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CITY OF OAKLAND

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March 20, 1995

#3978

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Way Parkway, Room 250
Alameda, CA 94502

Dear Barney:

Enclosed please find the reports titled "Environmental Site Assessment, Oakland Building No. 7, 7101 Edgewater Drive, Oakland, California", dated December 1989, and "Preliminary Geotechnical Evaluation and Environmental Site Assessment, City of Oakland Consolidated Services Center, Alternative Sites A and B, Oakland, California", dated May 13, 1992.

Please excuse the tardiness of these reports as Andrew Clark-Clough was called out-of-town for a family emergency. Andrew expects to follow-up with these reports no later than the week of the March 27, 1995.

If you have any questions please feel free to call me at (510) 238-7371 or Andrew Clark-Clough at (510) 238-6361.

Sincerely,

Gary L. Galindo
Environmental Program Specialist

enclosure

cc: Andrew Clark-Clough

Woodward-Clyde Consultants

ENVIRONMENTAL SITE ASSESSMENT
OAKLAND BUILDING NO. 7
7101 EDGEWATER DRIVE
OAKLAND, CALIFORNIA

Prepared for

The City of Oakland
Oakland, California 94612

Prepared by

Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, California 94607-4014

December, 1989

500 12th Street
Suite 100
Oakland, CA 94607-4014
(415) 893-3600

Woodward-Clyde Consultants

December 13, 1989
8910274A

City of Oakland
Architectural Services
City Hall
Oakland, CA 94612

Attention: Mr. Clyde Grimes
City Architect

Subject: Environmental Site Assessment
Oakland Building No. 7
7101 Edgewater Drive

Ladies and Gentlemen:

We are pleased to present the following report describing the results of our environmental site assessment of the alternative sites for Building No. 7. This report contains the results of our review of available data and laboratory testing of groundwater and soil samples from monitoring wells and borings drilled at the alternative sites 1 and 2.

Please call if you have any questions, or if we can provide assistance with this project.

Sincerely,

WOODWARD-CLYDE CONSULTANTS

Lois Gruenberg
Lois Gruenberg
Staff Engineer

Patrick C. Lucia
Patrick C. Lucia, Ph.D., P.E.
Principal

LG/PCL:tt
8910274a/COT

Enclosure

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1.0 INTRODUCTION

In accordance with Agreement Amendment No. 1 between the City of Oakland and Woodward Clyde Consultants (WCC), we are pleased to submit this Environmental Site Assessment of the two (2) alternative sites for the proposed Building No. 7 of the City of Oakland Corporation Yard at 7101 Edgewater Drive, as shown on Figure 1.

This report presents the following information:

- a review of the records of the potential environmental impacts on the alternative sites;
- a description of the soil and groundwater conditions encountered on the sites;
- analytical results of potential contaminants in soil and groundwater;
- evaluation of on-site contamination; and
- recommendations for additional investigations.

1.1 BACKGROUND/PROJECT DESCRIPTION

The existing Equipment Building (Building No. 5) at the City of Oakland's Consolidated Services Center has experienced extensive settlement

and distress. WCC previously evaluated the settlement problem and the findings and conclusions were presented in a report dated March 25, 1988, entitled "Geotechnical Engineering Study, Equipment Building, Consolidated Services Center, Oakland, California."

It is our understanding that the City of Oakland will demolish the existing building and replace it with a new structure referred to as Building No. 7. At present, the location of the replacement building has not been finalized, and may be located at one of two alternative sites. Alternative site 1 is an adjacent parcel of land located northeast of the present Consolidated Service Center; alternative site 2 is the parking area north of the Public Works Building at the northern end of the Consolidated Service Center, as shown on Figure 2.

The purpose of this Environmental Site Assessment is to evaluate the two alternative proposed building sites for the presence of hazardous materials in the soil and groundwater.

1.2 SCOPE OF WORK

This Environmental Assessment of the alternative sites for the proposed Building No. 7 history review:

- site reconnaissance;
- review of regulatory records on potential environmental impacts;
- drilling of four borings and collection of soil samples;
- installation of four monitoring wells and collection of groundwater samples;
- laboratory analysis of soil and groundwater samples; and
- preparation of this report.

Soil and groundwater samples were collected from each boring and well and submitted to a commercial analytical laboratory for the following analysis:

- Low to medium boiling point hydrocarbon compounds (EPA 8015/8020), and
- Volatile and semi-volatile organic compounds (EPA 8240, 8270).

This report presents the results of the Environmental Assessment.

1.3 SITE LOCATION/DESCRIPTION

The alternative sites for the proposed Building No. 7 are located at the north end of Edgewater Drive in the City of Oakland (Figure 1). Alternative site 1 is an undeveloped parcel east of the Consolidated Service Center and is owned by the Port of Oakland. To the northeast is the Interstate 880 and the Damon Slough. Alternative site 2 is the northeast parking lot of the Consolidated Service Center and adjacent to alternative site 1 (Figure 2). The City of Oakland leases this property from the Port of Oakland. It is bound by the San Leandro Bay to the west and southwest. The land to the south and southeast of both alternative sites is zoned industrial and has been developed.

Topographic maps show a gentle southwesterly slope. (U.S. Geologic Survey, San Leandro Quadrangle and Oakland East Quadrangle, 7.5 minute series, Topographic) Groundwater in these areas is expected to flow with the gradient, i.e., toward the Bay to the southwest. However, due to the site's proximity to the Bay, it is possible that the groundwater is influenced by tidal activity, as well.

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), February 1989, Site/Event List and the Hazardous Waste Management System (HWDMS) July 26, 1989 database listing were also reviewed. These listings were reviewed to assess if surrounding properties contain hazardous waste, or if toxic substance activities in the area may impact the site.

Potential uncontrolled hazardous waste sites are contained in the EPA CERCLIS database. The CERCLIS system contains only those potential hazardous waste sites that have been brought to the attention of the EPA. The EPA CERCLIS database for February 1989 contains no sites within an approximate 2,000-foot radius of the site.

The facilities listed in the EPA Hazardous Waste Data Management System (HWDMS) database are regulated under the Resources Conservation and Recovery Act (RCRA) of 1976. The HWDMS database contains only those regulated facilities that have notified EPA as hazardous waste generators, transporters (Trans) or treatment/storage/disposal facilities (TSDF). The EPA HWDMS database for July 27, 1989 lists the following case sites within an approximate 2,000-foot radius of the site.

Type 3	CAD981379902	ACS Asbestos Hazard Management 7303 Edgewater Drive Oakland, CA 94621
Type 1	CAD980895205	PAC Bell 7300 Edgewater Drive Oakland, CA 94621

The RCRA data base contains those sites which generate toxic wastes by type. Type 1 indicates that at least 1000 kg/month of non-accutely hazardous waste is generated (or 1 kg/month acutely hazardous waste); and type 3 indicates less than 100 kg/month of non-accutely hazardous waste is generated.

2.2.2 State Agencies

The California Office of Planning and Research's "Hazardous Waste and Substances Site List", revised June 1989 lists the following site:

(Unknown)
7307-F Edgewater Drive
Oakland, CA
Problem: Tank Leak

This site is also listed on the fuel leak list of the Regional Water Quality Control Board (RWQCB) for September 1, 1989 and the City of Oakland Fire Department underground storage tank activity permit files. The owner is not known.

The California Department of Health Services (DHS) "Expenditure Plan for Hazardous Substances Cleanup Bond Act of 1984", Revision 4, January 1989 lists priority cleanup toxic waste sites. No sites are listed.

The Regional Water Quality Control Board "Fuel Leak Case List" was reviewed for Alameda County. Three fuel leak cases were listed by RWQCB within an approximate 2,000-foot radius of the site.

McGuire & Hester 796 - 66th Avenue Oakland, CA	A2*
Port of Oakland (UST permit list) 7101 Edgewater Drive Oakland, CA 94621	B3
Unknown 7307-F Edgewater Drive Oakland, CA	C

* The codes indicate the following:
  A - the groundwater has been impacted;
  B - the soil has been impacted, but it is unknown whether the groundwater has been impacted;
  C - the soil has been impacted at less than 100 ppm (parts per million).
  The number is used to rank the sites' priority, where 1 is higher than 3.

2.2.3 City Agencies

Records were received from the City of Oakland Department of Fire Prevention for the years of 1974-1989. The records of the years from 1920-1973 are no longer available. These records list the sites in which permits were issued for underground storage tank (UST) activity.

(See next page for list of activities).

The following sites, within an approximately 2,000 foot radius of the site, were identified:

Date	Permit #	Address	Description
07/26/74	7868	7101 Edgewater Drive	Vapor recovery system
01/24/75	8018	7101 Edgewater Drive	Extend fuel lines
04/22/75	8058	7101 Edgewater Drive	Extend gas, diesel lines
09/16/78	8093	513 Independent Road	Install 1-5,000-gal. tank
12/04/75	8114	7101 Edgewater Drive	Repair fuel tank
10/03/78	8302	7200 Edgewater Drive	Install 1-10,000-gal. tank
05/31/79	8364	7200 Edgewater Drive	Install 1-10,000-gal. tank and 1-1,000-gal. waste oil
06/27/79	8370	7303 Edgewater Drive	Install 1-3,000-gal. tank
07/24/80	8464	8001 Oakport Street	Install 1-10,000-gal. tank
09/23/80	8473	7101 Edgewater Drive	Remove 1-8,000-gal. tank. Install 1-12,000-gal. tanks
02/07/84	8634	7101 Edgewater Drive	Install 2-20,000-gal., 1-12,000-gal. tanks
05/03/84	8649	7101 Edgewater Drive	Install 2-20,000-gal., 1-12,000-gal. tanks
12/17/86	8845	796-66th Avenue	Remove 1-1,000-, 1-5,000-, and 1-8,000-gal. tanks
07/01/87	9005	7200 Edgewater Drive	Remove 1-500-, 1-1,000-gal. tanks
11/19/87	9039	7200 Edgewater Drive	Remove 1-1,000-gal. tank
07/08/88	9130	7307-F Edgewater Drive	Remove 1-3,000-gal. tank
08/10/88	9140	575 Independent Road	Remove 2-500-gal. tanks

2.2.4 Port of Oakland

According to Neil Werner of the Port of Oakland, Environmental Compliance Group, some activities have occurred on the undeveloped parcel of land owned by the Port of Oakland. The Damon Slough is dredged for maintenance purposes on a regular basis. The dredgings are placed on the shore line of the Slough and on the undeveloped parcel at the northeastern side of Edgewater Drive (alternative site 1) to dry, and then are removed. Permits are issued by the Port of Oakland Planning and Compliance Department, Port Permits and Graphics Division for this activity.

Mr. Neil Werner also reported the discovery of an approximately 4 x 6 foot area of waste oil, about 5 to 6 years ago. It was located in a ditch on the west side of the northern end and at Edgewater Drive in front of the Public Works Building (alternative site 2), approximately 200 feet from the shoreline. The soil containing the 4 x 6 foot area of waste oil was removed by the Port of Oakland.

3.0
FIELD EXPLORATION

3.1 SOIL BORINGS AND SAMPLING

Soil borings were drilled at four locations two on each alternative site, as shown in Figure 2, extending to a maximum depth of 18.5 feet. Each boring was converted into a groundwater monitoring well. A log of each boring was prepared by a WCC engineer and is included in Appendix A. The logs contain descriptions of the materials encountered in each boring, well construction details, field measurements and field observations of potential contaminants. In order to investigate the groundwater conditions at each alternative site, the monitoring wells were located at points that WCC anticipated would provide data representative of site conditions.

All of the borings were drilled with 8-inch diameter continuous flight hollow stem augers, powered by a truck mounted drill rig. Soil samples were obtained just above, at and just below the groundwater table. The soil samples were recovered with a 2-inch diameter modified California drive sampler, lined with 3-6 inches long, 2-inch diameter, brass tubes. Sample ends were sealed with plastic caps and transported to an analytical laboratory in a chilled ice chest containing ice on the day sampled. Selected soil samples were submitted to a commercial analytical laboratory for chemical testing. Samples not selected for chemical analyses were held by the laboratory pending analytical results and proper disposal.

To reduce the potential of cross-contamination between sampling intervals, the drive sampler was decontaminated in the following manner:

(1) Alconox wash,
(2) Tap water rinse,
(3) Triple rinse with deionized water, and
(4) Air-dried.

Brass liners and caps were decontaminated in the same manner, prior to use. To reduce the potential for contamination between drilling locations, the augers and the drive sampler were steam cleaned prior to commencing each monitoring well boring.

Soil cuttings of each boring were placed in 55-gallon drums and stored on site pending laboratory analytical results and proper disposal.

3.2 MONITORING WELL CONSTRUCTION, DEVELOPMENT AND SAMPLING

Monitoring well MW-1 and MW-2 are located in the southwest and northeast parking lots of the Public Works building, respectively. Monitoring well MW-3 and MW-4 are located in the centers of the west and east sections, respectively, of the parcel of land northeast of the present Consolidated Service Center (Figure 2). All PVC casing, screen and well end caps were steam cleaned before construction of each monitoring well. Construction details are included in Appendix A.

The monitoring wells were developed at least 24 hours after the monitoring wells were installed. In developing the monitoring wells approximately 30 gallons of water was removed with a Teflon bailer, or the well was bailed dry. Measurements of the relative stability of pH, temperature, conductivity, and salinity were taken approximately every 5 gallons. Water levels were recorded at the beginning and at the end of well development. The wells were allowed to recharge for approximately 24 hours, before sampling occurred. Prior to sampling, approximately 3 casing volumes were removed from the wells with a Teflon bailer, or the wells were bailed dry. Once again, measurements of the relative stability of pH,

temperature, conductivity, and salinity were taken every 5 gallons (Appendix B). Groundwater samples were taken with a Teflon bailer and retained in containers prepared by the analytical laboratory. Then, the samples were transported to the State Certified laboratory in a chilled ice chest. Chain-of-Custody forms are included in Appendix C. Water removed from the monitoring wells was stored in 55-gallon drums pending analytical results and proper disposal.

CHEMICAL ANALYTICAL TESTING

The soil and groundwater samples were submitted to a state certified analytical laboratory, Sequoia Analytical Laboratory in Redwood City, for chemical testing. All of the groundwater and soil samples were analyzed for the following:

- Total petroleum hydrocarbons (TPH) (EPA Method 5030/8015/8020 modified) with benzene, toluene, ethylbenzene, and xylene (BTEX);
- Volatile organic or purgeable priority pollutants (EPA Method 8240); and
- Semi-volatile or extractible organics (EPA Method 8270).

Groundwater and soil samples were analyzed for potential contaminants based on field observations and site history. One water sample from each monitoring well was analyzed one one tube sample taken near the ground water table from each monitoring well boring was analyzed.

5.0
RESULTS AND DISCUSSION

5.1 RECORDS REVIEW

The review of Federal, State and city records revealed a concentration of reported fuel leaks, toxic cases and underground storage tanks (UST) activities to the south of the alternative sites for Building No. 7 (Figure 3). Although the topography suggests that shallow groundwater flows to the southwest, the proximity of these reported cases to the alternative sites poses a potential for environmental impact. The seasonal changes in groundwater flow and tidal influence could allow contaminants to spread laterally in a radial pattern in the case of an uncontrolled hazardous waste release.

The Fuel Leak Case List and UST permit activity records show that the Consolidated Services Center is on the RWQCB " Fuel Leak Case List". This is most likely due to underground tank closure activities in the area of Building No. 5.

The three sites located to the north of the Damon Slough are crossgradient from the alternative sites due to their proximity to the slough and the southwesterly direction of groundwater flow. It is unlikely that contamination from these sites would impact the alternative sites as contamination would be intercepted by the slough. Also, the permitted dredging activities reported by Neil Werner of the Port of Oakland, Environmental Compliance Group are unlikely to impact the alternative sites.

5.2 FIELD EXPLORATION

Similar types of fill material were encountered in each of the four monitoring well borings just above, at and just below the water table. The fill encountered consists of mostly sandy silts and clays. On alternative site 2, borings MW-1 and MW-2 contain gravels and organic particles woodchips, pieces of brick, etc. in the fill material. These borings, located in the parking lots of the Public Works Building, are approximately 2 to 4 feet higher in elevation than MW-3 and MW-4 located in alternative site 1, as shown on Figure 2.

During drilling, organic vapors in soil samples and cuttings from boring MW-1 were noted by the WCC engineer. This monitoring well is located within the area of the abandoned underground gas lines.

During drilling, groundwater was encountered at a depth of approximately 6 feet beneath the ground surface in monitoring wells MW-1 and MW-4. In MW-2 and MW-3, groundwater was encountered at a depth of approximately 7 to 7-1/2 feet beneath the ground surface.

5.3 SOIL ANALYSES

The results of the chemical analytical tests are summarized in Table 1 and included in Appendix C.

The following contaminants were detected in the soil at the location of MW-1 at a depth of 5 to 6-1/2 feet:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- 2-Methylnapthalene
- Napthlene
- Phenol

Low to medium boiling point hydrocarbons were detected in soil at each monitoring well boring location. Methylene chloride was detected in soil at the location of MW-3, however this is a common laboratory contaminant and is not believed to be a soil contaminant. Low to medium boiling point hydrocarbons were detected at 6.4 parts per million (ppm) in soil at 6 to 7-1/2 feet in MW-3, and 2.5 ppm in soil at 6 to 7-1/2 feet in MW-4.

5.4 GROUNDWATER ANALYSES

The results of the analytical tests of groundwater samples are summarized in Table 2A, 2B, 2C and included in Appendix C.

The following contaminants were detected in groundwater sampled from MW-1:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- 2-Methylnapthalene
- 4-Methylnapthalene
- Napthlene
- Phenol
- Low/Medium boiling point hydrocarbons

In addition benzene was detected in MW-2 and acetone and carbon disulfide in MW-3. It is believed that the acetone and carbon disulfide are laboratory contaminants.

5.5 DISCUSSION

Laboratory analysis of groundwater samples from monitoring wells MW-1 and MW-2 indicates that groundwater at alternative site 2 is contaminated with volatile organic compounds. Benzene is detected at 120 parts per

billion (ppb) which is above the Department of Health Services (DHS) drinking water standards of 1 ppb benzene. Analysis of soil samples from MW-1 show detection of volatile organic compounds usually associated with petroleum products. The probable source of this contamination is the fuel lines extending throughout the Consolidated Services Center.

Laboratory analysis of groundwater from monitoring well MW-3 and MW-4 shows no detection of volatile organics or purgeable organic contaminants or petroleum hydrocarbons. The low concentrations of petroleum hydrocarbons in soil from MW-3 and MW-4 are below concentrations which would require remediation by the California Regional Water Quality Control Board or the California Department of Health Services (DHS). In addition, the review of records indicates that alternative site 1 is unlikely to be impacted by the reported fuel leaks toxic release cases and underground storage tank activities in the area surrounding the Edgewater Drive sites.

6.0
RECOMMENDATIONS

The results of the groundwater analyses for alternative site 2 indicates substantial groundwater contamination and the potential for a substantial volume of contaminated soil at the groundwater - soil interface and above. The underground piping and possibly underground tanks are probable sources of contamination of the Consolidated Services Center (alternative site 2). Therefore, with the planned improvements, we recommend that a work plan for further investigation of soil and groundwater be developed and implemented. The plan should be submitted to Alameda County Department of Environmental Health (ACDEH) for review, along with a copy of this report and if directed, submitted to the California Regional Water Quality Control Board (CRWQCB).

The results of analytical tests on soil samples from monitoring well borings MW-3 and MW-4 do not indicate that the soils contain concentrations of petroleum hydrocarbons that would impact site use or require remediation. The results of analytical tests on groundwater samples from monitoring wells MW-3 and MW-4 showed no detection purgeable or extractable organics (EPA 8240 or 8270) or low to medium boiling point hydrocarbons (EPA 5030/8015/8020). Based on our review of the data evaluation of alternative site 1 use the risk of soil or groundwater contamination at the site is low.

7.0
LIMITATIONS

The scope of this investigation is limited by time constraints, expense, and practicality. A limited number of samples were taken at locations at the site and a limited number of laboratory chemical analyses were performed for those samples. Professional opinions concerning the presence of hazardous substances were developed based on the resulting data. It would be prohibitively expensive and time consuming to sample all locations at the site and analyze the samples for all substances which are now, or in the future might be, considered hazardous. Therefore, WCC cannot be held responsible should the investigation fail to detect the presence or quantity of all hazardous substances at all locations of the site.

Table 1. SOIL LABORATORY ANALYSES

PARAMETER (a)	UNITS	MW-1 (5.0-6.5)B	MW-2 (8.5-10.0)A	MW-3 (6.0-7.5)B	MW-4 (6.0-7.5)B	Detection Limit
VOLATILE ORGANICS (EPA Method 8240)						
Benzene	mg/kg	1.00	- -	- -	- -	0.1
Toluene	mg/kg	0.15	- -	- -	- -	0.1
Ethylbenzene	mg/kg	6.40	- -	- -	- -	0.1
Methylene Chloride	mg/kg	- -	- -	0.66	- -	0.1
Total Xylenes	mg/kg	7.40	- -	- -	- -	0.1
SEMI-VOLATILE ORGANICS (EPA Method 8270)						
2-Methylnapthalene	mg/kg	0.74	-- (c)	- -	- -	0.1
Napthlene	mg/kg	0.66	-- (c)	- -	- -	0.1
Phenol	mg/kg	0.11	-- (c)	- -	- -	0.1
PETROLEUM HYDROCARBONS with BTEX DISTINCTION (EPA Methods 8015/8020)						
Low/Medium B.P. Hydrocarbons Gasoline Standard	mg/kg	7.0	2.0	6.4	2.5	1.0
Benzene	mg/kg	- -	- -	- -	- -	0.05
Toluene	mg/kg	- -	- -	- -	- -	0.1
Ethylbenzene	mg/kg	0.18	- -	- -	- -	0.1
Xylenes	mg/kg	0.15	- -	- -	- -	0.1

(a) Compounds listed are only those compounds detected in one or more of the monitoring well borings sampled. Data for other compounds [not detected] is available in Appendix C.

(b) -- indicates parameter not present above the stated detection limit.

(c) The detection limit is 5 mg/kg.

(d) An example of the soil sample descriptions, MW-1(5.0-6.5)B: MW-1 is monitoring well boring no. 1; (5.0-6.5) is the depth interval in feet that the sample was recovered; and the letter indicates the section of the interval (A is the top , B the middle, and C the bottom 6 in.)

Table 2A. MONITORING WELL NO. 1 GROUNDWATER LABORATORY ANALYSIS

PARAMETER (a)	UNITS	SAMPLING EVENT		DRINKING WATER CRITERIA		MARINE CRITERIA		
		October, 1989	Detection Limit	PRIMARY MCLs (c),(d),(i)	ACTION LEVELS (e)	S.F. BAY BASIN PLAN	CALIFORNIA OCEAN PLAN (g)	EPA ACUTE TOXICITY (h)
VOLATILE ORGANICS (EPA Method 8240)								
Acetone	ug/L	- -	10.0	(j)				
Benzene	ug/L	120.0	2.0	5	1.0			5100
Carbon disulfide	ug/L	- -	2.0					
Toluene	ug/L	46.0	2.0	2000	100			6300
Ethylbenzene	ug/L	43.0	2.0	680	680			430
Methylene Chloride	ug/L	- -	2.0		40			12000
Total Xylenes	ug/L	78.0	2.0	1750	620			
SEMI-VOLATILE ORGANICS (EPA Method 8270)								
2-Methylnapthalene	ug/L	3.4	2.0					
4-Methylphenol	ug/L	4.8	2.0					
Napthlene	ug/L	5.6	2.0				2350	
Phenol	ug/L	2.8	2.0			500 (f)	120	5800
PETROLEUM HYDROCARBONS with BTEX DISTINCTION (EPA Methods 8015/8020)								
Low/Medium B.P. Hydrocarbons Gasoline Standard	ug/L	540.0	30.0					
Benzene	ug/L	65.0	0.3	5	1.0			5100
Toluene	ug/L	26.0	0.3	2000	100			6300
Ethylbenzene	ug/L	14.0	0.3	680	680			430
Xylenes	ug/L	22.0	0.3	1750	620			

(a) Compounds listed are only those compounds detected in one or more of the monitoring well borings sampled. Data for other compounds [not detected] is available in Appendix C.

(b) -- Indicates parameter not present above the stated detection limit.

(c) Drinking Water Standards Under the Safe Drinking Water Act, U.S. EPA, Criteria and Standards Division, Washington, D.C., February, 1989.

(d) State of California Department of Health Services, Recently Adopted Maximum Contaminant Levels for contaminants in Drinking Water. April, 1989

(e) Drinking Water Action Levels Recommended by the State of California Department of Health Services. April 19, 1989.

(f) San Francisco Bay Basin Water Quality Control Plan, California RWQCB, San Francisco Bay Region. December, 1986, Table IV-1 (Shallow Water).

(g) California State Water Resources Control Board. 1983 Water Quality Control Plan; Ocean Waters of California.

(h) U.S. Environmental Protection Agency, Water Quality Advisories, March, 1986; U.S. Environmental Protection Agency, Quality Criteria for Water, May, 1986, and pertinent updates.

(i) If state and federal guidelines both exist, the lower of the two concentration limits is given.

(j) Blank indicates no water quality criteria known.

Table 2B. MONITORING WELL NO. 2 GROUNDWATER LABORATORY ANALYSIS

PARAMETER (a)	UNITS	SAMPLING EVENT		DRINKING WATER CRITERIA		MARINE CRITERIA		
		October, 1989	Detection Limit	PRIMARY MCLs (c),(d),(i)	ACTION LEVELS (e)	S.F. BAY BASIN PLAN	CALIFORNIA OCEAN PLAN (g)	EPA ACUTE TOXICITY (h)
VOLATILE ORGANICS (EPA Method 8240)								
Acetone	ug/L	--	10.0	(j)				
Benzene	ug/L	2.0	2.0	5	1.0			5100
Carbon disulfide	ug/L	--	2.0					
Toluene	ug/L	--	2.0	2000	100			6300
Ethylbenzene	ug/L	--	2.0	680	680			430
Methylene Chloride	ug/L	--	2.0		40			12000
Total Xylenes	ug/L	--	2.0	1750	620			
SEMI-VOLATILE ORGANICS (EPA Method 8270)								
2-Methylnapthalene	ug/L	--	2.0					
4-Methylphenol	ug/L	--	2.0					
Napthlene	ug/L	--	2.0				2350	
Phenol	ug/L	--	2.0			500 (f)	120	5800
PETROLEUM HYDROCARBONS with BTEX DISTINCTION (EPA Methods 8015/8020)								
Low/Medium B.P. Hydro-carbons Gasoline Standard	ug/L	--	30.0					
Benzene	ug/L	--	0.3	5	1.0			5100
Toluene	ug/L	--	0.3	2000	100			6300
Ethylbenzene	ug/L	--	0.3	680	680			430
Xylenes	ug/L	--	0.3	1750	620			

(a) Compounds listed are only those compounds detected in one or more of the monitoring well borings sampled. Data for other compounds (not detected) is available in Appendix C.

(b) -- indicates parameter not present above the stated detection limit.

(c) Drinking Water Standards Under the Safe Drinking Water Act, U.S. EPA, Criteria and Standards Division, Washington, D.C., February, 1989.

(d) State of California Department of Health Services, Recently Adopted Maximum Contaminant Levels for contaminants in Drinking Water. April, 1989

(e) Drinking Water Action Levels Recommended by the State of California Department of Health Services. April 19, 1989.

(f) San Francisco Bay Basin Water Quality Control Plan, California RWQCB, San Francisco Bay Region. December, 1986, Table IV-1 (Shallow Water).

(g) California State Water Resources Control Board. 1983 Water Quality Control Plan; Ocean Waters of California.

(h) U.S. Environmental Protection Agency, Water Quality Advisories, March, 1986; U.S. Environmental Protection Agency, Quality Criteria for Water, May, 1986, and pertinent updates.

(i) If state and federal guidelines both exist, the lower of the two concentration limits is given.

(j) Blank indicates no water quality criteria known.

Table 2C. MONITORING WELL NO. 3 GROUNDWATER LABORATORY ANALYSIS

PARAMETER (a)	UNITS	SAMPLING EVENT		DRINKING WATER CRITERIA		MARINE CRITERIA		
		October, 1989	Detection Limit	PRIMARY MCLs (c),(d),(i)	ACTION LEVELS (e)	S.F. BAY BASIN PLAN	CALIFORNIA OCEAN PLAN (g)	EPA ACUTE TOXICITY (h)
VOLATILE ORGANICS (EPA Method 8240)								
Acetone	ug/L	15	10.0	(j)				
Benzene	ug/L	- -	2.0	5	1.0			5100
Carbon disulfide	ug/L	2.8	2.0					
Toluene	ug/L	- -	2.0	2000	100			6300
Ethylbenzene	ug/L	- -	2.0	680	680			430
Methylene Chloride	ug/L	- -	2.0		40			12000
Total Xylenes	ug/L	- -	2.0	1750	620			
SEMI-VOLATILE ORGANICS (EPA Method 8270)								
2-Methylnapthalene	ug/L	- -	2.0					
4-Methylphenol	ug/L	- -	2.0					
Napthlene	ug/L	- -	2.0				2350	
Phenol	ug/L	- -	2.0			500 (f)	120	5800
PETROLEUM HYDROCARBONS with BTEX DISTINCTION (EPA Methods 8015/8020)								
Low/Medium B.P. Hydro-carbons Gasoline Standard	ug/L	- -	30.0					
Benzene	ug/L	- -	0.3	5	1.0			5100
Toluene	ug/L	- -	0.3	2000	100			6300
Ethylbenzene	ug/L	- -	0.3	680	680			430
Xylenes	ug/L	- -	0.3	1750	620			

(a) Compounds listed are only those compounds detected in one or more of the monitoring well borings sampled. Data for other compounds [not detected] is available in Appendix C.

(b) -- Indicates parameter not present above the stated detection limit.

(c) Drinking Water Standards Under the Safe Drinking Water Act, U.S. EPA, Criteria and Standards Division, Washington, D.C., February, 1989.

(d) State of California Department of Health Services, Recently Adopted Maximum Contaminant Levels for contaminants in Drinking Water. April, 1989

(e) Drinking Water Action Levels Recommended by the State of California Department of Health Services. April 19, 1989.

(I) San Francisco Bay Basin Water Quality Control Plan, California RWQCB, San Francisco Bay Region. December, 1986, Table IV-1 (Shallow Water).

(g) California State Water Resources Control Board. 1983 Water Quality Control Plan; Ocean Waters of California.

(h) U.S. Environmental Protection Agency, Water Quality Advisories, March, 1986; U.S. Environmental Protection Agency, Quality Criteria for Water, May, 1986, and pertinent updates.

(i) If state and federal guidelines both exist, the lower of the two concentration limits is given.

(j) Blank indicates no water quality criteria known.

Table 2D. MONITORING WELL NO. 4 GROUNDWATER LABORATORY ANALYSIS

PARAMETER (a)	UNITS	SAMPLING EVENT		DRINKING WATER CRITERIA		MARINE CRITERIA		
		October, 1989	Detection Limit	PRIMARY MCLs (c),(d),(i)	ACTION LEVELS (e)	S.F. BAY BASIN PLAN	CALIFORNIA OCEAN PLAN (g)	EPA ACUTE TOXICITY (h)
VOLATILE ORGANICS (EPA Method 8240)								
Acetone	ug/L	--	10.0	(j)				
Benzene	ug/L	--	2.0	5	1.0			5100
Carbon disulfide	ug/L	--	2.0					
Toluene	ug/L	--	2.0	2000	100			6300
Ethylbenzene	ug/L	--	2.0	680	680			430
Methylene Chloride	ug/L	--	2.0		40			12000
Total Xylenes	ug/L	--	2.0	1750	620			
SEMI-VOLATILE ORGANICS (EPA Method 8270)								
2-Methylnapthalene	ug/L	--	2.0					
4-Methylphenol	ug/L	--	2.0					
Napthlene	ug/L	--	2.0				2350	
Phenol	ug/L	--	2.0			500 (f)	120	5800
PETROLEUM HYDROCARBONS with BTEX DISTINCTION (EPA Methods 8015/8020)								
Low/Medium B.P. Hydrocarbons Gasoline Standard	ug/L	--	30.0					
Benzene	ug/L	--	0.3	5	1.0			5100
Toluene	ug/L	--	0.3	2000	100			6300
Ethylbenzene	ug/L	--	0.3	680	680			430
Xylenes	ug/L	--	0.3	1750	620			

(a) Compounds listed are only those compounds detected in one or more of the monitoring well borings sampled. Data for other compounds [not detected] is available in Appendix C.

