aqua science engineers inc.

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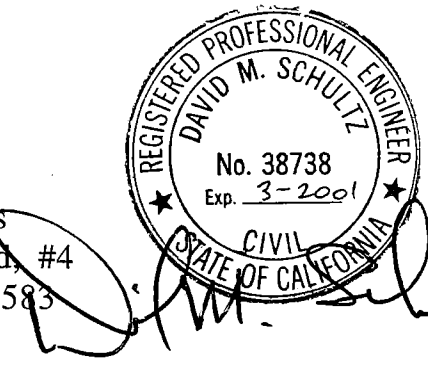
July 28, 1997

PROJECT REPORT
HALF-BURIED TANK ABANDONMENT
(ASE JOB NO. 2908)

for

Emeryville Properties
1400 Park Avenue
Emeryville, California



Submitted by:

Aqua Science Engineers
2411 Old Crow Canyon Road, #4
San Ramon, California 94583
(510) 820-9391

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APPENDICES

1.0 INTRODUCTION

This report documents the abandonment and related activities of the half-buried tank closure performed at the Emeryville Properties property located 1400 Park Avenue in Emeryville, California (Figure 1). The following tank was abandoned at the site (Figure 2):

QUANTITY	TYPE AND SIZE UST	FORMER CONTENTS
1	Steel, estimated 700 gallon	Water

The tank appeared to be made of 1/4-inch thick steel, was approximately 4-feet in diameter by 7-feet long, and was partially buried underground; only the top 8-12 inches of the tank were visible. The tank had two 1-inch diameter pipes extending out of the top of the tank. One of these pipes had a hose bib at its end (a typical valve a garden hose is hooked to), and the other pipe had an air-compressor fitting on it (apparently to pressurize the tank to extract the liquids). The tank had a 3-inch diameter flange on its top that was once connected to a valve attached to the adjacent retaining wall of the parking lot. The valve was still connected to the buried piping that led somewhere into the 1400 Park Avenue building. The end point of this pipe could not be determined inside the building. The final opening into the tank was a 12-inch diameter "manway-type" opening that had a cover held down by four threaded bolts. There was no pump or dispenser identified anywhere in relation to this tank. None of these characteristics are at all typical of a fuel related tank. No permits drawings or similar data, which could identify the tank's former usage, could be found when reviewing either the city or the county records. The tank's use, based on the afore-mentioned descriptions, was assumed to be related to an early version of a fire-suppression/sprinkler system for the building.

The scope of services provided by Aqua Science Engineers, Inc. (ASE) were conducted on behalf of our client, Emeryville Properties, and in response to the Alameda County Health Care Services Agency (ACHCSA) letter dated December 9, 1996. The following tasks were performed:

- Preparing a health and safety plan.
- Obtaining permits from appropriate agencies.
- Removing the liquids from the tank.
- Removing piping leading to and coming from the tank.
- Filling the tank with cement.
- Preparing this report of methods and findings.

2.0 PERMITS

The permit and approval required to abandon the tank was obtained by ASE from the Alameda County Health Care Services Agency (ACHCSA). A copy of the permit is attached in Appendix A. Mr. George Warren of the Emeryville Fire Department was contacted by telephone and said that his agency did not require a permit since the tank was not used for fuel storage.

3.0 MOBILIZATION

Field operations were conducted by trained technicians who are certified per the mandatory 40-hour safety program as specified in the OSHA Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). A tailgate safety meeting was conducted to review the health and safety plan. Personnel present during the activities that took place on July 18, 1997 included ASE Senior Project Manager David Allen, ASE Environmental Specialist Scott Ferriman, a representative from Jay's Welding, Ms. Gwen Tellegen representing Emeryville Properties, and Ms. Susan Hugo of the ACHCSA.

4.0 LIQUID REMOVAL

On July 18, 1997, ASE removed approximately 12 gallons of water from the tank. This water was stored on site in drums containing groundwater monitoring well purge water. This water is periodically removed from the site for recycling at a local waste-water recycling facility.

5.0 TANK PREPARATION

On July 18, 1997, the tank was made inert through the addition of 25 pounds of dry ice. After the LEL and oxygen content was found to be within an acceptable range, the pipes on top of the tank were removed by a welding torch. ASE also removed the valve, located in the adjacent retaining wall, which was apparently used to control the flow into or out of the tank.

6.0 TANK FILLING

On July 18, 1997, the tank was filled completely with approximately 3 cubic yards of concrete supplied by Right Away Redy Mix. The pipe leading from the former valve into the building was filled with a concrete plug.

7.0 AREA RESURFACING

At the request of Ms. Susan Hugo, Emeryville Properties will have the area surrounding the abandoned tank resurfaced with concrete to match existing surroundings and completely cover the tank. This work will take place upon receipt of any permits as necessary from the City of Emeryville.

8.0 CONCLUSIONS AND RECOMMENDATIONS

* The half-buried tank at the subject site has been abandoned in place by filling completely with concrete.

* Analytical results of a fluid sample collected from within the tank in 1996 identified no significant concentrations of total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015, total extractable petroleum hydrocarbons (TEPH) by modified EPA Method 8015, volatile organic compounds (VOCs) by EPA Method 8240, and semi volatile organic compounds (SVOCs) by EPA Method 8270. The sample appeared to contain only storm water. See Appendix B for a copy of the analytical report and chain of custody records.

* Water samples collected from monitoring well MW-3, downgradient of the half-buried tank, during quarterly groundwater monitoring activities identified no significant concentrations of VOCs by EPA Method 8240, total chromium by EPA Method 6010, and total lead by EPA Method 6010.

* Analytical results of a soil sample collected adjacent to the tank in 1996 identified no significant concentrations of TPH-G by modified EPA Method 8015, TEPH by modified EPA Method 8015, VOCs by EPA Method 8240, SVOCs by EPA Method 8270, and CAM 17 metals by EPA Methods 6010, 7471 and 7740. This soil sample did however contain 280 parts per million (ppm) TTLC lead by EPA Method 6010. Based on these results, this soil sample was also analyzed for STLC lead by EPA Method 6010, the results indicated 29 ppm STLC lead. The ACHCSA was made aware of these results, but did not require any further work to be performed. See Appendix B for a copy of the analytical report and chain of custody records.

* The half-buried tank abandonment represents the final environmental activities required by the ACHCSA at the subject site. ***On behalf of the property owner, Emeryville properties, ASE requests that this site be reviewed for case closure on all outstanding issues including the UST removals, the vertical hone pit, and the half-buried tank.***

ASE appreciates the opportunity to assist with the environmental needs of this property. Should questions or comments arise, please feel free to give us a call at (510) 820-9391.

Respectfully submitted,

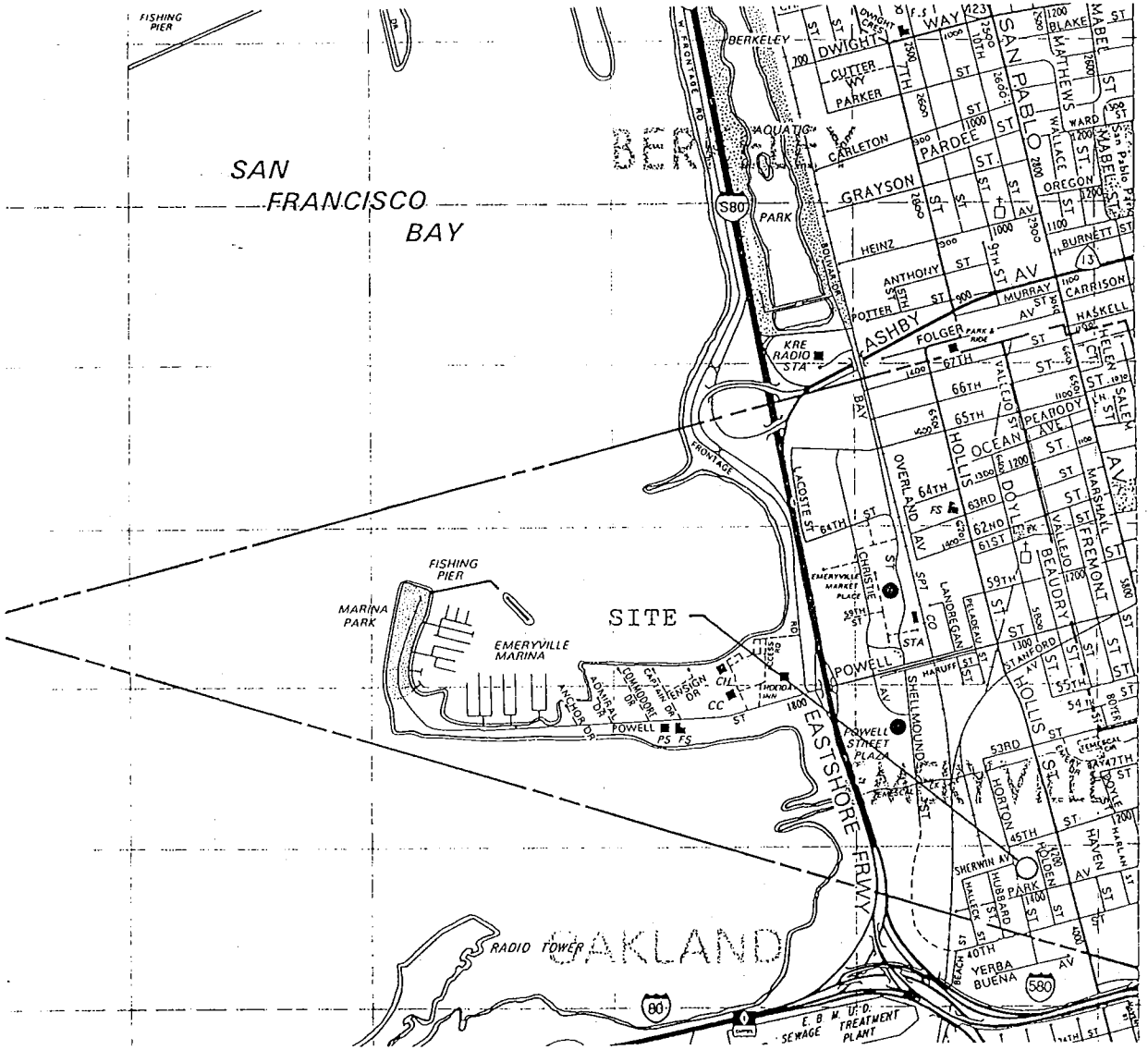
AQUA SCIENCE ENGINEERS, INC.

David Allen, R.E.A.
Senior Project Manager

Enclosures: Figure 1 and Figure 2
Appendices A & B

copies to: Ms. Gwen Tellegen, Emeryville Properties
Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. George Warren, Emeryville Fire Department.

