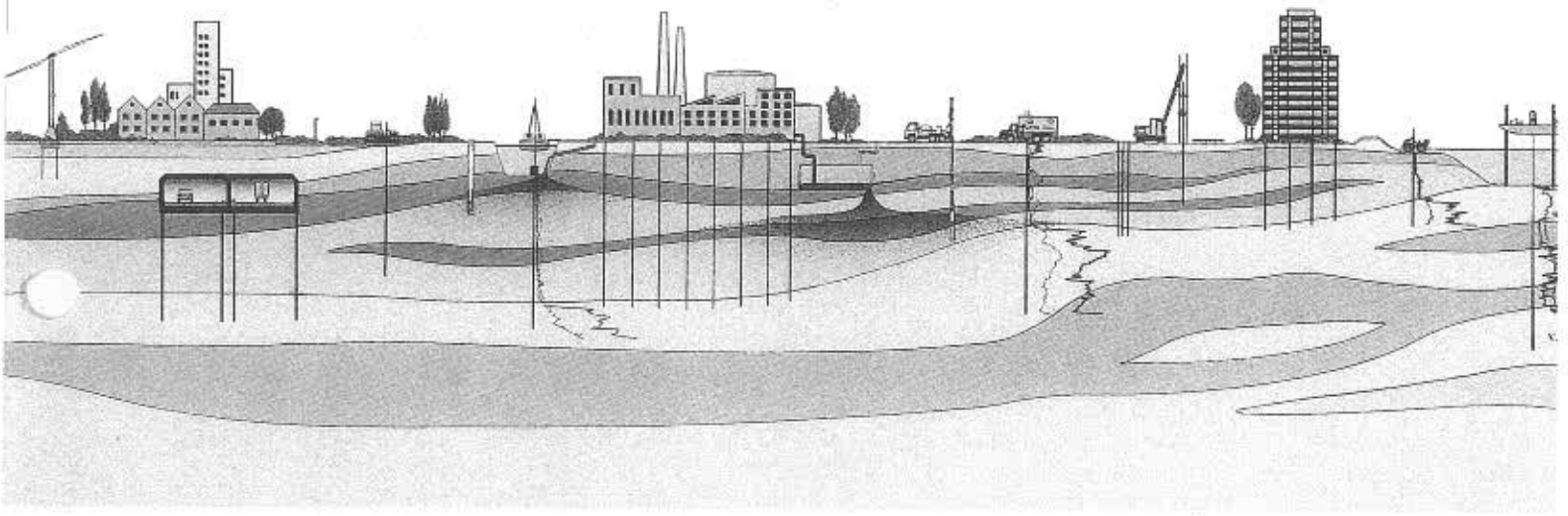
FUGRO WEST, INC.

SANTA BARBARA RAILROAD DEPOT
SITE ASSESSMENT
SANTA BARBARA, CALIFORNIA

Prepared for:
THE CITY OF SANTA BARBARA
REDEVELOPMENT AGENCY

March 1994



FUGRO WEST, INC.

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March 1994
Project No. 93-41-1780

City of Santa Barbara Redevelopment Agency
Post Office Box 1990
Santa Barbara, California 93102-1990

Attention: Mr. Louis D. Lazarine
Redevelopment Specialist

Santa Barbara Railroad Depot Site Assessment
Santa Barbara, California

Dear Mr. Lazarine:

We are submitting the attached report presenting the results of the Phase II Environmental Site Assessment for the Santa Barbara Railroad Depot, Santa Barbara, California. This evaluation was prepared for the City of Santa Barbara Redevelopment Agency, and was conducted in general accordance with our proposal dated June 17, 1993.

We have enjoyed the opportunity to work with you on this project and we look forward to working with you on future projects. Please call if you have any questions.

Sincerely,
FUGRO WEST, INC.

James R. Steele, R.G.
Project Geologist

Thomas D. Matteucci, R.G.
Senior Geologist

JRS:TDM:av

FUGRO

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INTRODUCTION

This report presents the findings, conclusions and recommendations for a site assessment conducted at the Santa Barbara Railroad Depot on February 14, 1994. The Santa Barbara Railroad Depot is located at 207 and 209 State Street (refer to Plate 1 - Site Location Map). It is our understanding that the City of Santa Barbara Redevelopment Agency (City) is interested in the possible acquisition of this property and wishes to have the extent of known and potential onsite soil and ground water contamination evaluated. The scope of work for this assessment was based on our knowledge of the conditions of the site area developed from other Fugro projects conducted over the last several years, interviews with Mr. Richard Evans of the County of Santa Barbara Environmental Health Services (EHS) Site Mitigation Unit (SMU)/Leaking Underground Fuel Tank (LUFT) program and review of files maintained at the EHS for additional information on the current status of regulatory activities in the site area. The work performed for this assessment was conducted in accordance with our work plan dated February 7, 1994.

Included with this report are Appendix A - Soil Boring Logs and Appendix B - Laboratory Analytical Data.

Site Description and History

The Santa Barbara Railroad Depot is located in the downtown commercial district of the City of Santa Barbara south of Montecito Street and west of State Street (refer to Plate 1). The northern portion of the central lot of the depot property was evaluated for this assessment (refer to Plate 2 - Site Assessment Map). The site lot occupies approximately 2.7 acres of land, with 207 and 209 State Street, and 224 Chapala shown as the addresses for the property. The site topography is relatively flat with a surface elevation of about 14 feet above mean sea level (MSL).

The site lot is used for automobile parking and contains two buildings, the railroad depot used by Amtrak, and the Open Air Bicycle shop. The surface of the site is partially paved with asphalt and concrete. The asphalt was in a degraded condition while the concrete was largely intact. The surface drainage onsite is toward the southeast and southwest into State Street and Chapala Street where surface runoff enters the storm drain system.

The Santa Barbara Railroad Depot has occupied the site since the early 1900s. The site was owned and operated by Southern Pacific Lines until 1993 when Martin V. Smith and Associates acquired ownership.

Potential sources for subsurface contamination at the subject property include former underground storage tank (UST) sites located at the Enterprise Fish Company/Rey Road site, the former site of a Shell Oil Company service station located at the corner of Montecito Street and Chapala Street, and a UST used for gasoline storage formerly located approximately 60 to 100 feet east of the depot building. Previous assessments for each of these sites are discussed below.

The nature and extent of subsurface contamination at the Enterprise Fish Company/Rey Road property was recently evaluated in assessments conducted by AET and Woodward-Clyde Consultants. AET assessed the extent of soil contamination on the depot property emanating from Enterprise Fish Company/Rey Road property in September 1993 and found that diesel fuel and gasoline-related soil contamination extends approximately 25 to 30 feet southward into the site from the property boundary at depth of up to 12 feet. Woodward-Clyde Consultants assessed the extent of ground water contamination from monitoring wells located onsite and on the Enterprise Fish Company/Rey Road property in August 1993. This assessment found fuel related ground water contamination of monitoring wells located adjacent to the site on the Enterprise Fish Company/Rey Road properties in August 1993. Maps, summary tables of sample analytical results, and laboratory analytical data from the assessments conducted by AET Woodward-Clyde were included in Appendix B of the work plan prepared for this project.

Records maintained at EHS indicate that, in addition to the fuel-related UST contamination, a dry cleaning facility formerly occupied the Enterprise Fish Company building. Potential subsurface contamination from dry cleaning solvents such as tetrachloroethene was not evaluated in previous assessments of this area.

The former Shell Oil Company service station site was granted closure by the EHS in January 1993. However, there is a potential that subsurface contamination from this source exists onsite.

A UST used for gasoline storage was removed from an onsite location approximately 60 to 100 feet east of the Amtrak Depot building. Approximately 200 cubic yards of soil contaminated with gasoline were excavated and removed from this site for the Southern Pacific Transportation Company by Erickson, Inc., in October 1988. Not all of the soil contamination was removed and contamination is believed to remain in place between 10 and 18 feet east of the former excavation site at depths of up to 12 feet. This was verified in an assessment conducted by AET in October 1992 where soil gasoline contamination was found in a soil boring in this area. Maps and summary tables of the soil sample analytical data from the 1988 Erickson, Inc., report and 1992 AET report were included in Appendix B of the work plan prepared for this project.

GEOLOGY AND HYDROGEOLOGY

Regional Geology

The site is located within the Western Transverse Ranges geomorphic province of California. This province is characterized by east to west geologic structural trends corresponding to similarly trending topographic features expressed in mountains, hills and valleys. The site is situated on a narrow coastal plain located between the Mesa Hills to the west and Mission Ridge to the northeast at the foot of the Santa Ynez Mountains (Norris and Webb, 1990).

Site Geology

The site is underlain by Quaternary alluvial or stream-derived deposits that comprise a thickness of up to 800 feet, and are underlain by Tertiary bedrock consisting largely of marine sedimentary rocks (Martin, 1984). The site is located approximately 1,000 feet to the north of the Mesa Fault. The fault has downdropped the coastal plain relative to the south side of the fault. The northern boundary of the coastal plain is delineated by Mission Ridge located approximately 1 mile north of the site (Dibblee, 1966).