(b) -- Indicates parameter not present above the stated detection limit.

(c) Drinking Water Standards Under the Safe Drinking Water Act, U.S. EPA, Criteria and Standards Division, Washington, D.C., February, 1989.

(d) State of California Department of Health Services, Recently Adopted Maximum Contaminant Levels for contaminants in Drinking Water. April, 1989

(e) Drinking Water Action Levels Recommended by the State of California Department of Health Services. April 19, 1989.

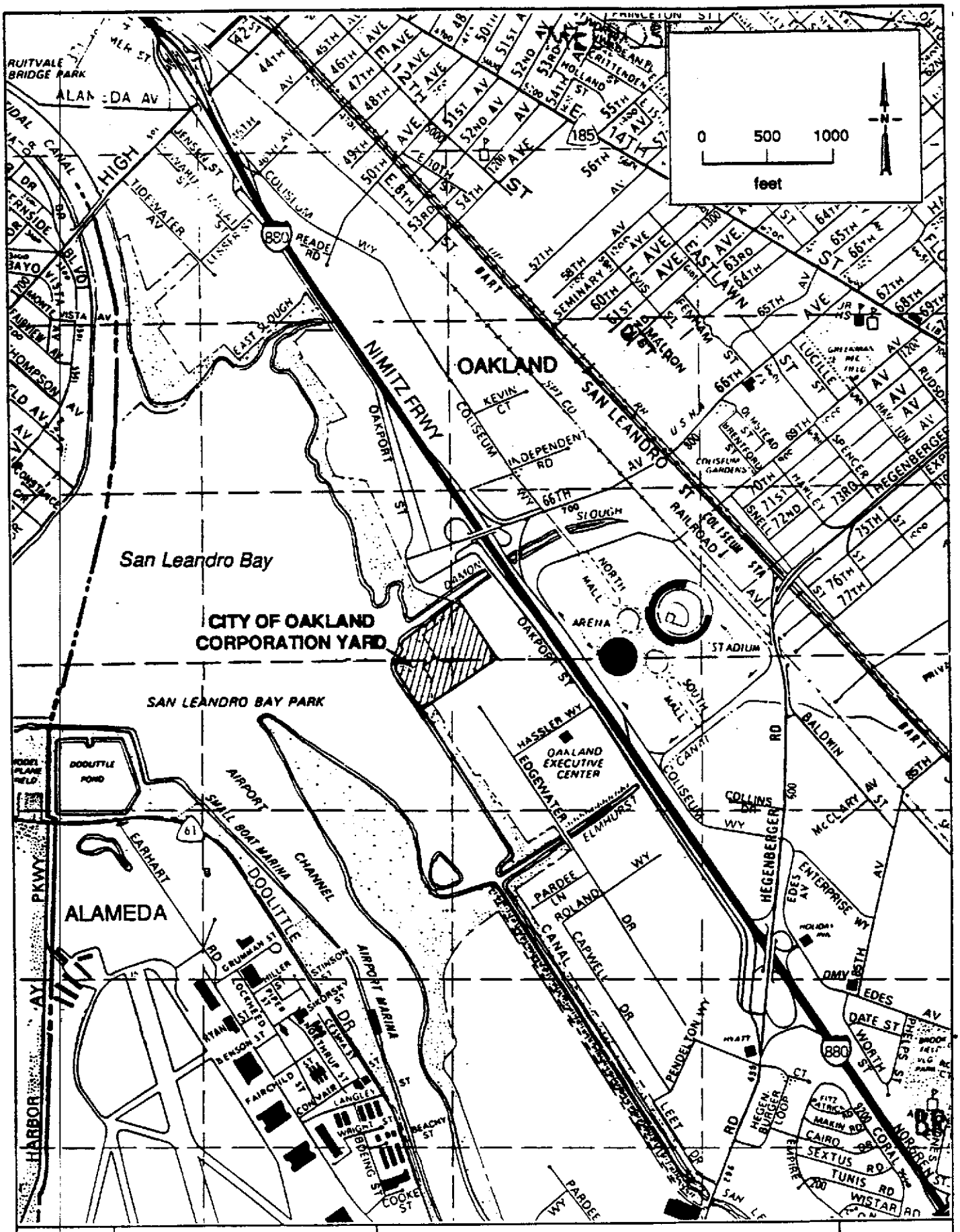
(f) San Francisco Bay Basin Water Quality Control Plan, California RWQCB, San Francisco Bay Region. December, 1986, Table IV-1 (Shallow Water).

(g) California State Water Resources Control Board. 1983 Water Quality Control Plan; Ocean Waters of California.

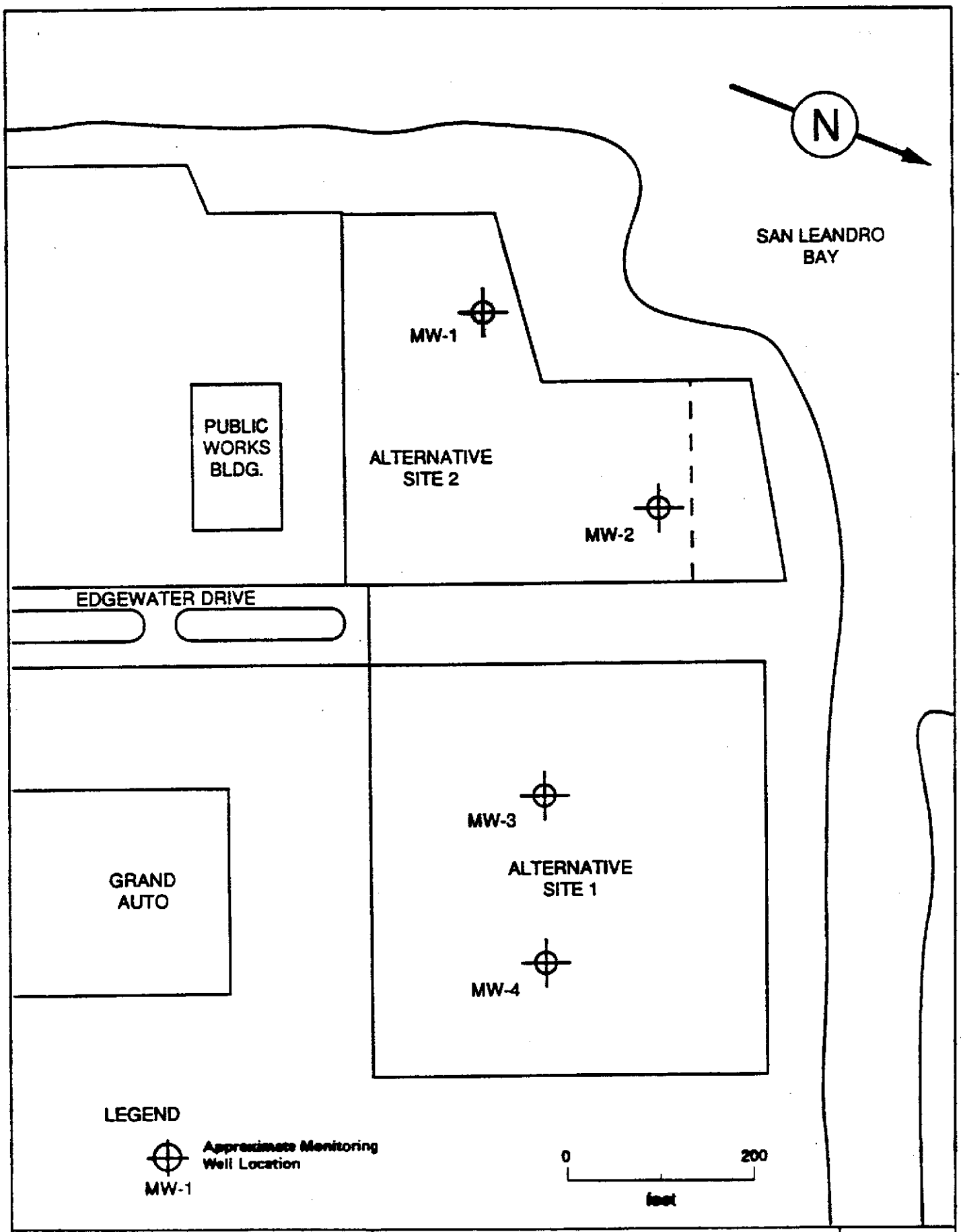
(h) U.S. Environmental Protection Agency, Water Quality Advisories, March, 1986; U.S. Environmental Protection Agency, Quality Criteria for Water, May, 1986, and pertinent updates.

(i) If state and federal guidelines both exist, the lower of the two concentration limits is given.

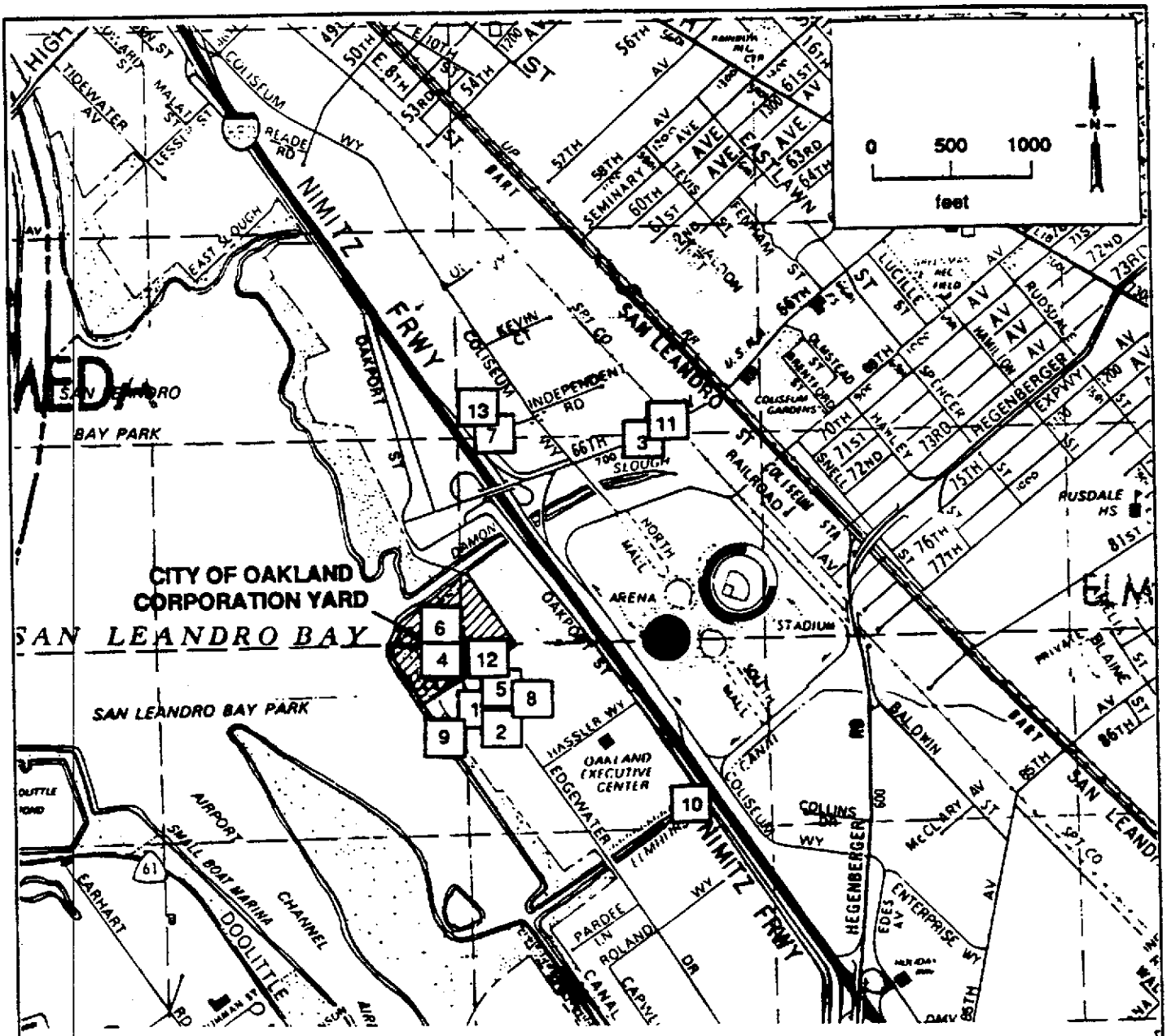
(j) Blank indicates no water quality criteria known.



Project No. 8910274A	Oakland Building No. 7	VICINITY MAP	Figure 1
Woodward-Clyde Consultants			



Project No. 8910274A	Oakland Building No. 7	SITE AND MONITORING WELL LOCATION PLAN	Figure 2
Woodward-Clyde Consultants			



LEGEND

RCRA Sites

1 ACS Asbestos Hazard Management

2 PAC Bell

Fuel Leak List

3 McGuire & Hester

4 Port of Oakland**

5 7307-F Edgewater Dr.**

Underground Storage Permits*

6 7101 Edgewater Dr.**

7 513 Independent Rd.

8 7200 Edgewater Dr.

9 7303 Edgewater Dr.

10 8001 Oakport St.

11 769-66th Av.

12 7307-F Edgewater Dr.**

13 575 Independent Rd.

* Summary of activity in Appendix A

** This site is listed in both sources.

Project No. 8910274A	Oakland Building No. 7	FUEL LEAK, UST AND TOXIC WASTE LOCATION MAP	Figure 3
Woodward-Clyde Consultants			

APPENDIX A
LOGS OF EXPLORATORY BORINGS

Woodward-Clyde Consultants

8910274A-ENVI
Oakland Building No. 7

LOG OF BORING/WELL
LEGEND

LOCATION			ELEVATION AND DATUM
AGENCY		DRILLER	DATE STARTED
EQUIPMENT			DATE COMPLETED
METHOD		DRILL BIT	COMPLETION DEPTH
CASING			SAMPLERS
PERFORATIONS		FROM TO	NO. OF SAMPLES / DIST. / UNDIST.
PACK		FROM TO	WATER LEVEL / ATD / COMPL / 24 HR
TYPE OF SEALS		FROM TO	LOGGED BY / CHECKED BY
		FROM TO	

DEPTH (FT) | **DESCRIPTION** | PIEZOMETER INSTALLTION | DEPTH (FT) | **SAMPLES** | **REMARKS** (Strength, moisture content, etc.)

SAMPLE INTERVAL AND TIME

PERCENT RECOVERED INDICATION

BLOW COUNT FOR ONE FOOT PENETRATION (UNLESS OTHERWISE NOTED)

MODIFIED CALIFORNIA SAMPLER
2" I.D., 2.5" O.D.

WELL CONSTRUCTION

- BLANK CASING
- SCREENED CASING
- CEMENT GROUT
- BENTONITE
- SAND PACK

GROUNDWATER LEVEL

AT TIME OF DRILLING (ATD) ▽ ATD

(OR)

6 HOURS AFTER COMPLETION OF DRILLING 6 HRS

(OR)

3 DAYS AFTER COMPLETION OF DRILLING 3 DAYS

DEPTH (FT)	SAMPLES	REMARKS
5	26	MW1 (1.0-2.5) 0800
	50 6"	MW1 (5.0-6.5) 0805
10	41	MW1 (10.0-11.5) 0810
15		

NOTE: THE BLOW COUNTS REPRESENT THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30-INCHES REQUIRED TO DRIVE A SAMPLER THROUGH THE LAST 12-INCHES OF AN 18-INCH PENETRATION.

Woodward-Clyde Consultants

8910274A-ENVI
Oakland Building No. 7

LOG OF WELL
MW-1

LOCATION	MW-1 (in the NW parking lot of 7101 Edgewater Dr.)	ELEVATION AND DATUM	
AGENCY	Datum Exploration Inc.	DRILLER Tom McCullen	DATE STARTED 09/29/89
EQUIPMENT	B-57		DATE COMPLETED 09/29/89
METHOD	6" Hollow Stem Auger	DRILL BIT	COMPLETION DEPTH 16.5
CASING	2" PVC		SAMPLERS 2" Split Spoon
PERFORATIONS	0.02 Slat	FROM 16.0 TO 6.0	NO. OF SAMPLES; DIST. 2; UNDIST.
PACK	#2/12 Sand	FROM 16.5 TO 5.0	WATER LEVEL; ATD 6.4'; COMPL; 24 HR
TYPE OF SEALS	Activated Bentonite Pellets	FROM 5.0 TO 4.0	LOGGED BY L. Gruenberg
	Grout with Ready Mix Top	FROM 4.0 TO 0.0	CHECKED BY P. Lucia

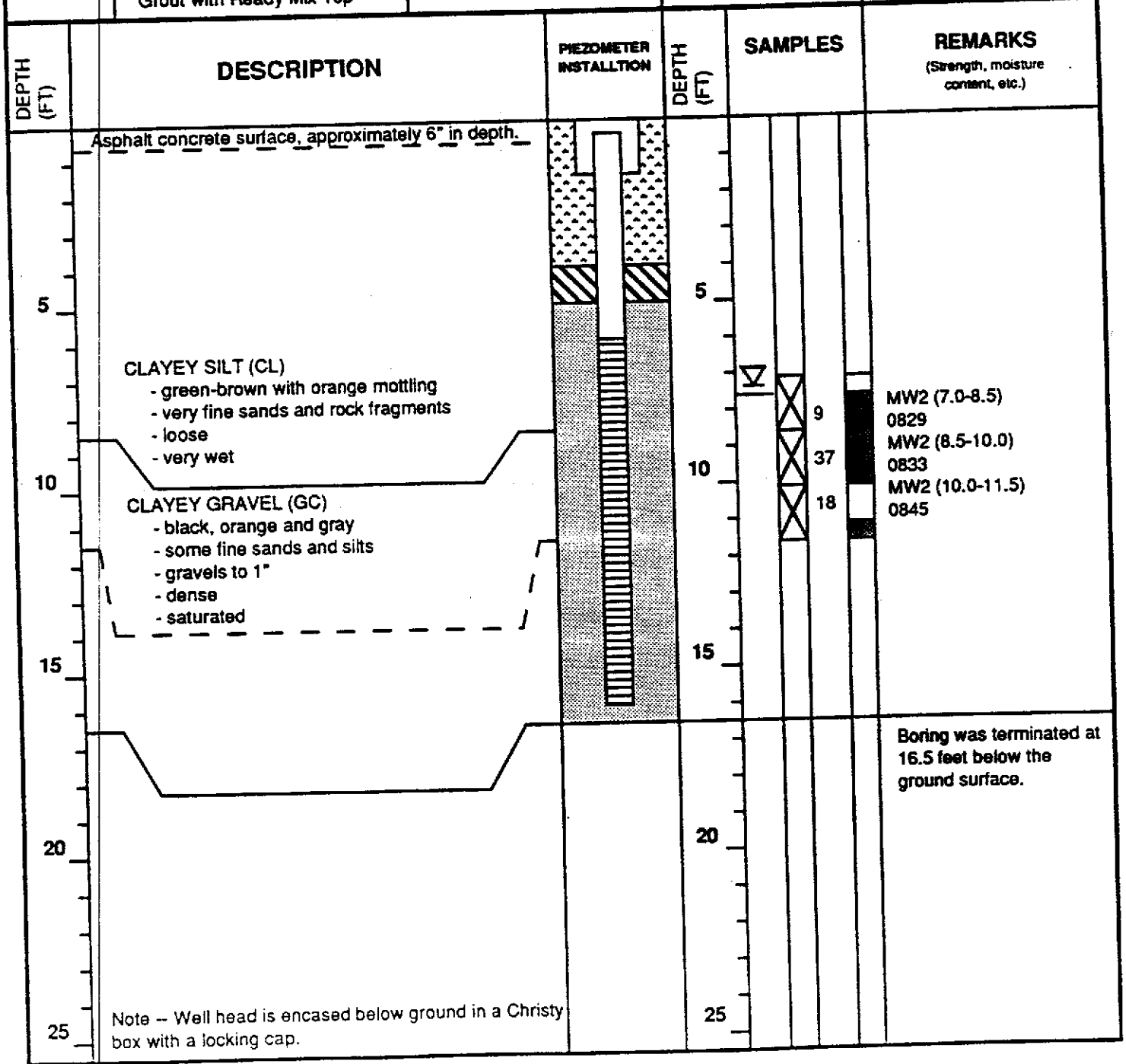
DEPTH (FT)	DESCRIPTION	PIEZOMETER INSTALLTION	DEPTH (FT)	SAMPLES	REMARKS (Strength, moisture content, etc.)
	Asphalt concrete surface, approximately 6" in depth.				
	Cuttings -- CLAYEY SILT (CL), brown, damp.				
5	SANDY CLAY (SC) - black with blue-gray mottling - medium to fine sand - some gravels to 2" diameter - organics (e.g. woodchips) - medium stiff - wet - odor		5	8	MW1 (5.0-6.5) 1600
10			10	9	MW1 (7.0-9.5) 1610
15			15		
20			20		Boring was terminated at 16.5 feet below the ground surface.
25	NOTE -- Well head is encased below ground in a Christy box with a locking cap.		25		

Woodward-Clyde Consultants

8910274A-ENVI
Oakland Building No. 7

LOG OF WELL **MW-2**

LOCATION	MW-2 (in the north parking lot)	ELEVATION AND DATUM	
AGENCY	Datum Exploration Inc.	DRILLER Tom McCullen	DATE STARTED 09/29/89
EQUIPMENT	B-57		DATE COMPLETED 09/29/89
METHOD	6" Hollow Stem Auger	DRILL BIT	COMPLETION DEPTH 16.5
CASING	2" PVC		SAMPLERS 2" Split Spoon
PERFORATIONS	0.02 Slat	FROM 16.0 TO 6.0	NO. OF SAMPLES DIST. 3 UNDIST.
PACK	#2/12 Sand	FROM 16.5 TO 5.0	WATER LEVEL ATD 7.6 COMPL 24 HR
TYPE OF SEALS	Activated Bentonite Pellets	FROM 5.0 TO 4.0	LOGGED BY L. Gruenberg
	Grout with Ready Mix Top	FROM 4.0 TO 0.0	CHECKED BY P. Lucia



Woodward-Clyde Consultants

8910274A-ENVI
Oakland Building No. 7

LOG OF WELL **MW-3**

LOCATION MW3 (in the equipment yard)			ELEVATION AND DATUM
AGENCY Datum Exploration Inc.	DRILLER Tom McCullen		DATE STARTED 09/29/89
EQUIPMENT B-57			DATE COMPLETED 09/29/89
METHOD 6" Hollow Stem Auger	DRILL BIT		COMPLETION DEPTH 18.5
CASING 2" PVC			SAMPLERS 2" Split Spoon
PERFORATIONS 0.02 Slat	FROM 18.0 TO 8.0		NO. OF SAMPLES: DIST. 4 / UNDIST.
PACK #2/12 Sand	FROM 18.5 TO 7.0		WATER LEVEL: ATD 7.5 / COMPL / 24 HR
TYPE OF SEALS: Activated Bentonite Pellets	FROM 7.0 TO 6.0		LOGGED BY L. Gruenberg
TYPE OF SEALS: Grout with Ready Mix Top	FROM 6.0 TO 0.0		CHECKED BY P. Lucia

DEPTH (FT)	DESCRIPTION	PIEZOMETER INSTALLTION	DEPTH (FT)	SAMPLES	REMARKS (Strength, moisture content, etc.)
	Ground surface is relatively flat and unpaved.				
5	CLAYEY SILT (CL) - brown with some black and orange-brown stains - some fine to medium sand - medium stiff - very plastic - damp		5	17	MW3 (6.0-7.5) 1310
10	SILTY CLAY (CL to CH) - light brown with blue-black stains - fine to medium sand - very soft - very plastic - wet		10	11 5 2	MW3 (7.5-9.0) 1315 MW3 (9.0-10.5) 1320 MW3 (10.5-12.0) 1350
15	Cuttings -- CLAY (CL toCH), gray, very plastic, saturated.		15		
20			20		Boring was terminated at 16.5 feet below the ground surface.
25			25		

Woodward-Clyde Consultants

8910274A-ENVI
Oakland Building No. 7

LOG OF WELL **MW-4**

LOCATION	MW-4 (in the open field next to the equipment yard)		ELEVATION AND DATUM
AGENCY	Datum Exploration Inc.	DRILLER Tom McCullen	DATE STARTED 09/29/89
EQUIPMENT	B-57		DATE COMPLETED 09/29/89
METHOD	6" Hollow Stem Auger	DRILL BIT	COMPLETION DEPTH 16.0
CASING	2" PVC		SAMPLERS 2" Split Spoon
PERFORATIONS	0.02 Slat	FROM 15.5 TO 5.5	NO. OF SAMPLES: DIST. 1; UNDIST.
PACK	#2/12 Sand	FROM 16.0 TO 4.5	WATER LEVEL: ATD 6.0; COMPL; 24 HR
TYPE OF SEALS	Activated Bentonite Pellets	FROM 4.5 TO 3.5	LOGGED BY L. Gruenberg
	Grout with Ready Mix Top	FROM 3.5 TO 0.0	CHECKED BY P. Lucia

DEPTH (FT)	DESCRIPTION	PIEZOMETER INSTALLTION	DEPTH (FT)	SAMPLES	REMARKS (Strength, moisture content, etc.)
	Ground surface is relatively flat and unpaved.				
	Cuttings -- CLAYEY SILT (CL), brown, damp.				
5	SILTY SAND (SM) - black/gray - medium sands and some gravels from 1.5" to 2" - some organics (e.g. woodchips) - medium dense - very wet		5	22	MW4 (6.0-7.5) 1056
10			10		
	Cuttings -- CLAY(CL to CH), gray, very plastic, saturated.				
15			15		
		to			Boring was terminated at 16.0 feet below the ground surface.
20			20		
25			25		

APPENDIX B
WATER QUALITY DATA

WATER SAMPLE LOG

Sample No. MW 2

Project No.: 8910274A Date: 10/3/89

Project Name: Oakland Corp Yard

Sample Location: 701 Edgewater Dr. Oak

Well Description:

Weather Conditions: breezy, sunny

Observations / Comments:

Quality Assurance

~~Sampling Method:~~ WELL DEVELOPMENT

Method to Measure Water Level: Solinst

Pump Lines: (New) / Cleaned Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer: Alconox, Tap, DI

pH Meter No.: see MW4 10/3/89 Calibrated

Specific Conductance Meter No.: Calibrated

Comments: TD = 14.7+0.4 = 15.1 $(15.1 - 7.6)\frac{1}{36}\pi \times 7.4^2$

Sampling Measurements

Water Level (below MP) at Start: 7.2+0.4 End:

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments Sal‰
1610	~2	7.35	23.0	16700	v. high	gray/black	—	11
1534	~10	7.40	21.1	18000	v. high	"	—	12.4
1549	~17	7.56	21.0	19000	v. high	"	—	13.8
1610	~30	7.52	21.0	18600	high	"		12.5

Total Discharge: Casing Volumes Removed:

Method of disposal of discharged water:

Number and size of sample containers filled:

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No. MW3

Project No.: 8910279A ENVI Date: 10/3/89

Project Name: Oakland Corp Yard

Sample Location: 7101 Edgewater Dr. Oak

Well Description:

Weather Conditions: sunny, nice!

Observations / Comments:

Quality Assurance

Sampling Method: WELL DEV.

Method to Measure Water Level: Solinst

Pump Lines: (New) / Cleaned Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer: Alconox Tap DI

pH Meter No.: see MW4 10/3/89 Calibrated "

Specific Conductance Meter No.: " Calibrated "

Comments: TD = 18.2 (18.2-6.81) ($\frac{1}{36}$) π x 7.48 =

Sampling Measurements

Water Level (below MP) at Start: 6.81+0.4 End: 17.75+0.4

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
								Sal %
1235	~2	7.48	22.5	33000	mod-high	gray green	strong	24.5 +
1247	~4	7.44	21.8	33000	mod	gray green	–	24.5 pumped dry
1410	~6	7.31	22.2	37000	v. low	yell.	clear	26.1 "
1430	~10	7.54	19.3	37000	high	black	–	26.1 @ bottom w/bailer

Total Discharge: ~10 Casing Volumes Removed:

Method of disposal of discharged water:

Number and size of sample containers filled:

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No. MW4

Project No.: 8910274A Date: 10/3/89

Project Name: Oakland Corp Yard

Sample Location: 7101 Edgewater, Oak

Well Description:

Weather Conditions: Sunny, nice.

Observations / Comments:

Quality Assurance

~~Sampling Method~~: WELL DEVELOPMENT

Method to Measure Water Level: Solinst

Pump Lines: (New) Cleaned Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer: Alconox

pH Meter No.: 144587 Calibrated 7.01 @ 25°C, 9.99 @ 25°C

Specific Conductance Meter No.: 13750 6.92 Calibrated not lined

Comments: TD = 15.5+0.4 = 15.9 x (2"/12"/1)² π = 9.98 (1/16) π
x 7.48 gal/ft³ = 6.51 gal = 1 well vol. casing vol.
X5 = 32 gal

Sampling Measurements

Water Level (below MP) at Start: 5.52+0.4 End: 11.5+0.4 and recovering

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	~~Comments~~ Sal %
1155	~3	7.44	22.4	14800	high	grn.-gray	strong	pumped dry 9.1
1315	~15	7.56	23.0	15900	high	dyell gray	—	10.8
1330	~25	7.36	20.8	20000	high	gray	—	13.6 bailed dry
1350	~30	7.79	21.5	16200	high	yell gray	—	11.2 high cond.