FIGURES

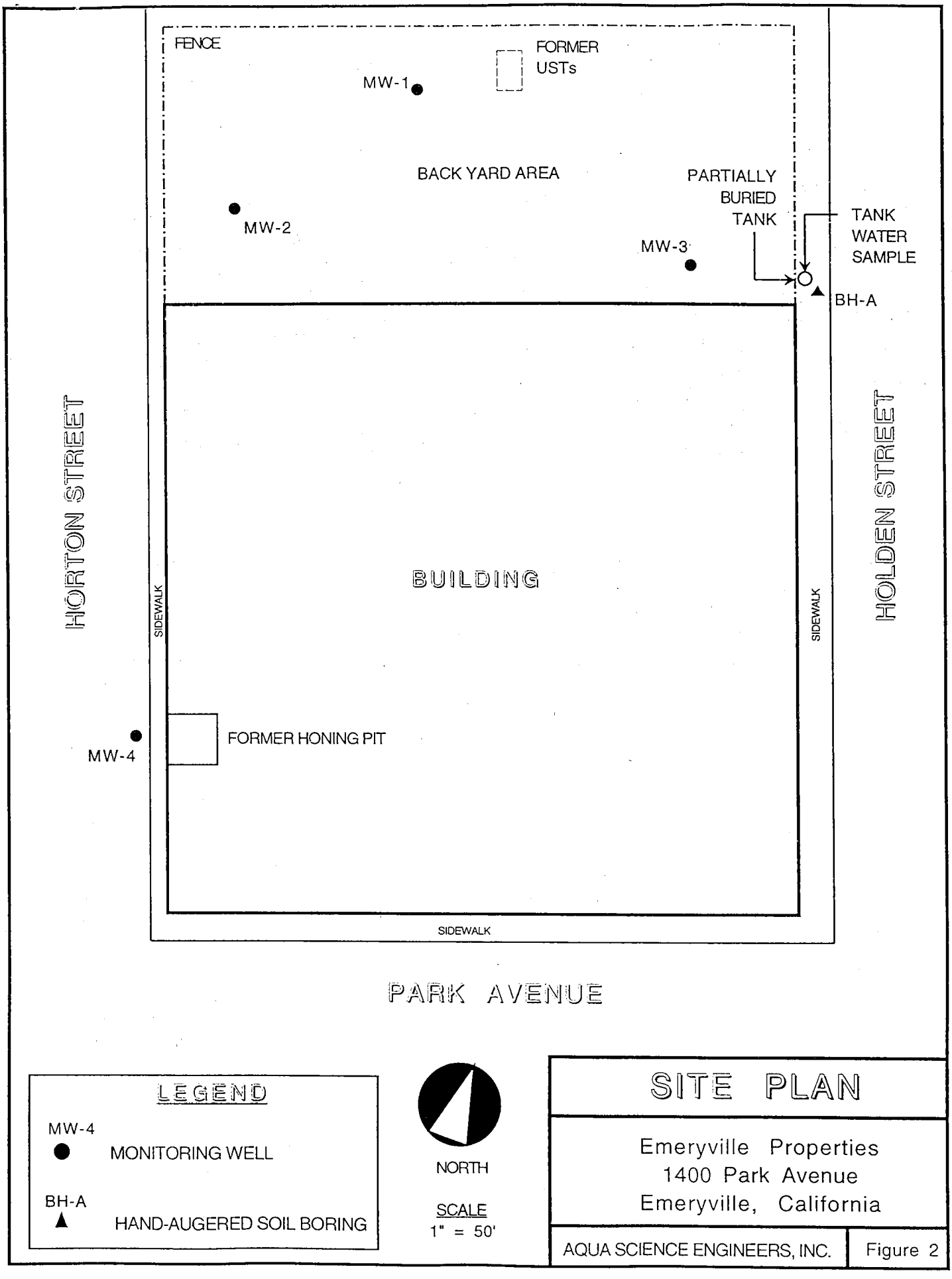


NORTH

LOCATION MAP

Emeryville Properties Facility
1400 Park Avenue
Emeryville, California

Aqua Science Engineers	Figure 1



SITE PLAN

Emeryville Properties
1400 Park Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2

APPENDIX A

PERMITS

Susan L. Hugo
Project Specialist

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
ENVIRONMENTAL PROTECTION DIVISION
1131 HARBOR BAY PARKWAY, RM 250
ALAMEDA, CA 94502-6577
PHONE # 510/567-6700
FAX # 510/337-9335

ACCEPTED
Underground Storage Tank Closure Permit Application
Alameda County Division of Hazardous Materials
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

These closure/removal plans have been received and found to be acceptable and essentially meet the requirements of State and Local Health Laws. Changes to your closure plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction/destruction.
One copy of the accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.
Any changes or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspections Department to determine if such changes meet the requirements of State and local laws.
Notify this Department at least 72 hours prior to the following required inspections:

- X Removal of Tank(s) and Piping
- ___ Sampling
- ___ Final Inspection

Issuance of a) permit to operate, b) permanent closure, is dependent on compliance with accepted plans and all applicable laws and regulations.

"THERE IS A FINANCIAL PENALTY FOR NOT OBTAINING THESE INSPECTIONS:

Contact Specialist: Susan L. Hugo 7/17/97

* NON-FUEL
ABOVEGROUND / UNDERGROUND TANK CLOSURE PLAN CLOSURE IN PLACE
* * * Complete according to attached instructions * * *

1. Name of Business EMERYVILLE PROPERTIES
   Business Owner or Contact Person (PRINT) WILLIAM LEWERENZ
2. Site Address 1400 PARK AVENUE
   City EMERYVILLE Zip 94608 Phone NONE
3. Mailing Address 699 2nd STREET
   City SAN FRANCISCO Zip 94107 Phone 415.957.1888
4. Property Owner EMERYVILLE PROPERTIES C/O WILLIAM LEWERE
   Business Name (if applicable) _____
   Address 699 2ND STREET
   City, State SAN FRANCISCO Zip 94107
5. Generator name under which tank will be manifested
   N/A
   EPA ID# under which tank will be manifested C A N/A

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 9, 1996
STID # 319

Mr. William Lewerenz
Emeryville Properties
699 Second Street
San Francisco, CA 94107

Mr. Thomas La Flamme
c/o Thomas Short Co.
1685 34th Street
Oakland, CA 94608

RE: Former Chromex / Charles Lowe / Thomas Short Company
1400 Park Street, Emeryville, California 94608

Dear Mr. Lewerenz & Mr. La Flamme:

This letter is a follow up to the on site meeting I had with Ms. Gwen Tellegan and Mr. Dave Allen of Aqua Science Engineers (ASE) on December 6, 1996 regarding the subsurface investigation related to the three underground storage tanks (USTs) and the vertical honing tank removed from the above referenced site. A work plan for soil and groundwater investigation dated December 2, 1996 and submitted by ASE for the subject site was reviewed and verbally approved by this agency.

During the site visit, ASE was implementing the approved work plan by installing a shallow groundwater monitoring well downgradient of the former honing tank. This well should be included in the groundwater monitoring program for the site. As part of the chromium vault investigation, three monitoring wells (MW-1, MW-2 & MW-3) were previously installed at the site. The chromium vault investigation was given a "no further action" status in the closure letter issued by this office on December 13, 1995. However, continued groundwater monitoring is required concerning the release associated with the three USTs removed from the site. Groundwater monitoring well MW-1 which is downgradient of the former USTs was sampled on November 6, 1995. Results showed the presence of low levels of toluene (4 ppb) , xylene (7.8 ppb) , PCE (7.9 ppb), DCE (2.6 ppb), and TCE (5.8ppb). TPH diesel and TPH motor oil were not detected in the water sample. Monitoring well MW-1 must be sampled for the following target compounds ; TPH gasoline, TPH diesel, TPH motor oil, BTEX , MTBE and PAH's (if TPH diesel is present). At a minimum, two more quarters of sampling must be conducted in well MW-1.

With regards to the UST found on the sidewalk along Holden Street, more information is warranted as far as the historical use of the tank, installation and piping diagrams, etc. Any openings /pipings associated with the UST must be capped to prevent water infiltration , usage and /or tampering by others since the UST appears to be accessible to the public. The UST must be properly closed by removal or closure in place. Please submit a UST closure application and provide our office with a copy of the results of the sample collected from the tank and the soil sample collected near the tank area no later than January 9, 1997.

If you have any questions concerning this letter or the subject site, please contact me at (510) 567-6780.

Sincerely,

Susan L. Hugo

Susan L. Hugo
Senior Hazardous Materials Specialist

c: Mee Ling Tung, Director, Environmental Health
Gordon Coleman, Acting Chief, Environmental Protection Division
Sum Arigala, San Francisco Bay, RWQCB
Gwen Tellegan, 2300 E. Imperial Highway, El Segundo, CA 90245
Dave Allen, ASE, 2411 Old Crow Canyon Road, # 4, San Ramon, CA 94583
SH / files

APPENDIX B

ANALYTICAL RESULTS

CORE LABORATORIES

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 961377
Prepared For:

Brea Canon Oil Co.
Gwen Tellegen
2300 E.Imperial Hwy 7th Floor
El Segundo, CA 90245

Date: 06/03/96

Elizabeth Awinger for
Signature

6/3/96
Date:

Name: Timothy A. Scott

Core Laboratories
1250 Gene Autry Way
Anaheim, CA 92805

Title: Laboratory Manager

CA.E.L.A.P. 1174
L.A.C.S.D. 10146

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CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:00
WORK DESCRIPTION...: Tank Water