Hydrogeology

The site is located in the southern portion of the Santa Barbara ground water basin (Upson, 1951). Shallow ground water in the vicinity of the site occurs in discontinuous water-bearing horizons that are reported to be under unconfined to semiconfined conditions (Martin, 1984). In the vicinity of the coast, the shallow zone may contain total dissolved solids (TDS) at concentrations up to 4,400 parts per million (ppm), and is locally impacted by sea water intrusion.

The depth to ground water varied from approximately 10 to 14 feet below ground surface (bgs) during the assessment conducted by Fugro on February 14, 1994. The assessment conducted by Woodward-Clyde Consultants in September 1993 measured the semiperched water table at depths ranging from 7 to 9 feet. The direction of ground water movement (gradient direction) has varied over the last 4 years. The gradient direction was measured by Fugro (formerly Fugro-McClelland) at the former Shell Oil Service Station at 33 West Montecito Street from 1988 through 1992. In 1988, the gradient direction was to the southeast. During the time period from 1989 through a portion of 1991, the gradient direction was induced to the northwest by dewatering activities conducted for freeway construction activities. After the dewatering ceased, the gradient direction was to the southwest. The gradient direction measured in the 1993 Woodward-Clyde assessment was to the north, northeast, and northwest.

METHODS OF ASSESSMENT

Soil Boring Advancement

Eight shallow soil borings were advanced to depths ranging from approximately 11.5 to 15.5 feet bgs. The soil boring locations are shown on Plate 2 and the soil boring log data are summarized in Table 1 - Soil Boring Log Summary. The boring locations were selected to evaluate known and potential subsurface contamination from the former UST and dry cleaning sites discussed above. Laboratory analytical results of soil samples collected during the advancement of the soil borings were utilized to determine the extent of contamination. The soil cuttings from each boring were monitored for volatile hydrocarbons by a geologist using an organic vapor analyzer (OVA). Undisturbed soil samples were collected at depths of 3, 5, and 10 feet in borings F-1 and F-2; 3, 5, 10, and 14 feet in boring F-3; 3, 5, and 12 feet in boring F-4; 3, 5, and 14 feet in boring F-5; and 3, 8, and 14 feet in borings F-6 through F-8. The soil samples were collected using a modified California split-spoon sampler. One sample from each boring was selected for laboratory analysis. The soil samples collected at or just above the top of ground water were selected for laboratory analysis in each boring except boring F-6. The sample collected at a depth of 8 feet was selected for laboratory analysis in boring F-6 because the soil exhibited gray staining, had a slight organic odor, and produced an OVA reading of 10 ppm. In addition, one water sample was collected for laboratory analyses from each boring with a hydropunch sampler. No additional purge water was generated. The analyses were performed in a California State Department of Health Services (DHS)-certified laboratory. Each soil boring was sealed with cement-bentonite grout.

To prevent potential cross contamination from equipment the following measures were used.

- Each section of drilling auger was steam-cleaned before and in between each time it was used during this assessment.

- All sampling equipment was washed in a nonphosphate detergent, rinsed twice in tap water, and final rinsed in deionized water dispensed from a spray apparatus before and in between each use.

Approximately 15 cubic feet of soil cuttings and one partially filled drum of equipment decontamination wash and rinse water were generated by assessment activities. These were stored onsite in four 55-gallon capacity DOT-approved drums pending the receipt of the laboratory analytical results for samples collected for this assessment. The laboratory analytical results for these samples indicated that the materials in these drums were not contaminated. Therefore, the materials in these drums will be spread out onsite in unpaved areas.

Sample Collection

Soil Sample Collection. Undisturbed soil samples were collected in precleaned 3-inch-long, 2.5-inch-diameter, stainless steel sample sleeves placed inside of the California Modified split-spoon sampler. Immediately after sample collection, the sample sleeves were sealed with Teflon sheets and air-tight plastic caps, labeled, and placed in a cooler containing prechilled artificial ice. The samples were transported on ice to the analytical laboratory by a courier within 48 hours of collection. The samples were accompanied by chain of custody documentation.

Ground Water Sample Collection. The ground water samples were collected in a precleaned plastic bailer approximately 2 feet in length. Two 40-milliliter (ml) VOA viles were filled for the samples collected from borings F-1, F-2, F-3, F-6, F-7, and F-8, and 1-liter amber glass bottles were filled for the samples collected from borings F-4 and F-5. The ground water was transferred with minimal turbulence and zero headspace into the sample containers and capped immediately to minimize potential volatile organic contaminants loss. The samples were immediately placed inside a cooler containing prechilled artificial ice. The samples were transported on ice to the analytical laboratory by a courier within 48 hours of collection. The samples were accompanied by chain of custody documentation.

Laboratory Analyses

Laboratory analyses for borings F-1, F-2, F-6, F-7. and F-8 were selected to evaluate the subsurface for potential gasoline related contamination. One sample per bore hole was analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH) as gasoline by EPA methods modified 8015/8020.

The laboratory analyses for borings F-4 and F-5 were selected to evaluate the subsurface for potential diesel fuel related contamination. The ground water samples and soil samples (one per bore hole) were analyzed for BTEX and TPH as diesel fuel by EPA methods modified 8015/8020.

The ground water sample and soil sample from boring F-3 were analyzed for volatile priority pollutants including dry cleaning solvents and fuel related contaminants by EPA method 8240.

FINDINGS

Drilling and Soil Sample Collection

Subsurface Conditions. Artificial fill and Quaternary-age alluvium were encountered in the soil borings (refer to Appendix A). Artificial fill was encountered in borings F-1, F-3, and in borings F-4 through F-7. The artificial fill in boring F-1 consisted of approximately 4 inches of concrete. The artificial fill encountered in borings F-3, F-4, and F-5 was found to depths ranging from 2.5 to 5 feet and consisted of sand and silty sand mixed with bricks, aggregate base, and other construction materials. The artificial fill encountered in borings F-6 and F-7 consisted of sandy silt and silty sand used for UST backfill. The artificial fill in boring F-6 was stained dark gray at depths ranging from 7 to 11.5 feet. Quaternary-age alluvium was encountered in all of the soil borings logged for this assessment. The alluvium is resultant from deposition from Mission Creek and is composed of silty sand and sand to depth.

OVA Soil Monitoring. The volatile hydrocarbon concentrations of drill cuttings and soil samples was monitored with an OVA in each of the soil borings. This data is summarized in Table 1. Readings of 8 parts per million by volume (ppmv) at 3 feet and 2 ppmv at 12 feet were produced in boring F-4, and a reading of 10 ppmv was produced at 8 feet in boring F-6. The remainder of the OVA monitoring readings were 0 ppmv.

Soil Sample Analytical Laboratory Data. The soil sample analytical laboratory data are summarized in Table 2 - Soil Sample Analytical Results. Toluene was detected in the sample collected from boring F-6 at a concentration of 12 micrograms per kilogram (μg/kg). No other analytes were detected at concentrations greater to or equal to the laboratory reporting limits. BTEX and TPH were not detected at concentrations equal to or greater than Santa Barbara County Cleanup Levels (*Santa Barbara County SMU/LUFT Assessment and Remediation Guidance Document*, January 1992).

Santa Barbara County cleanup levels are determined from a number of factors, including California Department of Health Services maximum contaminant levels (MCLs) in ground water, toxicity values, carcinogenicity, immediate endangerment to the health and safety of the public, threat to important environmental conditions, and other agency information.

The analyses performed on the sample from boring F-3 was intended to evaluate for potential BTEX, and for chlorinated solvents associated with former dry cleaning plant operations at the present site of the Enterprise Fish Company. The soil sample collected from this location was analyzed by EPA method 8240. This method includes analyses for BTEX, and the dry cleaning solvents tetrachloroethene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and

trichloroethene. None of these substances were detected at concentrations at or above laboratory reporting limits or California Department of Health Services MCLs for drinking water.

Ground Water Sample Collection

Depth to Ground Water. The depth to ground water varied from approximately 10 to 14 feet bgs during the assessment conducted on February 14, 1994. The depths to ground water for each soil boring measured on February 14, 1994, are summarized in Table 1. The variation in depth to ground water may be due to discontinuous water-bearing horizons.

Ground Water Sample Analytical Results. The ground water sample laboratory analytical results are presented in Table 3 - Ground Water Sample Analytical Results. None of the analytes were detected at concentrations greater to or equal to the laboratory reporting limits. BTEX and TPH were not detected at concentrations equal to or greater than Santa Barbara County Cleanup Levels (Santa Barbara County, January 1992).

As stated above, analyses of samples from boring F-3 was intended to evaluate for potential BTEX, and for chlorinated solvents associated with former dry cleaning plant operations at the present site of the Enterprise Fish Company. The ground water sample collected from this location was analyzed by EPA method 8240. This method includes analyses for BTEX, and the dry cleaning solvents tetrachloroethene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and trichloroethene. None of these substances were detected at concentrations at or above laboratory reporting limits or California Department of Health Services MCLs for drinking water.

CONCLUSIONS

Based on the findings presented above, we have developed the following conclusions.