Total Discharge: Casing Volumes Removed:

Method of disposal of discharged water:

Number and size of sample containers filled:

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No. MW 1

Project No. : 8910274A Date: 10/04/89

Project Name: Oakland Corp Yard

Sample Location: 7101 Edgewater Dr., OAK

Well Description:

Weather Conditions: sunny

Observations / Comments: Teflon bailer purging; sampling

Quality Assurance

Sampling Method: WELL DEVELOPMENT

Method to Measure Water Level : solinst

Pump Lines: (New) / Cleaned Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer: Alconox, Tap, DI

pH Meter No.: 144587 Calibrated 7.00 / 10.05

Specific Conductance Meter No.: 13750 Calibrated red lined

Comments: TD = 15.7 +0.4

1 well casing vol = (16.2 - 6.4) $\frac{1}{36}$ π x 7.48

Sampling Measurements

Water Level (below MP) at Start: 6.0+0.4 End: ~12'

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments Salt %
0845	~2	7.65	22.0	8500	high	brn	strong	~4.9 ±
1030	~4	7.74	22.2	9000	mod	gray	-	6.0
1150	~6	6.35	23.0	9200	mod	"	-	6.2
1325	~10	7.89	23.8	9100	mod	"	-	5.5
1344	~15	bailed dry						
1400	Sampled ~15	7.07	23.0	9800	high	gray	-	6.2

Total Discharge: ~15 Casing Volumes Removed: +2

Method of disposal of discharged water: barrelled on site

Number and size of sample containers filled: 1-55 gal to ~40 gal

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No. MW2

Project No.: 8910274A-EALV1 Date: 10/4/89

Project Name: Oakland Corp Yard

Sample Location: 7101 Edgewater Dr, OAK

Well Description:

Weather Conditions:

Observations / Comments:

Quality Assurance

Sampling Method: Teflon bailer

Method to Measure Water Level: Solinst

Pump Lines: ~~New~~ / ~~Cleaned~~ Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer: Alconox, Tap, D.I.

pH Meter No.: See MW1 10/4/89 Calibrated %

Specific Conductance Meter No.: Calibrated %

Comments: TD = 15.6 + 0.4 = 16.0

Sampling Measurements

Water Level (below MP) at Start: 7.2+0.4 End: 7.2+0.4

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Sal‰	Comments
1205	limit	5.58	22.3	17900	low	lt. gray	—	10.3	
1220	~15	7.53	22.2	18500	high	gray	—	12.0	~1.5' H2O in well
1230	~25	7.85	22.0	18300	"	"	—	11.9	
1245	~30	7.94	19.3	18900	"	dark	—	12.8	Sampled

Total Discharge: Casing Volumes Removed:

Method of disposal of discharged water:

Number and size of sample containers filled:

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No. MW4

Project No.: 8910274A - ENV1 Date: 10/4/89

Project Name: Oakland Corp Yard

Sample Location: 7101 Edgewater Dr., OAK

Well Description:

Weather Conditions:

Observations / Comments:

Quality Assurance

Sampling Method: Teflon bailer

Method to Measure Water Level: Solinst

~~Pump Lines: New / Cleaned~~ Bailer Lines: New / (Cleaned)

Method of cleaning Pump / Bailer:

pH Meter No.: See MW1 10/4/89 Calibrated "

Specific Conductance Meter No.: " Calibrated "

Comments: TD = 15.7 +0.4

Sampling Measurements

Water Level (below MP) at Start: 5.6 +0.4 End: 6.55+0.4

Measuring Point (MP): black mark

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Sal ‰	Comments
0917	init.	7.54	20.5	13000	low	murky clear	—	9.4	
0932	~5	7.08	20.0	14100	mod	murky yel	—	10.0	
0946	~12	6.91	19.3	15000	high	lt gray	—	10.4	milky
1007	~13	7.09	20.2	15000	v. low	slt. murky	—	10.5	Aromatic odor
1010	Sampled								

Total Discharge: Casing Volumes Removed:

Method of disposal of discharged water:

Number and size of sample containers filled:

Collected by:

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

APPENDIX C
LABORATORY ANALYSES

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4041
(415) 893-3600

Chain of Custody Record

PROJECT NO. 8910247A-ENV1

SAMPLERS: (Signature) Lois Gruenberg

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8240	EPA Method 8270	EPA Method 3015 TPH/Gas	EPA Method							Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
9/29/89	0829	MW2(7.0-8.5)	S					HOLD						1	MW2 WL ≅ 7.0'
	0833	MW2 (8.5-10.0) A		X	X	X		HOLD						1	
	0833	MW2 (8.5-10.0) B						HOLD						1	MW4
	0833	MW2 (8.5-10.0) C		X	X	X								1	WL ≅ 6.0'
	0845	MW2 (10.0-11.5) C						HOLD						1	
	1056	MW4 (6.0-7.5) B		X	X	X		HOLD						1	WL ≅ 7.5'
	1056	MW4 (6.0-7.5) C		X	X	X								1	
	1310	MW3 (6.0-7.5) B		X	X	X		HOLD						1	WL ≅ 6.0 for MW3
	1310	MW3 (6.0-7.5) C						HOLD						1	
	1315	MW3 (7.5-9.0) C						HOLD						1	
	1330	MW3 (9.0-10.5) C						HOLD						1	
	1350	MW3 (10.5-12.0) A		X	X	X								1	
	1350	MW3 (10.5-12.0) B						HOLD						1	
	1350	MW3 (10.5-12.0) C						HOLD						1	
	1600	MW1 (5.0-6.5) A						HOLD						1	
	1600	MW1 (5.0-6.5) B		X	X	X		HOLD						1	for MW1
	1600	MW1 (5.0-6.5) C						HOLD						1	
	1610	MW1 (7.0-8.5) A						HOLD						1	
	1610	MW1 (7.0-8.5) B						HOLD						1	
	1610	MW1 (7.0-8.5) C		X	X	X								1	

TOTAL NUMBER OF CONTAINERS: 20

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Lois Gruenberg	9/29/89 1615	[signature]			

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		[signature]		

SEQUOIA ANALYTICAL

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Matrix Descript:	Soil	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 5030/8015/8020	Analyzed: Oct 10, 1989
Attention: Lois Gruenberg	First Sample #:	910-0796	Reported: Oct 16, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
910-0796	MW2 (8.5-10.0)A	2.0	N.D.	N.D.	N.D.	N.D.
910-0797	MW4 (6.0-7.5)B	2.5	N.D.	N.D.	N.D.	N.D.
910-0798	MW3 (6.0-7.5)B	6.4	N.D.	N.D.	N.D.	N.D.
910-0799	MW1 (5.0-6.5)B	7.0	N.D.	N.D.	0.18	0.15
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: Lois Gruenberg

Client Project ID: #8910247A-ENV1

QC Sample Group: 9100796-9

Reported: Oct 16, 1989

QUALITY CONTROL DATA REPORT

ANALYTE	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	Spak/Dinsay	Spak/Dinsay	Spak/Dinsay
Reporting Units:	mg/kg	mg/kg	mg/kg
Date Analyzed:	Oct 10, 1989	Oct 10, 1989	Oct 10, 1989
QC Sample #:	910-0043	910-0043	910-0043
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	1.0	1.0	3.0
Conc. Matrix Spike:	0.65	0.78	2.3
Matrix Spike % Recovery:	65	78	77
Conc. Matrix Spike Dup.:	0.65	0.76	2.3
Matrix Spike Duplicate % Recovery:	65	76	77
Relative % Difference:	0	2.6	0

Laboratory blank contained the following analytes: None Detected

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Vickie Tague
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW2 (8.5-10.0)A	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed: Oct 12, 1989
Attention: Lois Gruenberg	Lab Number:	910-0796	Reported: Oct 16, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW4 (6.0-7.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed: Oct 13, 1989
Attention: Lois Gruenberg	Lab Number:	910-0797	Reported: Oct 16, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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VT Tague

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled:	Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW1 (5.0-6.5)B	Received:	Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed:	Oct 13, 1989
Attention: Lois Gruenberg	Lab Number:	910-0799	Reported:	Oct 16, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone	500.0	N.D.
Benzene	**100.0**	**1,100**
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	N.D.
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	N.D.
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	N.D.
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	**100.0**	**8,400**
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	N.D.
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	**100.0**	**150**
1,1,1-Trichloroethane	100.0	N.D.
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	**100.0**	**7,400**

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Q.C. Sample Dates
500 12th St., Suite 100	Method (units):	EPA 8240 (µg/L purged)	
Oakland, CA 94607-4041	Analyst(s):	T. Fowler	Analyzed: Oct 13, 1989
Attention: Lois Gruenberg	QC Sample #:	910-0541	Reported: Oct 16, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloro-ethene	N.D.	50	47	94	44	88	6.6
Trichloroethene	N.D.	50	52	104	51	102	1.9
Benzene	N.D.	50	53	106	53	106	0
Toluene	N.D.	50	45	90	46	92	2.2
Chlorobenzene	N.D.	50	50	100	51	102	2.0

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Vickie Tague
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW2 (8.5-10.0)A	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0796	Analyzed: Oct 12, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	5,000.0	N.D.
Acenaphthylene	5,000.0	N.D.
Aniline	5,000.0	N.D.
Anthracene	5,000.0	N.D.
Benzidine	125,000.0	N.D.
Benzoic Acid	25,000.0	N.D.
Benzo(a)anthracene	5,000.0	N.D.
Benzo(b)fluoranthene	5,000.0	N.D.
Benzo(k)fluoranthene	5,000.0	N.D.
Benzo(g,h,i)perylene	5,000.0	N.D.
Benzo(a)pyrene	5,000.0	N.D.
Benzyl alcohol	5,000.0	N.D.
Bis(2-chloroethoxy)methane	5,000.0	N.D.
Bis(2-chloroethyl)ether	5,000.0	N.D.
Bis(2-chloroisopropyl)ether	25,000.0	N.D.
Bis(2-ethylhexyl)phthalate	5,000.0	N.D.
4-Bromophenyl phenyl ether	5,000.0	N.D.
Butyl benzyl phthalate	5,000.0	N.D.
4-Chloroaniline	5,000.0	N.D.
2-Chloronaphthalene	5,000.0	N.D.
4-Chloro-3-methylphenol	5,000.0	N.D.
2-Chlorophenol	5,000.0	N.D.
4-Chlorophenyl phenyl ether	5,000.0	N.D.
Chrysene	5,000.0	N.D.
Dibenz(a,h)anthracene	5,000.0	N.D.
Dibenzofuran	5,000.0	N.D.
Di-N-butyl phthalate	25,000.0	N.D.
1,3-Dichlorobenzene	5,000.0	N.D.
1,4-Dichlorobenzene	5,000.0	N.D.
1,2-Dichlorobenzene	5,000.0	N.D.
3,3-Dichlorobenzidine	25,000.0	N.D.
2,4-Dichlorophenol	5,000.0	N.D.
Diethyl phthalate	5,000.0	N.D.
2,4-Dimethylphenol	5,000.0	N.D.
Dimethyl phthalate	5,000.0	N.D.
4,6-Dinitro-2-methylphenol	25,000.0	N.D.
2,4-Dinitrophenol	25,000.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW2 (8.5-10.0)A	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0796	Analyzed: Oct 12, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	5,000.0	N.D.
2,6-Dinitrotoluene	5,000.0	N.D.
Di-N-octyl phthalate	5,000.0	N.D.
Fluoranthene	5,000.0	N.D.
Fluorene	5,000.0	N.D.
Hexachlorobenzene	5,000.0	N.D.
Hexachlorobutadiene	5,000.0	N.D.
Hexachlorocyclopentadiene	5,000.0	N.D.
Hexachloroethane	5,000.0	N.D.
Indeno(1,2,3-cd)pyrene	5,000.0	N.D.
Isophorone	5,000.0	N.D.
2-Methylnaphthalene	5,000.0	N.D.
2-Methylphenol	5,000.0	N.D.
4-Methylphenol	5,000.0	N.D.
Naphthalene	5,000.0	N.D.
2-Nitroaniline	25,000.0	N.D.
3-Nitroaniline	25,000.0	N.D.
4-Nitroaniline	25,000.0	N.D.
Nitrobenzene	5,000.0	N.D.
2-Nitrophenol	5,000.0	N.D.
4-Nitrophenol	25,000.0	N.D.
N-Nitrosodiphenylamine	5,000.0	N.D.
N-Nitroso-di-N-propylamine	5,000.0	N.D.
Pentachlorophenol	25,000.0	N.D.
Phenathrene	5,000.0	N.D.
Phenol	5,000.0	N.D.
Pyrene	5,000.0	N.D.
1,2,4-Trichlorobenzene	5,000.0	N.D.
2,4,5-Trichlorophenol	25,000.0	N.D.
2,4,6-Trichlorophenol	5,000.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW4 (6.0-7.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0797	Analyzed: Oct 12, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	100.0	N.D.
Acenaphthylene	100.0	N.D.
Aniline	100.0	N.D.
Anthracene	100.0	N.D.
Benzidine	2,500.0	N.D.
Benzoic Acid	500.0	N.D.
Benzo(a)anthracene	100.0	N.D.
Benzo(b)fluoranthene	100.0	N.D.
Benzo(k)fluoranthene	100.0	N.D.
Benzo(g,h,i)perylene	100.0	N.D.
Benzo(a)pyrene	100.0	N.D.
Benzyl alcohol	100.0	N.D.
Bis(2-chloroethoxy)methane	100.0	N.D.
Bis(2-chloroethyl)ether	100.0	N.D.
Bis(2-chloroisopropyl)ether	500.0	N.D.
Bis(2-ethylhexyl)phthalate	100.0	N.D.
4-Bromophenyl phenyl ether	100.0	N.D.
Butyl benzyl phthalate	100.0	N.D.
4-Chloroaniline	100.0	N.D.
2-Chloronaphthalene	100.0	N.D.
4-Chloro-3-methylphenol	100.0	N.D.
2-Chlorophenol	100.0	N.D.
4-Chlorophenyl phenyl ether	100.0	N.D.
Chrysene	100.0	N.D.
Dibenz(a,h)anthracene	100.0	N.D.
Dibenzofuran	500.0	N.D.
Di-N-butyl phthalate	100.0	N.D.
1,3-Dichlorobenzene	100.0	N.D.
1,4-Dichlorobenzene	100.0	N.D.
1,2-Dichlorobenzene	500.0	N.D.
3,3-Dichlorobenzidine	100.0	N.D.
2,4-Dichlorophenol	100.0	N.D.
Diethyl phthalate	100.0	N.D.
2,4-Dimethylphenol	100.0	N.D.
Dimethyl phthalate	500.0	N.D.
4,6-Dinitro-2-methylphenol	500.0	N.D.
2,4-Dinitrophenol		

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW4 (6.0-7.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0797	Analyzed: Oct 12, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	100.0	N.D.
2,6-Dinitrotoluene	100.0	N.D.
Di-N-octyl phthalate	100.0	N.D.
Fluoranthene	100.0	N.D.
Fluorene	100.0	N.D.
Hexachlorobenzene	100.0	N.D.
Hexachlorobutadiene	100.0	N.D.
Hexachlorocyclopentadiene	100.0	N.D.
Hexachloroethane	100.0	N.D.
Indeno(1,2,3-cd)pyrene	100.0	N.D.
Isophorone	100.0	N.D.
2-Methylnaphthalene	100.0	N.D.
2-Methylphenol	100.0	N.D.
4-Methylphenol	100.0	N.D.
Naphthalene	100.0	N.D.
2-Nitroaniline	500.0	N.D.
3-Nitroaniline	500.0	N.D.
4-Nitroaniline	500.0	N.D.
Nitrobenzene	100.0	N.D.
2-Nitrophenol	100.0	N.D.
4-Nitrophenol	500.0	N.D.
N-Nitrosodiphenylamine	100.0	N.D.
N-Nitroso-di-N-propylamine	100.0	N.D.
Pentachlorophenol	500.0	N.D.
Phenathrene	100.0	N.D.
Phenol	100.0	N.D.
Pyrene	100.0	N.D.
1,2,4-Trichlorobenzene	100.0	N.D.
2,4,5-Trichlorophenol	500.0	N.D.
2,4,6-Trichlorophenol	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW3 (6.0-7.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0798	Analyzed: Oct 13, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	100.0	N.D.
2,6-Dinitrotoluene	100.0	N.D.
Di-N-octyl phthalate	100.0	N.D.
Fluoranthene	100.0	N.D.
Fluorene	100.0	N.D.
Hexachlorobenzene	100.0	N.D.
Hexachlorobutadiene	100.0	N.D.
Hexachlorocyclopentadiene	100.0	N.D.
Hexachloroethane	100.0	N.D.
Indeno(1,2,3-cd)pyrene	100.0	N.D.
Isophorone	100.0	N.D.
2-Methylnaphthalene	100.0	N.D.
2-Methylphenol	100.0	N.D.
4-Methylphenol	100.0	N.D.
Naphthalene	100.0	N.D.
2-Nitroaniline	500.0	N.D.
3-Nitroaniline	500.0	N.D.
4-Nitroaniline	500.0	N.D.
Nitrobenzene	100.0	N.D.
2-Nitrophenol	100.0	N.D.
4-Nitrophenol	500.0	N.D.
N-Nitrosodiphenylamine	100.0	N.D.
N-Nitroso-di-N-propylamine	100.0	N.D.
Pentachlorophenol	500.0	N.D.
Phenathrene	100.0	N.D.
Phenol	100.0	N.D.
Pyrene	100.0	N.D.
1,2,4-Trichlorobenzene	100.0	N.D.
2,4,5-Trichlorophenol	500.0	N.D.
2,4,6-Trichlorophenol	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW3 (6.0-7.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0798	Analyzed: Oct 13, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	100.0	N.D.
Acenaphthylene	100.0	N.D.
Aniline	100.0	N.D.
Anthracene	100.0	N.D.
Benzidine	2,500.0	N.D.
Benzoic Acid	500.0	N.D.
Benzo(a)anthracene	100.0	N.D.
Benzo(b)fluoranthene	100.0	N.D.
Benzo(k)fluoranthene	100.0	N.D.
Benzo(g,h,i)perylene	100.0	N.D.
Benzo(a)pyrene	100.0	N.D.
Benzyl alcohol	100.0	N.D.
Bis(2-chloroethoxy)methane	100.0	N.D.
Bis(2-chloroethyl)ether	100.0	N.D.
Bis(2-chloroisopropyl)ether	100.0	N.D.
Bis(2-ethylhexyl)phthalate	500.0	N.D.
4-Bromophenyl phenyl ether	100.0	N.D.
Butyl benzyl phthalate	100.0	N.D.
4-Chloroaniline	100.0	N.D.
2-Chloronaphthalene	100.0	N.D.
4-Chloro-3-methylphenol	100.0	N.D.
2-Chlorophenol	100.0	N.D.
4-Chlorophenyl phenyl ether	100.0	N.D.
Chrysene	100.0	N.D.
Dibenz(a,h)anthracene	100.0	N.D.
Dibenzofuran	100.0	N.D.
Di-N-butyl phthalate	500.0	N.D.
1,3-Dichlorobenzene	100.0	N.D.
1,4-Dichlorobenzene	100.0	N.D.
1,2-Dichlorobenzene	100.0	N.D.
3,3-Dichlorobenzidine	500.0	N.D.
2,4-Dichlorophenol	100.0	N.D.
Diethyl phthalate	100.0	N.D.
2,4-Dimethylphenol	100.0	N.D.
Dimethyl phthalate	100.0	N.D.
4,6-Dinitro-2-methylphenol	500.0	N.D.
2,4-Dinitrophenol	500.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW1 (5.0-6.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0799	Analyzed: Oct 13, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	100.0	N.D.
Acenaphthylene	100.0	N.D.
Aniline	100.0	N.D.
Anthracene	100.0	N.D.
Benzidine	2,500.0	N.D.
Benzoic Acid	500.0	N.D.
Benzo(a)anthracene	100.0	N.D.
Benzo(b)fluoranthene	100.0	N.D.
Benzo(k)fluoranthene	100.0	N.D.
Benzo(g,h,i)perylene	100.0	N.D.
Benzo(a)pyrene	100.0	N.D.
Benzyl alcohol	100.0	N.D.
Bis(2-chloroethoxy)methane	100.0	N.D.
Bis(2-chloroethyl)ether	100.0	N.D.
Bis(2-chloroisopropyl)ether	100.0	N.D.
Bis(2-ethylhexyl)phthalate	500.0	N.D.
4-Bromophenyl phenyl ether	100.0	N.D.
Butyl benzyl phthalate	100.0	N.D.
4-Chloroaniline	100.0	N.D.
2-Chloronaphthalene	100.0	N.D.
4-Chloro-3-methylphenol	100.0	N.D.
2-Chlorophenol	100.0	N.D.
4-Chlorophenyl phenyl ether	100.0	N.D.
Chrysene	100.0	N.D.
Dibenz(a,h)anthracene	100.0	N.D.
Dibenzofuran	100.0	N.D.
Di-N-butyl phthalate	500.0	N.D.
1,3-Dichlorobenzene	100.0	N.D.
1,4-Dichlorobenzene	100.0	N.D.
1,2-Dichlorobenzene	100.0	N.D.
3,3-Dichlorobenzidine	500.0	N.D.
2,4-Dichlorophenol	100.0	N.D.
Diethyl phthalate	100.0	N.D.
2,4-Dimethylphenol	100.0	N.D.
Dimethyl phthalate	100.0	N.D.
4,6-Dinitro-2-methylphenol	500.0	N.D.
2,4-Dinitrophenol	500.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910247A-ENV1	Sampled: Sep 29, 1989
500 12th St., Suite 100	Sample Descript:	Soil, MW1 (5.0-6.5)B	Received: Sep 29, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 6, 1989
Attention: Lois Gruenberg	Lab Number:	910-0799	Analyzed: Oct 13, 1989
			Reported: Oct 16, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	100.0	N.D.
2,6-Dinitrotoluene	100.0	N.D.
Di-N-octyl phthalate	100.0	N.D.
Fluoranthene	100.0	N.D.
Fluorene	100.0	N.D.
Hexachlorobenzene	100.0	N.D.
Hexachlorobutadiene	100.0	N.D.
Hexachlorocyclopentadiene	100.0	N.D.
Hexachloroethane	100.0	N.D.
Indeno(1,2,3-cd)pyrene	100.0	N.D.
Isophorone	100.0	N.D.
2-Methylnaphthalene	100.0	740
2-Methylphenol	100.0	N.D.
4-Methylphenol	100.0	N.D.
Naphthalene	100.0	660
2-Nitroaniline	500.0	N.D.
3-Nitroaniline	500.0	N.D.
4-Nitroaniline	500.0	N.D.
Nitrobenzene	100.0	N.D.
2-Nitrophenol	100.0	N.D.
4-Nitrophenol	500.0	N.D.
N-Nitrosodiphenylamine	100.0	N.D.
N-Nitroso-di-N-propylamine	100.0	N.D.
Pentachlorophenol	500.0	N.D.
Phenathrene	100.0	N.D.
Phenol	100.0	110
Pyrene	100.0	N.D.
1,2,4-Trichlorobenzene	100.0	N.D.
2,4,5-Trichlorophenol	500.0	N.D.
2,4,6-Trichlorophenol	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: Lois Gruenberg

Client Project ID: #8910247A-ENV1
Method (units): EPA 8270 (µg)
Analyst(s): T. Fowler
QC Sample #: 910-0184

Q.C. Sample Dates
Analyzed: Oct 13, 1989
Reported: Oct 16, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	92	92	93	93	1.1
2-Chlorophenol	N.D.	100	93	93	97	97	4.2
1,4-Dichloro-benzene	N.D.	50	43	86	45	90	4.5
N-Nitroso-Di-N-propylamine	N.D.	50	54	108	54	108	0
1,2,4-Trichloro-benzene	N.D.	50	41	82	42	84	2.4
4-Chloro-3-Methylphenol	N.D.	100	88	88	88	88	0
Acenaphthene	N.D.	50	44	88	43	86	2.3
4-Nitrophenol	N.D.	100	93	93	104	104	11
2,4-Dinitro-toluene	N.D.	50	40	80	39	78	2.5
Pentachloro-phenol	N.D.	100	103	103	111	111	7.5
Pyrene	N.D.	50	51	102	57	114	11

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Project Manager

$$\% \text{ Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: Lois Gruenberg

Project: #8910274A-ENV1

Enclosed are the results from 12 water samples received at Sequoia Analytical on October 4,1989. The requested analyses are listed below:

9100918 A	Water, MW-4	10/4/89	EPA 8270
9100918 B	Water, MW-4	10/4/89	EPA 5030/8015/8020
9100918 C	Water, MW-4	10/4/89	EPA 8240
9100919 A	Water, MW-3	10/4/89	EPA 8270
9100919 B	Water, MW-3	10/4/89	EPA 5030/8015/8020
9100919 C	Water, MW-3	10/4/89	EPA 8240
9100920 A	Water, MW-2	10/4/89	EPA 8270
9100920 B	Water, MW-2	10/4/89	EPA 5030/8015/8020
9100920 C	Water, MW-2	10/4/89	EPA 8240
9100921 A	Water, MW-1	10/4/89	EPA 8270
9100921 B	Water, MW-1	10/4/89	EPA 5030/8015/8020
9100921 C	Water, MW-1	10/4/89	EPA 8240

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Matrix Descript:	Water	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Oct 12, 1989
Attention: Lois Gruenberg	First Sample #:	910-0918	Reported:	Oct 25, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
9100918 B	MW-4	N.D.	N.D.	N.D.	N.D.	N.D.
9100919 B	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
9100920 B	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
9100921 B	MW-1	540	65	26	14	22
Detection Limits:		**30.0**	**0.3**	**0.3**	**0.3**	**0.3**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: Lois Gruenberg

Client Project ID: #8910274A-ENV1

QC Sample Group: 9100918-21

Reported: Oct 25, 1989

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	K. Mitchell	K. Mitchell	K. Mitchell	K. Mitchell
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Oct 12, 1989	Oct 12, 1989	Oct 12, 1989	Oct 12, 1989
QC Sample #:	910-1417	910-1417	910-1417	910-1417
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	2.5	2.5	2.5	7.5
Conc. Matrix Spike:	2.8	2.3	2.7	7.0
Matrix Spike % Recovery:	112	92	108	93
Conc. Matrix Spike Dup.:	2.3	2.0	2.3	5.7
Matrix Spike Duplicate % Recovery:	92	80	92	76
Relative % Difference:	20	14	16	20

Laboratory blank contained the following analytes: None Detected

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Vickie Tague
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-4	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed:	Oct 17, 1989
Attention: Lois Gruenberg	Lab Number:	910-0918 C	Reported:	Oct 25, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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VM Tague

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-3	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed:	Oct 17, 1989
Attention: Lois Gruenberg	Lab Number:	910-0919 C	Reported:	Oct 25, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	15
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	2.8
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-2	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed:	Oct 17, 1989
Attention: Lois Gruenberg	Lab Number:	910-0920 C	Reported:	Oct 25, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	3.3
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-1	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8240	Analyzed:	Oct 17, 1989
Attention: Lois Gruenberg	Lab Number:	910-0921 C	Reported:	Oct 25, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	**2.0**	**120**
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	**2.0**	**43**
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	**2.0**	**46**
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	**2.0**	**78**

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	
500 12th St., Suite 100	Method (units):	EPA 8240 (µg/L purged)	Q.C. Sample Dates
Oakland, CA 94607-4041	Analyst(s):	T. Fowler	
Attention: Lois Gruenberg	QC Sample #:	910-0920	Analyzed: Oct 17, 1989
			Reported: Oct 25, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloro-ethene	N.D.	50	41	82	40	80	2.5
Trichloroethene	N.D.	50	47	94	44	88	6.6
Benzene	3.3	50	51	95	49	91	4.3
Toluene	N.D.	50	47	94	44	88	6.6
Chlorobenzene	N.D.	50	50	100	48	96	4.1

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Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-4	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0918 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50.0	N.D.
Benzoic Acid	10.0	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10.0	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10.0	N.D.
2,4-Dinitrophenol	10.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-4	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0918 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10.0	N.D.
3-Nitroaniline	10.0	N.D.
4-Nitroaniline	10.0	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10.0	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10.0	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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MT Tague

Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-3	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0919 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50.0	N.D.
Benzoic Acid	10.0	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10.0	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10.0	N.D.
2,4-Dinitrophenol	10.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-3	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0919 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10.0	N.D.
3-Nitroaniline	10.0	N.D.
4-Nitroaniline	10.0	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10.0	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10.0	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-2	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0920 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50.0	N.D.
Benzoic Acid	10.0	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10.0	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10.0	N.D.
2,4-Dinitrophenol	10.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-2	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0920 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10.0	N.D.
3-Nitroaniline	10.0	N.D.
4-Nitroaniline	10.0	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10.0	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10.0	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Vickie Tague
Project Manager

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled:	Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-1	Received:	Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted:	Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0921 A	Analyzed:	Oct 19, 1989
			Reported:	Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50.0	N.D.
Benzoic Acid	10.0	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10.0	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10.0	N.D.
2,4-Dinitrophenol	10.0	N.D.

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Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	Sampled: Oct 4, 1989
500 12th St., Suite 100	Sample Descript:	Water, MW-1	Received: Oct 4, 1989
Oakland, CA 94607-4041	Analysis Method:	EPA 8270	Extracted: Oct 11, 1989
Attention: Lois Gruenberg	Lab Number:	910-0921 A	Analyzed: Oct 19, 1989
			Reported: Oct 25, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	3.4
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	4.9
4-Methylphenol	2.0	5.6
Naphthalene	2.0	N.D.
2-Nitroaniline	10.0	N.D.
3-Nitroaniline	10.0	N.D.
4-Nitroaniline	10.0	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10.0	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10.0	N.D.
Phenathrene	2.0	2.8
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants
500 12th St., Suite 100
Oakland, CA 94607-4041
Attention: Lois Gruenberg

Client Project ID: #8910274A-ENV1
Method (units): EPA 8270 (µg)
Analyst(s): T. Fowler
QC Sample #: SBLK100989

Q.C. Sample Dates
Analyzed: Oct 19, 1989
Reported: Oct 25, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	36	36	43	43	18
2-Chlorophenol	N.D.	100	75	75	89	89	17
1,4-Dichloro-benzene	N.D.	50	41	82	37	74	10
N-Nitroso-Di-N-propylamine	N.D.	50	45	90	47	94	4.3
1,2,4-Trichloro-benzene	N.D.	50	38	76	35	70	8.2
4-Chloro-3-Methylphenol	N.D.	100	76	76	78	78	2.6
Acenaphthene	N.D.	50	44	88	41	82	7.1
4-Nitrophenol	N.D.	100	39	39	35	35	11
2,4-Dinitro-toluene	N.D.	50	39	78	36	72	8.0
Pentachloro-phenol	N.D.	100	96	96	91	91	5.3
Pyrene	N.D.	50	36	72	35	70	2.8

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants	Client Project ID:	#8910274A-ENV1	
500 12th St., Suite 100	Method (units):	EPA 8240 (µg/L purged)	Q.C. Sample Dates
Oakland, CA 94607-4041	Analyst(s):	T. Fowler	
Attention: Lois Gruenberg	QC Sample #:	910-0920	Analyzed: Oct 17, 1989
			Reported: Oct 25, 1989

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloro-ethene	N.D.	50	41	82	40	80	2.5
Trichloroethene	N.D.	50	47	94	44	88	6.6
Benzene	3.3	50	51	95	49	91	4.3
Toluene	N.D.	50	47	94	44	88	6.6
Chlorobenzene	N.D.	50	50	100	48	96	4.1

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

Woodward-Clyde Consultants

PRELIMINARY GEOTECHNICAL EVALUATION AND ENVIRONMENTAL SITE ASSESSMENT CITY OF OAKLAND CONSOLIDATED SERVICES CENTER ALTERNATIVE SITES A AND B OAKLAND, CALIFORNIA

Prepared for

City of Oakland
Office of the City Attorney
505 14th Street
Oakland, California 94612

May 13, 1992

Prepared by

Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, CA 94607-4014

Woodward-Clyde Consultants

Engineering & sciences applied to the earth & its environment

May 13, 1992
91C0592A

City of Oakland
Office of the City Attorney
505 14th Street
Oakland, California 94612

Attention: Donnell Choy, Esq.

Subject: Preliminary Geotechnical Evaluation and Environmental Site Assessment, City of Oakland Consolidated Services Center, Alternative Sites A and B, Oakland, California

Dear Mr. Choy:

We are pleased to present the following Preliminary Geotechnical Evaluation and Environmental Site Assessment of Alternative Sites A and B for Building No. 5 located at Edgewater Drive, Oakland, California. This report presents the results of our site history review, soil and groundwater exploration, and testing, and a discussion of possible remediation of contamination detected at the sites. Based upon previous studies, the report also contains a comparison of environmental and geotechnical conditions at Sites 1, 2, A and B. Mr. Mark Freitas performed the preliminary geotechnical evaluation.

Please call if you have any questions, or if we can provide additional assistance on this project.

Sincerely,

WOODWARD-CLYDE CONSULTANTS

Lois A. Gruenberg
Senior Staff Engineer

Albert P. Ridley, C.E.G.
Senior Consultant

Attachment:

(05-07-92) COPY of Q:\91\2105.1(91C0592A)\1

M0512921104

500 12th Street, Suite 100 • Oakland, CA 94607-4014 • (510) 893-3600 • Fax (510) 874-3268

Woodward-Clyde Consultants

PRELIMINARY GEOTECHNICAL EVALUATION AND ENVIRONMENTAL SITE ASSESSMENT CITY OF OAKLAND CONSOLIDATED SERVICES CENTER ALTERNATIVE SITES A AND B OAKLAND, CALIFORNIA

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EXECUTIVE SUMMARY

Soil and Groundwater Conditions

Analytical testing of soil and groundwater from monitoring wells installed at Sites A and B detected petroleum hydrocarbon contamination in soil and groundwater in MW-5, near three underground fuel tanks on the north side of Building No. 5, and in MW-6, near an unused underground fuel tank at the southwest corner of Building No. 5. Groundwater from MW-5 contained concentrations of benzene, ethylbenzene, and xylenes exceeding the California MCL (maximum contaminant level) for drinking water. Groundwater from MW-6 contained a concentration of benzene exceeding the California MCL.