LABORATORY I.D...: 961377-0001
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
TEPH - Carbon Chain Liquid		*1		EPA 8015 (modified)	05/30/96	TH
C8-C9	ND	1.0	mg/L	EPA 8015 (modified)		
C10-C11	ND	1.0	mg/L	EPA 8015 (modified)		
C12-C13	ND	1.0	mg/L	EPA 8015 (modified)		
C14-C15	ND	1.0	mg/L	EPA 8015 (modified)		
C16-C17	ND	1.0	mg/L	EPA 8015 (modified)		
C18-C19	ND	1.0	mg/L	EPA 8015 (modified)		
C20-C23	ND	1.0	mg/L	EPA 8015 (modified)		
C24-C27	ND	1.0	mg/L	EPA 8015 (modified)		
C28-C31	ND	1.0	mg/L	EPA 8015 (modified)		
C32-C35	ND	1.0	mg/L	EPA 8015 (modified)		
C36-C39	ND	1.0	mg/L	EPA 8015 (modified)		
C40-C43	ND	1.0	mg/L	EPA 8015 (modified)		
C44+	ND	1.0	mg/L	EPA 8015 (modified)		
Total	ND	1.0	mg/L	EPA 8015 (modified)		
Liquid-Liquid Extraction for BNAs	COMPLETED	-----	N/A	EPA 3520	05/30/96	C.M
Volatile Organics by GC/MS		*1		EPA 624	05/31/96	CIS
Acetone	ND	10	ug/L	EPA 624		
Benzene	ND	5	ug/L	EPA 624		
Bromodichloromethane	ND	5	ug/L	EPA 624		
Bromoform	ND	5	ug/L	EPA 624		
Bromomethane	ND	10	ug/L	EPA 624		
2-Butanone	ND	10	ug/L	EPA 624		
Carbon disulfide	ND	5	ug/L	EPA 624		
Carbon tetrachloride	ND	5	ug/L	EPA 624		
Chlorobenzene	ND	5	ug/L	EPA 624		
Chloroethane	ND	10	ug/L	EPA 624		
2-Chloroethylvinyl ether	ND	10	ug/L	EPA 624		
Chloroform	ND	5	ug/L	EPA 624		
Chloromethane	ND	10	ug/L	EPA 624		
Dibromochloromethane	ND	5	ug/L	EPA 624		
1,2-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,3-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,4-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,1-Dichloroethane	ND	5	ug/L	EPA 624		
1,2-Dichloroethane	ND	5	ug/L	EPA 624		
1,1-Dichloroethene	ND	5	ug/L	EPA 624		
Total 1,2-Dichloroethenes	ND	5	ug/L	EPA 624		
1,2-Dichloropropane	ND	5	ug/L	EPA 624		
cis-1,3-Dichloropropene	ND	5	ug/L	EPA 624		
trans-1,3-Dichloropropene	ND	5	ug/L	EPA 624		

1250 Gene Autry Way
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(714) 937-1094

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TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Ethylbenzene	ND	5	ug/L	EPA 624		
2-Hexanone	ND	10	ug/L	EPA 624		
Methylene Chloride	ND	5	ug/L	EPA 624		
4-Methyl-2-pentanone	ND	10	ug/L	EPA 624		
Styrene	ND	5	ug/L	EPA 624		
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 624		
Tetrachloroethene	ND	5	ug/L	EPA 624		
Toluene	ND	5	ug/L	EPA 624		
1,1,1-Trichloroethane	ND	5	ug/L	EPA 624		
1,1,2-Trichloroethane	ND	5	ug/L	EPA 624		
Trichloroethene	ND	5	ug/L	EPA 624		
Vinyl acetate	ND	10	ug/L	EPA 624		
Vinyl chloride	ND	10	ug/L	EPA 624		
Total Xylenes	ND	5	ug/L	EPA 624		
d4-1,2-Dichloroethane (SURROGATE)	100	0	% Recovery	76-114% QC LIMITS		
d8-Toluene (SURROGATE)	95	0	% Recovery	88-110% QC LIMITS		
4-Bromofluorobenzene (SURROGATE)	87	0	% Recovery	86-115% QC LIMITS		
Semivolatile Organics by GC/MS		*1		EPA 625	05/30/96	CIS
Acenaphthene	ND	10	ug/L	EPA 625		
Acenaphthylene	ND	10	ug/L	EPA 625		
Anthracene	ND	10	ug/L	EPA 625		
Benzidine	ND	20	ug/L	EPA 625		
Benzo(a)anthracene	ND	10	ug/L	EPA 625		
Benzo(b)fluoranthene	ND	10	ug/L	EPA 625		
Benzo(k)fluoranthene	ND	10	ug/L	EPA 625		
Benzoic acid	ND	20	ug/L	EPA 625		
Benzo(ghi)perylene	ND	10	ug/L	EPA 625		
Benzo(a)pyrene	ND	10	ug/L	EPA 625		
Benzyl alcohol	ND	10	ug/L	EPA 625		
Bis(2-chloroethoxy)methane	ND	10	ug/L	EPA 625		
Bis(2-chloroethyl)ether	ND	10	ug/L	EPA 625		
Bis(2-chloroisopropyl)ether	ND	10	ug/L	EPA 625		
Bis(2-ethylhexyl) phthalate	ND	10	ug/L	EPA 625		
4-Bromophenyl phenyl ether	ND	10	ug/L	EPA 625		
Butyl benzyl phthalate	ND	10	ug/L	EPA 625		
4-Chloroaniline	ND	20	ug/L	EPA 625		
4-Chloro-3-methylphenol	ND	10	ug/L	EPA 625		
2-Chloronaphthalene	ND	10	ug/L	EPA 625		
2-Chlorophenol	ND	10	ug/L	EPA 625		
4-Chlorophenyl phenyl ether	ND	10	ug/L	EPA 625		
Chrysene	ND	10	ug/L	EPA 625		
Di-n-butyl phthalate	ND	10	ug/L	EPA 625		
1,2-Dichlorobenzene	ND	10	ug/L	EPA 625		

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TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
1,3-Dichlorobenzene	ND	10	ug/L	EPA 625		
1,4-Dichlorobenzene	ND	10	ug/L	EPA 625		
3,3'-Dichlorobenzidine	ND	20	ug/L	EPA 625		
2,4-Dichlorophenol	ND	20	ug/L	EPA 625		
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 625		
Dibenzofuran	ND	10	ug/L	EPA 625		
Diethyl phthalate	ND	10	ug/L	EPA 625		
2,4-Dimethylphenol	ND	10	ug/L	EPA 625		
Dimethyl phthalate	ND	10	ug/L	EPA 625		
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 625		
2,4-Dinitrophenol	ND	10	ug/L	EPA 625		
2,4-Dinitrotoluene	ND	10	ug/L	EPA 625		
2,6-Dinitrotoluene	ND	10	ug/L	EPA 625		
Di-n-octyl phthalate	ND	10	ug/L	EPA 625		
Fluorene	ND	10	ug/L	EPA 625		
Fluoranthene	ND	10	ug/L	EPA 625		
Hexachlorobenzene	ND	10	ug/L	EPA 625		
Hexachlorobutadiene	ND	10	ug/L	EPA 625		
Hexachlorocyclopentadiene	ND	10	ug/L	EPA 625		
Hexachloroethane	ND	10	ug/L	EPA 625		
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 625		
Isophorone	ND	10	ug/L	EPA 625		
2-Methylnaphthalene	ND	10	ug/L	EPA 625		
2-Methylphenol	ND	10	ug/L	EPA 625		
4-Methylphenol	ND	10	ug/L	EPA 625		
2-Nitroaniline	ND	10	ug/L	EPA 625		
3-Nitroaniline	ND	50	ug/L	EPA 625		
4-Nitroaniline	ND	50	ug/L	EPA 625		
2-Nitrophenol	ND	10	ug/L	EPA 625		
4-Nitrophenol	ND	10	ug/L	EPA 625		
N-Nitrosodimethylamine	ND	50	ug/L	EPA 625		
N-Nitrosodi-n-propylamine	ND	10	ug/L	EPA 625		
N-Nitrosodiphenylamine	ND	10	ug/L	EPA 625		
Naphthalene	ND	10	ug/L	EPA 625		
Nitrobenzene	ND	10	ug/L	EPA 625		
Pentachlorophenol	ND	20	ug/L	EPA 625		
Phenanthrene	ND	10	ug/L	EPA 625		
Phenol	ND	10	ug/L	EPA 625		
Pyrene	ND	10	ug/L	EPA 625		
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 625		
2,4,5-Trichlorophenol	ND	10	ug/L	EPA 625		
2,4,6-Trichlorophenol	ND	10	ug/L	EPA 625		
2-Fluorophenol (SURROGATE)	4(a)	0	% Recovery	21-110% QC LIMITS		
d6-Phenol (SURROGATE)	36	0	% Recovery	10-110 QC LIMITS		
d5-Nitrobenzene (SURROGATE)	57	0	% Recovery	34-114% QC LIMITS		

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REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
2-Fluorobiphenyl (SURROGATE)	54	0	% Recovery	43-116% QC LIMITS		
2,4,6-Tribromophenol (SURROGATE)	41	0	% Recovery	10-122% QC LIMITS		
d14-Terphenyl (SURROGATE)	76	0	% Recovery	33-141% QC LIMITS		
Total Hydrocarbons Extraction	COMPLETED	-----	N/A	Cal. DHS Method	05/31/96	TH

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LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
TEPH - Carbon Chain Solids		*1		EPA 8015 (modified)	05/30/96	TH
C8-C9	ND	1.0	mg/kg	EPA 8015 (modified)		
C10-C11	ND	1.0	mg/kg	EPA 8015 (modified)		
C12-C13	ND	1.0	mg/kg	EPA 8015 (modified)		
C14-C15	ND	1.0	mg/kg	EPA 8015 (modified)		
C16-C17	3.7	1.0	mg/kg	EPA 8015 (modified)		
C18-C19	9.1	1.0	mg/kg	EPA 8015 (modified)		
C20-C23	17	1.0	mg/kg	EPA 8015 (modified)		
C24-C27	49	1.0	mg/kg	EPA 8015 (modified)		
C28-C31	45	1.0	mg/kg	EPA 8015 (modified)		
C32-C35	28	1.0	mg/kg	EPA 8015 (modified)		
C36-C39	13	1.0	mg/kg	EPA 8015 (modified)		
C40-C43	8.5	1.0	mg/kg	EPA 8015 (modified)		
C44+	ND	1.0	mg/kg	EPA 8015 (modified)		
Total	170	1.0	mg/kg	EPA 8015 (modified)		
Metals Digestion - Solids	COMPLETED	-----	N/A	EPA 3050	05/30/96	RH
Sonication Extraction for BNAs	COMPLETED	-----	N/A	EPA 3550	05/30/96	C.M
Volatile Organics by GC/MS		*1		EPA 8240	06/01/96	CIS
Acetone	ND	10	ug/kg	EPA 8240		
Benzene	ND	5	ug/kg	EPA 8240		
Bromodichloromethane	ND	5	ug/kg	EPA 8240		
Bromoform	ND	5	ug/kg	EPA 8240		
Bromomethane	ND	10	ug/kg	EPA 8240		
2-Butanone	ND	10	ug/kg	EPA 8240		
Carbon disulfide	ND	5	ug/kg	EPA 8240		
Carbon tetrachloride	ND	5	ug/kg	EPA 8240		
Chlorobenzene	ND	5	ug/kg	EPA 8240		
Chlorodibromomethane	ND	5	ug/kg	EPA 8240		
Chloroethane	ND	10	ug/kg	EPA 8240		
2-Chloroethylvinyl ether	ND	10	ug/kg	EPA 8240		
Chloroform	ND	5	ug/kg	EPA 8240		
Chloromethane	ND	10	ug/kg	EPA 8240		
1,2-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,3-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,4-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,1-Dichloroethane	ND	5	ug/kg	EPA 8240		
1,2-Dichloroethane	ND	5	ug/kg	EPA 8240		
1,1-Dichloroethene	ND	5	ug/kg	EPA 8240		
cis-1,2-Dichloroethene	ND	5	ug/kg	EPA 8240		
trans-1,2-Dichloroethene	ND	5	ug/kg	EPA 8240		