- BTEX and TPH were not detected at concentrations at or above the Santa Barbara County LUFT/SMU cleanup levels in soil and ground water samples collected for this assessment. Samples were collected onsite at locations adjacent to former UST sites at the Shell Oil Company service station that formerly occupied the corner of Chapala Street and Montecito Street, the Rey Road/Enterprise Fish Company, and a UST formerly located onsite to the east of the railroad depot building.

- The area adjacent to the Enterprise Fish Company was also evaluated for potential subsurface contamination from dry cleaning operations. The soil and ground water samples collected from boring F-3 (located immediately inside the site boundary adjacent to the Enterprise Fish Company) were analyzed for volatile priority pollutants by EPA method 8240. The analytes evaluated by EPA method 8240 include BTEX and the dry cleaning solvents tetrachloroethene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and trichloroethene. None of these analytes were detected at concentrations at or above California Department of Health Services MCLs.

LIMITATIONS

This report has been prepared exclusively for the City of Santa Barbara Redevelopment Agency as a soil and ground water quality assessment of the Santa Barbara Railroad Depot located in the City of Santa Barbara, California. In performing our professional services, we have attempted to apply present engineering and scientific judgement and use a level of effort consistent with the standard of practice measured on the date the work was performed in the locale of the project site for similar type studies. Fugro makes no warranty, express or implied.

The analyses and interpretations in this report have been developed based on the results field observations, and of our review of the site history as presented in previous assessments performed by Fugro West, Inc., and other consultants. While sample locations are considered representative of specific test locations, Fugro West, Inc., does not warrant that the results contained herein are representative of the entire site.

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Table 1. Soil Boring Log Summary

Soil Boring	Total Depth (feet)	Approximate Depth to Ground Water (feet)	OVA Monitoring		Soil Sample Depth (feet)
			Monitoring Depth (feet)	OVA Reading (ppmv)	
F1	11.5	10	3	0	3
			5	0	5
			10	0	10*
F2	11.5	10	3	0	3
			5	0	5
			10	0	10*
F3	15.5	12	3	0	3
			5	0	5
			10	0	10
			14	0	14*
F4	13.5	12	3	8	3
			5	0	5
			12	2	12*
F5	15.5	14	3	0	3
			5	0	5
			14	0	14*
F6	15.5	14	3	0	3
			8	10	8*
			14	0	14
F7	15.5	14	3	0	3
			8	0	8
			14	0	14*
F8	15.5	14	3	0	3
			8	0	8
			14	0	14*

ppmv parts per million by volume
* Sample submitted to analytical laboratory for analysis.

Table 2. Soil Sample Analytical Results

Soil Boring	Sample Depth (feet)	Results in micrograms per kilogram (µg/kg)				
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Total Petroleum Hydrocarbons
EPA method 8015 modified/8020						
F1	10	ND	ND	ND	ND	ND (gasoline)
F2	10	ND	ND	ND	ND	ND (gasoline)
F4	12	ND	ND	ND	ND	ND (diesel)
F5	14	ND	ND	ND	ND	ND (diesel)
F6	8	ND	12	ND	ND	ND (gasoline)
F7	14	ND	ND	ND	ND	ND (gasoline)
F8	14	ND	ND	ND	ND	ND (gasoline)
EPA method 8240*						
F3	14	ND	ND	ND	ND	NA
Laboratory Reporting Limit		5	5	5	15	1,000
by EPA method 8020		5	5	5	15	10,000
by EPA method 8240		5	5	5	5	
Santa Barbara County Cleanup Level		100	10,000	68,000	175,000	100,000

NA Not analyzed
ND Not detected at or above the laboratory detection limit.
* EPA method 8240 is designed to target 40 constituents, including those listed above. None of the constituents were detected at concentrations at or above the laboratory detection limit.

Table 3. Ground Water Sample Analytical Results

Soil Boring	Results in micrograms per kilogram (µg/kg)				
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total Petroleum Hydrocarbons
EPA method 8015 modified/8020					
F1	ND	ND	ND	ND	ND (gasoline)
F2	ND	ND	ND	ND	ND (gasoline)
F4	ND	ND	ND	ND	ND (diesel)
F5	ND	ND	ND	ND	ND (diesel)
F6	ND	12	ND	ND	ND (gasoline)
F7	ND	ND	ND	ND	ND (gasoline)
F8	ND	ND	ND	ND	ND (gasoline)
EPA method 8240*					
F3	ND	ND	ND	ND	NA
Laboratory Reporting Limit					
by EPA method 8020	0.5	0.5	0.5	1.5	10
by EPA method 8240	1.0	5	5	15	
Santa Barbara County Cleanup Level	1.0	100	680	1750	1000

NA Not analyzed
ND Not detected at or above the laboratory detection limit.
* EPA method 8240 is designed to target 40 constituents, including those listed above. None of the constituents were detected at concentrations at or above the laboratory detection limit.

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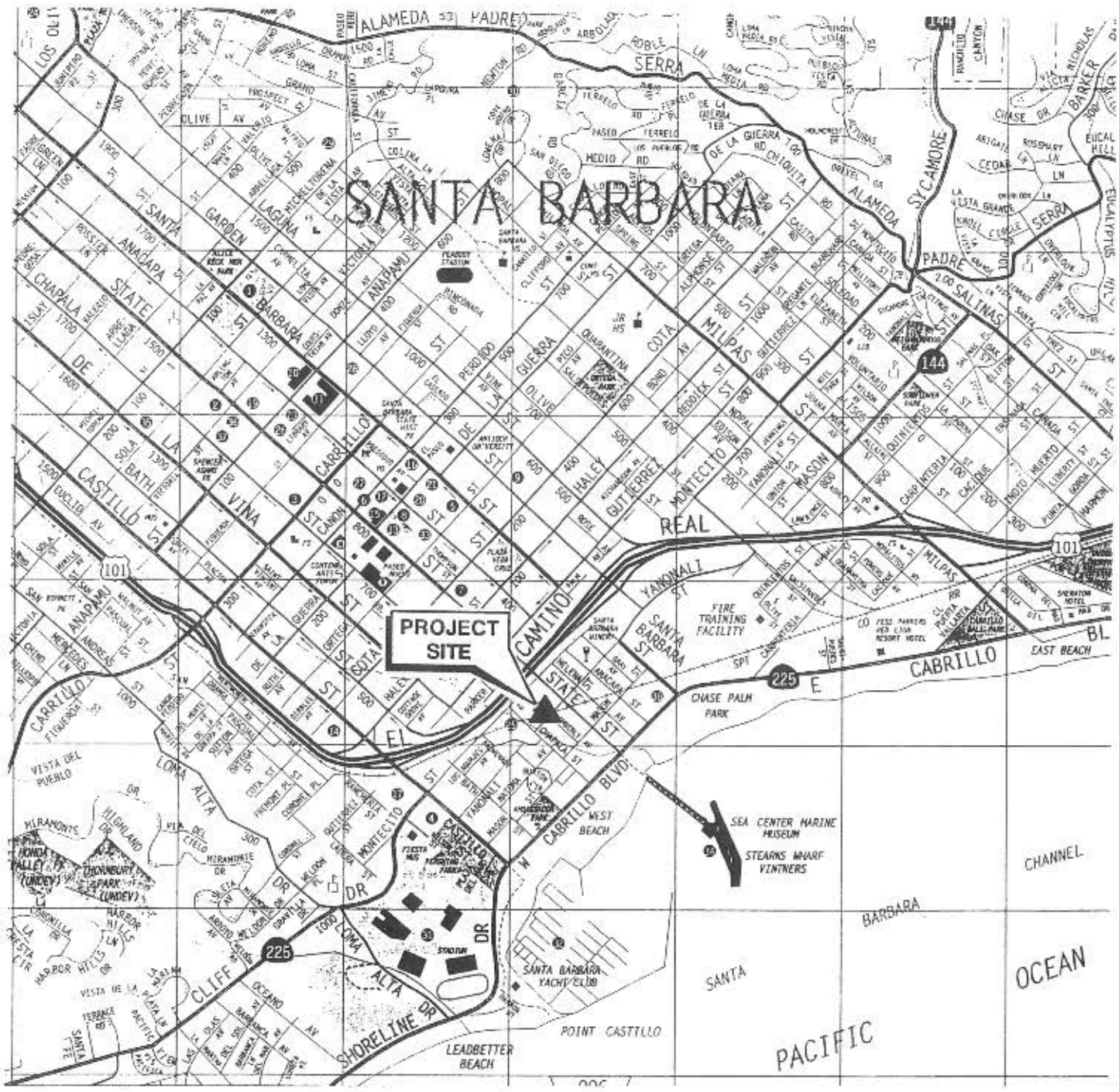