Analysis of the groundwater sample from MW-5 detected concentrations of lead and copper exceeding the Federal MCL. The groundwater sample from MW-6 contained lead, nickel, and copper exceeding the Federal MCL. Groundwater from MW-7 contained nickel and copper exceeding the Federal MCL. Analysis of soil from MW-6 detected total lead at a concentration 10 times the STLC (soluble threshold limit concentration). There is a possibility that the soluble lead concentration may exceed the STLC, requiring disposal of excavated soil as a hazardous waste.

Geotechnical Evaluation

The subsurface geotechnical conditions at Sites A, B, 1, and 2 are similar and consist of fill overlying soft, compressible silty clay, known locally as Bay Mud. Exploratory borings drilled at the sites encountered about 10 to 15 feet of fill overlying Bay Mud. The bottom of the Bay Mud was consistently encountered at a depth of approximately 28 to 30 feet below the ground surface.

The proposed equipment building could be supported on driven piles at any of the sites and it is estimated that the piles would be similar in length at each of the sites. It is feasible to support the proposed building on shallow foundations; however, the building would need to be designed to tolerate expected large total and differential settlements.

The ground surface at Site 1 is at a lower grade than Sites 2, A, and B. If Site 1 is developed, it is anticipated that the site grade will be raised by placing fill which will lead to consolidation of the underlying Bay Mud and overall site settlement.

Environmental Comparison of Sites 1, 2, A, and B

A previous environmental assessment of Site 1 concluded that it is likely that Site 1 has not been environmentally impacted. However, it would be prudent to perform preconstruction monitoring of groundwater to document site conditions, followed by at least four quarters of monitoring. For this monitoring, the costs are estimated to be about $50,000.

Low concentrations of petroleum hydrocarbons and volatile organics have been previously detected at Site 2. It is anticipated that groundwater monitoring will need to be initiated and continued for several years at this site. In addition, remediation of soil would likely be required during removal of existing underground fuel lines at this site. The groundwater monitoring (at least 4 quarters) and possible soil remediation costs (assumed 1000 cubic yards contaminated soil) at Site 2 could range from $350,000 to $500,000.

Higher concentrations of gasoline and volatile organics, exceeding the California MCL's for drinking water, have been detected in soil and groundwater at Site A near underground fuel tanks and pipes. Concentrations of metals have been detected in groundwater at Site A exceeding the Federal MCL's. It is anticipated that soil and groundwater contamination will require remediation. Assuming about 4,000 cubic yards of contaminated soil would need to be hauled off-site for proper disposal at about $350 per cubic yard, and about $20 per cubic yard for import fill, about $1.4 million might be needed for soil remediation at Site A. Groundwater extraction and treatment might cost about $450,000. The total cost of groundwater and soil remediation at Site A might cost between $1.8 and $2.0 million.

Assuming that the extent of soil and groundwater contamination at Site B is less than at Site A, the remediation costs would be less. Assuming about 2,000 cubic yards of contaminated soil needed to be hauled to a Class I or II Waste Management Facility, the cost would be about $700,000. Groundwater extraction and treatment might cost about $300,000. The total cost to remediate soil and groundwater at Site B might be $1.0 million.

Because of uncertainties in the site conditions, these estimates are for comparison only. Actual remediation costs could be several times greater than estimated.

1.0 INTRODUCTION

In accordance with Amendment No. 2 to the Agreement dated September 4, 1991 between the City of Oakland and Woodward-Clyde Consultants (WCC), we have prepared this geotechnical and environmental study of Alternative Sites A and B. These sites are being considered for a replacement building (Building No. 7) for the existing equipment building (Building No. 5) at the City of Oakland Consolidated Services Center, 7101 Edgewater Drive, Oakland, California, as shown on Figure 1.

Based on the results of our field exploration and chemical laboratory testing, we have evaluated preliminary foundation requirements and evaluated the environmental contamination issues at Sites A and B for development of the proposed Building No. 7. Specifically, this report includes the following information:

- a description of the soil and groundwater conditions encountered in the exploratory borings and monitoring wells drilled at the alternative sites;
- preliminary foundation requirements for the proposed structure;
- a list of potential construction impacts;
- a site historic review;
- a description of site environmental features;
- soil and groundwater chemical analytical results; and
- an environmental comparison of the four (4) Alternative Sites 1, 2, A and B.

1.1 PROJECT BACKGROUND

Building No. 5 has experienced extensive settlement and distress. WCC previously studied the settlement problem and the results and conclusions of this study were presented in a report entitled "Geotechnical Engineering Study, Equipment Building, Consolidated Services Center, Oakland, California," dated March 25, 1988. It is our understanding that the City will demolish Building No. 5 and replace it with a new structure to be located at one of the Alternative Sites 1, 2, A or B, (Figure 2). Alternative Sites A and B are located in the vicinity of the existing Building No. 5, southeast of Alternative Sites 1 and 2.

WCC conducted a preliminary environmental site assessment for Alternative Sites 1 and 2 and the results were presented in a report entitled "Environmental Site Assessment, Oakland Building No. 7, 7101 Edgewater Drive, Oakland, California," dated December 13, 1989. WCC also conducted a preliminary geotechnical evaluation of Alternative Sites 1 and 2 and the results were presented in a report entitled "Preliminary Geotechnical Evaluation, Proposed Equipment Building 7 Sites, Edgewater Road, Oakland, California," dated October 11, 1989.

1.2 SCOPE OF WORK

The following tasks are included in this report: Task 1, Preliminary Geotechnical Evaluation; and Task 2, Environmental Assessment. The Preliminary Geotechnical Evaluation (Section 4.0) is to provide predesign information for evaluation of the proposed replacement Building No. 7 at Alternative Sites A and B, including preliminary remediation construction cost estimates. Specifically, the Task 1 includes the following:

1) a description of soil and groundwater conditions expected at the alternative sites;

2) preliminary foundation requirements for the proposed structures including preliminary pile design lengths and capacities; and

3) construction considerations or impacts.

The Environmental Assessment is to provide an evaluation of the potential for soil or groundwater contamination at Alternative Site A and B, and to assist in site selection. The following Subtasks are included:

Subtask 1) Update Site History Review (Section 2.0) -
Review available City, County, State and Federal information for spills or leaks in the site vicinity and known toxic cases, site activities involving storage, handling or releases of hazardous materials at Alternative Sites A and B.

Subtask 2) Site Reconnaissance (Section 2.0) -
Observe the existing surface conditions and current activities on Alternative Sites A and B, including interviews with facility employees and research of permits for storage of hazardous waste.

Subtask 3) Field Investigation (Section 3.0) -
Install and sample three (3) borings converted to groundwater monitoring wells;

Subtask 4) Laboratory Analyses (Section 5.0) -
Perform soil and groundwater analyses for total petroleum hydrocarbons (TPH) as gas with benzene, toluene, ethylbenzene, and xylenes (BTEX), Oil & Grease, volatile and semi-volatile organics, poly-chlorinated biphenyls (PCBs), and priority pollutant metals.

Subtask 5) Analysis and Report -
Review the results of Task 1 and present the combined environmental and geotechnical site conditions for Alternative Sites A and B; and provide the relative geotechnical suitability of these sites for the planned building, and the results of the environmental assessment for Alternative Sites A and B.

The conclusions of the environmental and geotechnical evaluation are discussed in Section 6.0. The conclusion include an environmental comparison of the Alternative Sites 1, 2, A and B. The recommendations are presented in Section 7.0, and include a discussion of possible additional site exploration. Recommendations for remediation activities include methods, possible extent and estimated potential costs.

2.0
SITE HISTORY

2.1 SITE DESCRIPTION

The City of Oakland Consolidated Services Center located at 7101 Edgewater Drive, is zoned as light industrial/commercial. The Consolidated Services Center is surrounded by the Damon Slough on the north; an undeveloped parcel (Alternative Site 1) and Grand Auto on the east; the San Leandro Bay on the west; and light industrial/commercial properties on the south. The Consolidated Services Center consists of offices, including the Public Works Building, and warehouse structures, including Building No. 5 (Figure 3), located on approximately 17 acres. Areas not occupied by buildings are paved, except for the undeveloped parcel located northeast of the Consolidated Services Center, Alternative Site 1. The City of Oakland leases this property from the Port of Oakland.

2.2 UPDATED RECORDS REVIEW

2.2.1 Aerial Photographic Review

Aerial photographs of the Site taken in 1969, 1970, 1971 and 1988 were reviewed in the environmental site assessment for the Alternative sites 1 and 2 dated December 13, 1989. These photos showed the progressive development of the Consolidated Services Center. To update this review, aerial photographs taken in 1971, 1973, 1983 and 1990 were reviewed.

In the 1971 photograph the Consolidated Services Center was shown in the development stages. All buildings currently at the facility exist in this photo, but the facility is not yet paved. Building No. 5 is shown as under construction. The Grand Auto building exists on the south border of the undeveloped parcel (Alternative Site 1). The 1973 photo shows that the facility is paved, and the pump island has been installed southwest of Building No. 5. In the 1983 photo no significant changes are shown. However, there is a darker area, possibly staining, near the southwest corner of Building No. 5 at the location of the wash drain. The 1990 photograph also shows staining near the wash drain area.

2.2.2 Agency Review

Federal, State and City regulatory listing of fuel and toxic waste sites were reviewed to identify site contamination cases within an approximate 2,000-foot radius of the site (Figure 4).

2.2.2.1 Federal Agencies

The United States Environmental Protection Agency's (EPA) "National Priorities List, Final and Proposed Sites", February 11, 1991 update, was reviewed. No toxic waste sites were identified on the NPL list within an approximate 2,000-foot radius of the 7101 Edgewater Drive site.

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), July 29, 1991, Site/Event List was reviewed to update the February 1989 CERCLIS. These listings were reviewed to assess if surrounding properties contain hazardous waste, or if toxic substance activities in the area may impact the site.

Potential uncontrolled hazardous waste sites are contained in the EPA CERCLIS database. The CERCLIS system contains only those potential hazardous waste sites that have been brought to the attention of the EPA. The EPS CERCLIS database for July 1991 lists one (1) site within an approximate 2,000-foot radius of the site.

Type DS1 CAD983585548	Oakport Development Site South of Oakport Street between Hassler Way Oakland, CA 94621

This facility is also listed on the Alameda County Fuel Leak Case List, as shown in Section 2.2.2.2 and on Figure 4.

The facilities listed in the EPA Hazardous Waste Data Management System (HWDMS) database are regulated under the Resources Conservation and Recovery Act (RCRA) of 1976. The HWDMS database contains only those facilities regulated under RCRA that have notified EPA as hazardous waste generators, transporters (Trans) or treatment/storage/disposal

facilities (TSDF). The HWDMS database identifies sites which generate toxic wastes by type. Type 1 indicates that at least 1000 kg/month of non-acutely hazardous waste is generated (or 1 kg/month acutely hazardous waste); likewise, Type 2, 100 kg/mo but less than 1000 kg/mo non-acutely hazardous waste generated; and Type 3, less than 100 kg/month of non-acutely hazardous waste generated. The EPA HWDMS database for September 18, 1991 lists the following case sites within an approximate 2,000-foot radius of the site.

Type 2* CAD981379902	ACS Asbestos Management 7303 Edgewater Drive Oakland, CA 94621
Type 1 CAD980895205	PAC Bell 7300 Edgewater Drive Oakland, CA 94621
Type 2 CAD981970247	Glidden Company 5800 Coliseum Way Oakland, CA 94621
Type 3 CAD981652365	Grand Auto, Inc. 7200 Edgewater Drive Oakland, CA 94621
Type 2 CAD981370158	Novacor Medical Corp. 7799 Pardee Lane Oakland, CA 94621
Type 3 CAD981424609	City of Oakland 7101 Edgewater Drive Oakland, CA 94621
Trans CAD009238981	System 99 8201 Edgewater Drive Oakland, CA 94621

Type 3 CA099958761 TAB Label Co.
7305 Edgewater Drive, Suite F
Oakland, CA 94621

*(was listed as a Type 3 generator in 1989 list)

2.2.2.2 State Agencies

The California Office of Planning and Research's "Hazardous Waste and Substances Site List", revised June 1989 (November 1990, update) lists the following sites:

City of Oakland
7101 Edgewater Drive
Oakland, CA 94621
Problem: Tank Leak

Hooton Property
7301-F Edgewater Drive
Oakland, CA 94621
Problem: Tank Leak

Malibu Grand Prix
8000 S. Coliseum Way
Oakland, CA 94621
Problem: Tank Leak

McGuire & Hester
796-66th Avenue
Oakland, CA 94621
Problem: Tank Leak

The Hooton Property site is also listed on the fuel leak list of the regional Water Quality Control Board (RWQCB) for September 1, 1989 and the City of Oakland Fire Department underground storage tank activity permit files.

The California Department of Health Services (DHS) "Expenditure Plan for Hazardous Substances Cleanup Bond Act of 1984", Revision 4, January 1989 lists identified toxic waste sites for priority cleanup. No sites within an approximately 2000-foot radius are listed on the January 10, 1990 update.

The RWQCB Toxic Case List, dated September 18, 1991, and the Fuel Leak Case List, dated September 12, 1991 were reviewed for Alameda County. No toxics cases were found within a 2,000-foot radius of the site. However, five fuel leak cases were listed by RWQCB within an approximate 2,000-foot radius of the site.

McGuire & Hester
796-66th Avenue
Oakland, CA 94621

Port of Oakland
(UST permit list)
7101 Edgewater Drive
Oakland, CA 94621

Hooton Property
7301-F Edgewater Drive
Oakland, CA 94621

Malibu Grand Prix
8000 S. Coliseum Way
Oakland, CA 94621

City of Oakland
7101 Edgewater Drive
Oakland, CA 94621

2.2.2.3 Local Agencies

Records were received from the City of Oakland Department of Fire Prevention for the years 1974-1989. The records of the years from 1920-1973 are no longer available. These records list the sites in which permits were issued for underground storage tank (UST) activity.

The following sites, within an approximately 2,000 foot radius of the site, were identified:

Date	Permit#	Address	Description
07/26/74	**7868**	**7101 Edgewater Drive**	**Vapor recovery system**
01/24/75	**8018**	**7101 Edgewater Drive**	**Extend fuel lines**
04/22/75	**8058**	**7101 Edgewater Drive**	**Extend gas, diesel lines**
09/16/78	8093	513 Independent Road	Install 1-5,000-gal. tank
12/04/75	**8114**	**7101 Edgewater Drive**	**Repair fuel tank**
10/03/78	8302	7200 Edgewater Drive	Install 1-10,000-gal. tank
05/31/79	8364	7200 Edgewater Drive	Install 1-10,000-gal. tank and 1-1,000-gal. waste oil
06/27/79	8370	7303 Edgewater Drive	Install 1-3,000-gal. tank
07/24/80	8464	8001 Oakport Street	Install 1-10,000-gal. tank
09/23/80	**8473**	**7101 Edgewater Drive**	**Remove 1-8,000-gal. tank. Install 1-12,000-gal. tanks**
02/07/84	**8634**	**7101 Edgewater Drive**	**Install 2-20,000-gal., 1-12,000-gal. tanks**
05/03/84	**8649**	**7101 Edgewater Drive**	**Install 2-20,000-gal., 1-12,000-gal. tanks**
12/17/86	8845	796-66th Avenue	Remove 1-1,000-, 1-5,000-, and 1-8,000-gal. tanks

Date	Permit#	Address	Description
07/01/87	9005	7200 Edgewater Drive	Remove 1-500-, 1-1,000-gal. tanks
11/19/87	9039	7200 Edgewater Drive	Remove 1-1,000-gal. tank
07/08/88	9130	7307-F Edgewater Drive	Remove 1-3,000-gal. tank
08/10/88	9140	575 Independent Road	Remove 2-500-gal. tanks
11/23/88	9180	845 66th Avenue	Repair
03/14/89	**9222**	**7101 Edgewater Drive**	**Install 2-1,000 gal. tanks**
06/13/89	9257	8501 Pardee Dr.	Remove 1-550 gal. tank
07/12/89	9268	845 66th Avenue	Install & remove 2-10,000 gal. tanks, 1-280 gal. tank
01/31/90	9345	8000 S. Coliseum Way	Remove 1-6,000 gal. tank
02/14/90	9352	7801 Oakport Street	Remove 1-3,000 gal. tank
06/05/90	9396	727 66th Avenue	Remove 1-1,000 gal. tank
06/13/90	9405	5601 Oakport	Install 2-1,000 gal. above ground tanks
09/04/90	9447	8000 S. Coliseum Way	Install 1-1,000 gal. above ground tanks
09/05/90	9450	814 69th Avenue	Remove 1-500 gal. tank
07/31/91	9471	701 66th Avenue	Remove 1-1,000 gal. tank

2.3 SITE RECONNAISSANCE

Building No. 5 was constructed in 1971 and is approximately 49,000 square feet, as shown on Figure 3. Its primary use is for City vehicle repair and maintenance, including police cars, fire engines, construction equipment, small equipment, and many other types and sizes of machines and engines. The facility houses a paint and body shop, a welding shop, three (3) lube bays, a tire shop, a radio repair shop, a parts and supplies storage area, and office space.

The storage area is used for product storage and distribution of antifreeze, oils and lubricants, parts, and aerosols. Antifreeze is purchased in bulk and transferred to one-gallon containers at this facility. The lube bays are used as repositories of lubrication and other used oils from vehicle maintenance activities. Two (2) of the lube and waste oil repositories are located along the south wall, and are plumbed directly to the waste oil and lube tanks located on the outside of the south wall. One (1) is located near the northwest entrance. The above-ground tanks are pumped monthly to remove accumulated lubrication and waste oil. A copy of the EPA form 8700-12A Acknowledgement of Notification of Hazardous Waste Activity includes the generator ID number, and is presented in Appendix A.

Several underground storage tanks (USTs) are located around the perimeter of Building No. 5 (Figure 3). Two (2) 20,000-gallon and one (1) 5,000-gallon single-walled, fiberglass gasoline storage tanks were installed in 1986, and are operational. One of the 20,000-gallon tanks contains diesel fuel and the other two contain unleaded gasoline. Two (2) 1,000-gallon lube oil and two (2) 500-gallon waste oil tanks were abandoned in 1989, and replaced with the aforementioned above-ground tanks. A 12,000-gallon underground unleaded gasoline tank is located south of the southwest corner of Building No. 5. According to a City employee, this tank is not operational, although it is plumbed to the pump island located approximately 200 feet to the northwest. It was also reported that this tank still contains an unknown quantity of unleaded gasoline. An abandoned pressurized pipeline system is plumbed to the pump island located near the southwest corner of Building No. 5. The pipeline system remains within the subsurface along the western border of the property and in the northwest parking lot, as shown in Figure 3.

2.4 SUMMARY OF PREVIOUS INVESTIGATION

WCC previously conducted an environmental assessment for Alternative Sites 1 and 2 (WCC 1989). Four monitoring wells were installed in borings drilled at Sites 1 and 2. During the field investigation fill material, generally consisting of sandy silts and clays, were encountered in each of the four monitoring well borings. On Alternative Site 2, borings MW-1 and MW-2 were located in the parking lots of the Public Works Building and encountered gravels and organic material. Monitoring well MW-1 is located within the area of the abandoned underground gas lines. Monitoring wells MW-3 and MW-4 are located on Alternative Site 1 (Figure 3).

During drilling, groundwater was encountered at a depth of approximately six feet beneath the ground surface in borings for monitoring wells MW-1 and MW-4. In borings for MW-2 and MW-3, groundwater was encountered at a depth of approximately 7 to 7½ feet beneath the ground surface.

The following contaminants were detected in the soil samples taken in monitoring well boring MW-1 at a depth of 5 to 6½ feet:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- 2-Methylnapthalene
- Napthene
- Phenol

Low to medium boiling point hydrocarbons were detected in soil at each monitoring well boring location. Low to medium boiling point hydrocarbons were detected at 6.4 parts per million (ppm) in soil at 6 to 7½ feet in MW-3, and 2.5 ppm in soil at 6 to 7½ feet in MW-4.

The following contaminants were detected in groundwater sampled from MW-1:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- 2-Methylnapthalene
- 4-Methylnapthalene
- Napthene
- Phenol
- Low/Medium boiling point hydrocarbons

In addition, benzene was detected in MW-2 and acetone and carbon disulfide in MW-3. It is believed that the acetone and carbon disulfide detected were laboratory contaminants.

Laboratory analysis of groundwater samples from monitoring wells MW-1 and MW-2 indicated that groundwater at Alternative Site 2 was contaminated with volatile organic compounds. Analysis of soils samples from MW-1 showed detection of volatile organic compounds usually associated with petroleum products. The probable source of this contamination is the fuel lines extending throughout the Consolidated Services Center.

Laboratory analysis of groundwater samples from monitoring well MW-3 and MW-4 showed no detection of volatile organics or purgeable organic contaminants or petroleum hydrocarbons. The low concentrations of petroleum hydrocarbons in soil from MW-3 and MW-4 were below leaking underground storage tank (LUFT) program general guidelines. Under these current guidelines, it is unlikely that remediation of soil or groundwater would be required.

3.0
FIELD EXPLORATION

3.1 GEOLOGIC SETTING

The site is located on an area of man-made fill overlying silty soft, compressible, holocene-age clay, locally known as Bay Mud. The Bay Mud deposits are underlain by alluvial and older bay deposits consisting of silty clay to clean sands. Bedrock is estimated to be over 800 feet below the ground surface.

Topographic maps show a gentle southwesterly slope (U.S. Geologic Survey, San Leandro Quadrangle and Oakland East Quadrangle, 7.5 minute series). In general, it is expected that the local groundwater gradient and flow direction is west, towards the Bay. However, due to the close proximity of the site to the Bay, it is possible that the local groundwater flow and elevation are influenced by tidal activity, as well.

3.2 SOIL BORINGS AND SAMPLING

On December 5, 1991, WCC retained Aqua Science Engineers, Inc. to drill three soil borings and convert each to a groundwater monitoring well. The locations of these monitoring wells are shown in Figures 2 and 3. Monitoring Well MW-5 was installed north of the building about 20 feet east of three fiberglass underground storage tanks (two at 20,000 gallons and one at 5,000 gallons) for gasoline. Monitoring Well MW-6 was installed southwest of the building near gas pumps and about 60 feet downgradient from a 12,000 gallon fiberglass underground storage tank for fuel. Monitoring Well MW-7 was also installed south of the building, about 60 feet downgradient from two abandoned waste oil tanks (one 500 gallons, one 1000 gallons) at the southeast corner of the building. These tanks are about 10 feet deep, and were placed on a base of crushed rock and backfilled with soil.

The monitoring well borings were drilled to a maximum depth of 15 feet below grade. A log of each boring was prepared by a WCC engineer and is included in Appendix A. The boring logs contain descriptions of the materials encountered in each boring, well construction details, and field measurements of potential contaminants.

Groundwater Protection Ordinance Permit No. 91656 was obtained by WCC for monitoring well installation from the Alameda County Water Conservation and Flood Control District Zone 7. A copy of the permit is provided in Appendix B.

The monitoring well borings were completed in accordance with WCC and Alameda County Water Conservation and Flood Control District - Zone 7 specifications. The monitoring well borings were drilled with a truck-mounted drill rig, equipped with 8-inch outside diameter (O.D.), hollow-stem, continuous flight augers. Wells were constructed and soil samples collected under the direction of a WCC engineer. Samples were collected by advancing a 2-inch O.D. modified California sampler through the hollow stem of the augers. The sampler was driven 18 inches, using an 140 pound hammer with a 30-inch drop. The number of blows required to drive the sampler through each 6-inch portion of the 18-inch interval is shown on the boring logs in Appendix B.

The soil samples were retained in 6-inch long, 2-inch diameter brass liners contained within the sampler. One six-inch liner from the drive sampler was examined by the WCC engineer and the soil was visually classified using the Unified Soil Classification System. As one soil sample was being classified, another was placed inside of a plastic baggie where the headspace was analyzed using a calibrated photoionization detector. Of the three samples taken in each of the three borings, no organic vapors were detected. One sample taken near the top of the water table was analyzed for each boring.

To reduce the potential of cross-contamination, the drive sampler was decontaminated between sampling intervals in the following manner:

1) Alconox wash
2) tap water rinse
3) distilled water rinse

New and decontaminated brass liners and caps were used for each sample. To reduce the potential for cross-contamination between borings, separate sets of augers were used for each drilling location. All augers were steam cleaned by Aqua Science Engineers prior to being brought to the site. Drilling and sampling equipment was steam-cleaned on-site at the end of the day. Steam cleaning fluids, decontamination water and soil cuttings were collected in

4.0
PRELIMINARY GEOTECHNICAL EVALUATION

4.1 SUBSURFACE CONDITIONS

The following interpretation of subsurface conditions is based on a review of the site history, subsurface data, boring logs and laboratory test results from the March 1988 Geotechnical Engineering Study conducted by WCC and the monitoring well borings drilled for the current environmental assessment. Actual subsurface conditions may vary from those described herein, particularly away from the locations of exploratory borings.

The existing equipment building site as well as the entire Consolidated Services Center was developed by filling and reclaiming the lowlands along San Francisco Bay in 1969 and 1970. Prior to development of the site a dike extended through the western portion of the Service Center Complex site protecting the onshore lowland area from the Bay. The location of this dike was evaluated in our 1988 study and is expected to traverse the western portion of Sites A and B.

Subsurface conditions at Alternative Sites A and B are expected to be similar. The borings drilled for the 1988 study in and around the existing equipment building encountered a 10- to 15-foot thick layer of heterogeneous fill that was predominated by clayey gravel and gravelly clays. The composition and consistency of the fill varied widely. It ranged from soft, highly plastic clays to dense clayey gravel and contained minor amounts of rock fragments, rubble, and debris.

Soft to medium stiff, highly plastic silty clay known locally as Bay Mud was encountered below the fill. The Bay Mud had low to moderate organic content and occasional pockets of peat and was weak and highly compressible. The thickness of the Bay Mud varied from about 15 feet on the east side of the sites, to 20 feet on the west. Below the Bay Mud, extending to the maximum depth explored, 41-1/2 feet, stiff to very stiff silty clay with occasional lenses of medium dense to dense sand was encountered.

Groundwater was encountered at a depth of 10 feet (about elevation 0) during the 1988 study and at a depth of about 7 feet (elevation +3 feet) in the monitoring wells drilled for the current environmental assessment. All elevations in this report are referenced to NGVD of 1929. Groundwater levels at the site are expected to fluctuate with the adjacent tidal levels.

4.2 DISCUSSION

The subsurface conditions at Alternative Sites A and B are similar to and consistent with those encountered at Sites 1 and 2 in the October 1989 Geotechnical Engineering Study by WCC, with the following exceptions. The thickness of fill at Sites A and B varies significantly, mainly due to the pre-1970 dike which traverses these sites. Because of limited subsurface data, it is not known how much the thickness of fill varies at Sites 1 and 2. Much of Site A and a portion of Site B has been preloaded by surcharge fill and through the weight of the existing building. Thus, the compressibility of the Bay Mud underlying Site A should be less than at Sites B, 1 or 2.

The new equipment building could be supported on shallow spread footing foundations or deep foundations consisting of piles. If shallow foundations were used to support a new Equipment Building at Sites A or B, it is estimated that building settlements would vary between about 3 and 7 inches. Footings in the vicinity of the existing Equipment Building would settle significantly less than footings further away from the existing structure. Differential settlement between adjacent columns could be 3 inches or more. This scenario is based on the assumption that the new building would be situated completely to the east of the old dike that traverses the site. If the building spans the dike, differential settlements would be greater.

The estimated total settlement of the proposed Equipment Building if supported on shallow foundations, i.e., spread footings, at Sites 1 or 2 has been estimated to be about 4 inches due to structural loads, plus an additional amount if the site grade were to be raised (infer to the Preliminary Geotechnical Evaluation Report dated October 11, 1989). Differential settlement is expected to be at least half of the total settlement.

Assuming subsurface conditions below a depth of 41-1/2 feet at Sites A and B are similar to conditions below this depth at Sites 1 and 2, a deep foundation of driven piles relying on

skin-friction and/or end bearing could be used to support the proposed structure with minimal settlement.

4.3 RECOMMENDATIONS

In order to reduce the total and differential settlements of the new equipment building, and the chance for architectural and structural distress, it is recommended that at Sites A or B, the proposed Equipment Building be supported on driven pile foundations. The piles should derive support through skin-friction and/or end bearing in the stiff to very stiff soil underlying the Bay Mud, below a depth of about 30 feet (elevation -20 feet). Prestressed, precast concrete piles with a minimum size of 12 inches square are suggested, but not to the exclusion of other pile types. The following allowable skin-friction values are recommended for preliminary design:

	below elevation -20 feet
Dead load	500 psf
Dead plus live load	750 psf
All loads, including wind or seismic	1000 psf

Previous borings at Sites A and B only extended to a depth of about 41 feet. If the conditions below 41 feet are similar to those at Sites 1 and 2, it may not be possible to drive piles through the dense sands encountered in the borings at a depth of about 50 feet (elevation -40 feet) at Sites 1 and 2. Further exploration is necessary to determine the thickness and extent of this layer before its suitability for end-bearing or potential for pile driving refusal can be determined.

Settlement of the planned structure if supported on pile foundations as described herein is estimated to be less than 1/2 inch.

5.0
LABORATORY CHEMICAL ANALYSES

Soil and groundwater samples from monitoring wells MW-5, MW-6 and MW-7 were tested for total petroleum hydrocarbons with benzene, toluene, ethylbenzene, and xylenes, volatile and semivolatile organic compounds, polychlorinated biphenyls (PCBs) and priority pollutant metals. A list of the soil and groundwater samples taken and the analyses performed are provided in Table 1. During groundwater sampling a duplicate sample was taken of MW-5 and labeled MW-10, a trip blank was stored in the cooler along with the groundwater samples and was labeled MW-8, and an equipment blank was taken by passing nitrogen-purged water through a clean Teflon bailer and labeled MW-9. The soil and groundwater analyses were performed by Anametrix, Inc. of San Jose, a State-certified analytical laboratory. The results of the laboratory analyses are discussed in Sections 6.1 and 6.2 and summarized in Tables 2, 3 and 4. Laboratory reports are included in Appendix D.

6.0
RESULTS

6.1 FIELD EXPLORATION

The soils encountered were similar in each monitoring well boring. In boring MW-5 and MW-7, clayey silt and sand with interbedded gravels was encountered to approximately 13 to 14 feet below grade, and to approximately 8 feet below grade in boring MW-6. Groundwater was encountered at approximately 7 feet below grade in each boring. The boring logs are included in Appendix B.

As described in Section 3.2, all soil samples were analyzed in the field for organic vapors using a photoionization detector. Organic vapors were not detected in any samples. However, a strong petroleum odor was noted from soils in the 8- to 9½-foot sample of MW-5. An oily sheen was visible on the augers from 5 to 15 feet below ground after they were removed from boring MW-5. During development of monitoring well MW-5 an oily sheen was also observed on the water removed from the well. Sheen was not observed in the soil or water from monitoring wells MW-6 and MW-7.