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LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
1,2-Dichloropropane	ND	5	ug/kg	EPA 8240		
cis-1,3-Dichloropropene	ND	5	ug/kg	EPA 8240		
trans-1,3-Dichloropropene	ND	5	ug/kg	EPA 8240		
Ethylbenzene	ND	5	ug/kg	EPA 8240		
2-Hexanone	ND	10	ug/kg	EPA 8240		
Methylene Chloride	ND	5	ug/kg	EPA 8240		
4-Methyl-2-pentanone	ND	10	ug/kg	EPA 8240		
Styrene	ND	5	ug/kg	EPA 8240		
1,1,2,2-Tetrachloroethane	ND	5	ug/kg	EPA 8240		
Tetrachloroethene	ND	5	ug/kg	EPA 8240		
1,1,1-Trichloroethane	ND	5	ug/kg	EPA 8240		
1,1,2-Trichloroethane	ND	5	ug/kg	EPA 8240		
Trichloroethene	ND	5	ug/kg	EPA 8240		
Toluene	ND	5	ug/kg	EPA 8240		
Trichlorofluoromethane	ND	5	ug/kg	EPA 8240		
Vinyl acetate	ND	10	ug/kg	EPA 8240		
Vinyl chloride	ND	10	ug/kg	EPA 8240		
Total Xylenes	ND	5	ug/kg	EPA 8240		
d4-Dichloroethane (SURROGATE)	104	0	% Recovery	70-121% QC LIMITS		
d8-Toluene (SURROGATE)	101	0	% Recovery	84-138% QC LIMITS		
4-Bromofluorobenzene (SURROGATE)	126(a)	0	% Recovery	74-121% QC LIMITS		
Semivolatile Organics by GC/MS		*10		EPA 8270	05/30/96	CIS
Acenaphthene	ND	3300	ug/kg	EPA 8270		
Acenaphthylene	ND	3300	ug/kg	EPA 8270		
Anthracene	ND	3300	ug/kg	EPA 8270		
Benzidine	ND	6700	ug/kg	EPA 8270		
Benzo(a)anthracene	ND	3300	ug/kg	EPA 8270		
Benzo(b)fluoranthene	ND	3300	ug/kg	EPA 8270		
Benzo(k)fluoranthene	ND	3300	ug/kg	EPA 8270		
Benzoic acid	ND	6700	ug/kg	EPA 8270		
Benzo(ghi)perylene	ND	3300	ug/kg	EPA 8270		
Benzo(a)pyrene	ND	3300	ug/kg	EPA 8270		
Benzyl alcohol	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroethoxy)methane	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroethyl)ether	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroisopropyl)ether	ND	3300	ug/kg	EPA 8270		
Bis(2-ethylhexyl) phthalate	ND	3300	ug/kg	EPA 8270		
4-Bromophenyl phenyl ether	ND	3300	ug/kg	EPA 8270		
Butyl benzyl phthalate	ND	3300	ug/kg	EPA 8270		
4-Chloroaniline	ND	6700	ug/kg	EPA 8270		
4-Chloro-3-methylphenol	ND	3300	ug/kg	EPA 8270		
2-Chloronaphthalene	ND	3300	ug/kg	EPA 8270		
2-Chlorophenol	ND	3300	ug/kg	EPA 8270		

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LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Chlorophenyl phenyl ether	ND	3300	ug/kg	EPA 8270		
Chrysene	ND	3300	ug/kg	EPA 8270		
Di-n-butyl phthalate	ND	3300	ug/kg	EPA 8270		
1,2-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
1,3-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
1,4-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
3,3'-Dichlorobenzidine	ND	3300	ug/kg	EPA 8270		
2,4-Dichlorophenol	ND	6700	ug/kg	EPA 8270		
Dibenzo(a,h)anthracene	ND	3300	ug/kg	EPA 8270		
Dibenzofuran	ND	3300	ug/kg	EPA 8270		
Diethyl phthalate	ND	3300	ug/kg	EPA 8270		
2,4-Dimethylphenol	ND	3300	ug/kg	EPA 8270		
Dimethyl phthalate	ND	3300	ug/kg	EPA 8270		
4,6-Dinitro-2-methylphenol	ND	6700	ug/kg	EPA 8270		
2,4-Dinitrophenol	ND	3300	ug/kg	EPA 8270		
2,4-Dinitrotoluene	ND	3300	ug/kg	EPA 8270		
2,6-Dinitrotoluene	ND	3300	ug/kg	EPA 8270		
Di-n-octyl phthalate	ND	3300	ug/kg	EPA 8270		
Fluorene	ND	3300	ug/kg	EPA 8270		
Fluoranthene	ND	3300	ug/kg	EPA 8270		
Hexachlorobenzene	ND	3300	ug/kg	EPA 8270		
Hexachlorobutadiene	ND	3300	ug/kg	EPA 8270		
Hexachlorocyclopentadiene	ND	3300	ug/kg	EPA 8270		
Hexachloroethane	ND	3300	ug/kg	EPA 8270		
Indeno(1,2,3-cd)pyrene	ND	3300	ug/kg	EPA 8270		
Isophorone	ND	3300	ug/kg	EPA 8270		
2-Methylnaphthalene	ND	3300	ug/kg	EPA 8270		
2-Methylphenol	ND	3300	ug/kg	EPA 8270		
4-Methylphenol	ND	3300	ug/kg	EPA 8270		
2-Nitroaniline	ND	3300	ug/kg	EPA 8270		
3-Nitroaniline	ND	17000	ug/kg	EPA 8270		
4-Nitroaniline	ND	17000	ug/kg	EPA 8270		
2-Nitrophenol	ND	6700	ug/kg	EPA 8270		
4-Nitrophenol	ND	6700	ug/kg	EPA 8270		
N-Nitrosodimethylamine	ND	17000	ug/kg	EPA 8270		
N-Nitrosodi-n-propylamine	ND	3300	ug/kg	EPA 8270		
N-Nitrosodiphenylamine	ND	3300	ug/kg	EPA 8270		
Naphthalene	ND	3300	ug/kg	EPA 8270		
Nitrobenzene	ND	3300	ug/kg	EPA 8270		
Pentachlorophenol	ND	6700	ug/kg	EPA 8270		
Phenanthrene	ND	3300	ug/kg	EPA 8270		
Phenol	ND	3300	ug/kg	EPA 8270		
Pyrene	ND	3300	ug/kg	EPA 8270		
1,2,4-Trichlorobenzene	ND	3300	ug/kg	EPA 8270		
2,4,5-Trichlorophenol	ND	3300	ug/kg	EPA 8270		

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LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECH
2,4,6-Trichlorophenol	ND	3300	ug/kg	EPA 8270		
2-Fluorophenol (SURROGATE)	103	0	% recovery	25-121% QC LIMITS		
d6-Phenol (SURROGATE)	104	0	% recovery	24-125% QC LIMITS		
d5-Nitrobenzene (SURROGATE)	120	0	% recovery	23-120% QC LIMITS		
2-Fluorobiphenyl (SURROGATE)	121(a)	0	% recovery	30-115% QC LIMITS		
2,4,6-Tribromophenol (SURROGATE)	119	0	% recovery	19-122% QC LIMITS		
d14-Terphenyl (SURROGATE)	123	0	% recovery	18-147% QC LIMITS		
CAM Metals		*100		EPA 6010	05/30/96	EAW
Antimony (Sb)	32	5.0	mg/kg	EPA 6010		
Arsenic (As)	21	5.0	mg/kg	EPA 6010		
Barium (Ba)	93	5.0	mg/kg	EPA 6010		
Beryllium (Be)	ND	5.0	mg/kg	EPA 6010		
Cadmium (Cd)	ND	5.0	mg/kg	EPA 6010		
Chromium (Cr)	42	5.0	mg/kg	EPA 6010		
Cobalt (Co)	ND	5.0	mg/kg	EPA 6010		
Copper (Cu)	43	5.0	mg/kg	EPA 6010		
Lead (Pb)	280	5.0	mg/kg	EPA 6010		
Molybdenum (Mo)	9.5	5.0	mg/kg	EPA 6010		
Nickel (Ni)	20	5.0	mg/kg	EPA 6010		
Silver (Ag)	11	5.0	mg/kg	EPA 6010		
Thallium (Tl)	ND	5.0	mg/kg	EPA 6010		
Vanadium (V)	20	5.0	mg/kg	EPA 6010		
Zinc (Zn)	150	5.0	mg/kg	EPA 6010		
Mercury (Hg)	1.70	0.0002	mg/kg	7471	05/30/96	RH
Selenium (Se)	0.27	0.20	mg/kg	7740	05/30/96	EAW
Total Hydrocarbons Extraction	COMPLETED	-----	N/A	Cal. DHS Method	05/31/96	TH

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QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Mercury (Hg) REPORTING LIMIT/DF: 0.0002 UNITS:mg/kg				DATE/TIME ANALYZED:05/30/96 08:00 METHOD REFERENCE :7471						QC BATCH NUMBER:952520 TECHNICIAN:RH
BLANK	ICB	IB053096	<0.0002							
BLANK	CCB	CB053096	<0.0002							
BLANK	MB	MB053096	<0.0002							
STANDARD	ICVS	M94441	0.23			0.2	115			
STANDARD	CCVS	M94441	0.17			0.2	85			
STANDARD	LCS	M50052	0.24			0.2	120			
SPIKE	BLANK	053096-1	0.50					0.4	0.1	100
PARAMETER:Selenium (Se) REPORTING LIMIT/DF: 0.002 UNITS:mg/kg				DATE/TIME ANALYZED:05/30/96 14:48 METHOD REFERENCE :7740						QC BATCH NUMBER:952521 TECHNICIAN:EAW
BLANK	ICB	IB053096	<0.002							
BLANK	MB	MB053096	<0.002							
BLANK	CCB	CB053096	<0.002							
STANDARD	ICVS	M50142/43	0.026			0.025	104			
STANDARD	LCS	M40713/14	0.026			0.025	104			
STANDARD	CCVS	M50142/43	0.025			0.025	100			
SPIKE	MATRIX	961394-1	0.024					0.003	0.025	84
DUPLICATE	MS/MSD	961394-1	0.024	0.023	4					

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QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288S DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952542

