ND	1.7
chloroform (CCC)		ND	0.8
chloromethane		ND	1.3
1,2-dichlorobenzene		ND	0.6
1,3-dichlorobenzene		ND	0.5
1,4-dichlorobenzene		ND	0.5
dichlorodifluoromethane		ND	1.6
1,1 -dichloroethane (SPCC)		ND	1.3
1,2-dichloroethane		ND	0.9
1,1 -dichloroethene (CCC)		ND	0.7
1,2-dichloropropane		ND	2.2
cis-1,3-dichloropropene		ND	0.8
trans-1,3-dichlorpropene		ND	1.0
ethylbenzene		**2500**	0.4
2-hexano		**13000**	1.8
4-methyl-2-pentanone		**140000**	1.4

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW2-H20 (E4070735)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
methylene dichloride		ND	6.7
styrene		ND	0.8
1,1,2,2-tetrachloroethane		ND	0.8
tetrachloroethylene		ND	1.7
toluene		**71000**	0.4
trans- 1,2-dichloroethlene		ND	1.1
1,1,1-trichloroethane		ND	0.8
1,1,2-trichloroethane		ND	1.3
trichloroethylene		**10**	0.8
trichlorofluoromethane		ND	1.5
o-xylene		**3100**	0.3
p/m-xylene		**11000**	0.4
vinyl acetate		ND	2.6
vinyl chloride		ND	1.4

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetic acid, 1-methylethyl ester		**4700**	e
cyclohexane, methyl-		**1300**	e
2-hexanol		**3600**	e
acetic acid, 2-methylpropyl ester		**32000**	e
acetic acid, butyl ester		**7600**	e
4-methyl-2-pentyl acetate		**2000**	e
propanoic acid, 2-methyl-, 2-methyl		**2000**	e
ethyl acetate		**5500**	e
1-propanol, 2-methyl-		**4300**	e

Reviewed By:

Lei Chen, Laboratory Manager

783 East Evelyn Ave., Sunnyvale, CA 94086 Tel. (408) 738-3033 Fax. (408) 738-3035

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-H20 (E4070739)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetone		460	4.2
benzene		6.7	0.8
bromomethane		ND	1.3
bromodichloromethane		ND	0.7
bromoform (SPCC)		ND	1.2
2-butanone		ND	1.1
carbon disulfide		ND	1.2
carbon tetrachloride		ND	1.5
chlorobenzene (SPCC)		ND	0.6
chlorodibromomethane		ND	1.6
chloroethane		ND	0.8
2-chloro-ethyl-vinyl ether		ND	1.7
chloroform (CCC)		ND	0.8
chloromethane		ND	1.3
1,2-dichlorobenzene		ND	0.6
1,3-dichlorobenzene		ND	0.5
1,4-dichlorobenzene		ND	0.5
dichlorodifluoromethane		ND	1.6
1,1 -dichloroethane (SPCC)		ND	1.3
1,2-dichloroethane		ND	0.9
1,1 -dichloroethene (CCC)		ND	0.7
1,2-dichloropropane		ND	2.2
cis-1,3-dichloropropene		ND	0.8
trans-1,3-dichlorpropene		ND	1.0
ethylbenzene		34	0.4
2-hexano		2.0	1.8
4-methyl-2-pentanone		75	1.4

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW3-H20 (E4070739)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
methylene dichloride		ND	6.7
styrene		ND	0.8
1,1,2,2-tetrachloroethane		ND	0.8
tetrachloroethylene		1.2	1.7
toluene		490	0.4
trans- 1,2-dichloroethlene		ND	1.1
1,1,1-trichloroethane		ND	0.8
1,1,2-trichloroethane		ND	1.3
trichloroethylene		5.7	0.8
trichlorofluoromethane		ND	1.5
o-xylene		21	0.3
p/m-xylene		97	0.4
vinyl acetate		ND	2.6
vinyl chloride		ND	1.4

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
cyclohexane, methyl-		0.010	e
acetic acid, 2-methylpropyl ester		0.022	e
2-heptanone		0.013	e

Reviewed By:

Lei Chen, Laboratory Manager

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-H20 (E4070745)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
acetone		**2700**	4.2
benzene		**19**	0.8
bromomethane		ND	1.3
bromodichloromethane		ND	0.7
bromoform (SPCC)		ND	1.2
2-butanone		**3700**	1.1
carbon disulfide		ND	1.2
carbon tetrachloride		ND	1.5
chlorobenzene (SPCC)		ND	0.6
chlorodibromomethane		ND	1.6
chloroethane		ND	0.8
2-chloro-ethyl-vinyl ether		ND	1.7
chloroform (CCC)		ND	0.8
chloromethane		ND	1.3
1,2-dichlorobenzene		ND	0.6
1,3-dichlorobenzene		ND	0.5
1,4-dichlorobenzene		ND	0.5
dichlorodifluoromethane		ND	1.6
1,1 -dichloroethane (SPCC)		ND	1.3
1,2-dichloroethane		ND	0.9
1,1 -dichloroethene (CCC)		ND	0.7
1,2-dichloropropane		ND	2.2
cis-1,3-dichloropropene		ND	0.8
trans-1,3-dichlorpropene		ND	1.0
ethylbenzene		**33**	0.4
2-hexano		ND	1.8
4-methyl-2-pentanone		**520**	1.4

AMER
Advanced Materials Engineering Research, Inc.

EPA METHODS 624/8240 ANALYSIS REPORT
(ELAP CERTIFICATE NO. 1909)

Client: TMC Environmental, Inc.
13908 San Pablo Ave., Suite 101
San Pablo, CA 94806
Project Manager: Mark Youngkin / Tom Ghigliotto
Project: 4525-4563 Horton Street, # 1-15094
Sample Name: SW4-H20 (E4070745)

Date Sampled: 07-06-94
Date Received: 07-07-94
Date Reported: 07-21-94
Sample Matrix: Water
AMER Report #: E303

COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
methylene dichloride		ND	6.7
styrene		ND	0.8
1,1,2,2-tetrachloroethane		ND	0.8
tetrachloroethylene		ND	1.7
toluene		230	0.4
trans- 1,2-dichloroethlene		ND	1.1
1,1,1-trichloroethane		ND	0.8
1,1,2-trichloroethane		ND	1.3
trichloroethylene		2.7	0.8
trichlorofluoromethane		ND	1.5
o-xylene		6.7	0.3
p/m-xylene		50	0.4
vinyl acetate		ND	2.6
vinyl chloride		ND	1.4

TENTATIVE IDENTIFICATION COMPOUND	CAS #	CONC. (ug/l)	DETECTION LIMIT (ug/l)
1-propanol, 2-methyl-		28	e
2-heptanone		8.2	e

Reviewed By:

Lei Chen, Laboratory Manager

624/8240 TEST QA/QC TABLE

AMER WORKORDER: E303

AMER I.D. Number: E4070729-SP
TMC Environmental, Inc. Project: # 1-15094
Ext/Prep. Method: EPA 5030
Date: 07/19/94
Analyst: LC

Analytical Method EPA 624/8240
Analysis date: 07/19/94
Analyst: LC
Matrix: Water
Unit: ug/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
1,1-Dichloroethene	0	50	45.81	92	44.53	89	90	61	145	3	14
Trichloroethene	0	50	42.45	85	41.63	83	84	71	120	2	14
Chlorobenzene	0	50	44.15	88	42.42	85	87	75	130	4	13
Toluene	0	50	45.28	91	43.06	86	88	76	125	5	13
Benzene	0	50	43.71	87	43.05	86	87	76	127	2	11

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spik
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

8240 TEST QA/QC TABLE

AMER WORKORDER: E303

AMER I.D. Number: E4070725-SP
TMC Environmental, Inc. Project: # 1-15094
Ext/Prep. Method: EPA 5030
Date: 07/19/94
Analyst: LC/RL

Analytical Method EPA 8240
Analysis date: 07/19/94
Analyst: LC
Matrix: Soil
Unit: mg/kg

Analyte	Sample Result	Spike Level	Matrix Spike Result	Ms Recovery %	Matrix Spike Dul. Result	MSD Recovery %	Average Recovery %R	LCL %R	UCL %R	RPD %	UCL %RPD
1,1-Dichloroethene	0	0.125	0.147	118	0.140	112	115	59	172	5	14
Trichloroethene	0	0.125	0.110	88	0.103	82	85	62	137	7	14
Chlorobenzene	0	0.125	0.115	92	0.110	88	90	60	133	4	13
Toluene	0	0.125	0.116	93	0.109	87	90	59	139	6	13
Benzene	0	0.125	0.143	114	0.134	107	111	66	142	6	11