6.2 SOIL LABORATORY CHEMICAL ANALYSES

Of the volatile organics analyzed for (EPA Method 8240 and BTEX, EPA Method 5030/Modified 8015), elevated concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) were detected in the soil sample from MW-5 at depth of 8 to 8.5 feet. Benzene and xylene were also detected, but at much lower concentrations, in MW-6 at a depth of 7.5 to 8 feet. No volatile organics were detected in the soil sample from MW-7 at a depth of 7 to 7.5 feet. The semivolatile organic compounds naphthalene and 2-methylnaphthalene were detected in the soil sample from MW-5 and fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, and benzo(a)pyrene were detected in soil sample MW-6 . No semivolatile organic compounds were detected in soil sample MW-7 . Total petroleum hydrocarbons (TPH) quantified as gasoline were detected in soil sample MW-5, but not in soil sample MW-6 nor MW-7. TPH quantified as diesel was detected in all three soil

samples. The analytical laboratory attributed the detection of TPH as diesel to different substances for each sample, as listed below:

Sample	TPH as diesel (mg/kg)	Attributed to by Analytical Laboratory
MW-5 (8-8½)	280	Lighter petroleum product, possibly gasoline
MW-6 (7½ - 8)	140	Combination of diesel and a heavier petroleum product, possibly motor oil
MW-7 (7 - 7½)	48	Heavier petroleum product, possibly motor oil

Total Oil and Grease was detected in the soil samples from all three well borings, MW-5, MW-6 and MW-7, with the highest concentration detected in MW-6 at 1800 mg/kg. Polychlorinated biphenyls (PCBs) were not detected in either of the three soil samples. Of the priority pollutant metals analyzed for, total arsenic, total chromium, copper, nickel, lead and zinc were detected in the three soil samples and cadmium in soil sample MW-6 only. Total lead was detected in the MW-6 soil sample at 94 mg/kg, greater than 10 times the California Title 22, Soluble Threshold Limit Concentration (STLC) of 5.0 mg/l. It is possible that this soil could be considered a hazardous waste based on soluble lead concentrations if excavated. However, a Waste Extraction Test (WET) would need to be performed to evaluate if this soil would be classified a hazardous waste. The results of the soil laboratory chemical analyses are summarized in Table 2. Laboratory analytical reports are included in Appendix D.

6.3 GROUNDWATER LABORATORY CHEMICAL ANALYSES

The volatile organic compounds benzene, toluene, ethylbenzene and xylene (BTEX) and semivolatile organic compounds naphthalene and 2-methylnaphthalene were detected in groundwater sample MW-5. Benzene, toluene, and xylene were detected at much lower levels in groundwater sample MW-6. Semivolatile organic compounds were not detected in the MW-6 groundwater sample. TPH quantified as gas and as diesel were detected in groundwater sample MW-5 at 16,000 µg/L and 1900 µg/L, respectively. TPH as gas and as

diesel were detected in groundwater sample MW-6 at lower levels, 780 µg/L and 520 µg/L, respectively.

TPH as gas and as diesel, and volatile and semivolatile organics were not detected in the groundwater sample from MW-7. Neither total Oil and Grease nor PCBs were detected in groundwater from the three monitoring wells. The results of the groundwater laboratory chemical analyses are summarized in Table 3. Laboratory analytical reports are included in Appendix D.

6.4 QA/QC

During groundwater sampling a trip blank was carried in the cooler along with the groundwater samples and an equipment blank was taken by running nitrogen-purged water through a cleaned Teflon bailer. The results of the analyses of these samples are shown in Table 4. No compounds analyzed for were detected in both the trip and equipment blanks. Laboratory analytical reports are included in Appendix D.

7.0
ENVIRONMENTAL ASSESSMENT CONCLUSIONS AND RECOMMENDATIONS

7.1 DISCUSSION

The records review indicated that the City of Oakland Consolidated Services Center has been listed as a type 3 generator of less than 100 kg/month of non-acutely hazardous waste. The EPA generator number is included in Appendix A as shown on the EPA form 8700-12A, Acknowledgment of Notification of Hazardous Waste Activity. Hazardous waste generated at Building No. 5 is temporarily stored in two above-ground tanks for no longer than 90 days. In addition, a tank leak is reported for the Consolidated Services Center on the Office of Planning and Research, Hazardous Waste and Substances Site List and the RWQCB Fuel Leak Case List. Several tank leaks exist within a 2,000-foot radius of the Site, as shown on Figure 4. Two of the fuel leak cases are reported for the Consolidated Services Center, and were probably related to tank replacements performed prior to 1989, as described in Section 2.2.3.

From site history review and reconnaissance activities, several site features were identified as potential sources of soil and groundwater contamination at the Consolidated Services Center. These features include, but are not limited to, the following: the four (4) sumps for runoff collection from Building No. 5 interior drains; the operational underground fuel storage tank farm located near the northeast corner of Building No. 5; the non-operational underground fuel storage tank and associated pump island located near southwest corner of Building No. 5, and the associated pipeline system located along the western border of the Consolidated Services Center and in the northwest parking lot.

Chemical laboratory analyses of groundwater and soil samples and observations during drilling indicate that there is soil and groundwater contamination in the vicinity of Building No. 5. Petroleum hydrocarbon contamination detected in soil and groundwater samples from MW-5 indicate gasoline, diesel (or possibly weathered gasoline), and BTEX contamination in the vicinity of the tank farm area. The semi-volatile organic compounds detected in soil sample MW-6 are typically formed from the heating of a high-boiling-point petroleum product. This suggests the presence of used motor oil. As indicated by the presence of TPH

as diesel and Oil and Grease detected in soil sample MW-7, soil contamination extends into the parking area south of Building No. 5, though it may dissipate to a large extent.

The semi-volatile organic compounds and Oil and Grease were detected in soil sample MW-6 and not in groundwater sample MW-6. The TPH quantified as diesel in groundwater sample MW-6 is probably in fact weathered gasoline. This indicates a relatively old fuel leaks either from or in the vicinity of the non-operational fuel tank and the pump island. Soil and groundwater contamination from the environmental assessment performed for Alternative Sites 1 and 2 suggests a similar contamination scenario along the pipeline system. As described in Section 2.4, BTEX, polynuclear aromatics and TPH as gasoline were detected in soil and groundwater samples from MW-1. MW-1 is located with in the pipeline system located in the northwest parking lot of the Consolidated Services Center, and is associated with Alternative Site 2.

Regulatory criteria were exceeded in groundwater samples taken during this environmental assessment. Groundwater samples from MW-5 and MW-6 are contaminated with the dissolved fuel components benzene, ethylbenzene, and xylene, as well as lead and copper, at levels greater than federal and California Maximum Contaminant Levels (MCLs) set for drinking water quality. Benzene detected at 1800 µg/L in groundwater sample MW-5, and lead at 1040 µg/L in groundwater sample MW-6, exceed the MCL of 1 µg/L and 50 µg/L respectively, by the widest margin. In groundwater sample MW-6 nickel was also detected slightly over the proposed MCL. Hydrocarbon contamination of groundwater was not detected at MW-7, but levels of nickel and copper did exceed proposed MCLs. Background levels of copper may be high due to the local "hot spot" of copper contamination in San Leandro Bay sediments. The nickel concentration of 270 µg/L in MW-7 is higher than typical background values of 0.5 to 50 µg/L for nickel in seawater. (San Francisco Bay-Delta, 1987)

7.2 RECOMMENDATIONS

Due to the presence of soil and groundwater petroleum and metals contamination within the vicinity of Building No. 5 and potentially along the fuel pipeline system, we recommend further remedial investigation of the potential sources and extent of contamination at the Consolidated Services Center to evaluate possible methods of remediation and costs. Prior to beginning such an investigation the detection of these contaminants in soil and

groundwater should be reported to the Alameda County Department of Environmental Health as a possible unauthorized fuel release. Further remedial investigation at Alternative Sites A and B would probably include the western border of the Consolidated Services Center where the pipeline system exists. The following are tasks that should be considered:

1) to evaluate of potential sources of leaks of fuel at the three USTs with at least three soil borings in the vicinity of the three USTs near MW-5;
2) one soil boring at each sump pit on the north and south sides of Building No. 5;
3) a minimum of two additional, strategically placed, monitoring wells to evaluate the groundwater gradient and the extent of groundwater contamination;
4) a soil gas survey to explore the extent of petroleum fuel contamination.

In addition, we recommend that future field activities include verification groundwater monitoring of existing monitoring wells at Alternative Site 1.

We recommend that this report be provided to the City Attorney for guidance. It is likely that the Alameda County Department of Environmental Health will require submittal of a plan to explore the detected petroleum contamination.

8.0
ESTIMATED COSTS AND POTENTIAL CONSTRUCTION IMPACTS

Based on the information provided by environmental assessments and geotechnical investigations of the Alternative Sites, the several methods of soil and groundwater remediation were evaluated. For soil remediation, the following methods may be feasible:

- In-Situ Treatment
- Excavation and Treatment or Disposal

8.1 SOIL REMEDIATION

Methods of in-situ treatment include soil vapor extraction, steam injection and vacuum extraction, and bioremediation. In the event that petroleum contaminated soils are excavated, several treatment/disposal scenarios may be available. On-site aeration and/or bioremediation is a technologically proven method for reducing levels of volatile organic compounds. However, this method is not as effective for Oil and Grease and metals. The current best demonstrated and available technology for lead contaminated soil is stabilization prior to disposal at a Class I or II landfill.

8.2 GROUNDWATER REMEDIATION

For groundwater remediation, extraction and treatment may be the most feasible method. Extraction and treatment involves the withdrawal of groundwater and subsequent treatment to remove or destroy the contaminants before discharge. Groundwater flow and the contaminant plume could be mitigated by the extraction process. This treatment process is selected on the basis of the quantity of water to be treated, the identity and concentrations of contaminants present, and the reduction in concentrations of contaminants to be achieved. After treatment, the water may be disposed either by discharge to surface waters, reinjection into the ground, or discharge to a sewer system (Publicly Owned Treatment Work [POTW]). Discharge to surface waters or reinjection requires a National Pollutant Discharge Elimination System (NPDES) Permit. The RWQCB may set effluent discharge concentrations. Likewise,

a discharge to a POTW requires negotiation with the EBMUD to select the extent of pretreatment required and requires a variance from EBMUD.

Based on what is known to date on the type and concentrations of contaminants in the groundwater, several types of treatment methods may be feasible. In general, volatile organic compounds, polynuclear aromatics and petroleum hydrocarbons can be treated using activated carbon filters and other techniques. However, it is possible that some or all of the extracted groundwater may be discharged directly to a POTW. A more detailed evaluation of site conditions would be needed to evaluate the feasibility and methods of site remediation.

The treatment technologies considered suitable for removal or destruction of volatile organic compounds in groundwater are:

- Adsorption from the liquid onto Granular Activated Carbon (GAC);
- Ultra Violet (UV) light enhanced chemical oxidation;
- Air stripping (with or without emission control); and
- Bioremediation.

A more elaborate and more costly treatment system, involving ion-exchange or other chemical reaction, may be needed to treat groundwater containing elevated concentrations of metals, such as lead, copper, and nickel.

Using similar remediation scenarios at each site, we have estimated the relative cost as a comparison method for the four (4) alternative sites.

8.3 ALTERNATIVE SITES 1 AND 2

Based on the preliminary information provided in the previous environmental assessment of Alternative Sites 1 and 2, it is likely that Alternative Site 1 has not been environmentally impacted. Installation of an additional monitoring well and verification monitoring in accordance with RWQCB regulations for at least four quarters may cost approximately $50,000.

Soil and groundwater analyses of samples from monitoring wells MW-3 and MW-4 (Alternative Site 2) found volatile organics and TPH as gasoline at low concentrations. If Alternative Site 2 were chosen, it may likely require excavating approximately 1000 cubic yards (cy) of contaminated soils, pipeline removal and continued quarterly groundwater monitoring, in accordance with RWQCB regulations. This estimate assumes that the cost of hauling and disposal at a Class I or Class II waste management unit would be approximately $350/cy; that importing and placing select fill would be approximately $20/cy. The estimated cost of remediation at this site is potentially $350,000 to $500,000. This cost could be significantly higher a significantly larger volume of gasoline contaminated soil is found adjacent to the lines.

8.4 ALTERNATIVE SITES A AND B

The construction of Building No. 7 on either Alternative Site A or B would be impacted by the potential amounts of contaminated soil generated during excavation. Based on the results of the field exploration performed for this report, it is known that potentially extensive soil and groundwater contamination of volatile organic compounds exists on Alternative Site A and potentially to a lesser extent on Alternative Site B.

We estimate that the relative costs of remediation at Alternative Site A would be greater than Alternative Site B, due to the potential extent of contamination at Alternative Site A. If it is assumed that approximately 4,000 cy of contaminated soil were removed during construction, the estimated costs may be approximately $1.4 million. This estimate assumes that the cost of hauling and disposal at a Class I or Class II waste management unit would be approximately $350/cy; that importing and placing select fill would be approximately $20/cy. Groundwater extraction and treatment for Alternative Site A may cost approximately $450,000. This estimate includes the potential costs of design studies and reports, installation of extraction wells and the treatment system, and operations for two to three years. The cost for a typical treatment system might be about $150,000 with a cost of about $1 per gallon to treat about 100,000 gallons per year for three years, or about $300,000. The total costs of soil and groundwater remediation at Alternative Site A is potentially $1.8 to $2.0 million.

The relative cost impact at Alternative Site B is estimated using similar methods of soil and groundwater remediation and the assumption that Alternative Site B has sustained a lesser environmental impact than Alternative Site A. If approximately 2,000 cubic yards of contaminated soil, the cost of hauling and disposal at a Class I or Class II waste management unit would be approximately $700,000. Groundwater extraction and treatment may potentially cost approximately $300,000 assuming $150,000 for a treatment system and $150,000 for pumping and operations. The total costs of soil and groundwater remediation at Alternative Site B is potentially $1 million.

Because of uncertainties in the site conditions these estimates are for comparison only. Actual remediation costs could be several times greater than estimated.

9.0 LIMITATIONS

The scope of this investigation is limited by time constraints, expense, and practicality. A limited number of soil samples were taken at locations at the sites in the study area and a limited number of laboratory chemical analyses were performed for those samples. Professional opinions concerning the presence of hazardous substances were developed based on the resulting data. Assumptions were made about the potential extent of contamination at each site. These assumptions were used to provide relative estimates of costs of remediation. The costs are approximate and are intended for planning purposes only. For budgeting purposes, additional studies would be required. It would be prohibitively expensive and time consuming to sample all locations at the sites in the study area and analyze the samples for all substances which are now, or in the future might be considered hazardous. Therefore, WCC cannot be held responsible should the investigation fail to detect the presence or quantity of all hazardous substances at all locations.

The geotechnical evaluation presented in this report is preliminary and should be used for conceptual purposes only, not for budgeting or final design. It is based on assumptions and interpretations of subsurface conditions. A final geotechnical Engineering Study which includes additional field exploration, laboratory testing, and engineering analyses should be conducted prior to development of a final design.

REFERENCES

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San Francisco Bay-Delta Aquatic Habitat Institute, 1987. "Toxic Contaminants in the San Francisco Bay-Delta and Their Possible Biological Effects," August 26.

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Table 1. SOIL AND GROUNDWATER ANALYSES
91C0592A - Oakland Building No. 5
January 10, 1992

Analyses	SOIL, 12/6/91			GROUNDWATER, 12/13/91					
	MW-5 (8 - 8.5 ft)	MW-6 (7.5 - 8 ft)	MW-7 (7 - 7.5 ft)	MW-5	MW-5 DUP (MW-10)	MW-6	MW-7	Trip Blank (MW-8)	Equip Blank (MW-9)
TPH as low to med B.P. cmpds (as gas)	X	X	X	X	X	X	X	X	X
TPH as high B.P. cmpds (as diesel)	X	X	X	X		X	X		
BTEX	X	X	X	X	X	X	X	X	
Total Oil and Grease	X	X	X	X		X	X		
EPA Method 8240 - Volatiles	X	X	X	X	X	X	X		
EPA Method 8270 - Semivolatiles	X	X	X	X		X	X		
EPA Methos 8080 - PCBs	X	X	X	X		X	X		
Priority Pollutant Metals	X	X	X	X		X	X		

Table 2. SOIL ANALYTICAL RESULTS
91C0592A - Oakland Building No. 5
January 10, 1992

Parameter	Units	MW-5 (8 - 8.5 feet) 12/5/91	MW-6 (7.5 - 8 feet) 12/5/91	MW-7 (7 - 7.5 feet) 12/5/91	Reporting Limits (MW-5)	Reporting Limits (MW-6, MW-7)	CA STLC (e) (mg/L)	CA TTLC (e)
VOLATILE ORGANICS								
EPA Method 8240								
Benzene	mg/kg	2.6	0.02	- -	1.3	0.005	NS	NS
Ethylbenzene	mg/kg	9.3	- -	- -	1.3	0.005	NS	NS
Xylene (total)	mg/kg	26	0.006	- -	1.3	0.005	NS	NS
SEMIVOLATILE ORGANICS								
EPA Method 8270								
Naphthalene	mg/kg	4.2	- -	- -	0.330	0.330	NS	NS
2-Methylnaphthalene	mg/kg	3.7	- -	- -	0.330	0.330	NS	NS
Fluoranthene	mg/kg	- -	0.360	- -	0.330	0.330	NS	NS
Pyrene	mg/kg	- -	0.570	- -	0.330	0.330	NS	NS
Chrysene	mg/kg	- -	0.560	- -	0.330	0.330	NS	NS
Benzo(b)fluoranthene	mg/kg	- -	0.660	- -	0.330	0.330	NS	NS
Benzo(a)pyrene	mg/kg	- -	0.420	- -	0.330	0.330	NS	NS
PETROLEUM HYDROCARBONS								
EPA Method 5030/Mod. 8015								
Low/Medium B.P. HCs (as gas)	mg/kg	830	- -	- -	500	0.5	NS	NS
EPA Method 3550								
High B.P. HCs (as diesel)	mg/kg	280 (a)	140 (b)	48 (c)	50	10	NS	NS
BTEX								
EPA Method 5030/Mod. 8020								
Benzene	mg/kg	- -	0.030	- -	5	0.005	NS	NS
Toluene	mg/kg	5.1	- -	- -	5	0.005	NS	NS
Ethylbenzene	mg/kg	17	- -	- -	5	0.005	NS	NS
Xylene (total)	mg/kg	37	- -	- -	5	0.005	NS	NS

Table 2. SOIL ANALYTICAL RESULTS (continued)
91C0592A - Oakland Building No. 5
January 10, 1992

Parameter	Units	MW-5 (8 - 8.5 feet) 12/5/91	MW-6 (7.5 - 8 feet) 12/5/91	MW-7 (7 - 7.5 feet) 12/5/91	Reporting Limits (MW-5)	(MW-6, MW-7)	CA STLC (e) (mg/L)	CA TTLC (e)
PCBs								
EPA Method 8080	mg/kg	- -	- -	- -	0.080, 0.160 (f)	0.080, 0.160 (f)	5.0	50
TOTAL OIL & GREASE								
Standard Method 5520E&F	mg/kg	80	1800	93	30	30	NS	NS
PRIORITY POLLUTANT METALS								
EPA Method 6010/7000								
Arsenic	mg/kg	1.5	2.1	1.4	0.50	0.50	5.0	500
Cadmium	mg/kg	- -	0.29	- -	0.62	0.25,0.62 (d)	1.0	100
Total Chromium	mg/kg	28.1	43.4	30.2	1.2	0.5,1.2 (d)	560	2500
Copper	mg/kg	89.4	26.3	81.5	3.1	1.25, 3.1 (d)	25	2500
Nickel	mg/kg	37.8	43.4	35.9	5.0	2.0, 5.0 (d)	20	2000
Lead	mg/kg	7.9	94.0	7.3	0.75	2.0, 0.75 (d)	5.0	1000
Zinc	mg/kg	92.7	79.5	104	2.5	1.0, 2.5 (d)	250	5000

- - = Not detected at or above reporting limit
NS = No standard
(a) The concentration reported as diesel for sample MW-5 (8-8.5) is primarily due to the presence of a lighter petroleum product, possibly gasoline.
(b) The concentration reported as diesel for sample MW-6 (7.5-8) is due to the presence of a combination of diesel and a heavier petroleum product, possibly motor oil
(c) The concentration reported as diesel for sample MW-7 (7-7.5) is primarily due to the presence of a heavier petroleum product, possibly motor oil
(d) Reporting limits for Priority Pollutant Metals are shown for MW-6 (7.5-8) followed by MW-7 (7-7.5)
(e) California Soluble Threshold Limit Concentrations (STLC) and Total Threshold Limit Concentrations (TTLC) are taken from California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24 (May 31, 1991)
(f) Two reporting limts were used for the scan of PCB compounds analyzed. Refer to laboratory data sheets.

Table 3. GROUNDWATER ANALYTICAL RESULTS
91C0592A - Oakland Building No. 5
January 10, 1992

Parameter	Units	MW-5 12/13/91	MW-5 Dup (MW-10) 12/13/91	MW-6 12/13/91	MW-7 12/13/91	Reporting Limits (MW-5, MW-5 Dup)	Reporting Limits (MW-6, MW-7)	California MCL (a)	Federal MCL (b)
VOLATILE ORGANICS									
EPA Method 8240									
Benzene	µg/L	1800	1600	95	--	250	5	1	5
Toluene	µg/L	--	--	5	--	250	5	100 (g)	1000
Ethylbenzene	µg/L	1000	980	--	--	250	5	680	700
Xylene (total)	µg/L	3800	3500	--	--	250	5	1750	10000
SEMIVOLATILE ORGANICS									
EPA Method 8270									
Naphthalene	µg/L	54	NA	--	--	11	11	NS	NS
2-Methylnaphthalene	µg/L	16	NA	--	--	11	11	NS	NS
PETROLEUM HYDROCARBONS									
EPA Method 5030/Mod. 8015									
Low/Medium B.P. HCs (as gas)	µg/L	13000	16000	780	--	5000/12500 (d)	250/50 (e)	NS	NS
EPA Method 3550									
High B.P. HCs (as diesel)	µg/L	1900 (c)	NA	520	--	100	50	NS	NS
BTEX									
EPA Method 5030/Mod. 8020									
Benzene	µg/L	1500	1400	110	--	50/125 (d)	2.5/0.5 (e)	1	5
Toluene	µg/L	190	180	2.7	--	50/125 (d)	2.5/0.5 (e)	NS	1000
Ethylbenzene	µg/L	970	870	--	--	50/125 (d)	2.5/0.5 (e)	680	700
Xylene (total)	µg/L	2500	2500	5.5	--	50/125 (d)	2.5/0.5 (e)	1750	10000

Table 3. GROUNDWATER ANALYTICAL RESULTS (continued)
91C0592A - Oakland Building No. 5
January 10, 1992

Parameter	Units	MW-5 12/13/91	MW-5 Dup (MW-10) 12/13/91	MW-6 12/13/91	MW-7 12/13/91	Reporting Limits (MW-5, MW-5 Dup)	Reporting Limits (MW-6, MW-7)	California MCL (c)	Federal MCL (d)
PCBs									
EPA Method 8080	µg/L	--	NA	--	--	0.50, 1.0 (f)	0.50, 1.0 (f)	NS	0.5
TOTAL OIL & GREASE									
Standard Method 5520E&F	µg/L	--	NA	--	--	5	5	NS	NS
PRIORITY POLLUTANT METALS									
EPA Method 6010/7000									
Arsenic	µg/L	--	NA	14.3	--	10.0	10.0	50	50**
Total Chromium	µg/L	22.6	NA	42.2	10.6	10.0	10.0	50	100
Copper	µg/L	56.2	NA	94.2	35.1	25.0	25.0	NS	1.3*
Nickel	µg/L	--	NA	126	270	40.0	40.0	NS	100*
Lead	µg/L	173	NA	1040	11.4	3.0	40.0, 3.0 (e)	50	5*
Zinc	µg/L	201	NA	837	101	20.0	20.0	NS	NS

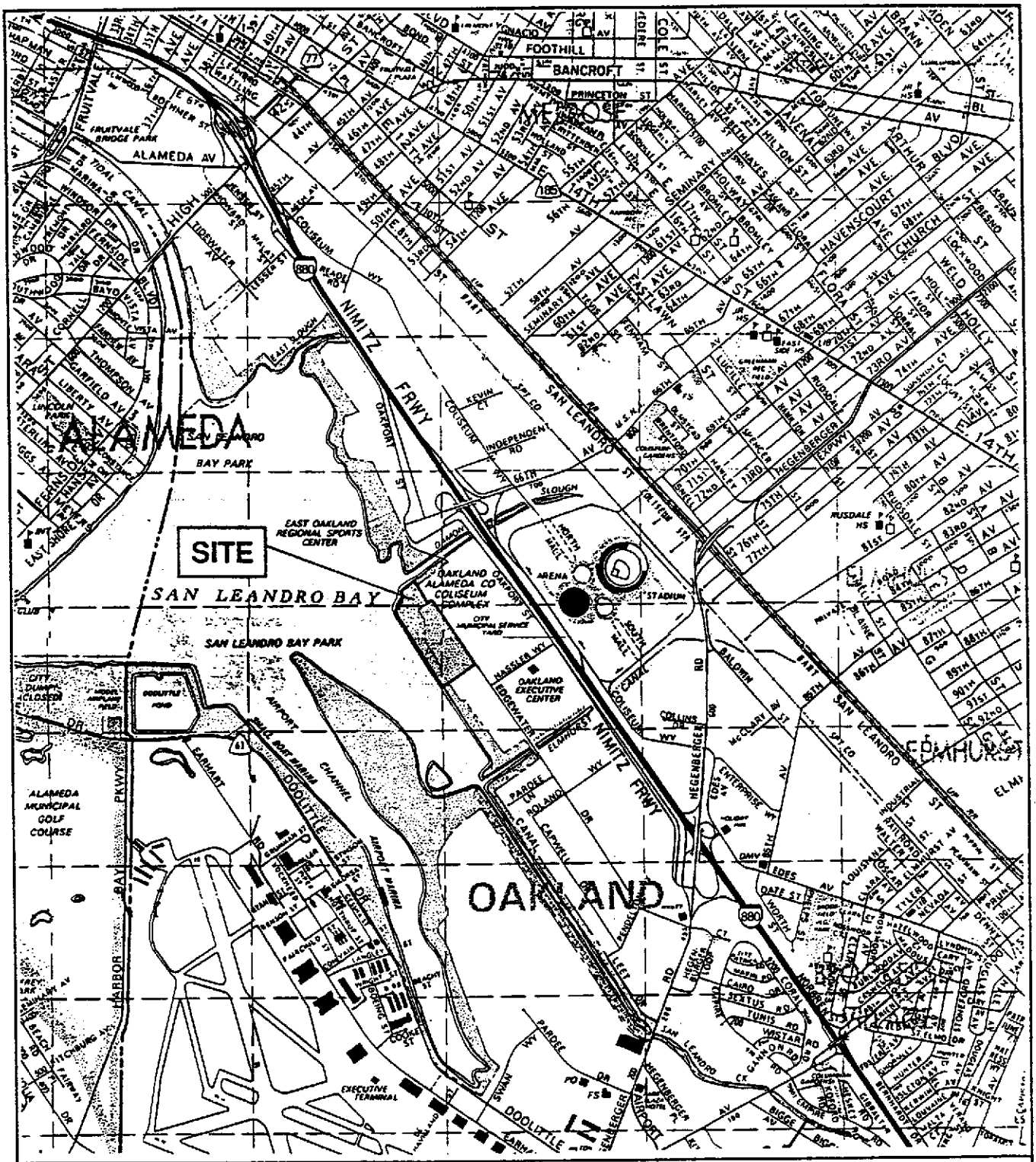
-- = Not detected at or above reporting limit
NA = Not analyzed
NS = No standard
* Proposed
** Under Review

(a) California Maximum Contaminant Levels (MCLs) from the California Code of Regulations. Title 22, Articles 4 and 5.5, June 21, 1991
(b) Federal Maximum Contaminant Levels (MCLs) from U.S. EPA Office of Water, "Drinking Water Regulations and Health Advisories", April 1991
(c) The concentration reported as diesel for sample MW-5 is primarily due to the presence of a lighter petroleum product, possibly gasoline.
(d) The reporting limits shown are for MW-5 followed by MW-5 Dup.
(e) The reporting limits shown are for MW-6 followed by MW-7.
(f) Two reporting limts were used for the scan of PCB compounds analyzed. Refer to laboratory data sheets.
(g) State of California Department of Toxic Substances Control "Action Level".