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
C8-C9	METHOD	MB053096	1	<1.0	1.0	mg/kg
C10-C11	METHOD	MB053096	1	<1.0	1.0	mg/kg
C12-C13	METHOD	MB053096	1	<1.0	1.0	mg/kg
C14-C15	METHOD	MB053096	1	<1.0	1.0	mg/kg
C16-C17	METHOD	MB053096	1	<1.0	1.0	mg/kg
C18-C19	METHOD	MB053096	1	<1.0	1.0	mg/kg
C20-C23	METHOD	MB053096	1	<1.0	1.0	mg/kg
C24-C27	METHOD	MB053096	1	<1.0	1.0	mg/kg
C28-C31	METHOD	MB053096	1	<1.0	1.0	mg/kg
C32-C35	METHOD	MB053096	1	<1.0	1.0	mg/kg
C36-C39	METHOD	MB053096	1	<1.0	1.0	mg/kg
C40-C43	METHOD	MB053096	1	<1.0	1.0	mg/kg
C44+	METHOD	MB053096	1	<1.0	1.0	mg/kg
Total	METHOD	MB053096	1	<1.0	1.0	mg/kg

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QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288S DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952542

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
Total	MATRIX	961364-17	1	570	0	1000	57	1.0	mg/kg
	MATRIX DUP	961364-17	1	584	0	1000	58	1.0	mg/kg
	MATRIX	961347-36	1	585	0	1000	59	1.0	mg/kg
	MATRIX DUP	961347-36	1	598	0	1000	60	1.0	mg/kg

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QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288L DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952543

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
C8-C9	METHOD	MB053096	1	<1.0	1.0	mg/L
C10-C11	METHOD	MB053096	1	<1.0	1.0	mg/L
C12-C13	METHOD	MB053096	1	<1.0	1.0	mg/L
C14-C15	METHOD	MB053096	1	<1.0	1.0	mg/L
C16-C17	METHOD	MB053096	1	<1.0	1.0	mg/L
C18-C19	METHOD	MB053096	1	<1.0	1.0	mg/L
C20-C23	METHOD	MB053096	1	<1.0	1.0	mg/L
C24-C27	METHOD	MB053096	1	<1.0	1.0	mg/L
C28-C31	METHOD	MB053096	1	<1.0	1.0	mg/L
C32-C35	METHOD	MB0530969	1	<1.0	1.0	mg/L
C36-C39	METHOD	MB053096	1	<1.0	1.0	mg/L
C40-C43	METHOD	MB053096	1	<1.0	1.0	mg/L
C44+	METHOD	MB053096	1	<1.0	1.0	mg/L
Total	METHOD	MB053096	1	<1.0	1.0	mg/L

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QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288L DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952543

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
Total	MATRIX	961376-27	1	802	0	1000	80	1.0	mg/L
	MATRIX DUP	961376-27	1	816	0	1000	82	1.0	mg/L

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QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acenaphthene	METHOD	053096	1	ND	330	ug/kg
Acenaphthylene	METHOD	053096	1	ND	330	ug/kg
Anthracene	METHOD	053096	1	ND	330	ug/kg
Benzidine	METHOD	053096	1	ND	660	ug/kg
Benzo(a)anthracene	METHOD	053096	1	ND	330	ug/kg
Benzo(b)fluoranthene	METHOD	053096	1	ND	330	ug/kg
Benzo(k)fluoranthene	METHOD	053096	1	ND	330	ug/kg
Benzoic acid	METHOD	053096	1	ND	660	ug/kg
Benzo(ghi)perylene	METHOD	053096	1	ND	330	ug/kg
Benzo(a)pyrene	METHOD	053096	1	ND	330	ug/kg
Benzyl alcohol	METHOD	053096	1	ND	330	ug/kg
Bis(2-chloroisopropyl)ether	METHOD	053096	1	ND	330	ug/kg
Bis(2-ethylhexyl)phthalate	METHOD	053096	1	ND	330	ug/kg
4-Bromophenyl phenyl ether	METHOD	053096	1	ND	330	ug/kg
Butyl benzyl phthalate	METHOD	053096	1	ND	330	ug/kg
4-Chloroaniline	METHOD	053096	1	ND	660	ug/kg
4-Chloro-3-methylphenol	METHOD	053096	1	ND	330	ug/kg
2-Chloronaphthalene	METHOD	053096	1	ND	330	ug/kg
2-Chlorophenol	METHOD	053096	1	ND	330	ug/kg
4-Chlorophenyl phenyl ether	METHOD	053096	1	ND	330	ug/kg
Chrysene	METHOD	053096	1	ND	330	ug/kg
Di-n-butyl phthalate	METHOD	053096	1	ND	330	ug/kg
1,2-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
1,3-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
1,4-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
3,3'-Dichlorobenzidine	METHOD	053096	1	ND	660	ug/kg
2,4-Dichlorophenol	METHOD	053096	1	ND	660	ug/kg
Dibenzo(a,h)anthracene	METHOD	053096	1	ND	330	ug/kg
Dibenzofuran	METHOD	053096	1	ND	330	ug/kg
Diethyl phthalate	METHOD	053096	1	ND	330	ug/kg
2,4-Dimethylphenol	METHOD	053096	1	ND	330	ug/kg
Dimethyl phthalate	METHOD	053096	1	ND	330	ug/kg
4,6-Dinitro-2-methylphenol	METHOD	053096	1	ND	660	ug/kg
2,4-Dinitrophenol	METHOD	053096	1	ND	330	ug/kg
2,4-Dinitrotoluene	METHOD	053096	1	ND	330	ug/kg
2,6-Dinitrotoluene	METHOD	053096	1	ND	330	ug/kg
Di-n-octyl phthalate	METHOD	053096	1	ND	330	ug/kg
Fluorene	METHOD	053096	1	ND	330	ug/kg
Fluoranthene	METHOD	053096	1	ND	330	ug/kg
Hexachlorobenzene	METHOD	053096	1	ND	330	ug/kg
Hexachlorobutadiene	METHOD	053096	1	ND	330	ug/kg
Hexachloroethane	METHOD	053096	1	ND	330	ug/kg
Indeno(1,2,3-cd)pyrene	METHOD	053096	1	ND	330	ug/kg
Isophorone	METHOD	053096	1	ND	330	ug/kg
2-Methylnaphthalene	METHOD	053096	1	ND	330	ug/kg
2-Methylphenol	METHOD	053096	1	ND	330	ug/kg
4-Methylphenol	METHOD	053096	1	ND	330	ug/kg
2-Nitroaniline	METHOD	053096	1	ND	330	ug/kg

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QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
3-Nitroaniline	METHOD	053096	1	ND	1600	ug/kg
4-Nitroaniline	METHOD	053096	1	ND	330	ug/kg
2-Nitrophenol	METHOD	053096	1	ND	330	ug/kg
4-Nitrophenol	METHOD	053096	1	ND	1600	ug/kg
N-Nitrosodimethylamine	METHOD	053096	1	ND	330	ug/kg
N-Nitrosodi-n-propylamine	METHOD	053096	1	ND	330	ug/kg
N-Nitrosodiphenylamine	METHOD	053096	1	ND	330	ug/kg
Naphthalene	METHOD	053096	1	ND	330	ug/kg
Nitrobenzene	METHOD	053096	1	ND	660	ug/kg
Pentachlorophenol	METHOD	053096	1	ND	330	ug/kg
Phenanthrene	METHOD	053096	1	ND	330	ug/kg
Phenol	METHOD	053096	1	ND	330	ug/kg
Pyrene	METHOD	053096	1	ND	330	ug/kg
1,2,4-Trichlorobenzene	METHOD	053096	1	ND	330	ug/kg
2,4,5-Trichlorophenol	METHOD	053096	1	ND	330	ug/kg
2,4,6-Trichlorophenol	METHOD	053096	1	ND	330	ug/kg
2-Fluorophenol (SURROGATE)	METHOD	053096	1	86	25-121	%Recovery
d6-Phenol (SURROGATE)	METHOD	053096	1	89	24-125	%Recovery
d5-Nitrobenzene (SURROGATE)	METHOD	053096	1	85	23-120	%Recovery
2-Fluorobiphenyl (SURROGATE)	METHOD	053096	1	81	30-115	%Recovery
2,4,6-Tribromophenol (SURROGATE)	METHOD	053096	1	95	19-122	%Recovery
d14-Terphenyl (SURROGATE)	METHOD	053096	1	86	18-147	%Recovery

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QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Phenol	BLANK	053096	3326	0	3300	ug/kg	101	1.4	60-117	36
	BLANK DUP	053096	3279	0	3300	ug/kg	99			
2-Chlorophenol	BLANK	053096	2589	0	3300	ug/kg	78	8.2	70-120	50
	BLANK DUP	053096	2809	0	3300	ug/kg	85			
1,4-Dichlorobenzene	BLANK	053096	1617	0	1700	ug/kg	95	1.4	71-123	27
	BLANK DUP	053096	1595	0	1700	ug/kg	94			
N-Nitroso-di-n-propylamine	BLANK	053096	1704	0	1700	ug/kg	100	1.8	66-129	38
	BLANK DUP	053096	1674	0	1700	ug/kg	98			
1,2,4-Trichlorobenzene	BLANK	053096	1600	0	1700	ug/kg	94	1.1	84-125	23
	BLANK DUP	053096	1617	0	1700	ug/kg	95			
4-Chloro-3-methylphenol	BLANK	053096	2769	0	3300	ug/kg	84	4.6	59-126	33
	BLANK DUP	053096	2899	0	3300	ug/kg	88			
Acenaphthene	BLANK	053096	1637	0	1700	ug/kg	96	8.3	66-134	19
	BLANK DUP	053096	1778	0	1700	ug/kg	105			
4-Nitrophenol	BLANK	053096	2213	0	3300	ug/kg	67	0.1	37-118	50
	BLANK DUP	053096	2210	0	3300	ug/kg	67			
2,4-Dinitrotoluene	BLANK	053096	1598	0	1700	ug/kg	94	3.5	53-116	47
	BLANK DUP	053096	1543	0	1700	ug/kg	91			
Pentachlorophenol	BLANK	053096	2895	0	3300	ug/kg	88	7.9	47-143	47
	BLANK DUP	053096	2676	0	3300	ug/kg	81			
Pyrene	BLANK	053096	1821	0	1700	ug/kg	107	11.1	71-157	36
	BLANK DUP	053096	2034	0	1700	ug/kg	120			
2-Fluorophenol (SURROGATE)	BLANK	053096	185	0	200	ug/kg	93	N/A	25-121	N/A
	BLANK DUP	053096	177	0	200	ug/kg	89			
d6-Phenol (SURROGATE)	BLANK	053096	181	0	200	ug/kg	91	N/A	24-125	N/A
	BLANK DUP	053096	179	0	200	ug/kg	90			
d5-Nitrobenzene (SURROGATE)	BLANK	053096	85	0	100	ug/kg	85	N/A	23-120	N/A
	BLANK DUP	053096	91	0	100	ug/kg	91			
2-Fluorobiphenyl (SURROGATE)	BLANK	053096	84	0	100	ug/kg	84	N/A	30-115	N/A
	BLANK DUP	053096	83	0	100	ug/kg	83			
2,4,6-Tribromophenol(SURROGATE	BLANK	053096	190	0	200	ug/kg	95	N/A	19-122	N/A
	BLANK DUP	053096	196	0	200	ug/kg	98			
d14-Terphenyl (SURROGATE)	BLANK	053096	98	0	100	ug/kg	98	N/A	18-147	N/A
	BLANK DUP	053096	108	0	100	ug/kg	108			