Notes:
Spike Level- Level of Concentration Added to the Sample
MS Result- Matrix Spik
MS %R- Matrix Spike Percent Recovery
MSD Result- Matrix Spike Duplicate Result
MSD %R- Matrix Spike Dublicate Percent Recovery
LCL- Lower Criteria Level
UCL- Upper Criteria Level
RPD- Relative Percent Difference

TMC Environmental, Inc.
13908 San Pablo Ave.
Suite 101
San Pablo, California
(510) 232-8366

CHAIN OF CUSTODY RECORD
ANALYSIS REQUEST FORM
FOR
ENVIRONMENTAL SAMPLING

E3

JOB #	JOB ADDRESS:	SAMPLER:
1-15094	4525-4563 HORTON ST. Emeryville, CA	MARK YOUNGKIN Tom Ghigliotto

LABORATORY NAME: Advanced Materials Engineering Research, Inc. Sunnyvale, CA 94086

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS	TEH-DIESEL	BTEX-8020	FULL SCAN	EPA 8010	EPA 8240	EPA 8270	[redacted] Total Lead	8015-Motor oil	
	SW1-1	X		7/6/94	921	X	X		X		X				*
	SW1-2	X		7/6/94	1020	X	X	7/7/94	X		X		X	X	*
	SW1-3	X		7/6/94	1029	X	X	BY MARK YOUNGKIN	X		X				*
	SW1-4	X		7/6/94	1043	X	X	– KK	X		X		X	X	*
	EQB-1		X	7/6/94	1110	X	X (crossed out)		X		X			X (crossed out) KK	
	SW1-H2O		X	7/6/94	1135	X	X		X		X			X	*
	SWA2-1	X		7/6/94	1120	X	X		X		X				*

Special Instructions: * - Field data indicates significant volatile organic contamination

EPA 8240 - Full Scan - library search

Relinquished By:		Recieved By:
(Print Name) Mark YOUNGKIN (Signature) Mark Youngkin	Date: 7/7/94 Time: 12:35a	(Print Name) EDGAR DIAZ (Signature) Edgar Diaz
(Print Name) EDGAR DIAZ (Signature) Edgar Diaz	Date: 7/7/94 Time: 2:52p	(Print Name) DL McDaniel (Signature) DL McDaniel
(Print Name) (Signature)	Date: Time:	(Print Name) (Signature)
(Print Name) (Signature)	Date: Time:	(Print Name) (Signature)

LABORATORY NOTES: _____ DAYS TURNAROUND TIME FOR ANALYSIS RESULTS
PLEASE INCLUDE SAMPLE CONDITION REPORT WITH RESULTS

PLEASE FAX A COPY OF THE ANALYTICAL RESULTS TO THE FOLLOWING:
TMC ENVIRONMENTAL, INC. AT (510) 232-5133

TMC Environmental, Inc.
13908 San Pablo Ave.
Suite 101
San Pablo, California
(510) 232-8366

CHAIN OF CUSTODY RECORD
ANALYSIS REQUEST FORM
FOR
ENVIRONMENTAL SAMPLING

JOB #	JOB ADDRESS:	SAMPLER:
1-15094	4525-4563 Horton ST, Emeryville, CA	Mark Youngkin Tom Chiglietto

LABORATORY NAME: Advanced Materials Engineering Research, Inc. Sunnyvale, CA 94086

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS	TEH-DIESEL	BTEX-8020	FULL SCAN	EPA 8010	EPA 8240	EPA 8270	[redacted]	8015 - motor oil	
	SW2-2	X		7/6/94	1130	X	X		X		X		X	X	*
	SW2-3	X		7/6/94	1145	X	X		X		X				*
	SW2-4	X		7/6/94	1200	X	X		X		X		X	X	*
	SW2-H_2O		X	7/6/94	1240	X	X		X		X			X	*
	SW3-1	X		7/6/94	1435	X	X		X		X				
	SW3-2	X		7/6/94	1452	X	X		X		X		X	X	
	SW3-3	X		7/6/94	1501	X	X		X		X				