Table 4. EQUIPMENT AND TRIP BLANK ANALYTICAL RESULTS
91C0592A - Oakland Building No. 5
January 10, 1992

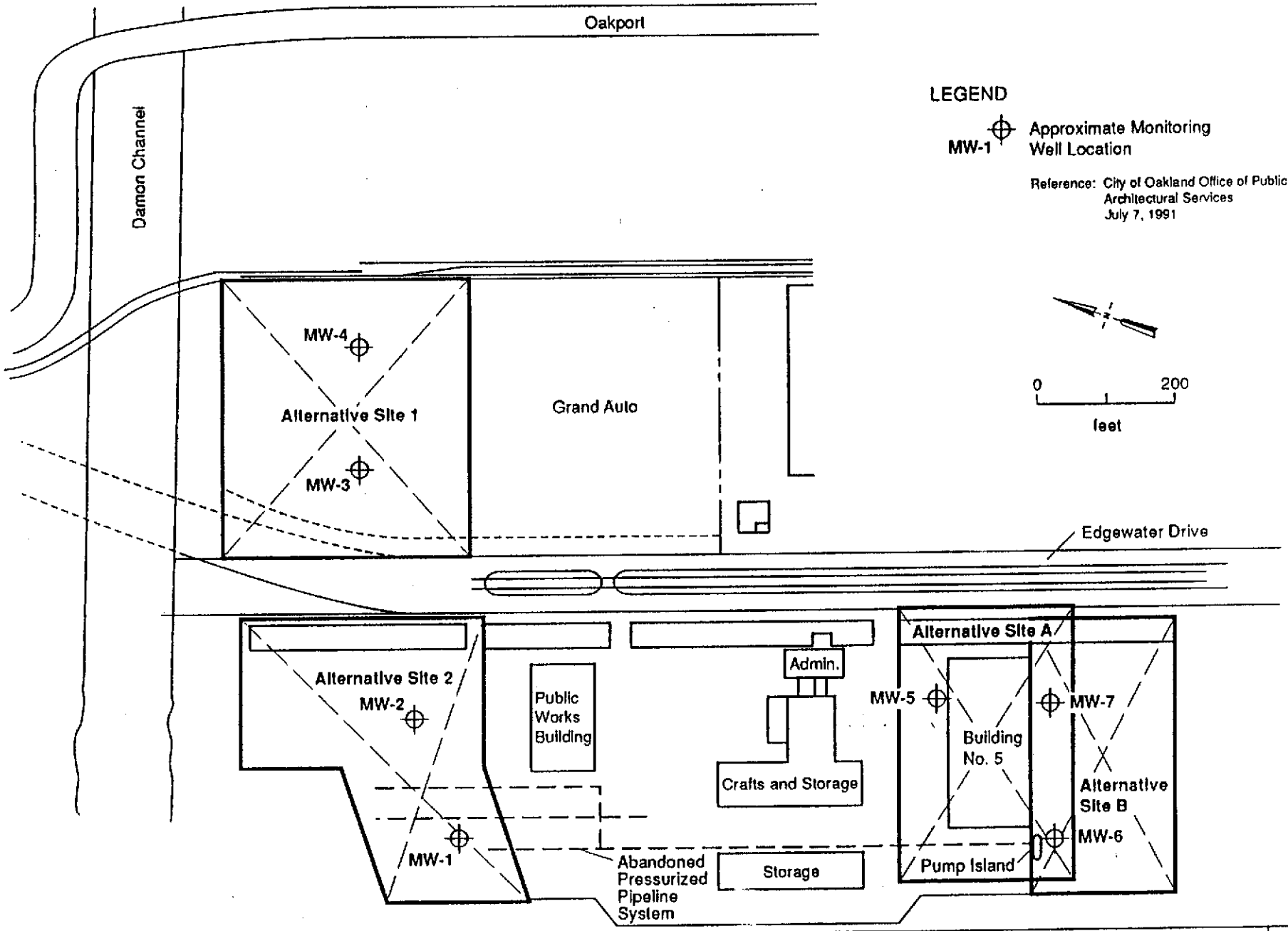
Parameter	Units	Trip Blank (MW-8) 12/13/91	Equip. Blank (MW-9) 12/13/91	Reporting Limit	California MCL (a)	Federal MCL (b)
PETROLEUM HYDROCARBONS						
EPA Method 5030/Mod. 8015						
Low/Medium B.P. HCs (as gas)	µg/L	--	--	50	NS	NS
BTEX						
EPA Method 5030/Mod. 8020						
Benzene	µg/L	--	NA	0.5	1	5
Toluene	µg/L	--	NA	0.5	NS	1000
Ethylbenzene	µg/L	--	NA	0.5	680	700
Xylene (total)	µg/L	--	NA	0.5	1750	10000

-- = Not detected at or above reporting limit
NA = Not analyzed
(a) California Maximum Contaminant Levels (MCLs) from the California Code of Regulations. Title 22, Articles 4 and 5.5, June 21, 1991
(b) Federal Maximum Contaminant Levels (MCLs) from U.S. EPA Office of Water, "Drinking Water Regulations and Health Advisories", April 1991

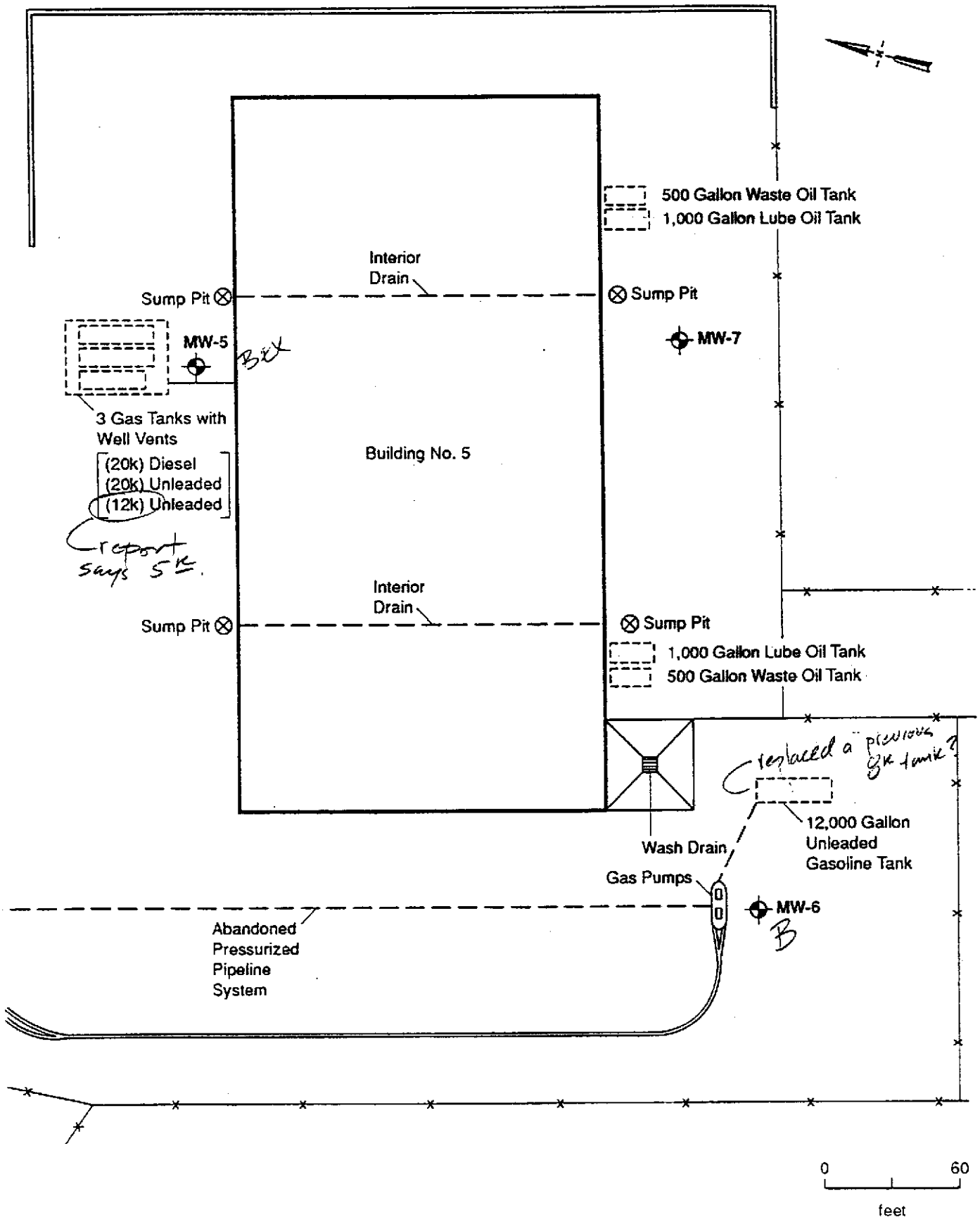


Reference: The Thomas Guide, Alameda and Contra Costa Counties Street Guide and Directory, Thomas Bros. Maps, 1990.

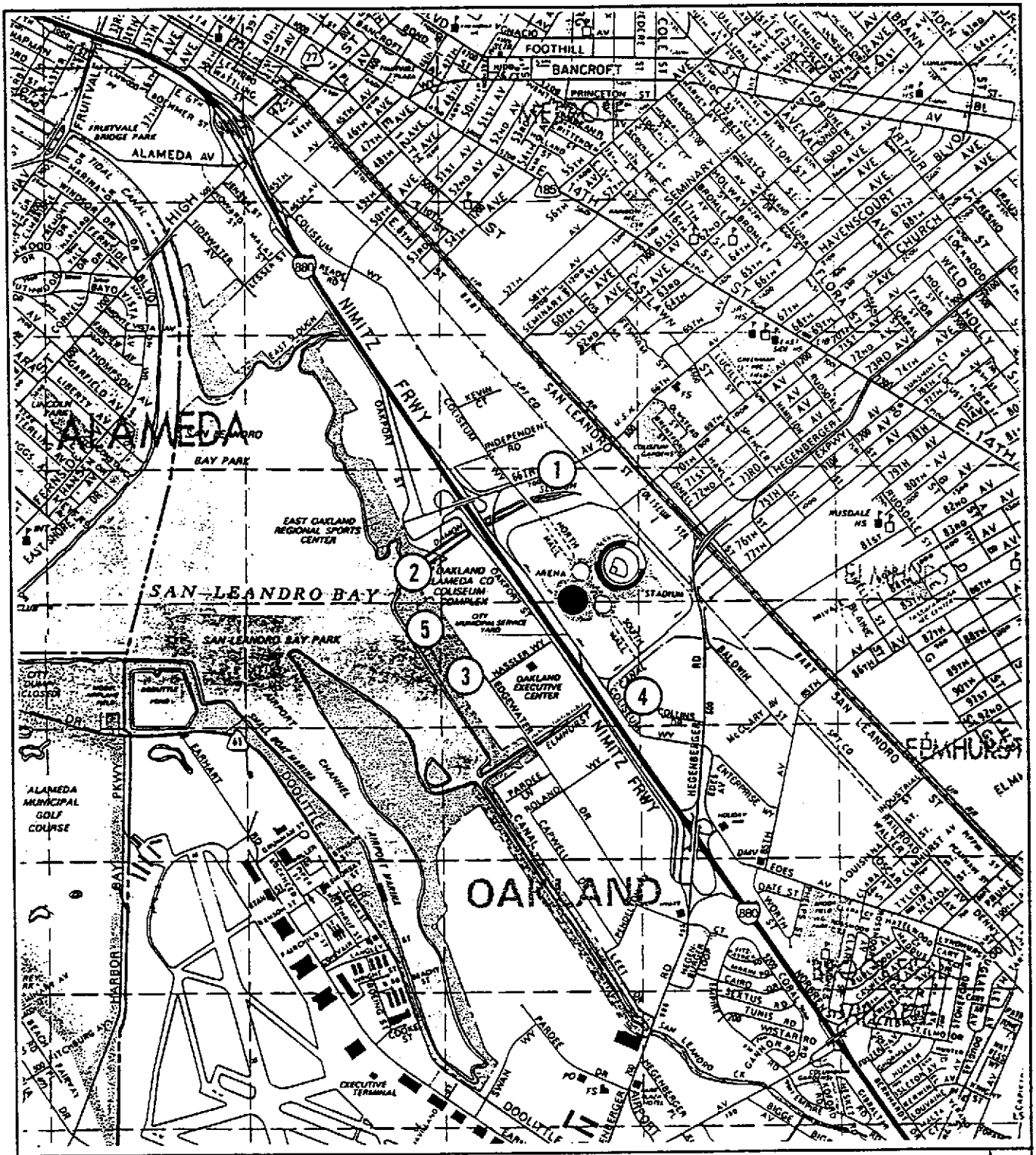
Project No. 91C0592A	City of Oakland Oakland Building No. 5	**VICINITY MAP** 7101 Edgewater Drive Oakland, California	Figure 1
Woodward-Clyde Consultants			



Project No. 91C0592A	City of Oakland Building No. 5	SITE PLAN CONSOLIDATED SERVICES CENTER	Figure 2
Woodward-Clyde Consultants			



Project No. 91C0592A	City of Oakland Building No. 5	BUILDING NO. 5 MONITORING WELL LOCATION MAP	Figure 3
Woodward-Clyde Consultants			



Legend

1 McGuire & Hester
796-66th Avenue

2 Port of Oakland
7101 Edgewater Drive

3 Hooton Property
7301-F Edgewater Drive

4 Malibu Grand Prix
8000 S. Coliseum Way

5 City of Oakland
7101 Edgewater Drive

SCALE
0 2000
feet

N

Reference: The Thomas Guide, 1990.

Project No. 91C0592A	City of Oakland Oakland Building No. 5	Fuel Leak Case Location Plan 7101 Edgewater Drive Oakland, California	Figure 4
Woodward-Clyde Consultants			

Site = your file

EPA

ACKNOWLEDGEMENT OF NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

cc: Bill Welch

8/21/86

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Resource Conservation and Recovery Act *(RCRA)*. Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all shipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

GENERAL SERVICES
AUG 21 3 50 PM '86

EPA I.D. NUMBER → CA0961424669

OAKLAND CITY OF
7101 EDGEWATER DR
OAKLAND CA 94621

INSTALLATION ADDRESS → 7101 EDGEWATER DRIVE
OAKLAND CA 94621

EPA Form 8700-12A (4-80)

Project: Oakland Bldg. #5 City of Oakland	Well No. MW-5		North: East:
Date Started: 12/5/91	Total Depth: 15 ft	Casing Elev:	GW ATD: 7 ft
Date Completed: 12/5/91	Perforation: .010" Slots	From 4	to 14 ft
Logged By: J. Hyman Checked By: L. G.	Pack: #2/12 Lonestar Sand	From 3	to 15 ft
Drilling Co: ASE Drilling Driller: Randy/Bill	Seal: Cement	From 1/2	to 2 ft
Drilling Method: Hollow Stem Auger	Bentonite Pellets	From 2	to 3 ft
Drilling Equipment: B-61	Casing: 2" PVC	Drill Bit Diameter: 8"	
	Sampler: Split Spoon		

Depth (feet)	LITHOLOGIC DESCRIPTION	LITH.	WELL CONSTRUCTION	Sample	Blows Per 6"	REMARKS
	Asphalt	CL				
	CLAY Yellowish brown to dark brown, some subangular coarse sand, trace angular gravel up to 1" in diameter, trace yellowish brown and gray silt, moist, stiff				8 9 10	HNu=0 ppm
5					5 6 10	
						Water HNu=0 ppm Strong Petroleum Odor
	GRAVEL Dark gray, brittle, stiff, trace of clay	GC			8 9 4	Sample Saturated
10						
						Drilling still slow
	SILTY CLAY Dark gray	CL				
						HNu=0 ppm
15	BOTTOM OF BORING AT 15 FEET.					
20						

Project: Oakland Bldg. #5 City of Oakland	Well No. MW-6		North: East:
Date Started: 12/5/91	Total Depth: 15 ft	Casing Elev:	GW ATD: 7 ft
Date Completed: 12/5/91	Perforation: .010" Slots	From 4	to 14 ft
Logged By: J. Hyman Checked By: L. G.	Pack: #2/12 Lonestar Sand	From 3	to 15 ft
Drilling Co: ASE Drilling Driller: Randy/Bill	Seal: Cement	From 1/2	to 2 ft
Drilling Method: Hollow Stem Auger	Bentonite Pellets	From 2	to 3 ft
Drilling Equipment: B-61	Casing: 2" PVC	Drill Bit Diameter: 8"	
	Sampler: Split Spoon		

Depth (feet)	LITHOLOGIC DESCRIPTION	LITH.	WELL CONSTRUCTION	Sample	Blows Per 6"	REMARKS
	Asphalt					
	SILTY SAND Yellowish brown	SM CL				HNu=0 ppm
5	CLAY Bluish gray, little assorted coarse sand and subrounded gravel, various colors, up to 3/4" in diameter, trace yellowish brown silt at 4', dark brown clay lens (3") at 5', trace organics, moist, medium firm				3 4 7	HNu=0 ppm
	SILTY CLAY Dark gray, trace gravel up to 1 1/2" in diameter, wet, stiff	CL			9 11 13	Water HNu=0 ppm No Odor
10						Slow drilling encountered
	SILT Dark greenish gray, with spots of white, reddish brown and brown, little fine sand, little clay, little assorted gravels up to 2" in diameter, saturated, medium firm	ML			3 4 5	HNu=0 ppm
15	BOTTOM OF BORING AT 15 FEET.					
20						

Project: Oakland Bldg. #5 City of Oakland	Well No. MW-7		North: East:
Date Started: 12/5/91	Total Depth: 15 ft	Casing Elev:	GW ATD: 7 ft
Date Completed: 12/5/91	Perforation: .010" Slots		From 4 to 14
Logged By: J. Hyman Checked by: L. G.	Pack: #2/12 Lonestar Sand		From 3 to 15
Drilling Co: ASE Drilling Driller: Randy/Bill	Seal: Cement		From 1/2 to 2
	Bentonite Pellets		From 2 to 3
Drilling Method: Hollow Stem Auger	Casing: 2" PVC		Drill Bit Diameter: 8"
Drilling Equipment: B-61	Sampler: Split Spoon		

Depth (feet)	LITHOLOGIC DESCRIPTION	LITH.	WELL CONSTRUCTION	Sample	Blows Per 6"	REMARKS
	Asphalt	CL				
	CLAY Dark brown, damp, trace sand					
5	CLAY Mottled brown to dark gray, some gray silt, trace assorted sand and angular gravel up to 1" in diameter, trace organics, moist to wet, stiff	CL			3 8 4	HNu=0 ppm
	SILTY CLAY Brown, some angular gravel up to 2" in diameter, pocket black clay 1" thick, wet, stiff	CL			8 6 6	Water No Odor HNu=0 ppm
10						
	SILTY CLAY Greenish gray, very fine grained, trace organics, saturated, very soft	MH CH			1 1 2	HNu=0 ppm
15	SILTY CLAY Dark gray, some organics, wet, soft					
	BOTTOM OF BORING AT 15 FEET.					

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94566 ♦ (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Consolidated Services Center
7101 Edgewater Drive
Oakland, Califonria

CLIENT
Name City of Oakland, Architectural Services
Address City Hall Phone
City Oakland, CA Zip 94612

APPLICANT
Name Lois Gruenberg
Woodward-Clyde Consultants
Address 500 12th St. No.100 Phone (510) 874-1765
City Oakland, CA Zip 94607-4014

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other environmental
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. 487000

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 5 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE November 21, 1991
ESTIMATED COMPLETION DATE November 26, 1991

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Lois Gruenberg Date 10/18/91

FOR OFFICE USE

PERMIT NUMBER 91656
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report equivalent for well projects, or drilling lo and location sketch for geotechnical projects.
3. Permit is void if project not begun within days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal a industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth specially approved. Minimum seal depth f monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cu tings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 20 Nov 91
Wyman Hong

12198

WATER SAMPLE LOG

Sample No.

Project No.: 91C0592A Date: 12/11/91

Project Name: Oakland Building No. 5

Sample Location: MW-5 N. of Bldg 5

Well Description: Well Development

Weather Conditions: Cool Clear

Observations / Comments:

Quality Assurance

Sampling Method: —

Method to Measure Water Level: Solinst Sounder

Pump Lines: New / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer: Alconox + H_2O, H_2O, DI H_2O

pH Meter No.: 217 256 Calibrated 4.00 = 4.00, 7.00 = 7.00

Specific Conductance Meter No.: 13749 Calibrated

Comments: Gastech 7500 ppm upon opening well, 4% LEL down to 300 ppm in 1 minute - Sheen on bailed water TD = 14.10

Sampling Measurements

Water Level (below MP) at Start: ~7.10 End:

Measuring Point (MP): N Rim TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Petty Odor	Comments
2:55	4	6.65	20.2	11,500	very high	Brown	yes	very silty
3:10	8	6.60	20.1	12,100	"	"	"	"
3:15	12	6.43	20.2	12,400	"	"	"	"
3:25	16	6.56	20.2	12,800	"	"	"	Surged
3:40	20	6.57	19.8	12,800	"	"	"	"
3:50	24	6.48	20.1	12,800	"	"	"	"
3:55	28	6.42	19.8	12,800	High	"	"	"
4:05	32	6.52	20.0	12,900	"	"	"	"

Total Discharge: 32 gals. Casing Volumes Removed: ~28

Method of disposal of discharged water: 55-gal. drum

Number and size of sample containers filled: —

Collected by: J. Hyman

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No.

Project No.: 91C0592A Date: 12-10-91

Project Name: Oakland Bldg #5

Sample Location: MW-6 near gas pumps

Well Description: well Development

Weather Conditions: Clear, sunny, warm

Observations / Comments: 1 pm

Quality Assurance

Sampling Method: -

Method to Measure Water Level: Sounder

Pump Lines: (New) / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer: Alconox + H_2O, H_2O, DI H_2O

pH Meter No.: 217256 Calibrated 4.00 = 4.00, 7.00 = 7.00

Specific Conductance Meter No.: 13749 Calibrated

Comments: Upon opening well, gastech > 500 ppm, 7100 LEL

Petr. smell on expandi-cap bottom

TD = 14.01 ft

Sampling Measurements

Water Level (below MP) at Start: 7.52 End:

Measuring Point (MP): TOC, N Rim

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Pet. Odor	Comments
1:35	3	7.47	20.0	5000	High	Dk Gray	Slight	Dark, silty Bailed
2:05	6	7.65	22.5	5000	"	"	None	" pumped
2:20	10	7.81	19.5	5200	"	"	"	" Bailed
2:55	14	7.86	20.0	5200	"	"	"	"
3:15	18	7.89	19.5	6100	"	"	"	Less silt
3:30	22	7.90	19.9	7600	"	"	"	"
3:40	26	7.82	19.8	8600	"	"	"	"
3:50	30	7.85	19.9	9100	"	"	"	
4:00	33	7.89	19.6	9900	"	Gray	"	over →

Total Discharge: 48 gals. Casing Volumes Removed: ~ 3 8

Method of disposal of discharged water: 55-gal. drum

Number and size of sample containers filled: -

Collected by: J. Hyman

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

Sample No.

4:10	~~MW~~ 36	7.85	18.9	10,000	High	Brownish gray	No
	Went to MW-7						
5:00	40	7.71	19.8	9900	"	Dark gray	No
12/11/91 :	∇ = 8.01				swabbed		
5:10	43	7.86		T500	very high	"	No

WATER SAMPLE LOG

Sample No.

Project No.: 91C0592A Date: 12/10/91
Project Name: Oakland Bldg No 5
Sample Location: MW-7
Well Description: Well Development
Weather Conditions: Cool, calm sun setting
Observations / Comments: ∇ almost recovered after 24 hrs. Bailed dry after ~ 5 gals.

Quality Assurance

Purging Method: Bailer
Method to Measure Water Level: Elec. Sounder
Pump Lines: New / Cleaned Bailer Lines: (New) / Cleaned
Method of cleaning Pump / Bailer: Alconox + H_2O, H_2O, DI H_2O
pH Meter No.: see MW-6 Calibrated
Specific Conductance Meter No.: Calibrated
Comments: Gastech: Upon opening well 7500 ppm, 5% LEL

TD = 14.00

Sampling Measurements

Water Level (below MP) at Start: 7.73 End: 12/11/91: 7.99
Measuring Point (MP): N. Rim TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (μmhos / cm)	Turbidity	Color	Odor	Comments
4:30	4	6.13	22	31400	High	Yellowish Brown	No	water seems warm
4:50	5	6.23	—	—	Med.	"	"	Well not recharging
5:15	5							well still not recharged ∇ = 13.7
12/11 4:45	8	5.97	21.1	26,200	High	"	No	very silty not recharging, still bailed 12/11

Total Discharge: 8 gals. Casing Volumes Removed: ~ 7
Method of disposal of discharged water: 55-gal drum labeled MW-7
Number and size of sample containers filled: NA

Collected by: Jenn Hyman

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

WATER SAMPLE LOG

Sample No.

Project No.: 910592A Date: 12/13/91

Project Name: Oakland Bldg #5

Sample Location: MW-5

Well Description: N of Bldg 5

Weather Conditions: Cool, clear

Observations / Comments:

Quality Assurance

Sampling Method: Teflon Bailer

Method to Measure Water Level: Solinst Sounder

Pump Lines: ~~New~~ / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer:

pH Meter No.: ~~Model 5~~ See MW-7 Calibrated

Specific Conductance Meter No.: Calibrated

Comments: Slight sheen on water

Sampling Measurements

Water Level (below MP) at Start: 7.09 End:

Measuring Point (MP): N. Rim TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
2:30	1.5	6.59	20.2	14,200	High	Brown Gray	Yes	silty
2:35	3.0	6.55	20.2	13,000	"	"	"	"
2:40	4.5	6.53	20.1	12,500	"	"	"	"
2:45	6	6.51	19.9	12,200	"	"	"	"
2:50	8	6.53	20.3	12,200	"	"	"	"

Total Discharge: ~ 11 Casing Volumes Removed:

Method of disposal of discharged water: 55 gallon drum at N. Side of Bldg.

Number and size of sample containers filled: 3 VOAs - TPHg + BTEX, 2 GA TPHd, T GA psd. -0+6, 2 VOAs - 8240, 2 GA 8270, 2 GA 8080, 1 plas PPM

Collected by: JAH

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

also: 3 VOAs - TPHg + BTEX, 2 VOAs 8240 : MW-10 DUP

WATER SAMPLE LOG

Sample No.

Project No. : 9160592A Date: 12/13/91

Project Name: Oakland Bldg #5

Sample Location: MW-6 SW corner of Bldg 5

Well Description: Near pumps

Weather Conditions:

Observations / Comments: Petr. Stains on blacktop near well. Trucks parked nearby

Quality Assurance

Sampling Method: Teflon Bailer

Method to Measure Water Level : Solinst Sounder

Pump Lines: New / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer:

pH Meter No.: see MW-7 Calibrated

Specific Conductance Meter No.: Calibrated

Comments:

Sampling Measurements

Water Level (below MP) at Start: 8.14 End:

Measuring Point (MP): N Rim TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Petr. Odor	Comments
11:45	1	7.55	19.9	6500	V. High	Dk gray	Slight	
11:55	2.5	7.58	19.8	5500	"	"	"	
12:00	4.5	7.58	19.8	5600	"	"	No	
12:05	6.5	7.66	19.9	5800	"	"	"	

Total Discharge: ~ 10 gals Casing Volumes Removed:

Method of disposal of discharged water: 55 gallon drum

Number and size of sample containers filled: 3 VOAs - TPHg + BTEX, 2 GA TPHd, 2 GA pd - O+G, 2 GA - 8270, 2 GA - 8080, 1 plas - FPH

Collected by: J. Hyman

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

MW-9: Equip Blank : 3 VOAs - TPHg

WATER SAMPLE LOG

Sample No.

Project No. : 9100592A Date: 12/13/91

Project Name: Oakland Bldg #5

Sample Location: MW-7 SE corner of bldg

Well Description: Near garage - thru traffic

Weather Conditions: Cool Clear breezy

Observations / Comments:

Quality Assurance

Sampling Method: Bailer (Teflon)

Method to Measure Water Level : Solinst Sounder

Pump Lines: New / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer:

pH Meter No.: 217256 Calibrated 1.00 = 7.00 4.00 = 4.00

Specific Conductance Meter No.: Calibrated

Comments:

Sampling Measurements

Water Level (below MP) at Start: 7.99 End:

Measuring Point (MP): N. Rim TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
11:10	2	5.88	21.5	24,000	High	Lt. Brown	NO	
11:15	3	5.91	21.4	27,000	"	"	"	
11:25	4	5.99	21.8	245,100	"	"	"	
1:55	5	6.04	21.8	25,500	Med.	"	"	
2:00	6	6.03	21.8	24,900	"	"	"	
4:20	7	6.80	21.5	24,100	"	"	"	

Total Discharge: ~9 Casing Volumes Removed:

Method of disposal of discharged water: 55 gallon drum at SE side

Number and size of sample containers filled: 3 VOAs - TPHg + BTEX, 2 GA TPHd, 2 GA psd - O+G, 2 VOAs - 8240, 2 GA - 8270, 2 GA 8080, 1 plas - PPM

Collected by: JAH

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive Suite E San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9112047- 1	MW-5(8-8.5)
9112047- 2	MW-6(7.5-8)
9112047- 3	MW-6(8-8.5)
9112047- 4	MW-7(7-7.5)
9112047- 5	MW-7(7.5-8)

This report consists of 42 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Manager

12-20-91
Date

ANAMETRIX REPORT DESCRIPTION
GCMS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anametrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	8240
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	8240
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	8240
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	8270
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	8270
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	8270

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- Percent recovery of chlorobenzene is outside established limits in the EPA Method 8240 matrix spike and matrix spike duplicate analysis of sample MW-7(7-7.5).
- A surrogate recovery is outside established limits in the EPA Method 8270 analysis of sample BLANK.
- A surrogate recovery is outside established limits in the EPA Method 8270 analysis of samples MW-5(8-8.5), MW-7(7-7.5), MW-6(7.5-8).

[signature]	12-19-91	[signature]	12-19-91
Department Supervisor	Date	Chemist	Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
ample ID : MW-5(8-8
Matrix : SOIL
ate Sampled :12/ 5/91
ate Analyzed :12/12/91
nstrument ID : MSD2

Anametrix ID : 9112047-01
Analyst : pp
Supervisor : M

Dilution Factor : 250.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	2500.	ND	U
75-01-4	Vinyl chloride	2500.	ND	U
74-83-9	Bromomethane	2500.	ND	U
75-00-3	Chloroethane	2500.	ND	U
75-69-4	Trichlorofluoromethane	1300.	ND	U
75-35-4	1,1-Dichloroethene	1300.	ND	U
76-13-1	Trichlorotrifluoroethane	1300.	ND	U
67-64-1	Acetone	5000.	ND	U
75-15-0	Carbon disulfide	1300.	ND	U
75-09-2	Methylene chloride	1300.	ND	U
156-60-5	Trans-1,2-dichloroethene	1300.	ND	U
75-34-3	1,1-Dichloroethane	1300.	ND	U
156-59-2	Cis-1,2-dichloroethene	1300.	ND	U
78-93-3	2-Butanone	5000.	ND	U
[illegible]-66-3	Chloroform	1300.	ND	U
71-55-6	1,1,1-Trichloroethane	1300.	ND	U
56-23-5	Carbon tetrachloride	1300.	ND	U
108-05-4	Vinyl acetate	2500.	ND	U
71-43-2	Benzene	1300.	2600.	
107-06-2	1,2-Dichloroethane	1300.	ND	U
79-01-6	Trichloroethene	1300.	ND	U
78-87-5	1,2-Dichloropropane	1300.	ND	U
75-27-4	Bromodichloromethane	1300.	ND	U
110-75-8	2-Chloroethylvinyl ether	1300.	ND	U
10061-01-5	Cis-1,3-dichloropropene	1300.	ND	U
108-10-1	4-Methyl-2-pentanone	2500.	ND	U
108-88-3	Toluene	1300.	ND	U
10061-02-6	Trans-1,3-dichloropropene	1300.	ND	U
79-00-5	1,1,2-Trichloroethane	1300.	ND	U
127-18-4	Tetrachloroethene	1300.	ND	U
591-78-6	2-Hexanone	2500.	ND	U
124-48-1	Dibromochloromethane	1300.	ND	U
108-90-7	Chlorobenzene	1300.	ND	U
100-41-4	Ethylbenzene	1300.	9300.	
1330-20-7	Xylene (Total)	1300.	26000.	
100-42-5	Styrene	1300.	ND	U
75-25-2	Bromoform	1300.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	1300.	ND	U
541-73-1	1,3-Dichlorobenzene	1300.	ND	U
106-46-7	1,4-Dichlorobenzene	1300.	ND	U
95-50-1	1,2-Dichlorobenzene	1300.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-6(7.5
Matrix : SOIL
Date Sampled :12/ 5/91
Date Analyzed :12/12/91
Instrument ID : MSD2

Anametrix ID : 9112047-02
Analyst : MCT
Supervisor : JM

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	20.	
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	6.	
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-7(7-7
Matrix : SOIL
Date Sampled :12/ 5/91
Date Analyzed :12/10/91
Instrument ID : MSD2

Anametrix ID : 9112047-04
Analyst :
Supervisor :

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

roject ID : 91C059
ample ID : BLANK
Matrix : SOIL
ate Sampled : 0/ 0/ 0
ate Analyzed :12/10/91
nstrument ID : MSD2

Anametrix ID : 1210B002
Analyst : M
Supervisor : M

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	12.	J
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	9.	J
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C059
Sample ID : BLANK
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Analyzed :12/12/91
Instrument ID : MSD2

Anametrix ID : 1212B002
Analyst : pf
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	12.	J
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : SOLID

Anametrix ID : 9112047
Analyst :
Supervisor :

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	100	100	101	0
2	MW-7(7-7	98	98	96	0
3	MW-7(MS	94	100	96	0
4	MW-7(MSD	96	100	97	0
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(73-130)
SU2 = Toluene-d8	(74-121)
SU3 = 1,4-Bromofluorobenzene	(70-124)

* Values outside of Anametrix QC limits

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : SOLID

Anametrix ID : 9112047
Analyst : SP
Supervisor : MM

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	99	100	102	0
2	MW-6(7.5	100	100	95	0
3	MW-5(8-8	100	102	101	0
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(73-130)
SU2 = Toluene-d8	(74-121)
SU3 = 1,4-Bromofluorobenzene	(70-124)

* Values outside of Anametrix QC limits

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-7(7-7
Matrix : SOIL
Date Sampled :12/ 5/91
Date Analyzed :12/10/91
Instrument ID : MSD2

Anametrix ID : 9112047-04
Analyst :
Supervisor :

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	%REC LIMITS
1,1-Dichloroethene	50.0	.0	29.6	59	54-150
Trichlorotrifluoroethan	50.0	.0	28.5	57	44-180
Methylene chloride	50.0	.0	34.0	68	64-130
Chloroform	50.0	.0	38.0	76	60-158
1,1,1-Trichloroethane	50.0	.0	35.1	70	48-152
Benzene	50.0	.0	37.5	75	70-134
1,2-Dichloroethane	50.0	.0	32.5	65	64-126
Trichloroethene	50.0	.0	40.1	80	58-146
4-Methyl-2-pentanone	50.0	.0	36.0	72	50-130
Toluene	50.0	.0	38.0	76	76-132
Tetrachloroethene	50.0	.0	42.2	84	64-148
Chlorobenzene	50.0	.0	39.2	78 *	86-124
1,2-Dichlorobenzene	50.0	.0	31.2	62	56-146