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QUALITY ASSURANCE REPORT

EPA Method 625 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acenaphthene	METHOD	052696	1	ND	10	ug/L
Acenaphthylene	METHOD	052696	1	ND	10	ug/L
Anthracene	METHOD	052696	1	ND	10	ug/L
Benzidine	METHOD	052696	1	ND	20	ug/L
Benzo(a)anthracene	METHOD	052696	1	ND	10	ug/L
Benzo(b)fluoranthene	METHOD	052696	1	ND	10	ug/L
Benzo(k)fluoranthene	METHOD	052696	1	ND	10	ug/L
Benzoic acid	METHOD	052696	1	ND	20	ug/L
Benzo(ghi)perylene	METHOD	052696	1	ND	10	ug/L
Benzo(a)pyrene	METHOD	052696	1	ND	10	ug/L
Benzyl alcohol	METHOD	052696	1	ND	10	ug/L
Bis(2-chloroisopropyl)ether	METHOD	052696	1	ND	10	ug/L
Bis(2-ethylhexyl)phthalate	METHOD	052696	1	ND	10	ug/L
4-Bromophenyl phenyl ether	METHOD	052696	1	ND	10	ug/L
Butyl benzyl phthalate	METHOD	052696	1	ND	10	ug/L
4-Chloroaniline	METHOD	052696	1	ND	20	ug/L
4-Chloro-3-methylphenol	METHOD	052696	1	ND	10	ug/L
2-Chloronaphthalene	METHOD	052696	1	ND	10	ug/L
2-Chlorophenol	METHOD	052696	1	ND	10	ug/L
4-Chlorophenyl phenyl ether	METHOD	052696	1	ND	10	ug/L
Chrysene	METHOD	052696	1	ND	10	ug/L
Di-n-butyl phthalate	METHOD	052696	1	ND	10	ug/L
1,2-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
1,3-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
1,4-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
3,3'-Dichlorobenzidine	METHOD	052696	1	ND	20	ug/L
2,4-Dichlorophenol	METHOD	052696	1	ND	20	ug/L
Dibenzo(a,h)anthracene	METHOD	052696	1	ND	10	ug/L
Dibenzofuran	METHOD	052696	1	ND	10	ug/L
Diethyl phthalate	METHOD	052696	1	ND	10	ug/L
2,4-Dimethylphenol	METHOD	052696	1	ND	10	ug/L
Dimethyl phthalate	METHOD	052696	1	ND	10	ug/L
4,6-Dinitro-2-methylphenol	METHOD	052696	1	ND	20	ug/L
2,4-Dinitrophenol	METHOD	052696	1	ND	10	ug/L
2,4-Dinitrotoluene	METHOD	052696	1	ND	10	ug/L
2,6-Dinitrotoluene	METHOD	052696	1	ND	10	ug/L
Di-n-octyl phthalate	METHOD	052696	1	ND	10	ug/L
Fluorene	METHOD	052696	1	ND	10	ug/L
Fluoranthene	METHOD	052696	1	ND	10	ug/L
Hexachlorobenzene	METHOD	052696	1	ND	10	ug/L
Hexachlorobutadiene	METHOD	052696	1	ND	10	ug/L
Hexachloroethane	METHOD	052696	1	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	METHOD	052696	1	ND	10	ug/L
Isophorone	METHOD	052696	1	ND	10	ug/L
2-Methylnaphthalene	METHOD	052696	1	ND	10	ug/L
2-Methylphenol	METHOD	052696	1	ND	10	ug/L
4-Methylphenol	METHOD	052696	1	ND	10	ug/L
2-Nitroaniline	METHOD	052696	1	ND	10	ug/L

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QUALITY ASSURANCE REPORT

EPA Method 625 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
3-Nitroaniline	METHOD	052696	1	ND	50	ug/L
4-Nitroaniline	METHOD	052696	1	ND	10	ug/L
2-Nitrophenol	METHOD	052696	1	ND	10	ug/L
4-Nitrophenol	METHOD	052696	1	ND	50	ug/L
N-Nitrosodimethylamine	METHOD	052696	1	ND	10	ug/L
N-Nitrosodi-n-propylamine	METHOD	052696	1	ND	10	ug/L
N-Nitrosodiphenylamine	METHOD	052696	1	ND	10	ug/L
Naphthalene	METHOD	052696	1	ND	10	ug/L
Nitrobenzene	METHOD	052696	1	ND	20	ug/L
Pentachlorophenol	METHOD	052696	1	ND	10	ug/L
Phenanthrene	METHOD	052696	1	ND	10	ug/L
Phenol	METHOD	052696	1	ND	10	ug/L
Pyrene	METHOD	052696	1	ND	10	ug/L
1,2,4-Trichlorobenzene	METHOD	052696	1	ND	10	ug/L
2,4,5-Trichlorophenol	METHOD	052696	1	ND	10	ug/L
2,4,6-Trichlorophenol	METHOD	052696	1	ND	10	ug/L
2-Fluorophenol (SURROGATE)	METHOD	052696	1	66	21-110	%Recovery
d6-Phenol (SURROGATE)	METHOD	052696	1	93	10-110	%Recovery
d5-Nitrobenzene (SURROGATE)	METHOD	052696	1	103	35-114	%Recovery
2-Fluorobiphenyl (SURROGATE)	METHOD	052696	1	92	43-116	%Recovery
2,4,6-Tribromophenol (SURROGATE)	METHOD	052696	1	110	10-123	%Recovery
d14-Terphenyl (SURROGATE)	METHOD	052696	1	102	33-141	%Recovery

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QUALITY ASSURANCE REPORT

EPA Method 625 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Phenol	BLANK	bs051696	62	0	100	ug/L	62	31.8	5-110	42
	BLANK DUP	bs051696	45	0	100	ug/L	45			
2-Chlorophenol	BLANK	bs051696	67	0	100	ug/L	67	37.2	27-123	40
	BLANK DUP	bs051696	46	0	100	ug/L	46			
1,4-Dichlorobenzene	BLANK	bs051696	43	0	50	ug/L	86	0.0	36-97	28
	BLANK DUP	bs051696	43	0	50	ug/L	86			
N-Nitroso-di-n-propylamine	BLANK	bs051696	53	0	50	ug/L	106	20.8	41-116	38
	BLANK DUP	bs051696	43	0	50	ug/L	86			
1,2,4-Trichlorobenzene	BLANK	bs051696	45	0	50	ug/L	90	2.2	39-98	28
	BLANK DUP	bs051696	46	0	50	ug/L	92			
4-Chloro-3-methylphenol	BLANK	bs051696	73	0	100	ug/L	73	1.4	23-97	42
	BLANK DUP	bs051696	72	0	100	ug/L	72			
Acenaphthene	BLANK	bs051696	47	0	50	ug/L	94	4.2	46-118	31
	BLANK DUP	bs051696	49	0	50	ug/L	98			
4-Nitrophenol	BLANK	bs051696	60	0	100	ug/L	60	3.4	10-80	50
	BLANK DUP	bs051696	58	0	100	ug/L	58			
2,4-Dinitrotoluene	BLANK	bs051696	46	0	50	ug/L	92	6.7	24-96	38
	BLANK DUP	bs051696	43	0	50	ug/L	86			
Pentachlorophenol	BLANK	bs051696	57	0	100	ug/L	57	5.4	9-105	50
	BLANK DUP	bs051696	54	0	100	ug/L	54			
Pyrene	BLANK	bs051696	56	0	50	ug/L	112	5.2	26-127	31
	BLANK DUP	bs051696	59	0	50	ug/L	118			
2-Fluorophenol (SURROGATE)	BLANK	bs051696	75	0	200	ug/L	38	N/A	21-110	N/A
	BLANK DUP	bs051696	58	0	200	ug/L	29			
d6-Phenol (SURROGATE)	BLANK	bs051696	125	0	200	ug/L	63	N/A	10-110	N/A
	BLANK DUP	bs051696	128	0	200	ug/L	64			
d5-Nitrobenzene (SURROGATE)	BLANK	bs051696	89	0	100	ug/L	89	N/A	35-114	N/A
	BLANK DUP	bs051696	106	0	100	ug/L	106			
2-Fluorobiphenyl (SURROGATE)	BLANK	bs051696	75	0	100	ug/L	75	N/A	43-116	N/A
	BLANK DUP	bs051696	92	0	100	ug/L	92			
2,4,6-Tribromophenol(SURROGATE	BLANK	bs051696	160	0	200	ug/L	80	N/A	10-123	N/A
	BLANK DUP	bs051696	190	0	200	ug/L	95			
d14-Terphenyl (SURROGATE)	BLANK	bs051696	92	0	100	ug/L	92	N/A	33-141	N/A
	BLANK DUP	bs051696	127	0	100	ug/L	127			

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QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

BLANKS

TEST DESCRIPTION	ANALYS.SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acetone	METHOD	053196	1	ND	10	ug/L
Benzene	METHOD	053196	1	ND	5	ug/L
Bromodichloromethane	METHOD	053196	1	ND	5	ug/L
Bromoform	METHOD	053196	1	ND	5	ug/L
Bromomethane	METHOD	053196	1	ND	10	ug/L
2-Butanone	METHOD	053196	1	ND	10	ug/L
Carbon disulfide	METHOD	053196	1	ND	5	ug/L
Carbon tetrachloride	METHOD	053196	1	ND	5	ug/L
Chlorobenzene	METHOD	053196	1	ND	5	ug/L
Chlorodibromomethane	METHOD	053196	1	ND	5	ug/L
Chloroethane	METHOD	053196	1	ND	10	ug/L
2-Chloroethylvinyl ether	METHOD	053196	1	ND	10	ug/L
Chloroform	METHOD	053196	1	ND	5	ug/L
Chloromethane	METHOD	053196	1	ND	10	ug/L
1,1-Dichloroethane	METHOD	053196	1	ND	5	ug/L
1,2-Dichloroethene	METHOD	053196	1	ND	5	ug/L
1,1-Dichloroethene	METHOD	053196	1	ND	5	ug/L
1,2-Dichloroethene (total)	METHOD	053196	1	ND	5	ug/L
1,2-Dichloropropane	METHOD	053196	1	ND	5	ug/L
cis-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/L
trans-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/L
Ethylbenzene	METHOD	053196	1	ND	5	ug/L
2-Hexanone	METHOD	053196	1	ND	10	ug/L
Methylene chloride	METHOD	053196	1	ND	5	ug/L
4-Methyl-2-pentanone	METHOD	053196	1	ND	10	ug/L
Styrene	METHOD	053196	1	ND	5	ug/L
1,1,2,2-Tetrachloroethane	METHOD	053196	1	ND	5	ug/L
Tetrachloroethene	METHOD	053196	1	ND	5	ug/L
Toluene	METHOD	053196	1	ND	5	ug/L
1,1,1-Trichloroethane	METHOD	053196	1	ND	5	ug/L
1,1,2-Trichloroethane	METHOD	053196	1	ND	5	ug/L
Trichloroethene	METHOD	053196	1	ND	5	ug/L
Vinyl acetate	METHOD	053196	1	ND	5	ug/L
Vinyl chloride	METHOD	053196	1	ND	10	ug/L
Total xylenes	METHOD	053196	1	ND	5	ug/L
d4-1,2-Dichloroethane (SURROGATE)	METHOD	053196	1	102	70-121	% recovery
d8-Toluene (SURROGATE)	METHOD	053196	1	96	84-138	% recovery
4-Bromofluorobenzene (SURROGATE)	METHOD	053196	1	87	74-121	% recovery