SITE LOCATION MAP

PLATE 1

March 1994
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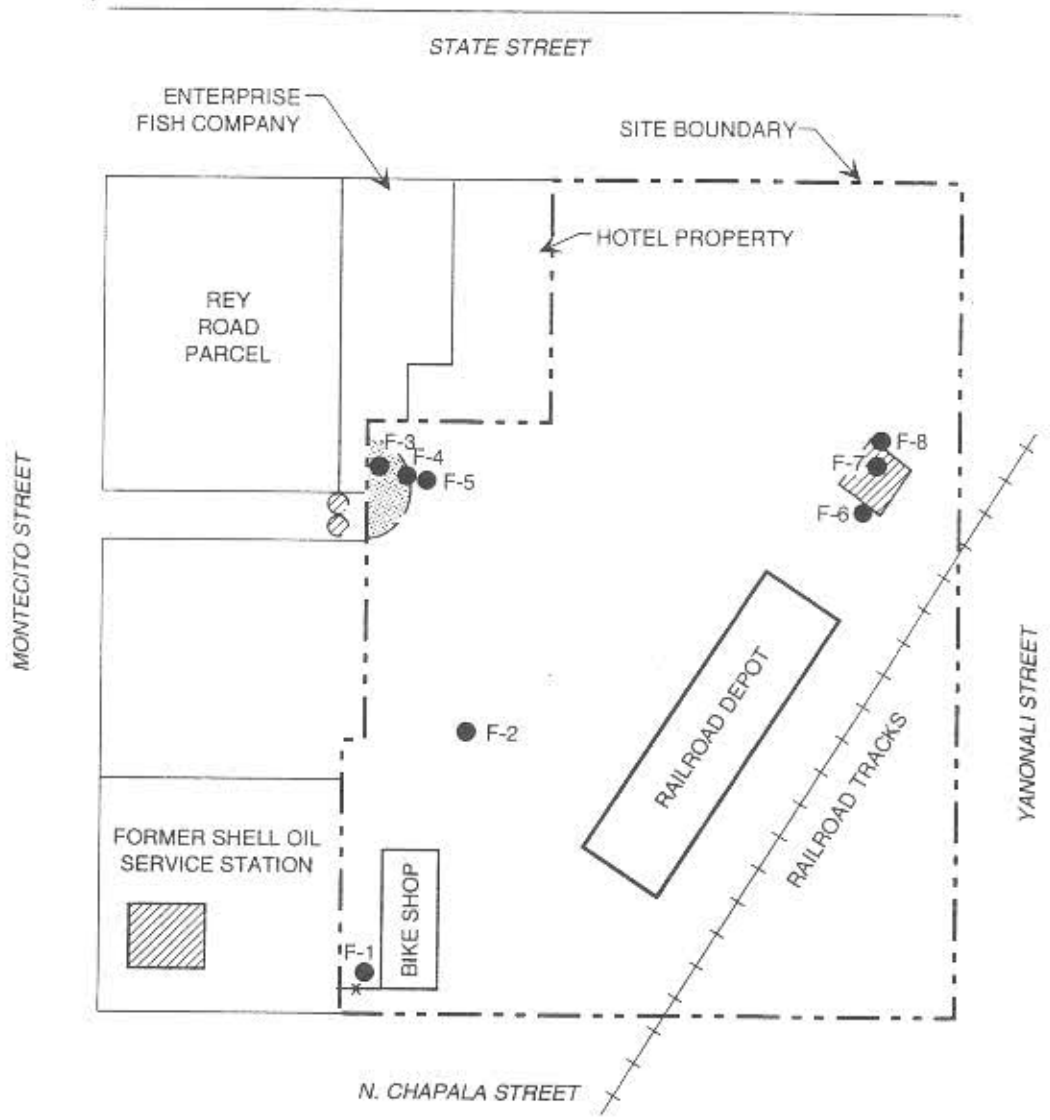


LEGEND

F-1● Soil Boring Location

Former UST Location

Approximate Extent of Onsite Soil Contamination Estimated in The AET Assessment

NORTH

0 50 100

FEET

Note: All measurements are approximate.

SITE ASSESSMENT MAP

PLATE 2

APPENDIX A

SOIL BORING LOGS

March 1994

Project No. 93-41-1780

FUGRO

LOCATION: Approximately 10 ft northeast of Chapala Street and 3 ft southeast of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)

ELEVATION, ft / DEPTH, ft	MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
					ARTIFICIAL FILL (af) Concrete; 4"							
10			F1-3	14	**ALLUVIUM (Qal)** Fine SAND (SP): loose, moderate brown, dry	0						
			F1-5	17		0						
					Fine Sandy SILT (ML): soft, moderate brown, damp, carbonized plant remains							
10			F1-10	10		0	ND	ND	ND	ND	ND	
0												
20												
-10												
30												
-20												

COMPLETION DEPTH: 11.5 ft

DEPTH TO WATER:

First Encountered (▽): 10.0 ft

At End of Drilling (▼): ft

BACKFILLED WITH: Cement/Benton, Grout

DRILLING DATE: FEB 14 94

NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger

DRILLED BY: Valley Well Drilling

LOGGED BY: JRSteele

CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-1

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.1

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 150 ft northeast of Chapala Street and 55 ft southeast of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)

ELEVATION, ft / DEPTH, ft	MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
10			F2-3	12	**ALLUVIUM (Qal)** Coarse Sandy SILT (ML): soft, moderate brown, dry to damp	0						
			F2-5	10	Coarse SAND (SP): loose, moderate yellowish brown, damp, with gravel	0						
10			F2-10	12	Sandy CLAY (CL): moderate brown, wet, with gravel and silt	0	ND	ND	ND	ND	ND	
0												
20												
-10												
30												
-20												

COMPLETION DEPTH: 11.5 ft
DEPTH TO WATER:
First Encountered (▽): 10.0 ft
At End of Drilling (▽): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-2

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.2

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 285 ft northeast of Chapala Street and 2 ft southeast of the site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)

ELEVATION, ft	DEPTH, ft	MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
10				F3-3	11	**ARTIFICIAL FILL (af)** Sandy SILT (ML): soft to firm, moderate brown, damp, with concrete, roots	0						
				F3-5	12	**ALLUVIUM (Qal)** Coarse SAND (SP): loose, moderate yellowish brown, damp	0						
	10			F3-10	13	Silty CLAY (CL): soft, moderate brown, moist, with coarse sand and iron oxide nodules, gray mottling and root fragments	0						
0				F3-14	9		0	ND	ND	ND	ND	ND	
	20												
-10													
	30												
-20													

COMPLETION DEPTH: 15.5 ft
DEPTH TO WATER:
First Encountered (▽): 12.0 ft
At End of Drilling (▽): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-3

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.3

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 280 ft northeast of Chapala Street and 10 ft southeast of site boundary.

SURFACE EL: 13.5 ft +/- (rel. MSL datum)

ELEVATION, ft / DEPTH, ft	MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
10		X	F4-3	4	**ARTIFICIAL FILL (af)** Coarse SAND (SP): loose, moderate yellowish brown, dry to damp, with fine gravel	8						
		X	F4-5	6	**ALLUVIUM (Qal)** CLAY (CL): soft, moderate brown, damp, with black and gray mottling	0						
0		X	F4-12	12	Fine Sandy CLAY (CL): soft, moderate brown, damp to wet ▽	2	ND	ND	ND	ND	ND	
-10												
-20												

COMPLETION DEPTH: 13.5 ft
DEPTH TO WATER:
First Encountered (▽): 12.0 ft
At End of Drilling (▽): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-4

Santa Barbara Railroad Depot

NEW#2

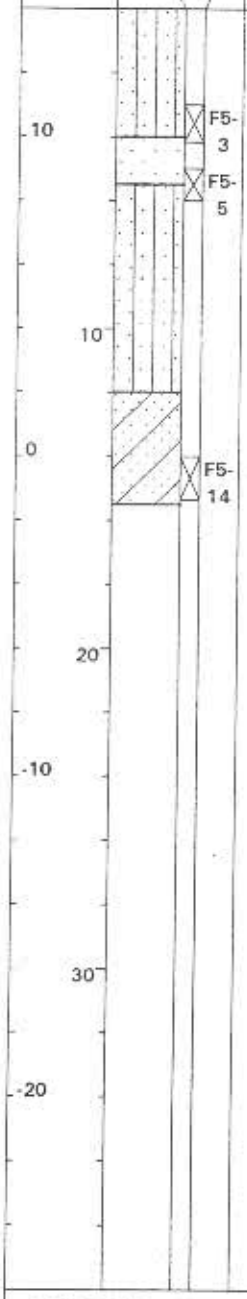
PLATE A-1.4

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 275 ft northeast of Chapala Street and 30 ft southeast of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)



MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
		F5-3	11	**ARTIFICIAL FILL (af)** Fine to coarse Sandy SILT (ML): soft, moderate brown, damp - bricks, at 2'	0						
		F5-5	10	**ALLUVIUM (Qal)** Coarse SAND (SP): loose, moderate yellowish brown, damp	0						
				Fine Sandy SILT (ML): soft, moderate brown, damp, with clay							
		F5-14	12	Clayey, fine to coarse SAND (SC): loose, moderate yellowish brown, moist to wet, with gray mottling	0	ND	ND	ND	ND	ND	

COMPLETION DEPTH: 15.5 ft
DEPTH TO WATER:
First Encountered (▽): 14.0 ft
At End of Drilling (▼): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-5

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.5

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 260 ft northeast of Chapala Street and 50 ft northwest of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)