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
1,1-Dichloroethene	50.0	29.6	59	0	30	54-150
Trichlorotrifluoroethan	50.0	27.6	55	3	30	44-180
Methylene chloride	50.0	36.2	72	6	30	64-130
Chloroform	50.0	40.3	81	6	30	60-158
1,1,1-Trichloroethane	50.0	36.0	72	2	30	48-152
Benzene	50.0	39.1	78	4	30	70-134
1,2-Dichloroethane	50.0	35.2	70	8	30	64-126
Trichloroethene	50.0	41.3	83	3	30	58-146
4-Methyl-2-pentanone	50.0	42.2	84	16	30	50-130
Toluene	50.0	38.8	78	2	30	76-132
Tetrachloroethene	50.0	40.4	81	4	30	64-148
Chlorobenzene	50.0	39.3	79 *	0	30	86-124
1,2-Dichlorobenzene	50.0	33.3	67	7	30	56-146

* Value is outside of Anametrix QC limits

RPD: 0 out of 13 outside limits
Spike Recovery: 2 out of 26 outside limits

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-5(8-8
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-01
Analyst : iw
Supervisor : W

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	330.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	330.	ND	U
95-57-8	2-CHLOROPHENOL	330.	ND	U
541-73-1	1,3-DICHLOROBENZENE	330.	ND	U
106-46-7	1,4-DICHLOROBENZENE	330.	ND	U
100-51-6	BENZYL ALCOHOL	330.	ND	U
95-50-1	1,2-DICHLOROBENZENE	330.	ND	U
95-48-7	2-METHYLPHENOL	330.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	330.	ND	U
106-44-5	4-METHYLPHENOL	330.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	330.	ND	U
67-72-1	HEXACHLOROETHANE	330.	ND	U
98-95-3	NITROBENZENE	330.	ND	U
78-59-1	ISOPHORONE	330.	ND	U
88-75-5	2-NITROPHENOL	330.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	330.	ND	U
65-85-0	BENZOIC ACID	1700.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	330.	ND	U
120-83-2	2,4-DICHLOROPHENOL	330.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	330.	ND	U
91-20-3	NAPHTHALENE	330.	4200.	
106-47-8	4-CHLOROANILINE	330.	ND	U
87-68-3	HEXACHLOROBUTADIENE	330.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	330.	ND	U
91-57-6	2-METHYLNAPHTHALENE	330.	3700.	
77-47-4	HEXACHLOROCYCLOPENTADIENE	330.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	330.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	1700.	ND	U
91-58-7	2-CHLORONAPHTHALENE	330.	ND	U
88-74-4	2-NITROANILINE	1700.	ND	U
131-11-3	DIMETHYLPHTHALATE	330.	ND	U
208-96-8	ACENAPHTHYLENE	330.	ND	U
606-20-2	2,6-DINITROTOLUENE	330.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-5(8-8
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-01
Analyst : lw
Supervisor : M

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	1700.	ND	U
83-32-9	ACENAPHTHENE	330.	ND	U
51-28-5	2,4-DINITROPHENOL	1700.	ND	U
100-02-7	4-NITROPHENOL	1700.	ND	U
132-64-9	DIBENZOFURAN	330.	ND	U
121-14-2	2,4-DINITROTOLUENE	330.	ND	U
84-66-2	DIETHYLPHTHALATE	330.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	330.	ND	U
86-73-7	FLUORENE	330.	ND	U
100-01-6	4-NITROANILINE	1700.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1700.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	330.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	330.	ND	U
118-74-1	HEXACHLOROBENZENE	330.	ND	U
87-86-5	PENTACHLOROPHENOL	1700.	ND	U
85-01-8	PHENANTHRENE	330.	ND	U
120-12-7	ANTHRACENE	330.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	330.	ND	U
206-44-0	FLUORANTHENE	330.	ND	U
129-00-0	PYRENE	330.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	330.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	670.	ND	U
56-55-3	BENZO(A)ANTHRACENE	330.	ND	U
218-01-9	CHRYSENE	330.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	330.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	330.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	330.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	330.	ND	U
50-32-8	BENZO(A)PYRENE	330.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	330.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	330.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	330.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	330.	ND	U
4165-61-1	ANILINE	330.	ND	U
103-33-3	AZOBENZENE	330.	ND	U
92-87-5	BENZIDINE	1700.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-6(7.5
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-02
Analyst : LW
Supervisor : JM

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	330.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	330.	ND	U
95-57-8	2-CHLOROPHENOL	330.	ND	U
541-73-1	1,3-DICHLOROBENZENE	330.	ND	U
106-46-7	1,4-DICHLOROBENZENE	330.	ND	U
100-51-6	BENZYL ALCOHOL	330.	ND	U
95-50-1	1,2-DICHLOROBENZENE	330.	ND	U
95-48-7	2-METHYLPHENOL	330.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	330.	ND	U
106-44-5	4-METHYLPHENOL	330.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	330.	ND	U
67-72-1	HEXACHLOROETHANE	330.	ND	U
98-95-3	NITROBENZENE	330.	ND	U
78-59-1	ISOPHORONE	330.	ND	U
88-75-5	2-NITROPHENOL	330.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	330.	ND	U
65-85-0	BENZOIC ACID	1700.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	330.	ND	U
120-83-2	2,4-DICHLOROPHENOL	330.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	330.	ND	U
91-20-3	NAPHTHALENE	330.	ND	U
106-47-8	4-CHLOROANILINE	330.	ND	U
87-68-3	HEXACHLOROBUTADIENE	330.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	330.	ND	U
91-57-6	2-METHYLNAPHTHALENE	330.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	330.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	330.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	1700.	ND	U
91-58-7	2-CHLORONAPHTHALENE	330.	ND	U
88-74-4	2-NITROANILINE	1700.	ND	U
131-11-3	DIMETHYLPHTHALATE	330.	ND	U
208-96-8	ACENAPHTHYLENE	330.	ND	U
606-20-2	2,6-DINITROTOLUENE	330.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-6(7.5
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-02
Analyst : WS
Supervisor : JH

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	1700.	ND	U
83-32-9	ACENAPHTHENE	330.	ND	U
51-28-5	2,4-DINITROPHENOL	1700.	ND	U
100-02-7	4-NITROPHENOL	1700.	ND	U
132-64-9	DIBENZOFURAN	330.	ND	U
121-14-2	2,4-DINITROTOLUENE	330.	ND	U
84-66-2	DIETHYLPHTHALATE	330.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	330.	ND	U
86-73-7	FLUORENE	330.	ND	U
100-01-6	4-NITROANILINE	1700.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1700.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	330.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	330.	ND	U
118-74-1	HEXACHLOROBENZENE	330.	ND	U
87-86-5	PENTACHLOROPHENOL	1700.	ND	U
85-01-8	PHENANTHRENE	330.	ND	U
120-12-7	ANTHRACENE	330.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	330.	ND	U
206-44-0	FLUORANTHENE	330.	360.	
129-00-0	PYRENE	330.	570.	
85-68-7	BUTYLBENZYLPHTHALATE	330.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	670.	ND	U
56-55-3	BENZO(A)ANTHRACENE	330.	ND	U
218-01-9	CHRYSENE	330.	560.	
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	330.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	330.	ND	U
205-99-2	BENZO(B)FLUOROANTHENE	330.	660.	
207-08-9	BENZO(K)FLUOROANTHENE	330.	ND	U
50-32-8	BENZO(A)PYRENE	330.	420.	
193-39-5	INDENO(1,2,3-CD)PYRENE	330.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	330.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	330.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	330.	ND	U
4165-61-1	ANILINE	330.	ND	U
103-33-3	AZOBENZENE	330.	ND	U
92-87-5	BENZIDINE	1700.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-7(7-7
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-04
Analyst : ww
Supervisor : JM

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	330.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	330.	ND	U
95-57-8	2-CHLOROPHENOL	330.	ND	U
541-73-1	1,3-DICHLOROBENZENE	330.	ND	U
106-46-7	1,4-DICHLOROBENZENE	330.	ND	U
100-51-6	BENZYL ALCOHOL	330.	ND	U
95-50-1	1,2-DICHLOROBENZENE	330.	ND	U
95-48-7	2-METHYLPHENOL	330.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	330.	ND	U
106-44-5	4-METHYLPHENOL	330.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	330.	ND	U
67-72-1	HEXACHLOROETHANE	330.	ND	U
98-95-3	NITROBENZENE	330.	ND	U
78-59-1	ISOPHORONE	330.	ND	U
88-75-5	2-NITROPHENOL	330.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	330.	ND	U
65-85-0	BENZOIC ACID	1700.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	330.	ND	U
120-83-2	2,4-DICHLOROPHENOL	330.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	330.	ND	U
91-20-3	NAPHTHALENE	330.	ND	U
106-47-8	4-CHLOROANILINE	330.	ND	U
87-68-3	HEXACHLOROBUTADIENE	330.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	330.	ND	U
91-57-6	2-METHYLNAPHTHALENE	330.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	330.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	330.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	1700.	ND	U
91-58-7	2-CHLORONAPHTHALENE	330.	ND	U
88-74-4	2-NITROANILINE	1700.	ND	U
131-11-3	DIMETHYLPHTHALATE	330.	ND	U
208-96-8	ACENAPHTHYLENE	330.	ND	U
606-20-2	2,6-DINITROTOLUENE	330.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-7(7-7
Matrix : SOIL
Date Sampled :12/ 5/91
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 9112047-04
Analyst : lw
Supervisor : LM

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	1700.	ND	U
83-32-9	ACENAPHTHENE	330.	ND	U
51-28-5	2,4-DINITROPHENOL	1700.	ND	U
100-02-7	4-NITROPHENOL	1700.	ND	U
132-64-9	DIBENZOFURAN	330.	ND	U
121-14-2	2,4-DINITROTOLUENE	330.	ND	U
84-66-2	DIETHYLPHTHALATE	330.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	330.	ND	U
86-73-7	FLUORENE	330.	ND	U
100-01-6	4-NITROANILINE	1700.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1700.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	330.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	330.	ND	U
118-74-1	HEXACHLOROBENZENE	330.	ND	U
87-86-5	PENTACHLOROPHENOL	1700.	ND	U
85-01-8	PHENANTHRENE	330.	ND	U
120-12-7	ANTHRACENE	330.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	330.	ND	U
206-44-0	FLUORANTHENE	330.	ND	U
129-00-0	PYRENE	330.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	330.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	670.	ND	U
56-55-3	BENZO(A)ANTHRACENE	330.	ND	U
218-01-9	CHRYSENE	330.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	330.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	330.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	330.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	330.	ND	U
50-32-8	BENZO(A)PYRENE	330.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	330.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	330.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	330.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	330.	ND	U
4165-61-1	ANILINE	330.	ND	U
103-33-3	AZOBENZENE	330.	ND	U
92-87-5	BENZIDINE	1700.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : BLANK
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 1212B002
Analyst : ww
Supervisor : MH

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	330.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	330.	ND	U
95-57-8	2-CHLOROPHENOL	330.	ND	U
541-73-1	1,3-DICHLOROBENZENE	330.	ND	U
106-46-7	1,4-DICHLOROBENZENE	330.	ND	U
100-51-6	BENZYL ALCOHOL	330.	ND	U
95-50-1	1,2-DICHLOROBENZENE	330.	ND	U
95-48-7	2-METHYLPHENOL	330.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	330.	ND	U
106-44-5	4-METHYLPHENOL	330.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	330.	ND	U
67-72-1	HEXACHLOROETHANE	330.	ND	U
98-95-3	NITROBENZENE	330.	ND	U
78-59-1	ISOPHORONE	330.	ND	U
88-75-5	2-NITROPHENOL	330.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	330.	ND	U
65-85-0	BENZOIC ACID	1700.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	330.	ND	U
120-83-2	2,4-DICHLOROPHENOL	330.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	330.	ND	U
91-20-3	NAPHTHALENE	330.	ND	U
106-47-8	4-CHLOROANILINE	330.	ND	U
87-68-3	HEXACHLOROBUTADIENE	330.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	330.	ND	U
91-57-6	2-METHYLNAPHTHALENE	330.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	330.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	1700.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	330.	ND	U
91-58-7	2-CHLORONAPHTHALENE	1700.	ND	U
88-74-4	2-NITROANILINE	330.	ND	U
131-11-3	DIMETHYLPHTHALATE	330.	ND	U
208-96-8	ACENAPHTHYLENE	330.	ND	U
606-20-2	2,6-DINITROTOLUENE			

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : BLANK
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Extracted :12/12/91
Amount Extracted : 30.0 g
Date Analyzed :12/17/91
Instrument ID : F2

Anametrix ID : 1212B002
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	1700.	ND	U
83-32-9	ACENAPHTHENE	330.	ND	U
51-28-5	2,4-DINITROPHENOL	1700.	ND	U
100-02-7	4-NITROPHENOL	1700.	ND	U
132-64-9	DIBENZOFURAN	330.	ND	U
121-14-2	2,4-DINITROTOLUENE	330.	ND	U
84-66-2	DIETHYLPHTHALATE	330.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	330.	ND	U
86-73-7	FLUORENE	330.	ND	U
100-01-6	4-NITROANILINE	1700.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	1700.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	330.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	330.	ND	U
118-74-1	HEXACHLOROBENZENE	330.	ND	U
87-86-5	PENTACHLOROPHENOL	1700.	ND	U
85-01-8	PHENANTHRENE	330.	ND	U
120-12-7	ANTHRACENE	330.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	330.	ND	U
206-44-0	FLUORANTHENE	330.	ND	U
129-00-0	PYRENE	330.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	330.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	670.	ND	U
56-55-3	BENZO(A)ANTHRACENE	330.	ND	U
218-01-9	CHRYSENE	330.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	330.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	330.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	330.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	330.	ND	U
50-32-8	BENZO(A)PYRENE	330.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	330.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	330.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	330.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	330.	ND	U
4165-61-1	ANILINE	330.	ND	U
103-33-3	AZOBENZENE	330.	ND	U
92-87-5	BENZIDINE	1700.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : SOLID

Anametrix ID : 9112047
Analyst : lw
Supervisor : MH

	SAMPLE ID	SU1	SU2	SU3	SU4	SU5	SU6	TOTAL OUT
1	BLANK	70	48	73	76	65	81 *	1
2	MW-5(8-8	69	52	82	87	52	87 *	1
3	MW-7(7-7	78	57	83	91	71	92 *	1
4	MW-6(7.5	81	57	89	93	72	106 *	1
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	QC LIMITS
SU1 = 2-FLUOROPHENOL	(14-118)
SU2 = PHENOL-D5	(20-122)
SU3 = NITROBENZENE-D5	(11-101)
SU4 = 2-FLUOROBIPHENYL	(17-102)
SU5 = 2,4,6-TRIBROMOPHENOL	(14-151)
SU6 = TERPHENYL-D14	(10- 74)

* Values outside of Anametrix QC limits

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GC
Sub-Department: PEST

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	8080 PCB
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	8080 PCB
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	8080 PCB

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GC
Sub-Department: PEST

QA/QC SUMMARY :

- Due to the software limitations the "MW-" part of the sample I.D was not included in the final report.

Stratos Dimas 12-19-91
Department Supervisor Date

Juliet Ofwono 12-19-91
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : 5(8-8.5)
Matrix : SOIL
Date Sampled : 12/ 5/91
Date Extracted : 12/10/91
Amount Extracted : 10.0 g
Date Analyzed : 12/11/91
Instrument ID : HP16

Anametrix ID : 9112047-1
Analyst : JHO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	80.	ND	U
11104-28-2	Aroclor-1221	80.	ND	U
11141-16-5	Aroclor-1232	80.	ND	U
53469-21-9	Aroclor-1242	80.	ND	U
12672-29-6	Aroclor-1248	80.	ND	U
11097-69-1	Aroclor-1254	160.	ND	U
11096-82-5	Aroclor-1260	160.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
Sample ID : 6(7.5-8)
Matrix : SOIL
ate Sampled : 12/ 5/91
,ate Extracted : 12/10/91
Amount Extracted : 10.0 g
ate Analyzed : 12/11/91
nstrument ID : HP16

Anametrix ID : 9112047-2
Analyst : DO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	80.	ND	U
11104-28-2	Aroclor-1221	80.	ND	U
11141-16-5	Aroclor-1232	80.	ND	U
53469-21-9	Aroclor-1242	80.	ND	U
12672-29-6	Aroclor-1248	80.	ND	U
11097-69-1	Aroclor-1254	160.	ND	U
11096-82-5	Aroclor-1260	160.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : 7(7-7.5)
Matrix : SOIL
Date Sampled : 12/ 5/91
Date Extracted : 12/10/91
Amount Extracted : 10.0 g
Date Analyzed : 12/11/91
Instrument ID : HP16

Anametrix ID : 9112047-4
Analyst : dlo
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	80.	ND	U
11104-28-2	Aroclor-1221	80.	ND	U
11141-16-5	Aroclor-1232	80.	ND	U
53469-21-9	Aroclor-1242	80.	ND	U
12672-29-6	Aroclor-1248	80.	ND	U
11097-69-1	Aroclor-1254	160.	ND	U
11096-82-5	Aroclor-1260	160.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID : 91C059
Sample ID : BLANK
atrix : SOIL
ate Sampled : 0/ 0/ 0
ate Extracted : 12/10/91
mount Extracted : 10.0 g
ate Analyzed : 12/11/91
nstrument ID : HP16

Anametrix ID : PSBLK121091
Analyst : LO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/KG

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	80.	ND	U
11104-28-2	Aroclor-1221	80.	ND	U
11141-16-5	Aroclor-1232	80.	ND	U
53469-21-9	Aroclor-1242	80.	ND	U
12672-29-6	Aroclor-1248	80.	ND	U
11097-69-1	Aroclor-1254	160.	ND	U
11096-82-5	Aroclor-1260	160.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : SOLID

Anametrix ID : 9112047
Analyst : tw
Supervisor : SD

	SAMPLE ID	SU1	TOTAL OUT
1	BLANK	109	0
2	5(8-8.5)	94	0
3	6(7.5-8)	82	0
4	7(7-7.5)	76	0
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
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19			
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23			
24			
25			
26			
27			
28			
29			
30			

	QC LIMITS
SU1 = DBC	(37-149)

* Values outside of Anametrix QC limits

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	TPHd
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	TPHd
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	TPHd
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	TPHg/BTEX
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	TPHg/BTEX
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample MW5(8-8.5) is primarily due to the presence of a lighter petroleum product, possibly gasoline.
- The concentration reported as diesel for sample MW-6(7.5-8) is due to the presence of a combination of diesel and a heavier petroleum product, possibly motor oil.
- The concentration reported as diesel for sample MW-7(7-7.5) is primarily due to the presence of a heavier petroleum product, possibly motor oil.

Department Supervisor 12/17/91 Date

Chemist 12.16.91 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112047
Matrix : SOIL
Date Sampled : 12/05/91

Project Number : 91C0592A
Date Released : 12/13/91

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# MW-5 (8-8.5) -01	Sample I.D.# MW-6 (7.5-8) -02	Sample I.D.# MW-7 (7-7.5) -04	Sample I.D.# 08B1209A BLANK
Benzene	0.005	ND	0.030	ND	ND
Toluene	0.005	5.1	ND	ND	ND
Ethylbenzene	0.005	17	ND	ND	ND
Total Xylenes	0.005	37	ND	ND	ND
TPH as Gasoline	0.5	830	ND	ND	ND
% Surrogate Recovery		92%	88%	72%	96%
Instrument I.D.		HP8	HP8	HP8	HP8
Date Analyzed		12/09/91	12/09/91	12/09/91	12/09/91
RLMF		1000	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12.16.91 Date

Supervisor 12/13/91 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9112047
Matrix : SOIL
Date Sampled : 12/05/91
Date Extracted: 12/10/91

Project Number : 91C0592A
Date Released : 12/13/91
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9112047-01	MW-5(8-8.5)	12/12/91	50	280
9112047-02	MW-6(7.5-8)	12/12/91	10	140
9112047-04	MW-7(7-7.5)	12/12/91	10	48
DSBL121091	METHOD BLANK	12/12/91	10	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12/20/91 Date

Supervisor 12.20.91 Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	5520EF
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	5520EF
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	5520EF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 12-19-91 Date

Chemist 12/18/91 Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : 91C0592A
Matrix : SOIL
Date sampled : 12/05/91
Date ext. TOG : 12/11/91
Date anl. TOG : 12/11/91

Anametrix I.D. : 9112047
Analyst : CY
Supervisor : MS
Date released : 12/18/91

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9112047-01	MW-5(8-8.5)	30	80
9112047-02	MW-6(7.5-8)	30	1800
9112047-04	MW-7(7-7.5)	30	93
GSBL121191	METHOD BLANK	30	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520E&F.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

TOTAL OIL AND GREASE MATRIX SPIKE REPORT
STANDARD METHOD 5520EF
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 91C0592A MW-5(8-8.5)	Anametrix I.D.	: 9112047-01
Matrix	: SOIL	Analyst	: JC
Date sampled	: 12/05/91	Supervisor	: JS
Date extracted	: 12/11/91	Date Released	: 12/18/91
Date analyzed	: 12/11/91		

COMPOUND	SPIKE AMT. (mg/Kg)	MS (mg/Kg)	%REC MS	MSD (mg/Kg)	%REC MSD	%RPD	%REC LIMITS
Motor Oil	300	290	70%	290	70%	0%	48-114%

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112047- 1	MW-5(8-8.5)	SOIL	12/05/91	PP-MET
9112047- 2	MW-6(7.5-8)	SOIL	12/05/91	PP-MET
9112047- 4	MW-7(7-7.5)	SOIL	12/05/91	PP-MET

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-6
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-02
Analyst : LW
Supervisor : LH

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	11.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	11.	ND	U
95-57-8	2-CHLOROPHENOL	11.	ND	U
541-73-1	1,3-DICHLOROBENZENE	11.	ND	U
106-46-7	1,4-DICHLOROBENZENE	11.	ND	U
100-51-6	BENZYL ALCOHOL	11.	ND	U
95-50-1	1,2-DICHLOROBENZENE	11.	ND	U
95-48-7	2-METHYLPHENOL	11.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	11.	ND	U
106-44-5	4-METHYLPHENOL	11.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	11.	ND	U
67-72-1	HEXACHLOROETHANE	11.	ND	U
98-95-3	NITROBENZENE	11.	ND	U
78-59-1	ISOPHORONE	11.	ND	U
88-75-5	2-NITROPHENOL	11.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	11.	ND	U
65-85-0	BENZOIC ACID	53.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	11.	ND	U
120-83-2	2,4-DICHLOROPHENOL	11.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	11.	ND	U
91-20-3	NAPHTHALENE	11.	ND	U
106-47-8	4-CHLOROANILINE	11.	ND	U
87-68-3	HEXACHLOROBUTADIENE	11.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	11.	ND	U
91-57-6	2-METHYLNAPHTHALENE	11.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	11.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	11.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	53.	ND	U
91-58-7	2-CHLORONAPHTHALENE	11.	ND	U
88-74-4	2-NITROANILINE	53.	ND	U
131-11-3	DIMETHYLPHTHALATE	11.	ND	U
208-96-8	ACENAPHTHYLENE	11.	ND	U
606-20-2	2,6-DINITROTOLUENE	11.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-6
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-02
Analyst : W
Supervisor : M

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	53.	ND	U
83-32-9	ACENAPHTHENE	11.	ND	U
51-28-5	2,4-DINITROPHENOL	53.	ND	U
100-02-7	4-NITROPHENOL	53.	ND	U
132-64-9	DIBENZOFURAN	11.	ND	U
121-14-2	2,4-DINITROTOLUENE	11.	ND	U
84-66-2	DIETHYLPHTHALATE	11.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	11.	ND	U
86-73-7	FLUORENE	11.	ND	U
100-01-6	4-NITROANILINE	53.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	53.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	11.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	11.	ND	U
118-74-1	HEXACHLOROBENZENE	11.	ND	U
87-86-5	PENTACHLOROPHENOL	53.	ND	U
85-01-8	PHENANTHRENE	11.	ND	U
120-12-7	ANTHRACENE	11.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	11.	ND	U
206-44-0	FLUORANTHENE	11.	ND	U
129-00-0	PYRENE	11.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	11.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	21.	ND	U
56-55-3	BENZO(A)ANTHRACENE	11.	ND	U
218-01-9	CHRYSENE	11.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	11.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	11.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	11.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	11.	ND	U
50-32-8	BENZO(A)PYRENE	11.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	11.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	11.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	11.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	11.	ND	U
4165-61-1	ANILINE	11.	ND	U
103-33-3	AZOBENZENE	11.	ND	U
92-87-5	BENZIDINE	53.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-7
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-03
Analyst : LW
Supervisor : LH

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	11.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	11.	ND	U
95-57-8	2-CHLOROPHENOL	11.	ND	U
541-73-1	1,3-DICHLOROBENZENE	11.	ND	U
106-46-7	1,4-DICHLOROBENZENE	11.	ND	U
100-51-6	BENZYL ALCOHOL	11.	ND	U
95-50-1	1,2-DICHLOROBENZENE	11.	ND	U
95-48-7	2-METHYLPHENOL	11.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	11.	ND	U
106-44-5	4-METHYLPHENOL	11.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	11.	ND	U
67-72-1	HEXACHLOROETHANE	11.	ND	U
98-95-3	NITROBENZENE	11.	ND	U
78-59-1	ISOPHORONE	11.	ND	U
88-75-5	2-NITROPHENOL	11.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	11.	ND	U
65-85-0	BENZOIC ACID	53.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	11.	ND	U
120-83-2	2,4-DICHLOROPHENOL	11.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	11.	ND	U
91-20-3	NAPHTHALENE	11.	ND	U
106-47-8	4-CHLOROANILINE	11.	ND	U
87-68-3	HEXACHLOROBUTADIENE	11.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	11.	ND	U
91-57-6	2-METHYLNAPHTHALENE	11.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	11.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	11.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	53.	ND	U
91-58-7	2-CHLORONAPHTHALENE	11.	ND	U
88-74-4	2-NITROANILINE	53.	ND	U
131-11-3	DIMETHYLPHTHALATE	11.	ND	U
208-96-8	ACENAPHTHYLENE	11.	ND	U
606-20-2	2,6-DINITROTOLUENE	11.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-7
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-03
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	53.	ND	U
83-32-9	ACENAPHTHENE	11.	ND	U
51-28-5	2,4-DINITROPHENOL	53.	ND	U
100-02-7	4-NITROPHENOL	53.	ND	U
132-64-9	DIBENZOFURAN	11.	ND	U
121-14-2	2,4-DINITROTOLUENE	11.	ND	U
84-66-2	DIETHYLPHTHALATE	11.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	11.	ND	U
86-73-7	FLUORENE	11.	ND	U
100-01-6	4-NITROANILINE	53.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	53.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	11.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	11.	ND	U
118-74-1	HEXACHLOROBENZENE	11.	ND	U
87-86-5	PENTACHLOROPHENOL	53.	ND	U
85-01-8	PHENANTHRENE	11.	ND	U
120-12-7	ANTHRACENE	11.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	11.	ND	U
206-44-0	FLUORANTHENE	11.	ND	U
129-00-0	PYRENE	11.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	11.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	21.	ND	U
56-55-3	BENZO(A)ANTHRACENE	11.	ND	U
218-01-9	CHRYSENE	11.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	11.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	11.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	11.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	11.	ND	U
50-32-8	BENZO(A)PYRENE	11.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	11.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	11.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	11.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	11.	ND	U
4165-61-1	ANILINE	11.	ND	U
103-33-3	AZOBENZENE	11.	ND	U
92-87-5	BENZIDINE	53.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : BLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Extracted :12/17/91
Amount Extracted : 1000.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 1217B001
Analyst : LW
Supervisor : LM

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	10.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10.	ND	U
95-57-8	2-CHLOROPHENOL	10.	ND	U
541-73-1	1,3-DICHLOROBENZENE	10.	ND	U
106-46-7	1,4-DICHLOROBENZENE	10.	ND	U
100-51-6	BENZYL ALCOHOL	10.	ND	U
95-50-1	1,2-DICHLOROBENZENE	10.	ND	U
95-48-7	2-METHYLPHENOL	10.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	10.	ND	U
106-44-5	4-METHYLPHENOL	10.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10.	ND	U
67-72-1	HEXACHLOROETHANE	10.	ND	U
98-95-3	NITROBENZENE	10.	ND	U
78-59-1	ISOPHORONE	10.	ND	U
88-75-5	2-NITROPHENOL	10.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	10.	ND	U
65-85-0	BENZOIC ACID	50.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10.	ND	U
120-83-2	2,4-DICHLOROPHENOL	10.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	10.	ND	U
91-20-3	NAPHTHALENE	10.	ND	U
106-47-8	4-CHLOROANILINE	10.	ND	U
87-68-3	HEXACHLOROBUTADIENE	10.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	10.	ND	U
91-57-6	2-METHYLNAPHTHALENE	10.	ND	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	10.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	50.	ND	U
91-58-7	2-CHLORONAPHTHALENE	10.	ND	U
88-74-4	2-NITROANILINE	50.	ND	U
131-11-3	DIMETHYLPHTHALATE	10.	ND	U
208-96-8	ACENAPHTHYLENE	10.	ND	U
606-20-2	2,6-DINITROTOLUENE	10.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : BLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Extracted :12/17/91
Amount Extracted : 1000.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 1217B001
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	50.	ND	U
83-32-9	ACENAPHTHENE	10.	ND	U
51-28-5	2,4-DINITROPHENOL	50.	ND	U
100-02-7	4-NITROPHENOL	50.	ND	U
132-64-9	DIBENZOFURAN	10.	ND	U
121-14-2	2,4-DINITROTOLUENE	10.	ND	U
84-66-2	DIETHYLPHTHALATE	10.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10.	ND	U
86-73-7	FLUORENE	10.	ND	U
100-01-6	4-NITROANILINE	50.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10.	ND	U
118-74-1	HEXACHLOROBENZENE	10.	ND	U
87-86-5	PENTACHLOROPHENOL	50.	ND	U
85-01-8	PHENANTHRENE	10.	ND	U
120-12-7	ANTHRACENE	10.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	10.	ND	U
206-44-0	FLUORANTHENE	10.	ND	U
129-00-0	PYRENE	10.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	10.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	20.	ND	U
56-55-3	BENZO(A)ANTHRACENE	10.	ND	U
218-01-9	CHRYSENE	10.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	10.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	10.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	10.	ND	U
50-32-8	BENZO(A)PYRENE	10.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	10.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	10.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	10.	ND	U
4165-61-1	ANILINE	10.	ND	U
103-33-3	AZOBENZENE	10.	ND	U
92-87-5	BENZIDINE	50.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : LIQUID

Anametrix ID : 9112144
Analyst : ww
Supervisor : JM

	SAMPLE ID	SU1	SU2	SU3	SU4	SU5	SU6	TOTAL OUT
1	BLANK	42	21	56	55	43	74	0
2	MW-5	42	21	58	63	47	74	0
3	MW-6	37	19	59	61	46	72	0
4	MW-7	34	18	63	61	41	76	0
5	MW-7 MS	40	20	61	62	42	75	0
6	MW-7 MSD	32	16	46	48	40	72	0
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	QC LIMITS
SU1 = 2-FLUOROPHENOL	(10- 82)
SU2 = PHENOL-D5	(10- 72)
SU3 = NITROBENZENE-D5	(10-100)
SU4 = 2-FLUOROBIPHENYL	(10- 92)
SU5 = 2,4,6-TRIBROMOPHENOL	(15-139)
SU6 = TERPHENYL-D14	(10-110)

* Values outside of Anametrix QC limits

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-7
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-03
Analyst : LW
Supervisor : JM

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
PHENOL	100.	0.	32.	32	10- 82
2-CHLOROPHENOL	100.	0.	50.	50	27-114
1,4-DICHLOROBENZENE	50.	0.	29.	57	21- 86
N-NITROSO-DI-N-PROP.(1)	50.	0.	36.	71	29-139
1,2,4-TRICHLOROBENZENE	50.	0.	29.	59	14-104
4-CHLORO-3-METHYLPHENOL	100.	0.	57.	57	36-121
ACENAPHTHENE	50.	0.	31.	62	38-108
4-NITROPHENOL	100.	0.	32.	32	10- 58
2,4-DINITROTOLUENE	50.	0.	34.	67	44-121
PENTACHLOROPHENOL	100.	0.	52.	52	10-137
PYRENE	50.	0.	35.	70	44-125

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
PHENOL	100.	28.	28	13	42	10- 82
2-CHLOROPHENOL	100.	42.	42	16	40	27-114
1,4-DICHLOROBENZENE	50.	22.	44	26	28	21- 86
N-NITROSO-DI-N-PROP.(1)	50.	30.	60	18	38	29-139
1,2,4-TRICHLOROBENZENE	50.	23.	46	24	28	14-104
4-CHLORO-3-METHYLPHENOL	100.	55.	55	4	42	36-121
ACENAPHTHENE	50.	27.	54	13	31	38-108
4-NITROPHENOL	100.	35.	35	8	50	10- 58
2,4-DINITROTOLUENE	50.	33.	66	2	38	44-121
PENTACHLOROPHENOL	100.	54.	54	3	50	10-137
PYRENE	50.	35.	71	1	31	44-125

* Value is outside of Anametrix QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : GC
Sub-Department: PEST

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112144- 1	MW-5	WATER	12/13/91	8080 PCB
9112144- 2	MW-6	WATER	12/13/91	8080 PCB
9112144- 3	MW-7	WATER	12/13/91	8080 PCB

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : GC
Sub-Department: PEST

QA/QC SUMMARY :

- The surrogate recoveries of all the analyzed extracts were outside of Anametrix control limits due to the acid cleanup necessary for this method.