Special Instructions:

Relinquished By:		Recieved By:
(Print Name) Mark Youngkin	Date: 7-7-94	(Print Name) EDGAR DIAZ
(Signature) Mark Youngkin	Time: 12:35a	(Signature) Edgar Diaz
(Print Name) EDGAR DIAZ	Date: 7/7/94	(Print Name) DC McDaniel
(Signature) Edgar Diaz	Time: 2:52p	(Signature) DC McDaniel
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)
(Print Name)	Date:	(Print Name)
(Signature)	Time:	(Signature)

LABORATORY NOTES: _____ DAYS TURNAROUND TIME FOR ANALYSIS RESULTS
PLEASE INCLUDE SAMPLE CONDITION REPORT WITH RESULTS

PLEASE FAX A COPY OF THE ANALYTICAL RESULTS TO THE FOLLOWING:
TMC ENVIRONMENTAL, INC. AT (510) 232-5133

TMC Environmental, Inc.
13908 San Pablo Ave.
Suite 101
San Pablo, California
(510) 232-8366

CHAIN OF CUSTODY RECORD
ANALYSIS REQUEST FORM
FOR
ENVIRONMENTAL SAMPLING

JOB #	JOB ADDRESS:	SAMPLER:
1-15094	4525-4563 HORTON ST	MARK YOUNGKIN Tom Graziotto
LABORATORY NAME:	Advanced Materials Engineering Research, Inc. Sunnyvale, CA 94086	

LAB ID NO.	SAMPLE LABEL	SOIL	WATER	DATE	TIME	TVH-GAS	TEH-DIESEL	BTEX-8020	FULL SCAN	EPA 8010	EPA 8240	EPA 8270	[redacted]	8015-motor oil
	SW3-H2O		X	7/6/94	1540	X	X		X		X			X
	SW3-4	X		7/6/94	1515	X	X		X		X			
	SW4-1	X		7/6/94	1600	X	X		X		X			
	SW4-2	X		7/6/94	1606	X	X		X		X		X	X
	SW4-3	X		7/6/94	1615	X	X		X		X			
	SW4-4	X		7/6/94	1625	X	X		X		X			
	SW4-H2O		X	7/6/94	1700	X	X		X		X			X

Special Instructions:

Relinquished By: Recieved By:

(Print Name) MARK YOUNGKIN	Date: 7-7-94	(Print Name) EDGAR DIAZ	
(Signature) Mark Youngkin	Time: 12:36a	(Signature) Edgar Diaz	
(Print Name) EDGAR DIAZ	Date: 7/7/94	(Print Name) DL McDaniel	
(Signature) Edgar Diaz	Time: 2:52p	(Signature) DL McDaniel	
(Print Name)	Date:	(Print Name)	
(Signature)	Time:	(Signature)	
(Print Name)	Date:	(Print Name)	
(Signature)	Time:	(Signature)	

LABORATORY NOTES: _____ DAYS TURNAROUND TIME FOR ANALYSIS RESULTS
PLEASE INCLUDE SAMPLE CONDITION REPORT WITH RESULTS

PLEASE FAX A COPY OF THE ANALYTICAL RESULTS TO THE FOLLOWING:
TMC ENVIRONMENTAL, INC. AT (510) 232-5133

KEY TO ENVIRONMENTAL BORING LOGS

SOIL TYPE CLASSIFICATION CHART FOR ENVIRONMENTAL INVESTIGATION			
MAJOR DIVISIONS		SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS	GRAVELS More than 1/2 coarse soil greater than # 4 sieve	GW	Well graded gravels-sand, no fines
		GP	Poorly graded gravels-sands, no fines
		GC	Gravels-sand-silt-clay mixtures
	SANDS More than 1/2 of soil greater than # 200 sieve	SW	Well graded sands, little or no fines
		SP	Poorly graded sands, little-no fines
		SC	Sand-silt-clay mixtures
FINE GRAINED SOILS	SILTS & CLAYS More than 1/2 of soil less than # 200 sieve	C	Inorganic clay-silt mixture of any plasticity, silt, mud, silty clay
		CS	Inorganic clay-silt-fine sand mixture of any plasticity, sandy clay
		O	Organic clay-silt-fine sand mixtures of any plasticity
HIGHY ORGANIC SOILS		PT	Peat and other highly organic soils
ARTIFICIAL FILL		AF	Imported fill material placed by man
Modified for environmental use from the USCS Unified Soil Classification System			