ELEVATION, ft / DEPTH, ft	MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
10			F6-3	9	**ARTIFICIAL FILL (af)** Silty fine SAND (SM): loose, moderate yellowish brown, dry to damp, with clay and pieces of asphalt	0						
			F6-8	5	- dark gray, with weathered petroleum product odor, 7' to 11.5'	10	ND	0.012	ND	ND	ND	
0			F6-14	8	**ALLUVIUM (Qal)** SAND (SP): loose, dark gray, wet, with organics (plant parts) and organic odor	0						
-10												
-20												

COMPLETION DEPTH: 15.5 ft
DEPTH TO WATER:
First Encountered (▽): 13.0 ft
At End of Drilling (▽): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-6

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.6

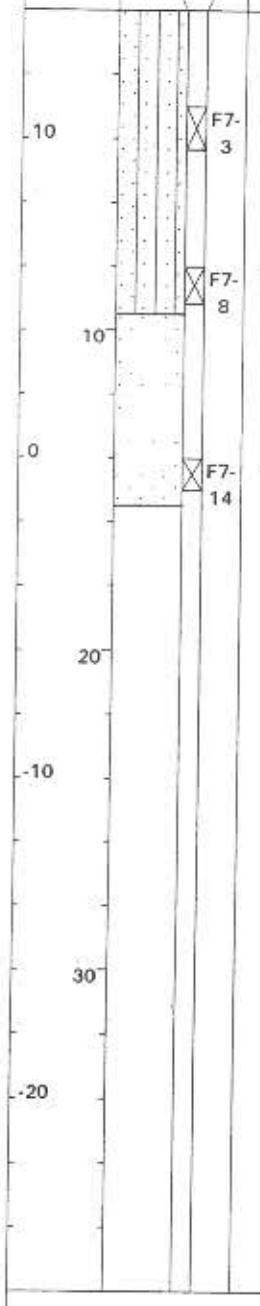
March 1994

Project No. 93-41-1780

FUGRO

LOCATION: Approximatley 280 ft northeast of Chapala Street and 45 ft northwest of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)



MATERIAL SYMBOL	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT	MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
	F7-3		8	**ARTIFICIAL FILL (af)** Coarse Sandy SILT (ML): soft, moderate brown, damp, with asphalt debris	0						
	F7-8		11		0						
	F7-14		14	**ALLUVIUM (Qal)** Coarse SAND (SP): loose, dark gray, moist to wet, with clay and organic (plant) debris	0	ND	ND	ND	ND	ND	

COMPLETION DEPTH: 15.5 ft

DEPTH TO WATER:

First Encountered (▽): 14.0 ft

At End of Drilling (▽): ft

BACKFILLED WITH: Cement/Benton. Grout

DRILLING DATE: FEB 14 94

NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Sten Auger

DRILLED BY: Valley Well Drilling

LOGGED BY: JRSteele

CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

LOG OF DRILL HOLE NO. F-7

Santa Barbara Railroad Depot

NEW#2

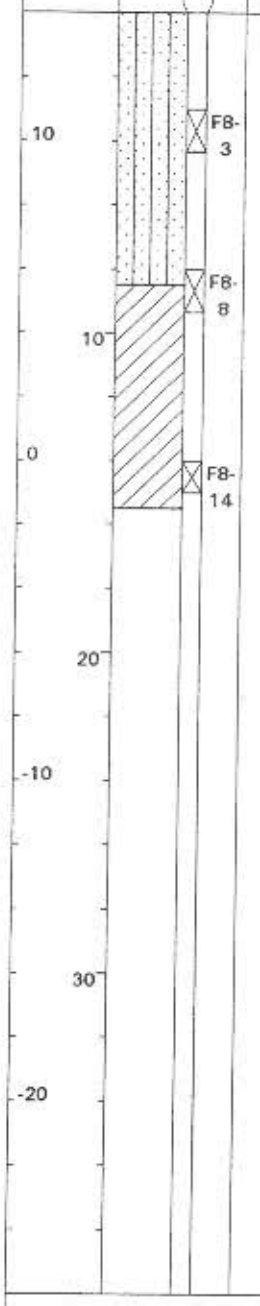
PLATE A-1.7

March 1994
Project No. 93-41-1780

FUGRO

LOCATION: Approximately 300 ft northeast of Chapala Street and 40 ft northwest of site boundary.

SURFACE EL: 14.0 ft +/- (rel. MSL datum)



MATERIAL DESCRIPTION	PID READING	BENZENE, ppm	TOLUENE, ppm	ETHYL-BENZENE, ppm	TOTAL XYLENES, ppm	TPH, ppm	TOTAL LEAD, ppm
ALLUVIUM (Qal) Silty fine SAND (SM): loose, moderate yellowish brown, dry to damp, with fine roots	0						
	0						
CLAY (CL): soft, moderate yellowish brown, with silt and fine roots	0	ND	ND	ND	ND	ND	

COMPLETION DEPTH: 15.5 ft
DEPTH TO WATER:
First Encountered (∇): 14.0 ft
At End of Drilling (∇): ft
BACKFILLED WITH: Cement/Benton. Grout
DRILLING DATE: FEB 14 94
NOTE: ND = Not Detected in concentrations at or above laboratory reporting limits.

DRILLING METHOD: Hollow Stem Auger
DRILLED BY: Valley Well Drilling
LOGGED BY: JRSteele
CHECKED BY: JRSteele

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

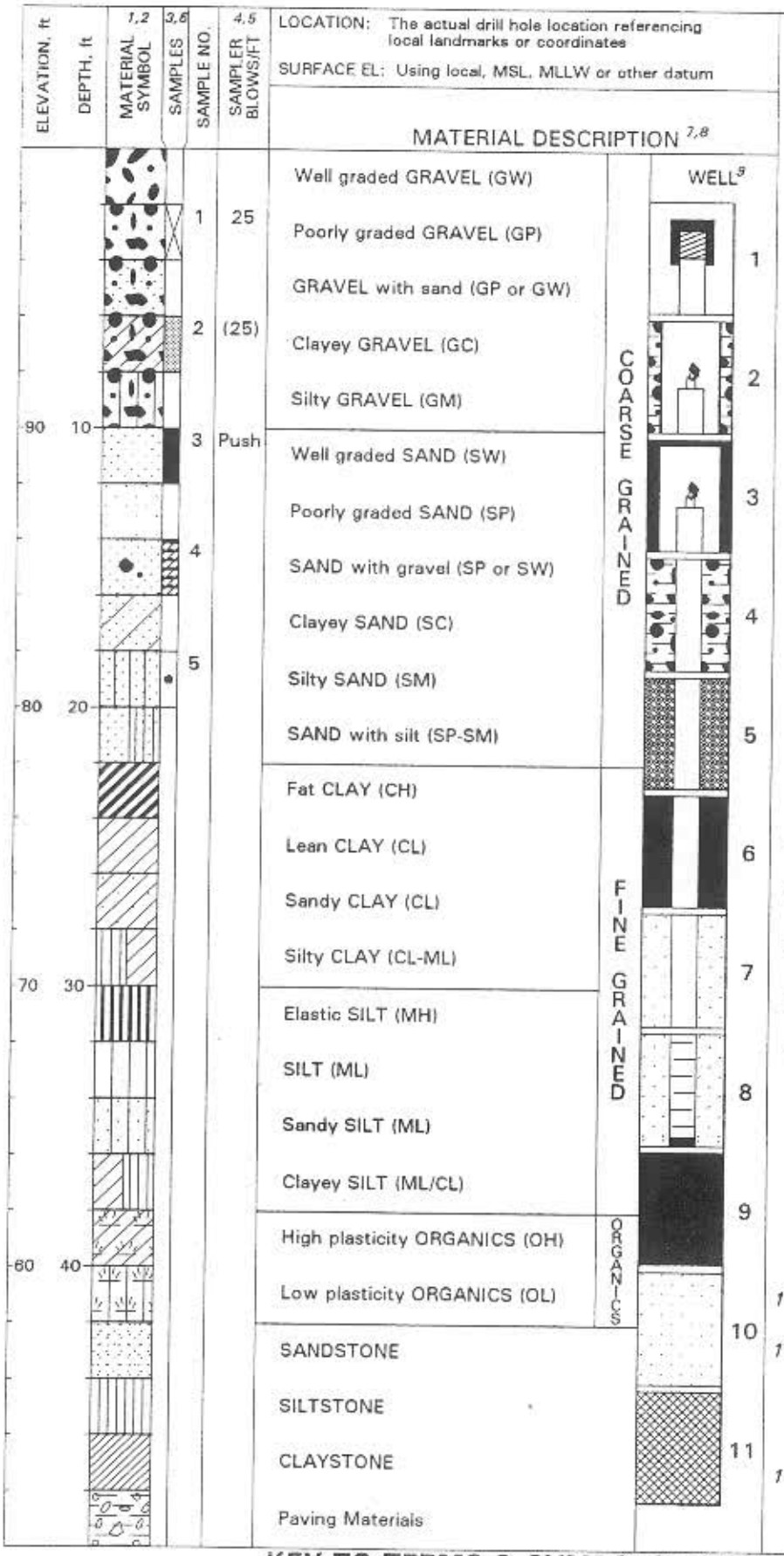
LOG OF DRILL HOLE NO. F-8

Santa Barbara Railroad Depot

NEW#2

PLATE A-1.8

March 1994
Project No. 93-41-1780



General Notes*

** General notes reference the sections with italicized numbers in the header area*

1 Soil Texture Symbol

2 Sloped line in symbol column indicates transitional boundary

3 Samplers and sampler dimensions (unless otherwise noted in report text) are as follows:

Symbol for:

Sample No	Sampler Type
1	SPT Sampler, driven 1 3/8" ID, 2" OD
2	CA Liner Sampler, driven 2 3/8" ID, 3" OD
3	Thin-walled Tube, pushed 2 7/8" ID, 3" OD
4	Disturbed Sample (bulk)
5	No Sample Recovered

4 Sampler Driving Resistance

Number of blows with 140 lb. hammer, falling 30-in. to drive sampler 1-ft. after seating sampler 6-in.; for example,

Blows/ft	Description
25	25 blows drove sampler 12" after initial 6" of seating
50/7"	50 blows drove sampler 7" after initial 6" of seating
Ref/3"	50 blows drove sampler 3" during initial 6" seating interval

5 Blow counts for Liner Sampler shown in ( )

6 Length of sample symbol approximates recovery length

7 Classification of Soils per ASTM, unless otherwise stated

8 Geologic Formation noted in bold font at the top of interpreted interval

9 Well Construction Legend

Section	Description
1	Well Cap
2	Protective concrete cover
3	Aboveground cover
4	Concrete
5	Grout/neat cement
6	Bentonite pellets
7	Sand
8	Slotted pipe w/bottom cap
9	Grout plug
10	Sand Backfill
11	Native Backfill

10 Refer to report text for EPA Test Methods used

11 Commonly used acronyms:

MSL	Mean Sea Level
MLLW	Mean Lower Low Water
PPM	Parts Per Million
PPMV	Parts Per Million by Volume
PCF	Pounds Per Cubic Foot

12 NAD 27 California Zone 7 coordinate system used

KEY TO TERMS & SYMBOLS USED ON LOGS PLATE A-2

APPENDIX B

LABORATORY ANALYTICAL DATA

94.0252

Form: Vta.(7/93)

CHAIN OF CUSTODY RECORD

FUGRO ◘ McClelland

LABORATORY: NET	LABORATORY LOCATION: Pittsburg	DATE: 2/14/94	FM JOB No.: 93-41-1780
CLIENT: City of Santa Barbara	PROJECT: Santa Barbara Railroad Depot Assess.		
PROJECT MANAGER: James R. Steele	SAMPLER (Signature): [signature]		

Laboratory No.	Sample No.	Location and Description	Date	Time	Vessel Type	No. of Vessels	Sample Matrix	Preservation Method	Tests Required
V	F-1 10	Boring F-1 @ 10'	2/14/94	0850	1	1	S	A, E	A
V	F-2 10	Boring F-2 @ 10'		1030					A
V	F-3 14	Boring F-3 @ 14'		1150					C
V	F-4 12	Boring F-4 @ ~~12'~~ 12'		1250					B
V	F-5 14	Boring F-5 @ 14'		1430					B
V	F-6 8	Boring F-6 @ 8'		1550					A
V	F-7 14	Boring F-7 @ 14'		1640					A
V	F-8 14	Boring F-8 @ 14'	↓	1715	↓	↓	↓	↓	A

VESSEL TYPE		SAMPLE MATRIX		TEST REQUIRED	
1	Brass or stainless steel sleeve, 2½-inch diameter by 1, 3, 4, or 6 inches long	A	Air	A	mod-8015/8020 TPH+BTEX → Gasol.
2	Brass or stainless steel sleeve, 1¾-inch diameter by 4 inches long	S	Solid	B	~~mod~~ 602/8015 TPH+BTEX → Diesel
3	Stainless steel sleeve, 1 inch diameter by 6 inches long	W	Water	C	~~8270~~ 8240, Volatiles Priority
4	Amber glass bottle with Teflon lined screw cap, 1,000 milliliters	O	Other	D	
5	Amber glass bottle with Teflon lined screw cap, 260 milliliters	PRESERVATION METHOD		E	
6	Clear glass jar with Teflon lined screw cap, 4 or 8 ounces	A	Artificial ice	F	
7	VOA vial, 40 milliliters	B	$NaHSO_4$	G	
8	Mason jar, 1 pint or 1 quart	C	HNO_3	H	
9	Plastic bottle, 1 liter	D	None	I	
10	Other	E	Other (Refrigerate)	J	

RELINQUISHED BY: (Signature) [signature]	RECEIVED BY: (Signature) [signature]	DATE: 2/16/94	TIME: 9:50AM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE:	TIME:
RELINQUISHED BY: (Signature)	RECEIVED FOR LABORATORY BY: (Signature) [signature]	DATE: 2/16	TIME: 10:40
METHOD OF SHIPMENT:	TURNAROUND TIME:	SAMPLE DISPOSAL: ☐ Return to FM ☐ Proper disposal by Lab after 60 days	
SPECIAL INSTRUCTIONS:			

HANDLING INFORMATION: SAMPLE TEMP. 2.7°C CG.

White - FM Copy Yellow - Laboratory Copy Pink - Return to FM with Results

5855 Olivas Park Drive • Ventura, California 93003-7672 • (805) 650-7000, FAX (805) 650-7010

93.0F17\Cocustody.713

NATIONAL ENVIRONMENTAL TESTING, INC.

Burbank Division
[illegible] South Flower Street
Burbank, CA [illegible]
Tel: (213) 849-6591
Fax: (818) 567-6477

DOHS Certificate Number: 1192
LACSD Lab I.D. Number: 10158

02/23/1994

Jim Steele
Fugro-McClelland
5855 Olivas Park Dr.
Ventura, CA 93003

Client Ref: Santa Barbara/9341-1780
Date Received: 02/16/1994

Sample analysis for the project referred to above has been completed and results are located on attached pages.

Should you have questions regarding procedures or results, please feel welcome to contact our Client Services Representatives or the Laboratory Director.

Kimberly S. Banks
Kimberly S. Banks
Project Manager

KB:rm
Attachments:
Analytical Reports
Chain of Custody Document

Client Net Acct No: 13200
NET Job No: 94.00252

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780
Date Taken: 02/14/1994
NET Job No.: 94.00252
Date Reported: 02/23/1994

Sample ID : F-1,10

Lab No. : 61743
Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 MOD. (LDLS)				
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
AROMATIC VOLATILES		--		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes, total	8020	ND	mg/Kg	0.015
TOT. PET. HYDROCARBONS		--		
as Gasoline	8015 MOD.	ND	mg/Kg	1.0
comment		NONE		
Surrogate Spike		--		
Bromofluorobenzene	8020/8015	92	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-2,10

Lab No. : 61744

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 MOD. (LDLS)				
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
AROMATIC VOLATILES		--		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes, total	8020	ND	mg/Kg	0.015
TOT. PET. HYDROCARBONS		--		
as Gasoline	8015 MOD.	ND	mg/Kg	1.0
comment		NONE		
Surrogate Spike		--		
Bromofluorobenzene	8020/8015	90	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-3,14

Lab No. : 61748

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8240(GCMS,Solid)				
Extraction Method		5030		
Date Extracted		02-23-94		
Date Analyzed		02-23-94		
Dilution Factor	8240	1		
Acetone	8240	ND	ug/Kg	10
Benzene	8240	ND	ug/Kg	5
Bromodichloromethane	8240	ND	ug/Kg	5
Bromoform	8240	ND	ug/Kg	5
Bromomethane	8240	ND	ug/Kg	5
2-Butanone	8240	ND	ug/Kg	10
Carbon disulfide	8240	ND	ug/Kg	5
Carbon tetrachloride	8240	ND	ug/Kg	5
Chlorobenzene	8240	ND	ug/Kg	5
Chloroethane	8240	ND	ug/Kg	5
2-Chloroethyl vinyl ether	8240	ND	ug/Kg	10
Chloroform	8240	ND	ug/Kg	5
Chloromethane	8240	ND	ug/Kg	5
Dibromochloromethane	8240	ND	ug/Kg	5
1,2-Dichlorobenzene	8240	ND	ug/Kg	5
1,3-Dichlorobenzene	8240	ND	ug/Kg	5
1,4-Dichlorobenzene	8240	ND	ug/Kg	5
1,1-Dichloroethane	8240	ND	ug/Kg	5
1,2-Dichloroethane	8240	ND	ug/Kg	5
1,1-Dichloroethene	8240	ND	ug/Kg	5
cis-1,2-Dichloroethene	8240	ND	ug/Kg	5
trans-1,2-Dichloroethene	8240	ND	ug/Kg	5
1,2-Dichloropropane	8240	ND	ug/Kg	5
cis-1,3-Dichloropropene	8240	ND	ug/Kg	5
trans-1,3-Dichloropropene	8240	ND	ug/Kg	5
Ethyl benzene	8240	ND	ug/Kg	5
2-Hexanone	8240	ND	ug/Kg	10
Methylene chloride	8240	ND	ug/Kg	10
4-Methyl-2-pentanone	8240	ND	ug/Kg	10
Styrene	8240	ND	ug/Kg	5
1,1,2,2-Tetrachloroethane	8240	ND	ug/Kg	5
Tetrachloroethene	8240	ND	ug/Kg	5
Toluene	8240	ND	ug/Kg	5
1,1,1-Trichloroethane	8240	ND	ug/Kg	5
1,1,2-Trichloroethane	8240	ND	ug/Kg	5
Trichloroethene	8240	ND	ug/Kg	5
Trichlorofluoromethane	8240	ND	ug/Kg	5
Vinyl acetate	8240	ND	ug/Kg	10
Vinyl chloride	8240	ND	ug/Kg	5
Xylenes (total)	8240	ND	ug/Kg	5