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CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Benzene	MATRIX	961363-1	49.6	0	50.0	ug/L	99	2.8	76-127	11
	MATRIX DUP	961363-1	51.0	0	50.0	ug/L	102			
Chlorobenzene	MATRIX	961363-1	45.8	0	50.0	ug/L	92	5.1	75-130	13
	MATRIX DUP	961363-1	48.2	0	50.0	ug/L	96			
1,1-Dichloroethene	MATRIX	961363-1	47.8	0	50.0	ug/L	96	7.3	61-145	14
	MATRIX DUP	961363-1	51.4	0	50.0	ug/L	103			
Trichloroethene	MATRIX	961363-1	50.1	0	50.0	ug/L	100	0.2	71-120	14
	MATRIX DUP	961363-1	50.2	0	50.0	ug/L	100			
Toluene	MATRIX	961363-1	44.5	0	50.0	ug/L	89	6.1	76-125	13
	MATRIX DUP	961363-1	47.3	0	50.0	ug/L	95			
d4-Dichloroethane (SURROGATE)	MATRIX	961363-1	50.7	0	50.0	ug/L	101	N/A	76-114	N/A
	MATRIX DUP	961363-1	52.5	0	50.0	ug/L	105			
d8-Toluene (SURROGATE)	MATRIX	961363-1	47.6	0	50.0	ug/L	95	N/A	88-110	N/A
	MATRIX DUP	961363-1	48.3	0	50.0	ug/L	97			
4-Bromofluorobenzene (SURROGAT	MATRIX	961363-1	53.5	0	50.0	ug/L	107	N/A	86-115	N/A
	MATRIX DUP	961363-1	50.9	0	50.0	ug/L	102			

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QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

BLANKS

TEST DESCRIPTION	ANALYS.SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acetone	METHOD	053196	1	ND	10	ug/kg
Benzene	METHOD	053196	1	ND	5	ug/kg
Bromodichloromethane	METHOD	053196	1	ND	5	ug/kg
Bromoform	METHOD	053196	1	ND	5	ug/kg
Bromomethane	METHOD	053196	1	ND	10	ug/kg
2-Butanone	METHOD	053196	1	ND	10	ug/kg
Carbon disulfide	METHOD	053196	1	ND	5	ug/kg
Carbon tetrachloride	METHOD	053196	1	ND	5	ug/kg
Chlorobenzene	METHOD	053196	1	ND	5	ug/kg
Chlorodibromomethane	METHOD	053196	1	ND	5	ug/kg
Chloroethane	METHOD	053196	1	ND	10	ug/kg
2-Chloroethylvinyl ether	METHOD	053196	1	ND	10	ug/kg
Chloroform	METHOD	053196	1	ND	5	ug/kg
Chloromethane	METHOD	053196	1	ND	10	ug/kg
1,1-Dichloroethane	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloroethene	METHOD	053196	1	ND	5	ug/kg
1,1-Dichloroethene	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloroethene (total)	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloropropane	METHOD	053196	1	ND	5	ug/kg
cis-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/kg
trans-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/kg
Ethylbenzene	METHOD	053196	1	ND	5	ug/kg
2-Hexanone	METHOD	053196	1	ND	10	ug/kg
Methylene chloride	METHOD	053196	1	ND	5	ug/kg
4-Methyl-2-pentanone	METHOD	053196	1	ND	10	ug/kg
Styrene	METHOD	053196	1	ND	5	ug/kg
1,1,2,2-Tetrachloroethane	METHOD	053196	1	ND	5	ug/kg
Tetrachloroethene	METHOD	053196	1	ND	5	ug/kg
Toluene	METHOD	053196	1	ND	5	ug/kg
1,1,1-Trichloroethane	METHOD	053196	1	ND	5	ug/kg
1,1,2-Trichloroethane	METHOD	053196	1	ND	5	ug/kg
Trichloroethene	METHOD	053196	1	ND	5	ug/kg
Vinyl acetate	METHOD	053196	1	ND	5	ug/kg
Vinyl chloride	METHOD	053196	1	ND	10	ug/kg
Total xylenes	METHOD	053196	1	ND	5	ug/kg
d4-1,2-Dichloroethane (SURROGATE)	METHOD	053196	1	102	70-121	% recovery
d8-Toluene (SURROGATE)	METHOD	053196	1	96	84-138	% recovery
4-Bromofluorobenzene (SURROGATE)	METHOD	053196	1	87	74-121	% recovery

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QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Benzene	MATRIX	961363-1	49.6	0	50.0	ug/kg	99	2.8	66-142	21
	MATRIX DUP	961363-1	51.0	0	50.0	ug/kg	102			
Chlorobenzene	MATRIX	961363-1	45.8	0	50.0	ug/kg	92	5.1	60-133	21
	MATRIX DUP	961363-1	48.2	0	50.0	ug/kg	96			
1,1-Dichloroethene	MATRIX	961363-1	47.8	0	50.0	ug/kg	96	7.3	59-172	22
	MATRIX DUP	961363-1	51.4	0	50.0	ug/kg	103			
Trichloroethene	MATRIX	961363-1	50.1	0	50.0	ug/kg	100	0.2	62-137	24
	MATRIX DUP	961363-1	50.2	0	50.0	ug/kg	100			
Toluene	MATRIX	961363-1	44.5	0	50.0	ug/kg	89	6.1	59-139	21
	MATRIX DUP	961363-1	47.3	0	50.0	ug/kg	95			
d4-Dichloroethane (SURROGATE)	MATRIX	961363-1	50.7	0	50.0	ug/kg	101	N/A	70-121	N/A
	MATRIX DUP	961363-1	52.5	0	50.0	ug/kg	105			
d8-Toluene (SURROGATE)	MATRIX	961363-1	47.6	0	50.0	ug/kg	95	N/A	84-138	N/A
	MATRIX DUP	961363-1	48.3	0	50.0	ug/kg	97			
4-Bromofluorobenzene (SURROGAT	MATRIX	961363-1	53.5	0	50.0	ug/kg	107	N/A	74-121	N/A
	MATRIX DUP	961363-1	50.9	0	50.0	ug/kg	102			

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ICP BLANK DATA

Date Analyzed: 5-30-96

Analyte		Cal. Blank (ug/l)	Cont. Blank (ug/l)	Det. Limits (ug/l)
Antimony	(Sb)	ND	ND	50
Arsenic	(As)	ND	ND	50
Barium	(Ba)	ND	ND	50
Beryllium	(Be)	ND	ND	50
Cadmium	(Cd)	ND	ND	50
Chromium	(Cr)	ND	ND	50
Cobalt	(Co)	ND	ND	50
Copper	(Cu)	ND	ND	50
Lead	(Pb)	ND	ND	50
Molybdenum	(Mo)	ND	ND	50
Nickel	(Ni)	ND	ND	50
Silver	(Ag)	ND	ND	50
Thallium	(Tl)	ND	ND	50
Vanadium	(V)	ND	ND	50
Zinc	(Zn)	ND	ND	50

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ICP REFERENCE STANDARD

Date Analyzed: 5-30-96

Sample Number: M50142/43

Analyte		True Conc. (ug/l)	Actual Conc. (ug/l)	% Rec
Antimony	(Sb)	5000	5012	100
Arsenic	(As)	5000	5051	101
Barium	(Ba)	5000	5106	102
Beryllium	(Be)	5000	5106	102
Cadmium	(Cd)	5000	5154	103
Chromium	(Cr)	5000	5153	103
Cobalt	(Co)	5000	5160	103
Copper	(Cu)	5000	5136	103
Lead	(Pb)	5000	5144	103
Molybdenum	(Mo)	5000	5026	100
Nickel	(Ni)	5000	5161	103
Silver	(Ag)	5000	5158	96
Thallium	(Tl)	5000	5113	102
Vanadium	(V)	5000	5138	103
Zinc	(Zn)	5000	5162	103

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ICP MATRIX SPIKE ANALYSIS

Date Analyzed: 5-30-96

Sample : 961308-11

Analyte		Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS %Rec	MSD Conc. (ug/L)	MSD %Rec	RPD
Antimony	(Sb)	5000	288	5140	97	5228	99	2
Arsenic	(As)	5000	40	4988	99	5040	100	1
Barium	(Ba)	5000	8980	14710	115	14580	112	1
Beryllium	(Be)	5000	ND	4930	99	4998	100	1
Cadmium	(Cd)	5000	74	4915	97	4982	98	1
Chromium	(Cr)	5000	1244	6178	99	6228	100	1
Cobalt	(Co)	5000	84	4924	97	4986	98	1
Copper	(Cu)	5000	1552	6673	102	6708	103	1
Lead	(Pb)	5000	316	5164	97	5192	98	1
Molybdenum	(Mo)	5000	296	5167	97	5252	99	2
Nickel	(Ni)	5000	3786	8899	102	8865	102	0
Silver	(Ag)	5000	121	4849	95	4709	92	3
Thallium	(Tl)	5000	26	4882	97	4934	98	1
Vanadium	(V)	5000	100	5016	98	5126	101	2
Zinc	(Zn)	5000	5935	11160	105	11070	103	1