Examples: CS CLAY, sandy; brown, moist, stiff, orange mottling, root holes, green stain
SC SAND, clayey; brown, wet, loose, fine grained, round pebbles, green stain

GRAIN SIZE CLASSIFICATION CHART								
U.S. seive	200	40	10	4	3/4"	3"	12"	
mm	0.07	0.4	2	4.7	19	76	305	mm

CLAY & SILT	SAND			GRAVEL		COBBLE GRAVEL	BOULDER GRAVEL
	FINE	MEDIUM	COARSE	FINE	COARSE		

MOISTURE CONDITION (increasing moisture ———)				
DRY	DAMP	MOIST	WET	FREE-WATER

DEFINITION OF ABBREVIATIONS AND TERMS	
RECOVERY	Recovery fraction (inches): length of sample over length of sampler- 18/18
MODE	SP- push sampler; HS- hand sampler; CA- California sampler- 2" sample liners CM- California modified sampler- 2½ sample liners; SS- Shelby tube sample STP- Standard pin, 1½" sample liners; DC- Diamond core rock sample
VAPOR ppm	Instrument abbreviations: HD- hydrocarbon detector, OVA- organic vapor analyzer, PID- photo ionization detector, COT- coloimetric tubes
REFUSAL -	Boring or sampling stopped by material too hard for equipment.
TERMINATED -	Boring stopped because sufficient information was obtained.
ABANDONED -	Boring stopped because of difficulties explained on log.

RELATIVE SOIL DENSITY AND CONSISTENCY						
SAND AND GRAVEL	BLOWS PER FOOT:	0-4	4-10	10-30	30-50	>50
	RELATIVE DENSITY:	Very loose	loose	medium dense	dense	very dense
SILT AND CLAY	BLOWS PER FOOT:	0-2	2-4	4-8	8-15	15-30	>30
	CONSISTENCY:	very soft	soft	firm	stiff	very stiff	hard

STANDING WATER LEVEL SYMBOLS	
SYMBOL ON LOG	DESCRIPTION
	Time of preliminary water level measurement during drilling. Time of final water level measurement at conclusion of drilling.

******* IMPORTANT NOTICE *******

LIMITATIONS APPLY TO THIS LOG THAT ARE UNIQUE TO ENVIRONMENTAL INVESTIGATIONS. THE BORING LOGS, CROSS SECTIONS, AND MAPS OF SUBSURFACE CONDITIONS APPLY ONLY AT THE SPECIFIC LOCATION AND TIME INDICATED. LOGS, CROSS SECTIONS, AND MAPS ARE NOT WARRANTED TO BE REPRESENTATIVE OF CONDITIONS AT OTHER LOCATIONS AND TIMES. THE FOLLOWING LIMITATIONS APPLY TO ALL BORING LOGS, CROSS SECTIONS, AND MAPS.

SUBSURFACE LOG, CROSS SECTION, AND MAP LIMITATIONS

The boring logs, cross sections, and maps are intended solely for use in environmental investigation. The data in these logs, cross sections, and maps is prohibited from use in other geologic, geotechnical, soil, foundation, fault, and landslide studies or designs. The methods used to acquire the data in these logs, cross sections, and maps are insufficient for these other purposes. The property lines shown on maps, figures, plates, and cross sections with boring locations, are not warranted to be accurate. These property lines are inadequate for purposes of future engineering design and construction. The accurate location of wells are only shown on plans surveyed and drawn by a licensed surveyor.

The techniques and methods used to construct the boring logs, cross sections, and maps have been modified specifically for use in environmental chemical investigation. Accordingly, variations in the techniques commonly used in other geologic, geotechnical, soil, foundation, fault, and landslide studies have been made in these boring logs, cross sections, and maps to acquire information applicable to chemical investigations.