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-3,14

Lab No. : 61748

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
SURROGATE RESULTS		--		
Spk Conc Toluene-d8	8240	50	ug/Kg	
Toluene-d8	8240	90	% Rec.	
Spk Conc Bromofluorobenzene	8240	50	ug/Kg	
Bromofluorobenzene	8240	100	% Rec.	
Spk Conc 1,2-DCA-d4	8240	50	ug/Kg	
1,2-Dichloroethane-d4	8240	91	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-4,12

Lab No. : 61749

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020 (soil) BTXE LDL				
DATE ANALYZED		02-17-94		
Dilution Factor		1		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes (Total)	8020	ND	mg/Kg	0.015
Surrogate Spike	8020	--		
Bromofluorobenzene	8020	97	% Rec.	
METHOD DOHS/LUFT				
Extraction Method		3550		
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
TOT. PET. HYDROCARBONS		--		
as Diesel	8015 MOD	ND	mg/Kg	10
Surrogate Spike-TPH		--		
Chlorobenzene	8015 MOD.	100	% Rec.	
Di-n-octyl-phthalate	8015 MOD.	NA	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-5,14

Lab No. : 61750

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020 (soil) BTXE LDL				
DATE ANALYZED		02-17-94		
Dilution Factor		1		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes (Total)	8020	ND	mg/Kg	0.015
Surrogate Spike	8020	--		
Bromofluorobenzene	8020	83	% Rec.	
METHOD DOHS/LUFT				
Extraction Method		3550		
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
TOT. PET. HYDROCARBONS		--		
as Diesel	8015 MOD	ND	mg/Kg	10
Surrogate Spike-TPH		--		
Chlorobenzene	8015 MOD.	100	% Rec.	
Di-n-octyl-phthalate	8015 MOD.	NA	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-6,8

Lab No. : 61745

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS		UNITS	REPORTING LIMIT
METHOD 8020/8015 MOD. (LDLS)					
Date Extracted		02-17-94			
Date Analyzed		02-17-94			
Dilution Factor		1			
AROMATIC VOLATILES		--			
Benzene	8020	ND		mg/Kg	0.005
Ethylbenzene	8020	ND		mg/Kg	0.005
Toluene	8020	0.012		mg/Kg	0.005
Xylenes, total	8020	ND		mg/Kg	0.015
TOT. PET. HYDROCARBONS		--			
as Gasoline	8015 MOD.	3	1	mg/Kg	1.0
comment		NONE			
Surrogate Spike		--			
Bromofluorobenzene	8020/8015	91		% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.
1: Hydrocarbons lighter than gasoline present.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-7,14

Lab No. : 61746

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 MOD. (LDLS)				
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
AROMATIC VOLATILES		--		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes, total	8020	ND	mg/Kg	0.015
TOT. PET. HYDROCARBONS		--		
as Gasoline	8015 MOD.	ND	mg/Kg	1.0
comment		NONE		
Surrogate Spike		--		
Bromofluorobenzene	8020/8015	86	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1750

NET Job No.: 94.00252

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-8,14

Lab No. : 61747

Sample Matrix: SOIL

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 MOD. (LDLS)				
Date Extracted		02-17-94		
Date Analyzed		02-17-94		
Dilution Factor		1		
AROMATIC VOLATILES		--		
Benzene	8020	ND	mg/Kg	0.005
Ethylbenzene	8020	ND	mg/Kg	0.005
Toluene	8020	ND	mg/Kg	0.005
Xylenes, total	8020	ND	mg/Kg	0.015
TOT. PET. HYDROCARBONS		--		
as Gasoline	8015 MOD.	ND	mg/Kg	1.0
comment		NONE		
Surrogate Spike		--		
Bromofluorobenzene	8020/8015	71	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Form: V1a.(7/93)

CHAIN OF CUSTODY RECORD

FUGRO ⊡ McClelland

LABORATORY		LABORATORY LOCATION	DATE / FM JOB No.
CLIENT		PROJECT	
PROJECT MANAGER		SAMPLER (Signature)	

Laboratory No.	Sample No.	Location and Description	Date	Time	Vessel Type	No. of Vessels	Sample Matrix	Preservation Method	Tests Required
	F-1 hp								
	F-2 hp			1035					
	F-3 hp			1200					
	F-4 hp			1305					
	F-5 hp								
	F-6 hp			1545					
	F-7 hp			1645					
	F-8 hp			1720					

VESSEL TYPE		SAMPLE MATRIX		TEST REQUIRED	
1	Brass or stainless steel sleeve, 2½-inch diameter by 1, 3, 4, or 6 inches long	A	Air	A	mod 8015/8020 TPH+BTEX & Gasol.
2	Brass or stainless steel sleeve, 1¾-inch diameter by 4 inches long	S	Solid	B	602/8015 TPH+BTEX & Diesel
3	Stainless steel sleeve, 1 inch diameter by 6 inches long	W	Water	C	8240 Volatile Prior. Halo.
4	Amber glass bottle with Teflon lined screw cap, 1,000 milliliters	O	Other	D	
5	Amber glass bottle with Teflon lined screw cap, 260 milliliters	PRESERVATION METHOD		E	
6	Clear glass jar with Teflon lined screw cap, 4 or 8 ounces	A	Artificial ice	F	
7	VOA vial, 40 milliliters	B	$NaHSO_4$	G	
8	Mason jar, 1 pint or 1 quart	C	HNO_3	H	
9	Plastic bottle, 1 liter	D	None	I	
10	Other	E	Other	J	

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE: 3/16/94	TIME: 9:50am
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE:	TIME:
RELINQUISHED BY: (Signature)	RECEIVED FOR LABORATORY BY: (Signature)	DATE:	TIME:
METHOD OF SHIPMENT:	TURNAROUND TIME:	SAMPLE DISPOSAL: ☐ Return to FM ☐ Proper disposal by Lab after 60 days	

SPECIAL INSTRUCTIONS:

HANDLING INFORMATION

White - FM Copy Yellow - Laboratory Copy Pink - Return to FM with Results

5855 Olivas Park Drive • Ventura, California 93003-7672 • (805) 650-7000, FAX (805) 650-7010

NET® NATIONAL ENVIRONMENTAL TESTING, INC.

Burbank Division
700 South Flower Street
Burbank, CA 91502
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DOHS Certificate Number: 1192
LACSD Lab I.D. Number: 10158

02/23/1994

Jim Steele
Fugro-McClelland
5855 Olivas Park Dr.
Ventura, CA 93003

Client Ref: Santa Barbara/9341-1780
Date Received: 02/16/1994

Sample analysis for the project referred to above has been completed and results are located on attached pages.

Should you have questions regarding procedures or results, please feel welcome to contact our Client Services Representatives or the Laboratory Director.

Kimberly S. Banks
Project Manager

KB:rm
Attachments:
Analytical Reports
Chain of Custody Document

Client Net Acct No: 13200
NET Job No: 94.00253

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1730

NET Job No.: 94.00253

Date Taken: 02.14/1994
Date Reported: 02/23/1994

Sample ID : F-1,hp

Lab No. : 61751

Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 COMB.				
Date Analyzed		02-21-94		
Dilution Factor	8020	1		
AROMATIC VOLATILES	8020	--		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes, total	8020	ND	ug/L	1.5
TOT. PET. HYDROCARBONS	8015 MOD.	--		
as Gasoline	8015 MOD.	ND	ug/L	10
Surrogate Spike-8020/8015	8020	--		
Bromofluorobenzene	8020	98	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780
Date Taken: 02/14/1994
NET Job No.: 94.00253
Date Reported: 02/23/1994

Sample ID : F-2,hp

Lab No. : 61752
Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 COMB.				
Date Analyzed		02-21-94		
Dilution Factor	8020	1		
AROMATIC VOLATILES	8020	--		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes, total	8020	ND	ug/L	1.5
TOT. PET. HYDROCARBONS	8015 MOD.	--		
as Gasoline	8015 MOD.	ND	ug/L	10
Surrogate Spike-8020/8015	8020	--		
Bromofluorobenzene	8020	99	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780
Date Sampled: 02/14/1994
NET Job No.: 94.00253
Date Reported: 04/06/1994
Sample ID : F-3,hp
Lab No. : 61756
Sample Matrix: GROUND WATER