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QUALITY ASSURANCE FOOTER

METHOD REFERENCES

(1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, November 1990, and July 1992 update
(2) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989
(3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
(4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
(5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
(6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
(7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method. The date and time of analysis indicated on the QA report may not reflect the actual time of analysis for QC samples. All data reported on an "as received" basis unless otherwise indicated. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis. Unless otherwise indicated, volatiles by gas chromatograpy are reported from a single column. Volatiles analyses on low level soils are conducted at room temperature.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA = Not analyzed
N/A = Not applicable
ug/L = Micrograms per liter
mg/L = Milligrams per liter
ND = Not detected at a value greater than the reporting limit
NC = Not calculable due to values lower than the detection limit
N.I. = Not Ignitable
S.I. = Sustains Ignition
I(NS) = Ignites, but does not Sustain Ignition
RPD = Relative Percent Difference

(a) = Surrogate recoveries were outside acceptable ranges due to matrix effects.
(b) = Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate.
(c) = Matrix spike recoveries were outside acceptable ranges due to matrix effects.
(d) = Relative Percent Difference (RPD) for duplicate analysis outside acceptance limits due to actual differences in the sample matrix.
(e) = The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.
(f) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.
(g) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.
(h) = High dilution due to matrix effects
(i) = Samples with results below 500 mg/L are considered hazardous

QC SAMPLE IDENTIFICATIONS

MB = Method Blank
RB = Reagent Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CS = Calibration Standard
ICB = Initial Calibration Verification
CCV = Continuing Calibration Verification
SB = Storage Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate
MD = Matrix Duplicate
BS = Blank Spike
SS = Surrogate Spike
LCS = Laboratory Control Standard
RS = Reference Standard

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	Corpus Christi, Texas	*CC
	Houston, Texas	*HP
	Lake Charles, Louisiana	*LC
	Long Beach, California	*LB
Aquatic Testing Laboratories:	Ventura, California	*AT

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961377

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 5-22-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Scott F. Ferriman 510-820-9391

PROJECT NAME Emeryville Properties NO. 3002
ADDRESS 1400 Park Avenue, Emeryville, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH GASOLINE (EPA 5030/8015)	TPH GASOLINE/BTEX (EPA 5030/8015-8020)	TPH DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	8015M Full Chain				
Tank Water	5-22-96	8:00	water	6 VOAs HCl 3 L. amber	1					X	X							X				
BH-A-5'	5-22-96	8:45	soil	1 - BT	2					X	X			X				X				

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Scott F. Ferriman 10:00	Federal Express 10:00		Greg Sizemore	
(signature) (time)	(signature) (time)	(signature) (time)	(signature) 9:45 (time)	
Scott Ferriman 5-22-96	5-22-96		Greg Sizemore	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE, Inc.	Company-	Company-	Core Lab 5-24-96	

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A N A L Y T I C A L R E P O R T

Job Number: 961444
Prepared For:

Brea Canon Oil Co.
Gwen Tellegen
2300 E.Imperial Hwy 7th Floor
El Segundo, CA 90245

Date: 06/07/96

Elizabeth Cavinaugh for
Signature

6/10/96
Date:

Name: Tim A. Scott

Core Laboratories
1250 Gene Autry Way
Anaheim, CA 92805

Title: Laboratory Manager

CA. E. L. A. P. 1174
L. A. C. S. D. 10146

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LABORATORY TESTS RESULTS
06/07/96

JOB NUMBER: 961444 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Gwen Tellegen
DATE SAMPLED.....: 06/04/96
TIME SAMPLED.....: 00:00
WORK DESCRIPTION...: 961444-1

LABORATORY I.D...: 961444-0001
DATE RECEIVED....: 06/04/96
TIME RECEIVED....: 12:00
REMARKS.....: soil, brass

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Metals Digestion-Aqueous	COMPLETED		N/A	EPA 3010A	06/06/96	RH
STLC Extraction Metals		*10		EPA 6010	06/06/96	EAW
Lead (Pb)	29	0.50	mg/L	EPA 6010		
STLC Metals Extraction	COMPLETED	-----	N/A	Cal. DHS Method	06/07/96	RH
Chromium (Cr+6), Total	<0.01	0.01	mg/kg	EPA 7196	06/07/96	JEM

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QUALITY ASSURANCE REPORT
06/07/96

JOB NUMBER: 961444 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Chromium (Cr+6), Total			DATE/TIME ANALYZED:06/07/96 15:53							QC BATCH NUMBER:952731
REPORTING LIMIT/DF: 0.01 UNITS:mg/kg			METHOD REFERENCE :EPA 7196							TECHNICIAN:JEM
BLANK	METHOD	060796A	<0.01							
STANDARD	LCS	SI60044	0.11			0.10	110			
SPIKE	MATRIX (c)	961444-1	0.14					0.00	0.20	70
DUPLICATE	MATRIX	961444-1	<0.01	<0.01	NC					

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ICP BLANK DATA

Date Analyzed: 6-06-96

Analyte		Cal. Blank (ug/l)	Cont. Blank (ug/l)	Det. Limits (ug/l)
Antimony	(Sb)	ND	ND	50
Arsenic	(As)	ND	ND	50
Barium	(Ba)	ND	ND	50
Beryllium	(Be)	ND	ND	50
Cadmium	(Cd)	ND	ND	50
Chromium	(Cr)	ND	ND	50
Cobalt	(Co)	ND	ND	50
Copper	(Cu)	ND	ND	50
Lead	(Pb)	ND	ND	50
Molybdenum	(Mo)	ND	ND	50
Nickel	(Ni)	ND	ND	50
Silver	(Ag)	ND	ND	50
Thallium	(Tl)	ND	ND	50
Vanadium	(V)	ND	ND	50
Zinc	(Zn)	ND	ND	50

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CORE LABORATORIES

ICP REFERENCE STANDARD

Date Analyzed: 6-06-96

Sample Number: M50142/43

Analyte		True Conc. (ug/l)	Actual Conc. (ug/l)	% Rec
Antimony	(Sb)	5000	5061	101
Arsenic	(As)	5000	5139	103
Barium	(Ba)	5000	5110	102
Beryllium	(Be)	5000	5130	103
Cadmium	(Cd)	5000	5149	103
Chromium	(Cr)	5000	5154	103
Cobalt	(Co)	5000	5158	103
Copper	(Cu)	5000	5120	102
Lead	(Pb)	5000	5130	103
Molybdenum	(Mo)	5000	5046	100
Nickel	(Ni)	5000	5158	103
Silver	(Ag)	5000	5167	96
Thallium	(Tl)	5000	5151	103
Vanadium	(V)	5000	5109	102
Zinc	(Zn)	5000	5168	103

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ICP MATRIX SPIKE ANALYSIS

Date Analyzed: 6-06-96

Sample : 961450-1

Analyte		Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS %Rec	MSD Conc. (ug/L)	MSD %Rec	RPD	
Antimony	(Sb)	500	ND	448	90	432	86	4	
Arsenic	(As)	500	ND	457	91	432	86	5	
Barium	(Ba)	500	144	584	88	566	84	3	
Beryllium	(Be)	500	ND	458	92	445	89	3	
Cadmium	(Cd)	500	ND	465	93	456	91	2	
Chromium	(Cr)	500	ND	477	95	458	92	4	
Cobalt	(Co)	500	ND	464	93	454	91	2	
Copper	(Cu)	500	508	843	67	790	56	6	
Lead	(Pb)	500	338	825	97	772	87	6	
Molybdenum	(Mo)	500	229	563	67	538	62	4	*
Nickel	(Ni)	500	ND	482	96	484	97	0	
Silver	(Ag)	500	ND	107	21	121	24	13	**
Thallium	(Tl)	500	ND	432	86	462	92	7	
Vanadium	(V)	500	ND	442	88	428	86	3	
Zinc	(Zn)	500	2226	2773	109	2638	82	5	

* MATRIX INTERFERENCE
** LOW DUE TO POSSIBLE PRECIPITATION OF AG

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QUALITY ASSURANCE FOOTER

METHOD REFERENCES

(1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, November 1990, and July 1992 update
(2) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989
(3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
(4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
(5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
(6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
(7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method. The date and time of analysis indicated on the QA report may not reflect the actual time of analysis for QC samples. All data reported on an "as received" basis unless otherwise indicated. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis. Unless otherwise indicated, volatiles by gas chromatograpy are reported from a single column. Volatiles analyses on low level soils are conducted at room temperature.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA = Not analyzed
N/A = Not applicable
ug/L = Micrograms per liter
mg/L = Milligrams per liter
ND = Not detected at a value greater than the reporting limit
NC = Not calculable due to values lower than the detection limit
N.I. = Not Ignitable
S.I. = Sustains Ignition
I(NS) = Ignites, but does not Sustain Ignition
RPD = Relative Percent Difference
(a) = Surrogate recoveries were outside acceptable ranges due to matrix effects.
(b) = Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate.
(c) = Matrix spike recoveries were outside acceptable ranges due to matrix effects.
(d) = Relative Percent Difference (RPD) for duplicate analysis outside acceptance limits due to actual differences in the sample matrix.
(e) = The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.
(f) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.
(g) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.
(h) = High dilution due to matrix effects
(i) = Samples with results below 500 mg/L are considered hazardous

QC SAMPLE IDENTIFICATIONS

MB = Method Blank
RB = Reagent Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CS = Calibration Standard
ICB = Initial Calibration Verification
CCV = Continuing Calibration Verification
SB = Storage Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate
MD = Matrix Duplicate
BS = Blank Spike
SS = Surrogate Spike
LCS = Laboratory Control Standard
RS = Reference Standard

SUBCONTRACTED LABORATORY LOCATIONS

Core Laboratories:	Aurora, Colorado(ELAP #1933)	*AU
	Casper, Wyoming	*CA
	Corpus Christi, Texas	*CC
	Houston, Texas	*HP
	Lake Charles, Louisiana	*LC
	Long Beach, California	*LB
Aquatic Testing Laboratories:		
	Ventura, California	*AT

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

All results, opinions or interpretations contained in this report are based upon information ... exclusive and confidential use ... The analytical ... represent the best judgement of Core Laboratories. Core Laboratories ... any kind, and expressly disclaims ... to the person ...

961522

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 5-22-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Scott F. Ferriman 510-820-9391

PROJECT NAME Emeryville Properties NO. 3002
ADDRESS 1400 Park Avenue, Emeryville, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH- GASOLINE (EPA 5030/8015)	TPH- GASOLINE/BTEX (EPA 5030/8015-8020)	TPH- DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM MET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	8015M Full Chain				
Tank Water	5-22-96	8:00	water	6 VOAs HCl 3 e. unpres	1					X	X							X				
BH-A-5'	5-22-96	8:45	soil	1 - BT	2					X	X			X				X				

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Scott F. Ferriman 10:00	Federal Express 10:00		Greg Sizemore	
(signature) (time)	(signature) (time)	(signature) (time)	(signature) 9:45	
Scott Ferriman 5-22-96	5-22-96		Greg Sizemore	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE, Inc.	Company-	Company-	Core Lab 5-24-96	