Chemical data, environmental conditions, odors, vapor readings, staining, etc. are transient and temporary features that change considerably with time. These features as shown on the boring logs, cross sections, and maps are not warranted at other locations or times. The descriptions as shown, refer only to the depth interval of the sample collected for inspection or laboratory analyses. No interpretation or extrapolation of data between sampling intervals is implied by the boring logs, cross sections, and maps.

Chemical investigations are designed only for the target chemical compounds of concern to the study or investigation. Other unknown or non targeted chemicals may exist within the soil that are beyond the scope of this specific study or investigation. The information in the boring logs, cross sections, and maps is provided to client in order that client may make a more informed decision as to the subsurface environmental condtions in the study area. No warranty is implied or stated that the samples, borings, wells, study area, site, or property is or is not free of environmental damage or impairment.

SUBSURFACE LOG OF BORING NUMBER SW1

PROJECT NAME: Sherwin Williams	**PROJECT #:** 115094	**SHEET** 1 **OF** 1
LOCATION: 1450 Sherwin Avenue, Emeryville, California	**DATE:** 07-06-1994	
DRILLER: Soils Exploration Services	**LICENSE #:** C57 57582696	
DRILL METHOD: CME Portable Drill Rig; Hollow Stem Auger; 8" O.D.	**SAMPLE METHOD:** Split spoon w/2" x 3" Liners; 140# @ 30"	
AGENCY: Zone 7 Water Agency	**INSPECTOR:** None	**BORING DIA:** ~ 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94432	**TOTAL DEPTH:** 15'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET		DESCRIPTION	STAIN/ OTHER
								Surface: Concrete 0-4"	
						2.5	CS		
SW1-1	4 1/4-4 1/2'	80	24	7500	CM	5		SILT w/very fine sand; Dark brown; Damp; Friable.	Odor
SW1-2	7 1/4-7 1/2'	80	14	>10000	CM	7.5	SC	Fine to Medium SAND, w/some Clay; Brown w/olive tint; Moist; Firm. Water @ 8' @ 10:25.	Odor
								Ambient air FID Readings ~ 1ppm.	Strng Odor
SW1-3	10 1/4 - 10 1/2'	100	14	>10000	CM	10	GC	Gravelly coarse SAND; Yellow brown; Wet; Loose.	
								Ambient air FID readings @ bore ~ 30ppm.	
	13 1/4 - 13 1/2'	0	8	>10000	CM	12.5		No recovery.	
SW1-4	13 3/4 - 14'	100	------		CM		CS	SILT, w/very fine sand; Dark brown to black; Wet; Firm. Over drill to 15'; Inserted 1" PVC well casing & 0.010 " slot for grab ground water sample.	Strng Odor
						15		Ambient Air FID Readings ~ 1ppm.	
								Bore backfilled with 4 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE LOG OF BORING NUMBER SW2

PROJECT NAME: Sherwin Williams	**PROJECT #:** 115094	**SHEET** 1 **OF** 1
LOCATION: 1450 Sherwin Avenue, Emeryville, California		**DATE:** 07-06-1994
DRILLER: Soils Exploration Services	**LICENSE #:** C57 57582696	
DRILL METHOD: CME Portable Drill Rig; Hollow Stem Auger; 8" O.D.	**SAMPLE METHOD:** Split spoon w/2" x 3" Liners; 140# @ 30"	
AGENCY: Zone 7 Water Agency	**INSPECTOR:** None	**BORING DIA:** ~ 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94432	**TOTAL DEPTH:** 15'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIONS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET		DESCRIPTION	STAIN/ OTHER
								Surface: Concrete 0-4"	
						2.5	CS		
SW2-1	4 1/4-4 1/2'	90	12	8000	CM	5		SILT w/very fine sand; Brown; Damp; Firm.	Odor
							SC		
SW2-2	7 1/4-7 1/2'	30	8	9500	CM	7.5		Gravelly SAND; Brown; Damp; Friable. Possible Fill.	Odor
								Groundwater @ ~8 1/2' @ 12:20.	
SW2-3	10 1/4 - 10 1/2'	100	4	2500	CM	10	CS	SILT, w/very fine sand; some small gravel; Light brown to tan w/olive green mottles; Wet; Firm.	Odor
						12.5	SC		
SW2-4	13 1/4 - 13 1/2'	50	------	1000	CM	15		Silty, fine SAND; Light brown to tan w/some red mottles @ striations; Very most; Firm.	Odor
								Over drill to ~15'. Inserted 1" PVC well casing & 0.010 " slot for grab ground water sample.	
								Bore backfilled with 4 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE LOG OF BORING NUMBER SW3