Analytes/Method	Results	Flags	Units	MDL	PQL	Date Analyzed	Prep Batch	Run Batch	Analyst
METHOD 8240(GCMS,Liquid)									
DATE ANALYZED	02-22-94					02/22/1994		143	shu
Dilution Factor	1					02/22/1994		143	shu
Acetone	ND		ug/L	4.6	10	02/22/1994		143	shu
Benzene	ND		ug/L	0.7	5	02/22/1994		143	shu
Bromodichloromethane	ND		ug/L	0.6	5	02/22/1994		143	shu
Bromoform	ND		ug/L	1.1	5	02/22/1994		143	shu
Bromomethane	ND		ug/L	0.9	5	02/22/1994		143	shu
2-Butanone	ND		ug/L	3.8	10	02/22/1994		143	shu
Carbon disulfide	ND		ug/L	1.0	5	02/22/1994		143	shu
Carbon Tetrachloride	ND		ug/L	1.4	5	02/22/1994		143	shu
Chlorobenzene	ND		ug/L	0.9	5	02/22/1994		143	shu
Chloroethane	ND		ug/L	2.4	5	02/22/1994		143	shu
2-Chloroethyl vinyl ether	ND		ug/L	4.1	10	02/22/1994		143	shu
Chloroform	ND		ug/L	0.8	5	02/22/1994		143	shu
Chloromethane	ND		ug/L	1.5	5	02/22/1994		143	shu
Dibromochloromethane	ND		ug/L	0.8	5	02/22/1994		143	shu
1,2-Dichlorobenzene	ND		ug/L	1.7	5	02/22/1994		143	shu
1,3-Dichlorobenzene	ND		ug/L	0.8	5	02/22/1994		143	shu
1,4-Dichlorobenzene	ND		ug/L	0.5	5	02/22/1994		143	shu
1,1-Dichloroethane	ND		ug/L	0.9	5	02/22/1994		143	shu
1,2-Dichloroethane	ND		ug/L	0.8	5	02/22/1994		143	shu
1,1-Dichloroethene	ND		ug/L	2.5	5	02/22/1994		143	shu
cis-1,2-Dichloroethene	ND		ug/L	0.8	5	02/22/1994		143	shu
trans-1,2-Dichloroethene	ND		ug/L	1.4	5	02/22/1994		143	shu
1,2-Dichloropropane	ND		ug/L	0.7	5	02/22/1994		143	shu
cis-1,3-Dichloropropene	ND		ug/L	1.3	5	02/22/1994		143	shu
trans-1,3-Dichloropropene	ND		ug/L	0.5	5	02/22/1994		143	shu
Ethyl benzene	ND		ug/L	1.1	5	02/22/1994		143	shu
2-Hexanone	ND		ug/L	2.4	10	02/22/1994		143	shu
Methylene chloride	ND		ug/L	1.0	10	02/22/1994		143	shu
4-Methyl-2-pentanone	ND		ug/L	3.3	10	02/22/1994		143	shu
Styrene	ND		ug/L	1.8	5	02/22/1994		143	shu
1,1,2,2-Tetrachloroethane	ND		ug/L	1.2	5	02/22/1994		143	shu
Tetrachloroethene	ND		ug/L	1.1	5	02/22/1994		143	shu
Toluene	ND		ug/L	1.8	5	02/22/1994		143	shu
1,1,1-Trichloroethane	ND		ug/L	1.6	5	02/22/1994		143	shu
1,1,2-Trichloroethane	ND		ug/L	1.3	5	02/22/1994		143	shu
Trichloroethene	ND		ug/L	0.8	5	02/22/1994		143	shu
Trichlorofluoromethane	ND		ug/L	1.5	5	02/22/1994		143	shu
Vinyl acetate	ND		ug/L	2.6	10	02/22/1994		143	shu
Vinyl chloride	ND		ug/L	0.9	5	02/22/1994		143	shu

ND: Not detected at the Method Detection Limit (MDL).
PQL: Practical Quantitation Limit
If a dilution factor greater than one (1) is reported the PQL and MDL must be multiplied by reported dilution factor to determine actual limits. A "D" flag indicates that only specific analytes have been reported from higher dilutio

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00253
Sample ID : F-3,hp
Lab No. : 61756

Date Sampled: 02/14/1994
Date Reported: 04/06/1994

Sample Matrix: GROUND WATER

Analytes/Method	Results	Flags	Units	MDL	PQL	Date Analyzed	Prep Batch	Run Batch	Analyst
Xylenes (total)	ND		ug/L	2.8	15	02/22/1994		143	shu
SURROGATE RESULTS	--					02/22/1994		143	shu
Spk Conc Toluene-d8	50		ug/L			02/22/1994		143	shu
Toluene-d8	108		% Rec.			02/22/1994		143	shu
Spk Conc Bromofluorobenzene	50		ug/L			02/22/1994		143	shu
Bromofluorobenzene	102		% Rec.			02/22/1994		143	shu
Spk Conc 1,2-DCA-d4	50		ug/L			02/22/1994		143	shu
1,2-Dichloroethane-d4	82		% Rec.			02/22/1994		143	shu

ND: Not detected at the Method Detection Limit (MDL)
PQL: Practical Quantitation Limit
If a dilution factor greater than one (1) is reported the PQL and MDL must be multiplied by reported dilution factor to determine actual limits. A "D" flag indicates that only specific analytes have been reported from higher dilution.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1730

NET Job No.: 94.00253

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-4,hp

Lab No. : 61757

Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020 (BTXE)				
DATE ANALYZED		02-21-94		
Dilution Factor	8020	1		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes (Total)	8020	ND	ug/L	1.5
Surrogate Spike	8020	--		
Bromofluorobenzene	8020	102	% Rec.	
METHOD DOHS/LUFT				
DATE ANALYZED		02-17-94		
DATE EXTRACTED		02-17-94		
Dilution Factor	8015 MOD.	1		
TOT. PET. HYDROCARBONS		--		
as Diesel	8015 MOD.	ND	mg/L	1
Surrogate Spike-TPH		--		
Chlorobenzene	8015 MOD.	100	% Rec.	
Di-n-octyl phthalate	8015 MOD.	N/A	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00253

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-5,hp

Lab No. : 61758

Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020 (BTXE)				
DATE ANALYZED		02-21-94		
Dilution Factor	8020	1		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes (Total)	8020	ND	ug/L	1.5
Surrogate Spike	8020	--		
Bromofluorobenzene	8020	74	% Rec.	
METHOD DOHS/LUFT				
DATE ANALYZED		02-17-94		
DATE EXTRACTED		02-17-94		
Dilution Factor	8015 MOD.	1		
TOT. PET. HYDROCARBONS		--		
as Diesel	8015 MOD.	ND	mg/L	1
Surrogate Spike-TPH		--		
Chlorobenzene	8015 MOD.	96	% Rec.	
Di-n-octyl phthalate	8015 MOD.	N/A	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780
Date Taken: 02/14/1994
NET Job No.: 94.00253
Date Reported: 02/23/1994

Sample ID : F-6,hp

Lab No. : 61753
Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 COMB.				
Date Analyzed		02-21-94		
Dilution Factor	8020	1		
AROMATIC VOLATILES	8020	--		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes, total	8020	ND	ug/L	1.5
TOT. PET. HYDROCARBONS	8015 MOD.	--		
as Gasoline	8015 MOD.	ND	ug/L	10
Surrogate Spike-8020/8015	8020	--		
Bromofluorobenzene	8020	100	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780

NET Job No.: 94.00253

Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-7,hp

Lab No. : 61754

Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 COMB.				
Date Analyzed		02-21-94		
Dilution Factor	8020	1		
AROMATIC VOLATILES	8020	--		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes, total	8020	ND	ug/L	1.5
TOT. PET. HYDROCARBONS	8015 MOD.	--		
as Gasoline	8015 MOD.	ND	ug/L	10
Surrogate Spike-8020/8015	8020	--		
Bromofluorobenzene	8020	109	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.

Client Name: Fugro-McClelland
Client Ref.: Santa Barbara/9341-1780
NET Job No.: 94.00253
Date Taken: 02/14/1994
Date Reported: 02/23/1994

Sample ID : F-8,hp

Lab No. : 61755
Sample Matrix: GROUND WATER

ANALYTES/METHOD	METHOD	RESULTS	UNITS	REPORTING LIMIT
METHOD 8020/8015 COMB.				
Date Analyzed		02-21-94		
Dilution Factor	8020	1		
AROMATIC VOLATILES	8020	--		
Benzene	8020	ND	ug/L	0.5
Ethylbenzene	8020	ND	ug/L	0.5
Toluene	8020	ND	ug/L	0.5
Xylenes, total	8020	ND	ug/L	1.5
TOT. PET. HYDROCARBONS	8015 MOD.	--		
as Gasoline	8015 MOD.	ND	ug/L	10
Surrogate Spike-8020/8015	8020	--		
Bromofluorobenzene	8020	105	% Rec.	

ND: Not Detected at the Reporting Limit, if a dilution factor is reported the R.L. must be multiplied by the dilution factor to obtain actual R.L.