Stratis Dimms 12-23-91
Department Supervisor Date

Juliet Ofuoro 12-23-91
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
ample ID : MW-5
Matrix : WATER
ate Sampled : 12/13/91
ate Extracted : 12/18/91
Amount Extracted : 500.0 mL
ate Analyzed : 12/20/91
nstrument ID : HP16

Anametrix ID : 9112144-1
Analyst : DO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	.50	ND	U
11104-28-2	Aroclor-1221	.50	ND	U
11141-16-5	Aroclor-1232	.50	ND	U
53469-21-9	Aroclor-1242	.50	ND	U
12672-29-6	Aroclor-1248	.50	ND	U
11097-69-1	Aroclor-1254	1.0	ND	U
11096-82-5	Aroclor-1260	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
Sample ID : MW-6
atrix : WATER
ate Sampled : 12/13/91
ate Extracted : 12/18/91
Amount Extracted : 500.0 mL
ate Analyzed : 12/20/91
nstrument ID : HP16

Anametrix ID : 9112144-2
Analyst : JLO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	.50	ND	U
11104-28-2	Aroclor-1221	.50	ND	U
11141-16-5	Aroclor-1232	.50	ND	U
53469-21-9	Aroclor-1242	.50	ND	U
12672-29-6	Aroclor-1248	.50	ND	U
11097-69-1	Aroclor-1254	1.0	ND	U
11096-82-5	Aroclor-1260	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
Sample ID : MW-7
atrix : WATER
ate Sampled : 12/13/91
ate Extracted : 12/18/91
Amount Extracted : 500.0 mL
ate Analyzed : 12/20/91
nstrument ID : HP16

Anametrix ID : 9112144-3
Analyst : JLO
Supervisor : SD

Dilution Factor : 1.00
Conc. Units : UG/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	.50	ND	U
11104-28-2	Aroclor-1221	.50	ND	U
11141-16-5	Aroclor-1232	.50	ND	U
53469-21-9	Aroclor-1242	.50	ND	U
12672-29-6	Aroclor-1248	.50	ND	U
11097-69-1	Aroclor-1254	1.0	ND	U
11096-82-5	Aroclor-1260	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

roject ID	: 91C059	Anametrix ID	: PCBWBLK12189
Sample ID	: BLANK	Analyst	: dco
latrix	: WATER	Supervisor	: SP
ate Sampled	: 0/ 0/ 0		
ate Extracted	: 12/18/91		
Amount Extracted	: 500.0 mL		
ate Analyzed	: 12/20/91	Dilution Factor	: 1.00
nstrument ID	: HP16	Conc. Units	: UG/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
12674-11-2	Aroclor-1016	.50	ND	U
11104-28-2	Aroclor-1221	.50	ND	U
11141-16-5	Aroclor-1232	.50	ND	U
53469-21-9	Aroclor-1242	.50	ND	U
12672-29-6	Aroclor-1248	.50	ND	U
11097-69-1	Aroclor-1254	1.0	ND	U
11096-82-5	Aroclor-1260	1.0	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 608/8080
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : LIQUID

Anametrix ID : 9112144
Analyst : [illegible]
Supervisor : SD

	SAMPLE ID	SU1	TOTAL OUT
1	BLANK	35 *	1
2	MW-5	30 *	1
3	MW-6	28 *	1
4	MW-7	36 *	1
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
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16			
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19			
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23			
24			
25			
26			
27			
28			
29			
30			

	QC LIMITS
SU1 = DBC	(43-146)

* Values outside of Anametrix QC limits

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112144- 1	MW-5	WATER	12/13/91	TPHd
9112144- 2	MW-6	WATER	12/13/91	TPHd
9112144- 3	MW-7	WATER	12/13/91	TPHd
9112144- 5	MW-9	WATER	12/13/91	TPHg
9112144- 1	MW-5	WATER	12/13/91	TPHg/BTEX
9112144- 2	MW-6	WATER	12/13/91	TPHg/BTEX
9112144- 3	MW-7	WATER	12/13/91	TPHg/BTEX
9112144- 4	MW-8	WATER	12/13/91	TPHg/BTEX
9112144- 6	MW-10	WATER	12/13/91	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample MW-5 is primarily due to the presence of a lighter petroleum product, possibly gasoline.

Department Supervisor 12.26.91 Date

Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112144
Matrix : WATER
Date Sampled : 12/13/91

Project Number : 91C0592A-4000
Date Released : 12/26/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-5 -01	Sample I.D.# MW-6 -02	Sample I.D.# MW-7 -03	Sample I.D.# MW-8 -04	Sample I.D.# MW-9 -05
Benzene	0.5	1500	110	ND	ND	-
Toluene	0.5	190	2.7	ND	ND	-
Ethylbenzene	0.5	970	ND	ND	ND	-
Total Xylenes	0.5	2500	5.5	ND	ND	-
TPH as Gasoline	50	13000	780	ND	ND	ND
% Surrogate Recovery		92%	90%	114%	123%	111%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		12/20/91	12/18/91	12/18/91	12/19/91	12/18/91
RLMF		100	5	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Steve Jones 12/26/91
Analyst Date

Supervisor 12.26.91
Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O. : 9112144
Matrix : WATER
Date Sampled : 12/13/91

Project Number : 91C0592A-4000
Date Released : 12/26/91

Is this a QC sple?

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-10 -06	Sample I.D.# 12B1218A BLANK	Sample I.D.# 12B1219A BLANK	Sample I.D.# 21B1219A BLANK	Sample I.D.# 12B1220B BLANK
Benzene	0.5	1400	ND	ND	ND	ND
Toluene	0.5	180	ND	ND	ND	ND
Ethylbenzene	0.5	870	ND	ND	ND	ND
Total Xylenes	0.5	2500	ND	ND	ND	ND
TPH as Gasoline	50	16000	ND	ND	ND	ND
% Surrogate Recovery		105%	106%	108%	100%	108%
Instrument I.D.		HP21	HP12	HP12	HP21	HP12
Date Analyzed		12/19/91	12/18/91	12/19/91	12/19/91	12/20/91
RLMF		250	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst Date

Supervisor 12.26.91 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9112144
Matrix : WATER
Date Sampled : 12/13/91
Date Extracted: 12/17/91

Project Number : 91C0592A-4000
Date Released : 12/26/91
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9112144-01	MW-5	12/19/91	100	1900
9112144-02	MW-6	12/18/91	50	520
9112144-03	MW-7	12/18/91	50	ND
DWBL121791	METHOD BLANK	12/18/91	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 12/26/91 Date

Supervisor 12-26-91 Date

BTEX MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 91C0592A-4000 MW-8
Matrix : WATER
Date Sampled : 12/13/91
Date Analyzed : 12/18/91

Anametrix I.D.: 9112144-04
Analyst : [illegible]
Supervisor : CF
Date Released : 12/26/91
Instrument ID : HP12

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	REC MS	MSD (ug/L)	REC MSD	RPD	%REC LIMITS
Benzene	10.0	9.7	97%	9.6	96%	-1%	46-149
Toluene	10.0	9.4	94%	9.2	92%	-2%	43-146
Ethylbenzene	10.0	8.6	86%	8.5	85%	-1%	51-138
M+P-Xylenes	6.7	5.8	87%	5.7	85%	-2%	39-161
O-Xylene	3.3	2.9	88%	2.9	88%	0%	37-156
P-BFB			114%		114%		53-147%

* Limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON METHOD SPIKE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD SPIKE
Matrix : REAGENT WATER
Date Sampled : N/A
Date Extracted: 12/17/91
Date Analyzed : 12/20/91

Anametrix I.D. : SPK121891
Analyst : [illegible]
Supervisor : [illegible]
Date Released : 12/26/91
Instrument I.D.: HP 9

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	%REC MS	MSD (ug/L)	%REC MSD	RPD	%REC LIMITS
Diesel	1250	750	60%	630	50%	-17%	36-150

* Limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112144- 1	MW-5	WATER	12/13/91	5520BF
9112144- 2	MW-6	WATER	12/13/91	5520BF
9112144- 3	MW-7	WATER	12/13/91	5520BF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor 12/23/91 Date

Chemist 12/24/91 Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : 91C0592A-4000
Matrix : WATER
Date sampled : 12/13/91
Date ext. TOG : 12/18/91
Date anl. TOG : 12/18/91

Anametrix I.D. : 9112144
Analyst : GT
Supervisor : CB
Date released : 12/23/91

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9112144-01	MW-5	5	ND
9112144-02	MW-6	5	ND
9112144-03	MW-7	5	ND
GWBL121891	METHOD BLANK	5	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

TOTAL OIL AND GREASE MATRIX SPIKE REPORT
STANDARD METHOD 5520BF
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : METHOD SPIKE
Matrix : WATER
Date sampled : N/A
Date extracted : 12/18/91
Date analyzed : 12/18/91

Anametrix I.D. : SPK121891
Analyst : CJ
Supervisor : GBS
Date Released : 12/23/91

COMPOUND	SPIKE AMT. (mg/L)	MS (mg/L)	%REC MS	MSD (mg/L)	%REC MSD	%RPD	%REC LIMITS
Motor Oil	50	40	80%	44	88%	10%	47-99%

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112144- 1	MW-5	WATER	12/13/91	PP-MET
9112144- 2	MW-6	WATER	12/13/91	PP-MET
9112144- 3	MW-7	WATER	12/13/91	PP-MET

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 12/26/91 Date

Chemist 12/26/91 Date

ANALYSIS DATA SHEET - PRIORITY POLLUTANT METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112144
Matrix : WATER
Date Sampled : 12/13/91
Project Number: 91C0592A-4000

Date Prepared : 12/22/91
Date Analyzed : 12/23/91
Date Released : 12/26/91
Instrument I.D.: AA1/AA2/ICP1

ELEMENTS	EPA Method#	Reporting Limit (ug/L)	Sample I.D.# MW-5 -01	Sample I.D.# MW-6 -02	Sample I.D.# MW-7 -03	Sample I.D.# BLANK MB1222W
Silver (Ag)	6010	10.0	ND	ND	ND	ND
Arsenic (As)	7060	10.0	ND	14.3	ND	ND
Beryllium (Be)	6010	5.0	ND	ND	ND	ND
Cadmium (Cd)	6010	5.0	ND	ND	ND	ND
Total Cr	6010	10.0	22.6	42.2	10.6	ND
Copper (Cu)	6010	25.0	56.2	94.2	35.1	ND
Mercury (Hg)	7470	0.68	ND	ND	ND	ND
Nickel (Ni)	6010	40.0	ND	126	270	ND
Lead (Pb)	7421	3.0	173	--	11.4	ND
Lead (Pb)	6010	40.0	--	1040	--	--
Antimony (Sb)	6010	60.0	ND	ND	ND	ND
Selenium (Se)	7740	5.0	ND	ND	ND	ND
Thallium (Tl)	7841	10.0	ND	ND	ND	ND
Zinc (Zn)	6010	20.0	201	837	101	ND

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Supervisor 12/26/91 Date

Chemist 12/26/91 Date

(12)1125 4111204 1

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

Chain of Custody Record

PROJECT NO. 91C0592A

SAMPLERS: (Signature)

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8240	EPA Method 8270	EPA Method 8080	EPA Method BTEX	Oil + Grease	PP Metals	TPH Low-Med BP	TPH Hi BP		HOLD	Number of Containers
1	12/5/91	9:15	MW-5 (8-8.5)	S	X	X	X	X	X	X	X	X			1
2	"	10:30	MW-6 (7.5-8)	S	X	X	X	X	X	X	X	X			1
3	"	"	MW-6 (8-8.5)	S										X	1
4	"	11:15	MW-7 (7-7.5)	S	X	X	X	X	X	X	X	X			1
5	"	"	MW-7 (7.5-8)	S										X	1

REMARKS (Sample preservation, handling procedures, etc.)

All samples stored in baggies in chilled cooler

Send Results to Lois Gruenberg (510) 874-1765

#1 has headspace others no space all cold.

STAT

TOTAL NUMBER OF CONTAINERS: 5

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/5/91 5:15				

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
				12/5/91 1715

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112047
Date Received : 12/05/91
Project ID : 91C0592A
Purchase Order: N/A
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- Samples MW-5(8-8.5) and MW-7(7-7.5) were analyzed at 1:2.5 dilution for EPA Method 6010 due to spectral interferences.
- All samples were analyzed at 1:5 dilution for selenium by EPA Method 7740 due to spectral interferences.
- Spike recoveries for copper and zinc by EPA Method 6010 were outside of Anametrix control limits due to high concentration levels in the unspiked sample.
- Matrix and post-digestion spike recoveries for arsenic by EPA Method 7060, lead by EPA Method 7421, selenium by EPA Method 7740 and thallium by EPA Method 7841 were outside of Anametrix control limits due to matrix effects.
- Spike recoveries for antimony by EPA Method 6010 and mercury by EPA Method 7471 were outside of Anametrix control limits.

Department/Supervisor 12/19/91 Date

Chemist 12/19/91 Date

ANALYSIS DATA SHEET - PRIORITY POLLUTANT METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112047
Matrix : SOIL
Date Sampled : 12/05/91
Project Number: 91C0592A

Date Prepared : 12/17, 12/18/91
Date Analyzed : 12/18/91
Date Released : 12/19/91
Instrument I.D.: AA1/AA2/ICP1

ELEMENTS	EPA Method#	Reporting Limit (mg/Kg)	Sample I.D.# MW-6 (7.5-8) -02
Silver (Ag)	6010	0.50	ND
Arsenic (As)	7060	0.50	2.1
Beryllium (Be)	6010	0.25	ND
Cadmium (Cd)	6010	0.25	0.29
Total Cr	6010	0.50	43.4
Copper (Cu)	6010	1.25	26.3
Mercury (Hg)	7471	0.34	ND
Nickel (Ni)	6010	2.0	43.4
Lead (Pb)	6010	2.0	94.0
Antimony (Sb)	6010	3.0	ND
Selenium (Se)	7740	1.2	ND
Thallium (Tl)	7841	0.50	ND
Zinc (Zn)	6010	1.0	79.5

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Supervisor 12/19/91 Date

Chemist 12/19/91 Date

ANALYSIS DATA SHEET - PRIORITY POLLUTANT METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112047
Matrix : SOIL
Date Sampled : 12/05/91
Project Number: 91C0592A

Date Prepared : 12/17, 12/18/91
Date Analyzed : 12/18/91
Date Released : 12/19/91
Instrument I.D.: AA1/AA2/ICP1

ELEMENTS	EPA Method#	Reporting Limit (mg/Kg)	Sample I.D.# MW-5 (8-8.5) -01	Sample I.D.# MW-7 (7-7.5) -04
Silver (Ag)	6010	1.2	ND	ND
Arsenic (As)	7060	0.50	1.5	1.4
Beryllium (Be)	6010	0.62	ND	ND
Cadmium (Cd)	6010	0.62	ND	ND
Total Cr	6010	1.2	28.1	30.2
Copper (Cu)	6010	3.1	89.4	81.5
Mercury (Hg)	7471	0.34	ND	ND
Nickel (Ni)	6010	5.0	37.8	35.9
Lead (Pb)	7421	0.75	7.9	7.3
Antimony (Sb)	6010	7.5	ND	ND
Selenium (Se)	7740	1.2	ND	ND
Thallium (Tl)	7841	0.50	ND	ND
Zinc (Zn)	6010	2.5	92.7	104

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Supervisor 12/19/91 Date

Chemist 12/19/91 Date

ANALYSIS DATA SHEET - PRIORITY POLLUTANT METALS
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9112047
Matrix : SOIL
Date Sampled : 12/05/91
Project Number: 91C0592A

Date Prepared : 12/17, 12/18/91
Date Analyzed : 12/18/91
Date Released : 12/19/91
Instrument I.D.: AA1/AA2/ICP1

ELEMENTS	EPA Method#	Reporting Limit (mg/Kg)	Sample I.D.# METHOD BLANK MB1217S	Sample I.D.# METHOD BLANK MB1218S
Silver (Ag)	6010	0.50	ND	--
Arsenic (As)	7060	0.50	ND	--
Beryllium (Be)	6010	0.25	ND	--
Cadmium (Cd)	6010	0.25	ND	--
Total Cr	6010	0.50	ND	--
Copper (Cu)	6010	1.25	ND	--
Mercury (Hg)	7471	0.34	--	ND
Nickel (Ni)	6010	2.0	ND	--
Lead (Pb)	6010	2.0	ND	--
Antimony (Sb)	6010	3.0	ND	--
Selenium (Se)	7740	0.25	ND	--
Thallium (Tl)	7841	0.50	ND	--
Zinc (Zn)	6010	1.0	ND	--

ND : Not detected at or above the practical quantitation limit for the method.

All Metals by EPA Method 6010/7000, Test Methods for Evaluating Solid Waste, SW-846 3rd Edition November 1986.

Supervisor 12/19/91 Date

Chemist 12/19/91 Date

ANAMETRIX, INC.
1961 CONCOURSE DRIVE, SUITE E
SAN JOSE, CA 95131, (408) 432-8192

INORGANICS MATRIX SPIKE REPORT

I.D. : 9112047-04MS,MD
repared: 12/17, 12/18/91
nalyzed: 12/18/91
WO # : 9112047

Inst. ID : AA1/AA2/ICP1
Date : 12/19/91
Matrix : SOIL
Conc. Units: mg/Kg

CP1
/91

METHOD	SPIKE AMOUNT	SAMPLE CONC.*	M.S. CONC.	% REC.	M.S.D. CONC.	% REC.	R P D
6010	50.0	0.0	50.3	100.6	49.2	98.4	2.2
7060	100	1.4	74.7	73.3	73.9	72.5	1.1
6010	2.50	0.0	2.70	108.0	2.68	107.2	0.7
6010	2.50	0.0	2.37	94.8	2.45	98.0	3.3
6010	10.0	30.2	41.7	115.0	41.8	116.0	0.9
6010	12.5	81.5	99.5	NR	99.4	NR	NR
7471	0.68	0.0	1.12	165	1.73	254	42.8
6010	25.0	35.9	63.3	109.6	63.8	111.6	1.8
7421	25.0	7.3	21.5	56.8	20.0	50.8	11.2
6010	25.0	0.0	15.0	60.0	14.5	58.0	3.4
7740	100	0.0	40.5	40.5	43.4	43.4	6.9
7841	100	0.0	63.4	63.4	56.2	56.2	12.0
6010	25.0	104	159	NR	158	NR	NR

Quality control limits for percent recovery are 75-125% and 25% for RPD.

Not reported due to interferences from relatively high background levels in the unspiked sample.

Sample concentration of 0.0 indicates that the analyte in the sample was below detection limit for the method. 0.0 is entered for calculations of the percent recovery and RPD only.

12/19/91
sor Date

Mona Kamel 12/19/91
Chemist Date

12/19/91
Date

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9112144- 1	MW-5
9112144- 2	MW-6
9112144- 3	MW-7
9112144- 4	MW-8
9112144- 5	MW-9
9112144- 6	MW-10

This report consists of 40 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Manager

12-27-91
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9112144- 1	MW-5	WATER	12/13/91	8240
9112144- 2	MW-6	WATER	12/13/91	8240
9112144- 3	MW-7	WATER	12/13/91	8240
9112144- 6	MW-10	WATER	12/13/91	8240
9112144- 1	MW-5	WATER	12/13/91	8270
9112144- 2	MW-6	WATER	12/13/91	8270
9112144- 3	MW-7	WATER	12/13/91	8270

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS GRUENBERG
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4014

Workorder # : 9112144
Date Received : 12/16/91
Project ID : 91C0592A-4000
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems.

Department Supervisor — Date: 12-23-91

Chemist — Date: 12-3-91

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID	: 91C0592A	Anametrix ID	: 9112144-01
Sample ID	: MW-5	Analyst	: MF
Matrix	: WATER	Supervisor	: JM
Date Sampled	:12/13/91		
Date Analyzed	:12/19/91	Dilution Factor	: 50.00
Instrument ID	: MSD1	Conc. Units	: ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	500.	ND	U
75-01-4	Vinyl chloride	500.	ND	U
74-83-9	Bromomethane	500.	ND	U
75-00-3	Chloroethane	500.	ND	U
75-69-4	Trichlorofluoromethane	250.	ND	U
75-35-4	1,1-Dichloroethene	250.	ND	U
76-13-1	Trichlorotrifluoroethane	250.	ND	U
67-64-1	Acetone	1000.	ND	U
75-15-0	Carbon disulfide	250.	ND	U
75-09-2	Methylene chloride	250.	ND	U
156-60-5	Trans-1,2-dichloroethene	250.	ND	U
75-34-3	1,1-Dichloroethane	250.	ND	U
156-59-2	Cis-1,2-dichloroethene	250.	ND	U
78-93-3	2-Butanone	1000.	ND	U
67-66-3	Chloroform	250.	ND	U
71-55-6	1,1,1-Trichloroethane	250.	ND	U
56-23-5	Carbon tetrachloride	250.	ND	U
108-05-4	Vinyl acetate	500.	ND	U
71-43-2	Benzene	250.	1800.	
107-06-2	1,2-Dichloroethane	250.	ND	U
79-01-6	Trichloroethene	250.	ND	U
78-87-5	1,2-Dichloropropane	250.	ND	U
75-27-4	Bromodichloromethane	250.	ND	U
110-75-8	2-Chloroethylvinyl ether	250.	ND	U
10061-01-5	Cis-1,3-dichloropropene	250.	ND	U
108-10-1	4-Methyl-2-pentanone	500.	ND	U
108-88-3	Toluene	250.	ND	U
10061-02-6	Trans-1,3-dichloropropene	250.	ND	U
79-00-5	1,1,2-Trichloroethane	250.	ND	U
127-18-4	Tetrachloroethene	250.	ND	U
591-78-6	2-Hexanone	500.	ND	U
124-48-1	Dibromochloromethane	250.	ND	U
108-90-7	Chlorobenzene	250.	ND	U
100-41-4	Ethylbenzene	250.	1000.	
1330-20-7	Xylene (Total)	250.	3800.	
100-42-5	Styrene	250.	ND	U
75-25-2	Bromoform	250.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	250.	ND	U
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Sample ID : MW-6
Matrix : WATER
Date Sampled :12/13/91
Date Analyzed :12/19/91
Instrument ID : MSD1

Anametrix ID : 9112144-02
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	95.	
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	5.	
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
ample ID : MW-7
Matrix : WATER
ate Sampled :12/13/91
ate Analyzed :12/19/91
nstrument ID : MSD1

Anametrix ID : 9112144-03
Analyst :
Supervisor :

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

roject ID : 91C0592A
ample ID : MW-10
Matrix : WATER
ate Sampled :12/13/91
ate Analyzed :12/19/91
nstrument ID : MSD1

Anametrix ID : 9112144-06
Analyst : MC
Supervisor : M

Dilution Factor : 50.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	500.	ND	U
75-01-4	Vinyl chloride	500.	ND	U
74-83-9	Bromomethane	500.	ND	U
75-00-3	Chloroethane	500.	ND	U
75-69-4	Trichlorofluoromethane	250.	ND	U
75-35-4	1,1-Dichloroethene	250.	ND	U
76-13-1	Trichlorotrifluoroethane	250.	ND	U
67-64-1	Acetone	1000.	ND	U
75-15-0	Carbon disulfide	250.	ND	U
75-09-2	Methylene chloride	250.	ND	U
156-60-5	Trans-1,2-dichloroethene	250.	ND	U
75-34-3	1,1-Dichloroethane	250.	ND	U
156-59-2	Cis-1,2-dichloroethene	250.	ND	U
78-93-3	2-Butanone	1000.	ND	U
67-66-3	Chloroform	250.	ND	U
71-55-6	1,1,1-Trichloroethane	250.	ND	U
56-23-5	Carbon tetrachloride	250.	ND	U
108-05-4	Vinyl acetate	500.	ND	U
71-43-2	Benzene	250.	1600.	
107-06-2	1,2-Dichloroethane	250.	ND	U
79-01-6	Trichloroethene	250.	ND	U
78-87-5	1,2-Dichloropropane	250.	ND	U
75-27-4	Bromodichloromethane	250.	ND	U
110-75-8	2-Chloroethylvinyl ether	250.	ND	U
10061-01-5	Cis-1,3-dichloropropene	250.	ND	U
108-10-1	4-Methyl-2-pentanone	500.	ND	U
108-88-3	Toluene	250.	ND	U
10061-02-6	Trans-1,3-dichloropropene	250.	ND	U
79-00-5	1,1,2-Trichloroethane	250.	ND	U
127-18-4	Tetrachloroethene	250.	ND	U
591-78-6	2-Hexanone	500.	ND	U
124-48-1	Dibromochloromethane	250.	ND	U
108-90-7	Chlorobenzene	250.	ND	U
100-41-4	Ethylbenzene	250.	980.	
1330-20-7	Xylene (Total)	250.	3500.	
100-42-5	Styrene	250.	ND	U
75-25-2	Bromoform	250.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	250.	ND	U
541-73-1	1,3-Dichlorobenzene	250.	ND	U
106-46-7	1,4-Dichlorobenzene	250.	ND	U
95-50-1	1,2-Dichlorobenzene	250.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

roject ID :
ample ID : BLANK
Matrix : WATER
ate Sampled : 0/ 0/ 0
ate Analyzed :12/19/91
nstrument ID : MSD1

Anametrix ID : 1219B001
Analyst :
Supervisor :

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : 91C0592A
Matrix : LIQUID

Anametrix ID : 9112144
Analyst : MF
Supervisor : MH

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	99	96	101	0
2	MW-6	97	101	108	0
3	MW-7	97	96	108	0
4	MW-5	93	104	107	0
5	MW-10	102	99	103	0
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(75-113)
SU2 = Toluene-d8	(83-110)
SU3 = 1,4-Bromofluorobenzene	(82-114)

* Values outside of Anametrix QC limits

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-5
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-01
Analyst : LW
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
108-95-2	PHENOL	11.	ND	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	11.	ND	U
95-57-8	2-CHLOROPHENOL	11.	ND	U
541-73-1	1,3-DICHLOROBENZENE	11.	ND	U
106-46-7	1,4-DICHLOROBENZENE	11.	ND	U
100-51-6	BENZYL ALCOHOL	11.	ND	U
95-50-1	1,2-DICHLOROBENZENE	11.	ND	U
95-48-7	2-METHYLPHENOL	11.	ND	U
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	11.	ND	U
106-44-5	4-METHYLPHENOL	11.	ND	U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	11.	ND	U
67-72-1	HEXACHLOROETHANE	11.	ND	U
98-95-3	NITROBENZENE	11.	ND	U
78-59-1	ISOPHORONE	11.	ND	U
88-75-5	2-NITROPHENOL	11.	ND	U
105-67-9	2,4-DIMETHYLPHENOL	11.	ND	U
65-85-0	BENZOIC ACID	53.	ND	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	11.	ND	U
120-83-2	2,4-DICHLOROPHENOL	11.	ND	U
120-82-1	1,2,4-TRICHLOROBENZENE	11.	ND	U
91-20-3	NAPHTHALENE	11.	54.	
106-47-8	4-CHLOROANILINE	11.	ND	U
87-68-3	HEXACHLOROBUTADIENE	11.	ND	U
59-50-7	4-CHLORO-3-METHYLPHENOL	11.	ND	U
91-57-6	2-METHYLNAPHTHALENE	11.	16.	
77-47-4	HEXACHLOROCYCLOPENTADIENE	11.	ND	U
88-06-2	2,4,6-TRICHLOROPHENOL	11.	ND	U
95-95-4	2,4,5-TRICHLOROPHENOL	53.	ND	U
91-58-7	2-CHLORONAPHTHALENE	11.	ND	U
88-74-4	2-NITROANILINE	53.	ND	U
131-11-3	DIMETHYLPHTHALATE	11.	ND	U
208-96-8	ACENAPHTHYLENE	11.	ND	U
606-20-2	2,6-DINITROTOLUENE	11.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 625/8270
ANAMETRIX, INC. (408)432-8192

Project ID : 90C0592A
Sample ID : MW-5
Matrix : WATER
Date Sampled :12/13/91
Date Extracted :12/17/91
Amount Extracted : 950.0 mL
Date Analyzed :12/19/91
Instrument ID : F3

Anametrix ID : 9112144-01
Analyst : LW
Supervisor : JH

Dilution Factor : 1.00
Conc. Units : ug/L

CAS NO.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
99-09-2	3-NITROANILINE	53.	ND	U
83-32-9	ACENAPHTHENE	11.	ND	U
51-28-5	2,4-DINITROPHENOL	53.	ND	U
100-02-7	4-NITROPHENOL	53.	ND	U
132-64-9	DIBENZOFURAN	11.	ND	U
121-14-2	2,4-DINITROTOLUENE	11.	ND	U
84-66-2	DIETHYLPHTHALATE	11.	ND	U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	11.	ND	U
86-73-7	FLUORENE	11.	ND	U
100-01-6	4-NITROANILINE	53.	ND	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	53.	ND	U
86-30-6	N-NITROSODIPHENYLAMINE (1)	11.	ND	U
101-55-3	4-BROMOPHENYL-PHENYLETHER	11.	ND	U
118-74-1	HEXACHLOROBENZENE	11.	ND	U
87-86-5	PENTACHLOROPHENOL	53.	ND	U
85-01-8	PHENANTHRENE	11.	ND	U
120-12-7	ANTHRACENE	11.	ND	U
84-74-2	DI-N-BUTYLPHTHALATE	11.	ND	U
206-44-0	FLUORANTHENE	11.	ND	U
129-00-0	PYRENE	11.	ND	U
85-68-7	BUTYLBENZYLPHTHALATE	11.	ND	U
91-94-1	3,3'-DICHLOROBENZIDINE	21.	ND	U
56-55-3	BENZO(A)ANTHRACENE	11.	ND	U
218-01-9	CHRYSENE	11.	ND	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	11.	ND	U
117-84-0	DI-N-OCTYLPHTHALATE	11.	ND	U
205-99-2	BENZO(B)FLUORANTHENE	11.	ND	U
207-08-9	BENZO(K)FLUORANTHENE	11.	ND	U
50-32-8	BENZO(A)PYRENE	11.	ND	U
193-39-5	INDENO(1,2,3-CD)PYRENE	11.	ND	U
53-70-3	DIBENZ[A,H]ANTHRACENE	11.	ND	U
191-24-2	BENZO(G,H,I)PERYLENE	11.	ND	U
62-75-9	N-NITROSODIMETHYLAMINE	11.	ND	U
4165-61-1	ANILINE	11.	ND	U
103-33-3	AZOBENZENE	11.	ND	U
92-87-5	BENZIDINE	53.	ND	U