PROJECT NAME: Sherwin Williams		**PROJECT #:** 115094	**SHEET** 1 **OF** 1
LOCATION: 1450 Sherwin Avenue, Emeryville, California			**DATE:** 07-06-1994
DRILLER: Soils Exploration Services		**LICENSE #:** C57 57582696	
DRILL METHOD: CME Portable Drill Rig; Hollow Stem Auger; 8" O.D.		**SAMPLE METHOD:** Split spoon w/2" x 3" Liners; 140# @ 30"	
AGENCY: Zone 7 Water Agency		**INSPECTOR:** None	**BORING DIA:** ~ 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94432		**TOTAL DEPTH:** 15'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIOINS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
								Surface: Concrete 0-4"	
						2.5	CS		
SW3-1	4 1/4-4 1/2'	30	8	----------	CM	5		SILT w/very fine sand; Dark brown; Damp; Firm.	
							CS		
SW3-2	7 1/4-7 1/2'	80	24	2	CM	7.5		Clayey SILT w/fine sand; Brown; Moist; Firm.	
SW3-3	10 1/4 - 10 1/2'	80	20	15	CM	10	SC	Clayey SAND; Brown to black with yellow striations and red-orange mottles; Very moist; Firm.	
						12.5			
SW3-4	13 1/4 - 13 1/2'	30	4	----------	CM	15		Poor sample recovery due to rock in sample shoe. Clayey SAND; Brown to gray brown; Wet; Friable.	
								Over drill to ~15'. Inserted 1" PVC well casing & 0.010 " slot for grab ground water sample.	
								Bore backfilled with 4 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.

SUBSURFACE LOG OF BORING NUMBER SW4

PROJECT NAME: Sherwin Williams	**PROJECT #:** 115094	**SHEET** 1 **OF** 1
LOCATION: 1450 Sherwin Avenue, Emeryville, California	**DATE:** 07-06-1994	
DRILLER: Soils Exploration Services	**LICENSE #:** C57 57582696	
DRILL METHOD: CME Portable Drill Rig; Hollow Stem Auger; 8" O.D.	**SAMPLE METHOD:** Split spoon w/2" x 3" Liners; 140# @ 30"	
AGENCY: Zone 7 Water Agency	**INSPECTOR:** None	**BORING DIA:** ~ 8"
LOGGER: Michael A. Princevalle	**AGENCY PERMIT NO. :** 94432	**TOTAL DEPTH:** 15'

*** NOTICE - CONDITIONS APPLY TO THIS LOG - SEE EXPLANATION OF LIMITATIOINS ***

SAMPLE NUMBER	SAMPLE DEPTH	% REC	BLOWS /FT	VAPOR PPM	MODE	DEPTH FEET	USCS	DESCRIPTION	STAIN/ OTHER
								Surface: Soil	
						2.5	CS		
SW4-1	4 1/4-4 1/2'	80	14	1	CM	5		SILT w/very fine sand; Dark brown; Damp; Firm.	
SW4-2	7 1/4-7 1/2'	75	24	0	CM	7.5	SC	Clayey fine SAND; Brown; Moist; Friable; Few, small wood fragments.	
SW4-3	10 1/4 - 10 1/2'	80	6	0	CM	10	GC	Clayey, gravelly SAND; Brown to tan; Wet; Friable.	
						12.5	SC		
SW4-4	13 1/4 - 13 1/2'	80		1	CM			Fine to Medium SAND, w/some fines; Brown w/some red to red-orange spotting or striations; Very moist; Friable.	
						15		Over drilled to 15'. Inserted 1 1/4" PVC well casing & 0.010 " well slot to recover grab ground water sample.	
								Bore backfilled with 4 sacks Portland cement grout.	

THIS LOG OF SUBSUFACE CONDITIONS APPLIES TO THE SPECIFIC LOCATION AND DATE INDICATED. THIS LOG IS NOT WARRENTED TO REPRESENT CONDITIONS AT OTHER LOCATIONS OR OTHER DATES.